



SR 9/I-95 at SR 842/Broward Boulevard Interchange Broward County, Florida

SR 9/I-95 @ SR 842/Broward Boulevard
from West of SW 24th Avenue to East of NW/SW 18th Avenue
Project Development & Environment (PD&E) Study

Preliminary Drainage Report

Financial Project ID Number: 435513-1-22-02
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Abbreviations

BCEPGMD	Broward County Environmental Protection and Growth Management Department
BHP	Borehole Permeability Test
EPA	United States Environmental Protection Agency
ERP	Environmental Resource Permit
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
LOS	Level of Service
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
PD&E	Project Development and Environment Study
SFWMD	South Florida Water Management District
SFRC	South Florida Rail Corridor
SIS	Strategic Intermodal System
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard

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Executive Summary

This Preliminary Drainage Report is part of the Preliminary Engineering Report for the Project Development and Environment (PD&E) Study for the SR 9 (I-95) at SR 842 (Broward Boulevard) Interchange in Broward County, Florida.

This Report identifies the existing drainage systems within the proposed limits of work, analyzes the stormwater management facility options available to meet FDOT and environmental permitting agencies criteria, and defines the conceptual drainage design.

The project is located in Broward County, Florida, within the jurisdictional boundary of the South Florida Water Management District (SFWMD), Broward County Environmental Protection and Growth Management Department (BCEPGMD), United States Army Corps of Engineers (USACE), and United States Coast Guard (USCG).

SFWMD has established several criteria for water quality, depending on the proposed type of stormwater treatment facility. All proposed stormwater management facilities will provide the necessary water quality treatment volume and limit the post-development peak discharge rate into the South Fork of the New River and the North Fork of the New River to the pre-development peak discharge rate. Water quality treatment and discharge attenuation is provided via existing and proposed dry detention/retention ponds and French Drain.

Based on the conceptual drainage design evaluation for the proposed interchange improvements, the stormwater management facilities required to meet FDOT drainage criteria, as well as SFWMD permit criteria, can be fully accommodated within the existing right-of-way, with no additional offsite right-of-way acquisition due solely for drainage purposes.

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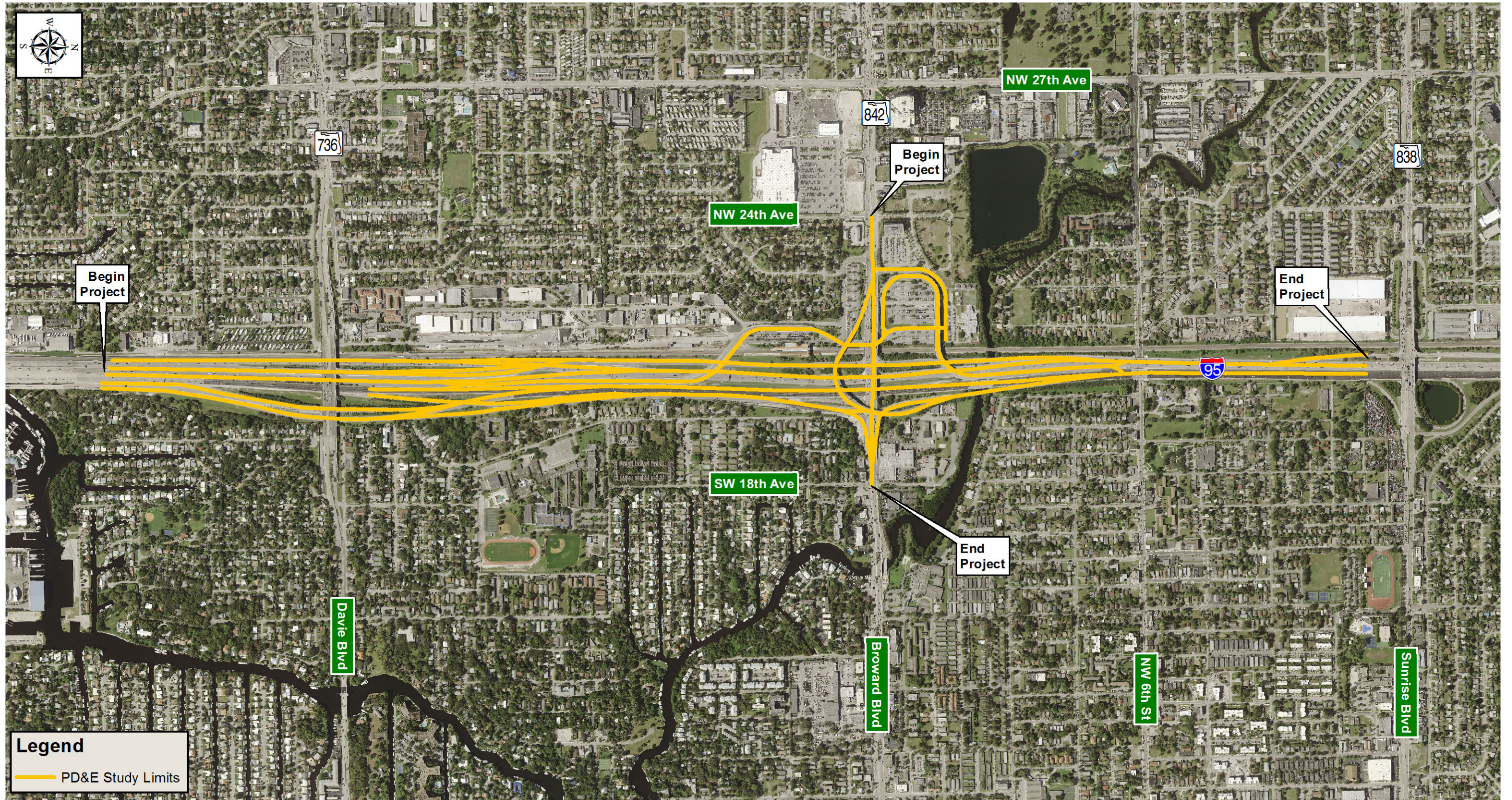
1.0 Introduction

The Florida Department of Transportation (FDOT), District Four, is currently conducting a Project Development and Environment (PD&E) Study that is evaluating potential improvements to the SR 9/I-95 and SR 842/Broward Boulevard Interchange in the City of Fort Lauderdale, Broward County, Florida. The major improvements being considered under the PD&E Study will improve traffic flow to and from I-95 and along Broward Boulevard, increase connectivity between the I-95 Express Lanes and Broward Boulevard, and expand intermodal connectivity. The improved connectivity and traffic flow will be achieved via widening along Broward Boulevard and I-95, new ramps to connect to the I-95 Express Lanes, and the re-alignment of existing ramps.

The purpose of this Report is to define the conceptual drainage design, and to evaluate and identify the recommended stormwater management facility locations, in support of the PD&E study, consistent with Federal, State and local objectives. This Report identifies the existing drainage systems within the proposed limits of work, FDOT drainage criteria and environmental permitting agency requirements that govern the final design, and the stormwater management facility options available to meet such criteria. Additionally, the Report identifies the outfall locations and preliminary sizes (volume and area) of required stormwater management facilities, and provides conclusions and recommendations for the proposed drainage systems. The proposed drainage improvements are based on the conceptual interchange design.

This Report is prepared in accordance with the FDOT PD&E Manual, Part 1, Chapter 12, and Part 2, Chapters 3, 9, and 11, dated June 14, 2017.

Figure 1 | Study Limits



2.0 Location and Description of Project

2.1 Project Location

The Interchange of I-95 at Broward Boulevard is located in central Broward County in the City of Fort Lauderdale, in Sections 4, 5, 8, and 9 of Township 50 S, Range 42 E. Refer to [Figure 1](#) of **Appendix A** for the Project Location Map and [Figure 5](#) of **Appendix A** for the USGS Quadrangle Map. The surrounding lands of the project area consist of residential, recreational, commercial and institutional use, as illustrated in the Land Use Map in [Figure 3](#) of **Appendix A**.

The project is located within the jurisdictional boundary of the South Florida Water Management District (SFWMD). The project lies within the SFWMD North New River and the C-12 Drainage Basins, see [Figure 8](#) of **Appendix A** for the SFWMD Drainage Basin Map.

2.2 Project Description

The PD&E study limits extend along SR 9/I-95, from just south of Dave Boulevard to just south of Sunrise Boulevard, a distance of approximately two miles, and along Broward Boulevard from NW 24th Avenue to SW 18th Avenue, a distance of approximately one half mile. The study area includes the median ramp connections to the Park & Ride lots from I-95 north and south of Broward Boulevard. These study limits are shown in [Figure 1](#).

2.2.1 SR 9/I-95 Express Lanes Project

This PD&E study has been conducted during the construction of Phase 3A-1 of the I-95 Express Lanes Design-Build Project, subsequent to the issuance of construction permits by the SFWMD. Conceptual drainage modifications determined in this Report will not be implemented until after the completion of construction of I-95 Express Lanes Phase 3A-1, therefore for analysis purposes, the proposed, post-development condition for SR 9/I-95 has been utilized for the pre-development condition for this project.

3.0 Typical Sections

3.1 Existing Typical Sections

3.1.1 SR 9/I-95 Typical Section

In the project area, typical section for SR 9/I-95 varies. South of Broward Boulevard, it is an eleven-lane divided interstate freeway facility with four general purpose travel lanes and three express lanes, one in the southbound direction, two in the northbound direction. At the interchange itself, there are numerous access ramps to and from I-95, Broward Boulevard, and the Broward Boulevard Park & Ride parking lot.

North of Broward Boulevard, SR 9/I-95 is a fourteen-lane divided interstate freeway facility with five general purpose travel lanes and two express lanes in each direction.

South of, and through Broward Boulevard, the proposed SR 9/I-95 typical section has the following characteristics:

- Four 12-foot general purpose travel lanes in each direction
- Two 11-foot express lanes in the northbound direction
- One 11-foot express travel lane in the southbound direction
- Swales / Linear dry ponds, inside and outside
- Right-of-way varies, with minimum widths of:
 - 425 feet from south of Davie Blvd. to south of the Broward Blvd. Park & Ride Ramp
 - 412 feet at the Broward Blvd. Park & Ride Ramp (south of Broward Blvd.)
 - 357 feet through the Broward Blvd. Interchange (between the Park & Ride Ramps)

North of Broward Boulevard, the proposed SR 9/I-95 typical section has the following characteristics:

- Five 12-foot general purpose travel lanes in each direction
- Two express lanes in each direction, with varying widths between 11 and 12 feet.
- Swales / Linear dry ponds, inside and outside
- Right-of-way varies, with minimum widths of:
 - 265 feet at the Broward Blvd. Park & Ride Ramp (north of Broward Blvd.)
 - 241 feet from north of the Broward Blvd. Park & Ride Ramp to Sunrise Blvd.

3.1.2 SR 842/Broward Boulevard Typical Section

SR 842/Broward Boulevard is a six-lane urban divided roadway, with a raised median within the vicinity of the I-95 Interchange.

Within the PD&E Study limits, SR 842/Broward Boulevard has the following characteristics:

- Three 12-foot travel lanes in each direction
- 6 to 7-foot sidewalks on both sides of the roadway
- Curb and gutter, inside and outside
- Raised median
- Right-of-way varies, with a minimum width of 110 feet

3.2 Proposed Typical Sections

3.2.1 SR 9/I-95 Typical Section

The proposed typical sections for SR 9/I-95 generally maintain the existing configuration, north and south of Broward Boulevard. Proposed modifications at the Davie Boulevard Interchange include two new ramps and a proposed toll gantry. At the Broward Boulevard Interchange, two new access ramps connecting the I-95 Express Lanes to the Park & Ride lot are proposed, as well as the re-alignment of existing on and off-ramps connecting the I-95 General Purpose Lanes to Broward Boulevard. The existing right-of-way widths are maintained throughout the project limits.

3.2.2 SR 842/Broward Boulevard Typical Section

The proposed typical section for Broward Boulevard is a six-lane urban divided roadway, with bicycle lanes and a raised median within the vicinity of the I-95 Interchange.

The proposed typical section has the following characteristics:

- Three 11-foot travel lanes in each direction
- One 7-foot bicycle lane in each direction
- Curb and gutter, inside and outside
- 6-foot sidewalks on both sides of the roadway
- Raised median
- Existing right-of-way width is maintained

4.0 Roadway Drainage

4.1 Existing Drainage Systems

The existing drainage within the project limits can be divided into four distinct systems based on existing collection and conveyance systems, interconnected stormwater management facilities, and outfalls. Refer to **Appendix B** for pre-development drainage maps. The existing drainage systems have been delineated as follows:

4.1.1 Existing Drainage System 16A (SR 9/I-95)

System 16A is defined as the segment of the I-95 corridor from the South Fork of the New River to south of Broward Boulevard, including the Davie Boulevard interchange. The system consists of French drains, multiple dry detention ponds, linear dry detention swales along the east and west sides of I-95, ultimately discharging to the South Fork of the New River. The system is located within the SFWMD North New River Drainage Basin. Refer to [Figure 8](#) of **Appendix A** for the SFWMD Drainage Basin Map.

System 16A has been divided into 24 basins, including four offsite basins that are interconnected by culverts connecting the east and west roadside swales and ditches, along with several other existing pipes that drain the runoff to the outside swales. The existing drainage facilities within this section of the corridor include dry detention swales and ponds, located within the northbound on-ramp and southbound off-ramp on Davie Boulevard, and on the east and west sides of I-95. Runoff from the inside northbound and southbound travel lanes is collected by barrier wall inlets and discharged through median drains along the system. Runoff from the outside northbound and southbound travel lanes sheet flows into roadside swales in some portions, and is collected by barrier wall inlets where there is retaining wall, and conveyed to the swales and ponds. The flow pattern is generally towards the south, where the existing drainage system ultimately discharges into the South Fork of the New River via a 66-inch outfall pipe.

Existing water quality treatment and discharge attenuation is provided within interconnected ponds, swales and French Drains upstream of a control structure consisting of a raised Type K Ditch Bottom Inlet and a V-notch bleeder in the southeast pond, just south of the Davie Boulevard interchange (Pond 16A-1).

The Seasonal High Groundwater Table (SHGWT) elevation and static tailwater elevation for the South Fork of the New River assumed for the analysis, modeling, and design associated with this study is 0.42-ft NAVD. This assumption is in accordance with previous permitting documentation and designs.

Refer to **Appendix B** for pre-development drainage maps.

4.1.2 Existing Drainage System 16B (SR 9/I-95)

System 16B is defined as the segment of the I-95 corridor from south of Broward Boulevard to the North Fork of the New River, and includes the Broward Boulevard interchange. The existing system consists of French drains, multiple dry ponds and swales within the infield areas and along the east and west sides of I-95, ultimately discharging to the North Fork of the New River. The system is located within the SFWMD North New River Drainage Basin. Refer to [Figure 8 of Appendix A](#) for the SFWMD Drainage Basin Map.

System 16B is divided into 33 basins, including five offsite basins that are interconnected by culverts connecting the median, east and west roadside ditches, swales and ponds. The existing drainage facilities within this section of the corridor include conveyance swales and ponds, located within the infield areas on the Broward Boulevard interchange, as well as the east and west sides of I-95. Runoff from the inside northbound and southbound travel lanes is collected through barrier wall inlets and discharged through median drains along the system. Runoff from the outside northbound and southbound travel lanes sheet flows into roadside swales in some portions, and is collected by barrier wall inlets where there is retaining wall, and conveyed to the swales and ponds. The flow pattern is generally towards the north, where the existing drainage system ultimately discharges into the North Fork of the New River via a 54-inch outfall pipe.

Existing water quality treatment and discharge attenuation is provided via a series of ponds, swales, and French drain systems. The existing outfall control structures consist of raised Ditch Bottom Inlets with

circular orifices for the detention system. These control structures collect and convey all roadway runoff and discharge to the wet pond located in the northeast quadrant of the Broward Boulevard interchange. The existing wet pond does not provide any water quality treatment or discharge attenuation, but rather collects and conveys the runoff from the upstream systems to the North Fork of the New River through the aforementioned 54-inch outfall pipe.

The Seasonal High Groundwater Table (SHGWT) elevation and static tailwater elevation for the North Fork of the New River assumed for the analysis, modeling, and design associated with this study is 0.42-ft NAVD. This assumption is in accordance with previous permitting documentation and designs.

Refer to **Appendix B** for pre-development drainage maps.

4.1.3 Existing Drainage System 17 (SR 9/I-95)

System 17 is defined as the segment of the I-95 corridor from the North Fork of the New River to just south of the Sunrise Boulevard interchange. The existing system consists of linear dry ponds (swales) along the east and west sides of I-95, ultimately discharging to the North Fork of the New River. The system is located within the SFWMD C-12 Drainage Basin. Refer to [Figure 8](#) of **Appendix A** for the SFWMD Drainage Basin Map.

System 17 is divided into nine basins, including two offsite basins. Runoff from the inside northbound and southbound travel lanes is collected by median inlets and conveyed through median drains along the corridor. Runoff from the outside northbound and southbound travel lanes sheet flows into roadside swales. The flow pattern is generally towards the south, where the existing drainage system ultimately discharges into the North Fork of the New River via a 48-inch outfall pipe and a 24-inch outfall pipe. Refer to **Appendix B** for the Pre-Development Drainage Maps.

A control structure is located on the east side of I-95, north of the North Fork of the New River (Pond 17-1). The control structure consists of a raised Type H Ditch Bottom Inlet with a 4-inch circular orifice. A second control structure is located on the west side of I-95, north of the North Fork of the New River (Pond 17-2). This control structure consists of a raised Type D Ditch Bottom Inlet with a 4-inch circular orifice. The two control structures overflow into the North Fork of the New River through the two aforementioned existing 48-inch pipe from Pond 17-1 and 24-inch pipe from Pond 17-2.

The Seasonal High Groundwater Table (SHGWT) elevation and static tailwater elevation for the North Fork of the New River assumed for the analysis, modeling, and design associated with this study is 0.42-ft NAVD. This assumption is in accordance with previous permitting documentation and designs.

Refer to **Appendix B** for pre-development drainage maps.

4.1.4 Existing Drainage System Broward Boulevard (SR 824) and Park & Ride

The Broward Boulevard Park & Ride is comprised of three parking lots on the north and south sides of Broward Boulevard, between the South Florida Rail Corridor (SFRC) and NW 22nd Avenue. Interconnected drainage sub-systems provide stormwater collection, conveyance, water quality

treatment and discharge attenuation for the Broward Boulevard Park & Ride. A separate drainage system provides collection and conveyance of stormwater runoff for Broward Boulevard, between the SFRC and West 22nd Avenue. The existing Park & Ride drainage systems consist of French drains and dry ponds that ultimately discharge to the North Fork of the New River via a 60" pipe. The existing Broward Boulevard drainage system consists of curb inlets and solid pipe that collect and convey stormwater runoff from the western approach to the bridge over the SFRC and I-95. Runoff from the Broward Boulevard system comingles with runoff from one of the southern Park & Ride systems, and ultimately discharges to the North Fork of the New River via a 72" pipe, serving Broward Boulevard from SW 28th Terrace to west of I-95 as well as Riverland Road from Davie Boulevard to NW 2nd Street. The system is located within the SFWMD C-12 Drainage Basin. Refer to [Figure 8](#) of **Appendix A** for the SFWMD Drainage Basin Map.

The drainage area for the Park & Ride and Broward Boulevard consists of interconnected systems. In the southernmost parking lot, runoff from SW 21st Terrace, the southern ramp connection to I-95, a portion of SW 1st Street, and a portion of the offsite Riverland Neighborhood adjacent to SW 21st Terrace and SW 1st Street is collected and conveyed to the triangular retention pond at the southwest quadrant of SW 1st Street and SW 21st Terrace, between the I-95 ramp and SW 21st Terrace. A control structure, consisting of a raised ditch bottom inlet with a vertical rectangular weir provides water quality treatment and discharge attenuation. This drainage sub-system is referred to as South Lot Sub-System 1.

Stormwater runoff from the southernmost Park & Ride lot and Fort Lauderdale Broward Train Station is collected by curb inlets in the parking lot and yard drains around the train station, and conveyed northward to a control structure consisting of a curb inlet with an internal weir wall. Water quality treatment and discharge attenuation is provided by French drains upstream of the weir. This drainage sub-system is referred to as South Lot Sub-System 3. Downstream of the weir, stormwater overflows from South Lot Sub-Systems 1 and 3 comingles and is conveyed northward, ultimately discharging to the North Fork of the New River via an existing 60-inch pipe.

Runoff from the South Park & Ride lot adjacent to the Broward Boulevard eastbound travel lanes and from a portion of SW 22nd Avenue is collected by catch basins and curb inlets within the parking lot and on SW 22nd Avenue. Water quality treatment and discharge attenuation is provided by existing French drains in the parking lot. Stormwater is conveyed to a control structure located in the northwest quadrant of the parking lot, where overflows are conveyed northward into the Broward Boulevard drainage system, where it is ultimately conveyed to the North Fork of the New River. This drainage sub-system is referred to as South Lot Sub-System 2.

Stormwater runoff from the North Park & Ride lot, as well as the adjacent I-95 on/off ramp, is collected in curb inlets and catch basins and conveyed eastward to a pair of dry retention ponds connected by an existing 18" pipe. The more southern pond (Pond N-5) of the pair contains a control structure consisting of a raised ditch bottom inlet. Water quality treatment and discharge attenuation is provided in the two ponds (Pond N-2 and Pond N-5), and by French drains upstream of the control structure and ponds. Stormwater overflows from this drainage system, referred to as North Lot Sub-System 2, into the existing 60-inch pipe that conveys stormwater overflows from the South Park & Ride Lot Sub-Systems 1 and 3, ultimately discharging to the North Fork of the New River.

Runoff from the northernmost portion of the North Park & Ride lot, along with a portion of NW 22nd Avenue, is collected by curb inlets along NW 22nd Avenue, and catch basins in the northeast quadrant of the North Park & Ride lot. This drainage sub-system is referred to as North Lot Sub-System 1. Stormwater is conveyed to a catch basin with an internal weir wall, prior to overflowing into the existing 60-inch pipe that conveys stormwater overflows from the South Park & Ride Lot Sub-Systems 1 and 3, and North Park & Ride Lot Sub-system 2, ultimately discharging to the North Fork of the New River. Water quality treatment and discharge attenuation is provided by French drains upstream of the weir.

Stormwater runoff from NW 22nd Avenue, along the north and west perimeters of the Park & Ride lot is collected in curb inlets and conveyed to the large 72" trunkline, where it comingles with runoff from the Broward Boulevard and South Park & Ride lot drainage systems, ultimately discharging to the North Fork of the New River. This drainage sub-system is part of the North Lot Sub-System 1.

Refer to **Appendix B** for pre-development drainage maps.

4.1.5 Bridge Riverbend Project

Adjacent to the Broward Boulevard Park & Ride North Parking Lot, at NW 24th Avenue, is a site currently being developed known as Bridge Riverbend. The site is located at the northwest corner of Broward Boulevard and NW 22nd Avenue in the City of Fort Lauderdale, Florida and is currently an existing corporate office park. The site was previously permitted by Broward County and SFWMD, and has been partially developed. At the time of this PD&E study, the developer applied for a permit modification for the remaining undeveloped parcel Building "A" fronting Broward Boulevard west of the existing office building (Building "B"), to complete build-out of the site. The permit modification will partially redevelop it to include an industrial warehouse building with associated loading docks and site parking.

The proposed drainage for the site includes dry pretreatment provided on site with exfiltration trench, with overflow to an adjacent borrow pit at Delevoe Park. The developer and BCEPGMD agreed to allow the lake to be used as a retention pond for stormwater overflows the site.

As part of this study, a potential drainage solution to provide water quality, treatment, and discharge attenuation for runoff from Broward Boulevard is through shared-use drainage utilization of the existing lake. Although the Department and Broward County have not come to an agreement as to whether or not this option is feasible, dialogue with Broward County to explore this option is ongoing. If the Department and the County can come to an agreement on using the lake for shared-use drainage, then the option will only be feasible if it creates no adverse impacts to peak design stages for the Bridge Riverbend site.

4.2 Proposed Drainage Systems

The proposed drainage design consists of closed collection and conveyance drainage systems interconnected by piping to modified existing stormwater treatment facilities and French drains to collect, convey, treat, and attenuate stormwater runoff for the controlling design storm events. The proposed treatment facilities, consisting of wet and dry ponds, swales and French Drain have been determined

based on an analysis of various factors which is discussed later in Section 7.0 of this report. The proposed stormwater management facility type is based on the facility type that provides the most practical, cost-effective solution for the Department to achieve the treatment and attenuation permitting requirements associated with the proposed improvements, while also minimizing impacts to the public. The recommended drainage design and stormwater management facility type is discussed later in Section 10.0 of this report.

5.0 Geotechnical Characteristics

A Geotechnical Report was prepared by GCME, Inc. as a part of this PD&E study. The report included review of all existing geotechnical information in connection with the subject project and completed six (6) borehole permeability tests (BHP) at the project site. Refer to **Appendix I** for the Geotechnical Report.

5.1 Soils Information

Review of the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS / SCS) Soils Map for Broward County, as well as the project's Geotechnical Report, the project area is underlain by Arents-Urban land complex, Basinger fine sand, Duette-Urban land complex, Immokalee (limestone substratum)-Urban land complex, Immokalee-Urban land complex, Udorthents, and Urban land. Based on the SCS Maps, no unsuitable soils are found within the project limits. See [Figure 4](#) in **Appendix A** for the USDA NRCS Soil Map of the project and **Appendix I** for the Geotechnical Report.

5.2 Hydraulic Conductivity

As part of the geotechnical investigations, six borehole permeability tests were conducted at the Broward Boulevard Park & Ride parking lots. The BHPs were conducted in order to determine hydraulic conductivity (k-values) of existing soils for the analysis of existing French drains and design of proposed French drains. Please refer to **Appendix I** for results of the Borehole Permeability Tests.

6.0 Stormwater Management Permitting

The agencies having stormwater permitting jurisdiction over the proposed improvements include:

- South Florida Water Management District (SFWMD)
- Broward County Environmental Protection and Growth Management Division (BCEPGMD)

SFWMD is the state permitting authority and has jurisdiction over the water bodies receiving stormwater runoff from the project area. The most recent SFWMD permit criteria are established in the SFWMD Environmental Resource Permit Information Manual, updated August 2016.

6.1 Stormwater Quality Criteria

The SFWMD has the lead jurisdiction over the stormwater quality criteria for the project and generally requires that all projects meet state water quality standards, as set forth in Chapter 17-302, Florida Administrative Code (FAC). According to the SFWMD Permit Volume IV, all projects must meet the following volumetric retention/detention requirements:

- For wet detention systems, the first inch of runoff from the project or the total runoff from 2.5 inches times the percent of imperviousness, whichever is greater, must be detained on site. A wet detention system is a system that maintains the control elevation at the seasonal high groundwater elevation and does not bleed down more than one-half inch of detention volume in 24 hours;
- Dry detention systems must provide 75 percent (75%) of the required wet detention volume. Dry detention systems must maintain the control elevation at or above one foot above the seasonal high groundwater elevation;
- Retention systems must provide 50 percent (50%) of the wet detention volume; and
- For projects with more than 50 percent (50%) of imperviousness, discharge to the receiving water bodies must be made through baffles, skimmers, or other mechanisms suitable from preventing oil and grease from discharging to or from the retention/detention areas.

6.2 Stormwater Quantity Criteria

SFWMD criteria govern peak discharge rate attenuation. SFWMD criteria govern attenuation volume by limiting the post-development peak discharge rate to the pre-development peak discharge rate for the 25-year, 72-hour design rainfall event using SFWMD 72-hour rainfall distribution. SFWMD requires that offsite discharge rates be limited to rates not causing adverse impacts to existing off-site properties, and:

- Historic discharge rates,
- Rates determined in previous SFWMD permit action, or
- Basin allowable discharge rates.

6.3 Total Maximum Daily Load (TMDLs) and Nutrient Impaired Water Bodies

The Florida Department of Environmental Protection (FDEP) has developed a Basin Management Action Plan (BMAP) which implements certain measures in order to restore and protect state waters and addresses Total Maximum Daily Load (TMDLs) requirements for impaired waterbodies. TMDLs represent the maximum amount of a given pollutant that a waterbody can assimilate and still meet water quality standards, including its applicable water quality criteria and its designated uses. TMDLs are developed for waterbodies that are verified as not meeting their water quality standards.

Section 303(d) of the Federal Clean Water Act requires states to submit to the United States Environmental Protection Agency (EPA) lists of surface waters that do not meet applicable water quality

standards (impaired waters) and establish a TMDL for each pollutant causing the impairment of listed waters on a schedule. The FDEP has developed such lists, commonly referred to as 303(d) lists, since 1992. The list of impaired waters in each basin, referred to as the Verified List, is also required by the FWRA (Subsection 403.067[4], Florida Statutes [F.S.]); the state's 303(d) list is amended annually to include basin updates.

For assessment purposes, the FDEP has divided the North New River Canal Basin and the South New River Canal (C-11) Basin into water assessment polygons with a unique waterbody identification (WBID) number for each watershed or stream reach. There is one WBID identified within the North New River Canal Basin with TMDLs – for Dissolved Oxygen, Fecal Coliform, Nutrients (Chlorophyll-A), and Mercury (in fish tissue). FDEP listed the North Fork of the New River Canal, WBID No. 3276A, as an impaired waterbody under the Verified List of 2014. There is one WBID identified within the South New River Canal Basin with TMDLs – for Fecal Coliform, Copper, and Mercury (in fish tissue). FDEP listed the South Fork of the New River (C-11) Canal, WBID No. 3277A, as an impaired waterbody under the Verified List of 2014. Refer to [Figure 6](#) of **Appendix A** for limits of WBID No. 3276A and 3277A, and the Verified List of 2014, respectively.

Since the WBIDs identified within the North New River Canal Basin and the South New River Canal (C-11) Basin are not impaired for Nitrogen or Phosphorous, a nutrient loading analysis is not required.

6.4 Floodplain Encroachment

The project falls within the Federal Emergency Management Administration (FEMA) defined Zones X, AE, and AH. Zone X is an area considered to be outside of the 500-year flood. Zone AE is a special flood hazard area subject to inundation by the 100-year flood, with determined base flood elevations. Zone AH is a special flood hazard area, also subject to inundation by the 100-year flood, that experiences flood depths of 1 to 3 feet (which are usually areas of ponding), with determined base flood elevations.

The project will result only in minimal encroachments to floodplains. These base floodplain encroachments will be constrained to along the east and west sides of I-95, and within the median of the I-95 mainline, as well as along Broward Boulevard. Encroachments resulting from the construction of the project will be fully compensated within the proposed stormwater management facilities to ensure there will be no increase or significant change to flood elevations and/or limits. This project does not encroach upon the base floodplain.

Refer to [Figure 7](#) in **Appendix A** for the FEMA Flood Zone Map.

7.0 Stormwater Management Facilities Evaluation

Several types of stormwater management facilities alternatives are commonly used on roadway projects. The more commonly used alternatives in south Florida, particularly for roadway projects, include wet detention ponds, dry detention ponds, retention ponds, and French drains (exfiltration trenches). However, each of these stormwater management facility types has different design criteria and application.

Based on the proposed improvements, available right-of-way, and impacts to existing stormwater management facilities, modification of the existing stormwater management facilities to create additional storage volume will be necessary in order to accommodate for additional water quality treatment discharge attenuation and floodplain compensation.

8.0 Stormwater Management System Design

8.1 Project Datum

The vertical datum used in this report and calculations is NAVD 88. The datum shift was determined using the National Geodetic Survey VERTCON online tool.

The datum shift used to convert NGVD 29 to NAVD 88 within the study area is summarized below.

Table 1 – Datum Conversion from NGVD 29 to NAVD 88

Location	Latitude	Longitude	Shift (ft.)
Broward Boulevard	26° 07' 18" N	80° 10' 55" W	(-)1.58

8.2 Control Elevations

8.2.1 Tailwater Elevations

The SFWMD Technical Memorandum “An Atlas of Eastern Broward County Surface Water Management Basins” was referenced in determining the controlling tailwater elevation(s) of the North and South Forks of the New River. Since the project lies to the east of SFWMD control structures, the canals are tidally controlled, and have no maintained elevation. Accordingly, existing SFWMD permit documentation was referenced in order to determine the average high water (tailwater) elevations of the canals. Based on existing permits for the various drainage systems with the project limits, the tailwater elevations are constant for all systems defined for the project. The average high water elevation of the North Fork of the New River and the South Fork of the New River (C-11) Canal was determined to be 2.00 ft NGVD (0.42 ft NAVD). Refer to [Figure 8](#) of **Appendix A** for the SFWMD Technical Memorandum, and to **Appendix H** for existing permit documentation.

8.2.2 Seasonal High Groundwater Table

Although no in-situ geotechnical data has been provided by FDOT for this project, preliminary research was performed to determine the seasonal high groundwater table elevation (SHGWT) within the study limits. Specifically, the average high water data for the adjacent North and South Forks of the New River, which control and influence groundwater table elevations throughout the project area, was used to determine the assumed SHGWT elevation of 2.00 ft. NGVD (0.42 ft. NAVD). The assumed SHGWT

elevation is consistent with existing permits for the various drainage systems within the project limits, as well as existing permits for adjacent properties.

8.3 Roadway Base Protection

FDOT has established the following criterion for base protection of roads:

- Freeways and Rural Multilane Mainline facilities shall provide a 3-ft clearance for the roadway base course above the base clearance water elevation (i.e. seasonal high ground water table, SHGWT). Using a base clearance water elevation (SHGWT) of 2.00 ft. NGVD (0.42 ft. NAVD), the minimum roadway base elevation allowable for the project along I-95 mainline is 3.42 ft. NGVD (9.92 ft. NAVD).
- Ramps shall provide a 2-ft. clearance for the roadway base course above the base clearance water elevation (SHGWT). Using a base clearance water elevation (SHGWT) of 2.00 ft. NGVD (0.42 ft. NAVD), the minimum roadway base elevation allowable for the ramps is 4.00 ft. NGVD (2.42 ft. NAVD).
- All other facilities shall provide a 1-ft. clearance for the roadway base course above the base clearance water elevation (SHGWT). Using a base clearance water elevation (SHGWT) of 2.00 ft. NGVD (0.42 ft. NAVD), the minimum roadway base elevation allowable for all other facilities is 3.00 ft. NGVD (1.42 ft. NAVD).

Refer to [Figure 11](#) in **Appendix A** for the FDOT Criteria for Grade Datum. The SHGWT determination is discussed in Section 8.0 of this report.

9.0 Stormwater Modeling

9.1.1 Design Storms and Rainfall Depths

The rainfall depths for the various design storms simulated in the pre-development and post-development AdICPR models were obtained from the existing permit documents and include:

- 10-year, 24-hour: 8.75"
- 25-year, 72-hour: 14.00"
- 100-year, 24-hour: 13.50"

Refer to [Figure 9](#) of **Appendix A** for the SFWMD rainfall maps.

9.1.2 Pre-Development and Post-Development Models

The pre-development and post-development models were developed using the software Advanced Integrated Channel and Pond Routing (AdICPR). The majority of the input used to model existing features was acquired from topographic survey and/or existing drainage information obtained by existing plans and permits. In areas where topographic survey data was insufficient, other sources such as existing plans or permit documents were used to generate the input.

For the pre-development and post-development models, swales and ponds were modeled as separate stage-storage nodes in AdICPR, with assigned basins delineated for each node based on their direct contributing runoff area. Elevation contours were created for the swales and ponds in Microstation using the DTM feature of Geopak. These areas were measured at half foot contours and input into AdICPR as stage-storage nodes. Boundary conditions were modeled as static time-stage nodes with elevations based on SFWMD Basin Atlas information.

Nodes are generally interconnected by links consisting of pipes or culverts, weirs, or drop structures. Pipe and culvert links have been input based on review of existing plans and permit. Weirs and drop structures have also been modeled based on existing plans and permit, depending on intended type of flow simulation and downstream conveyance and node type.

The calculations, AdICPR flood routing input, and results for pre-development conditions and post-development conditions are found in **Appendix D** through **Appendix G** for Systems 16A through Broward Blvd Park & Ride, respectively.

10.0 Conceptual Drainage Design Recommendations

Based on the proposed roadway improvements, the existing dry detention swales and ponds will be impacted and reduced by roadway widening and new ramps along I-95. However, the portions of select stormwater management facilities that will remain, will be modified, expanded, deepened, have their side slopes steepened, and/or improved with retaining wall in lieu of embankment in order to accommodate the increased runoff from the roadway and new ramps, as well as any loss of existing storage. Existing control structures for Broward Boulevard and the Park & Ride drainage systems will remain in place, with a new structure proposed to control the two ponds on either side of Broward Boulevard. All control structures for the I-95 drainage systems will be modified. All existing outfalls will remain in place, and will continue to function as in the existing condition. AdICPR hydrologic and hydraulic models demonstrate that pre-vs-post discharge requirements are met, and that peak stages are not increased by the project.

The proposed stormwater management facilities meet FDOT drainage criteria, as well as SFWMD permit (water quality and quantity) criteria. Refer to **Appendix C** for the Post-Development Drainage Maps for the recommended interchange design. Refer to the Post-Development Land-Use Tables included in **Appendices D** through **Appendix G** for each system, as well as pre-development and post-development curve number calculations and area breakdowns. The peak discharge rates and peak stages for the 10-year – 24-hour, 25-year – 72-hour, and 100-year – 24-hour design storms are shown in the Drainage System Summary Tables, included in **Appendices D through G** for each System.

For this project, right-of-way takes are required to accommodate proposed alignment shift and widening along Broward Boulevard east of I-95. Given the proposed roadway reconstruction within System 16B, additional right-of-way will be required to meet regulatory agencies stormwater management treatment and attenuation criteria, as such a pond siting analysis was performed following FDOT guidelines.

The pond site alternatives were then evaluated with a multi-disciplinary team consisting of representatives from right-of-way, roadway design, drainage design, environmental management, construction, and maintenance, based on several factors, including:

- Right-of-Way – cost, land use, zoning, easement considerations
- Drainage – hydrology, hydraulics
- Flood Zone (FEMA)
- Contamination and Hazardous Materials Risk
- Utilities Involvement
- Threatened and Endangered Species Involvement
- Noise
- Wetlands and Protected Uplands Involvement
- Cultural Resources Involvement
- Section 4(f) Involvement
- Constructability – cost, access, methodology
- Maintainability – cost, access
- Community Impact – public opinion, aesthetics

Each of these factors were assigned a weight based off of how important that factor is to the overall pond siting evaluation process for this particular project. That weight is then multiplied by the score given to each pond site alternative for each factor to get the total score. The higher the weight and the higher the score, the more preferential the pond site alternative is.

Beginning with the right-of-way factors, including parcel costs, zoning, and land use, these constraints played a significant part of the evaluation process. In addition, priority was given to parcels that front the corridor or have existing drainage easements or public right-of-way that will allow for connection from the proposed drainage system. See **Appendix J** for the Pond Site Alternatives Exhibit and further details on pond site alternative evaluation results.

11.0 Conclusion

Based on the conceptual drainage design evaluation for the proposed interchange improvements, the stormwater management facilities required to meet FDOT drainage criteria, as well as SFWMD permit criteria, can be fully accommodated within the I-95, Park & Ride, and Broward Boulevard existing and proposed right-of-way, with no additional offsite right-of-way acquisition required solely for drainage purposes within Systems 16A and 17. For System 16B a pond siting evaluation was conducted to identify alternative pond sites outside the existing I-95 limited access roadway right-of-way, and to justify the selection of a specific pond site.




Appendix A

Design Aids



Legend

 Project Limits

BEGIN PROJECT

SW 24TH AVE

SW 21ST TER

SOUTH FLORIDA RAIL CORRIDOR



RIVERSIDE DR

DAVIE BLVD

SOUTH FORK OF THE NEW RIVER

Matchline - Sheet 2

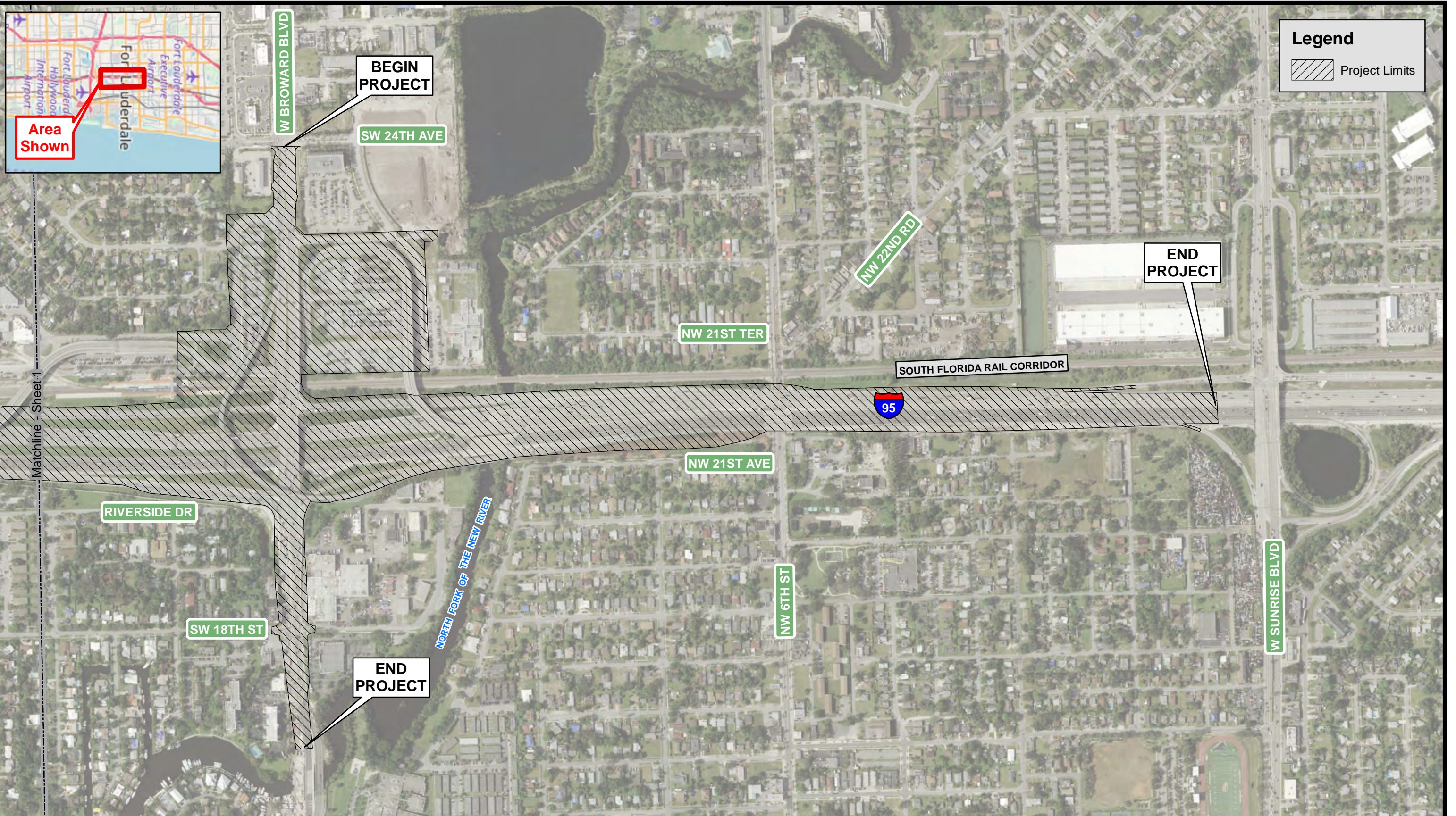


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0 250 500 1,000 Feet



Figure 1
Project Location Map



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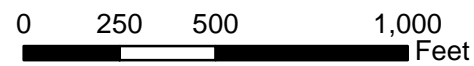
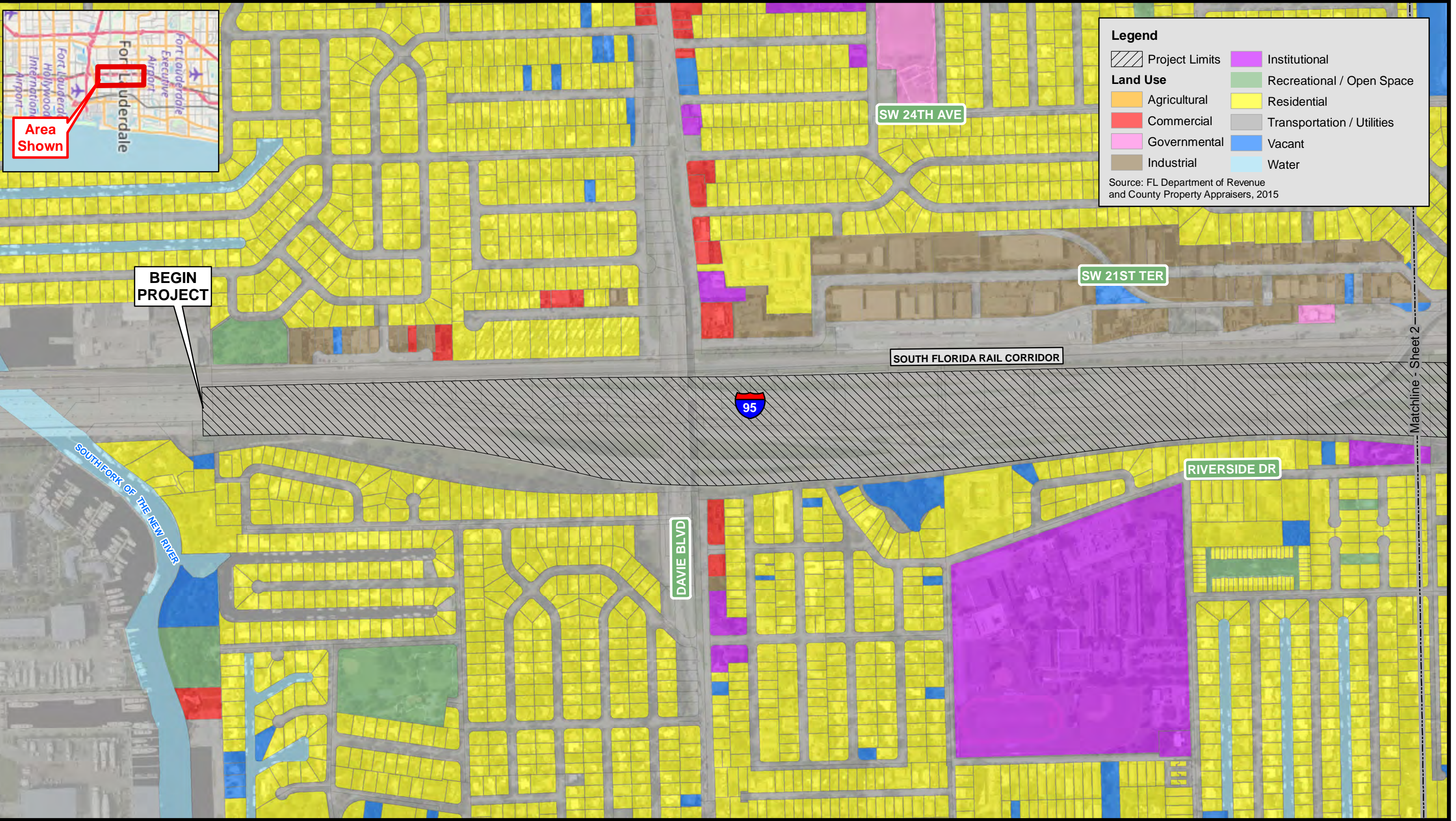


Figure 1
 Project Location Map



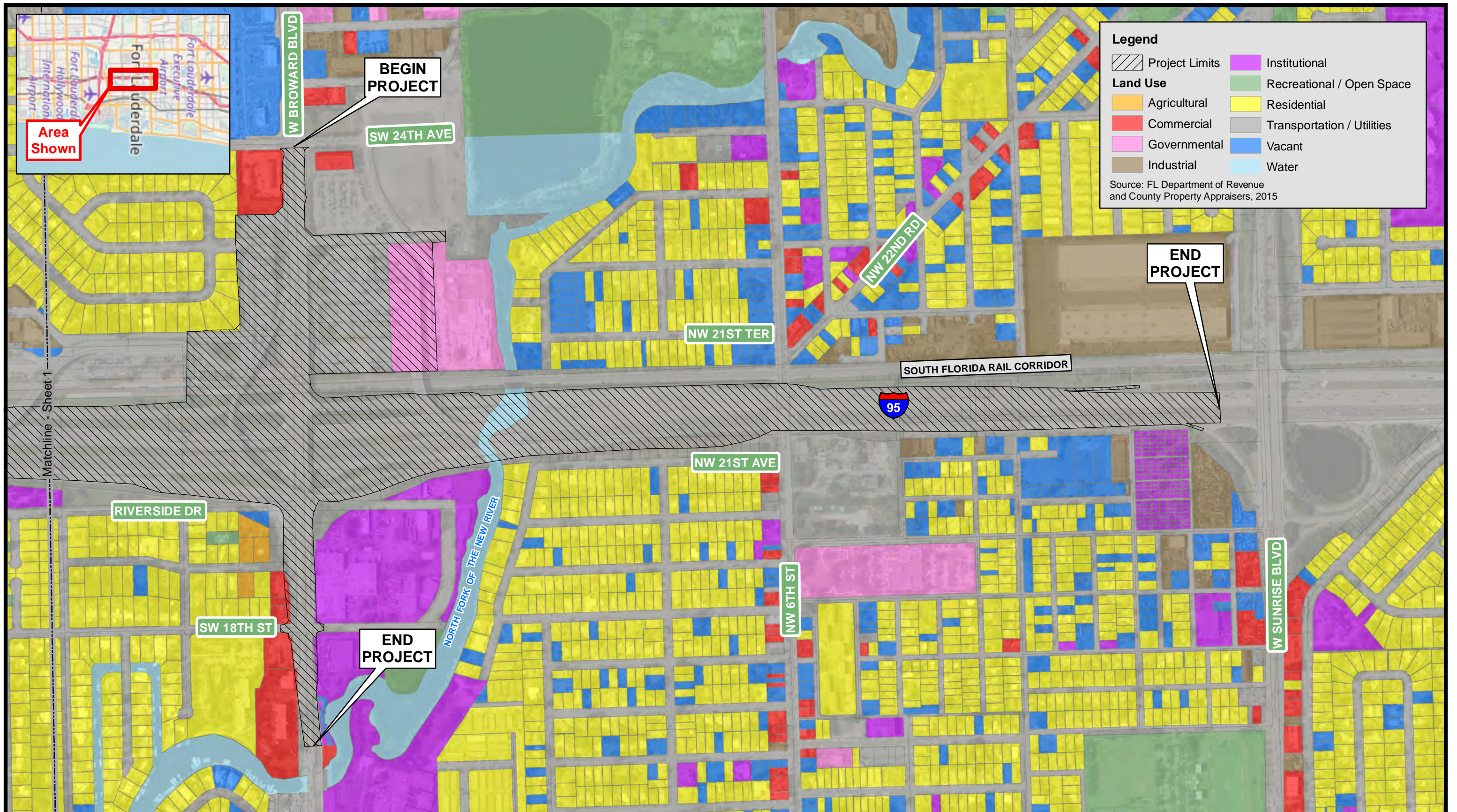
Matchline - Sheet 2



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 FM # 435513-1-22-02
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Figure 2
 Existing Land Use Map



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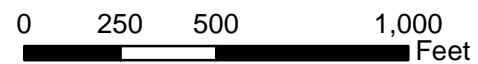


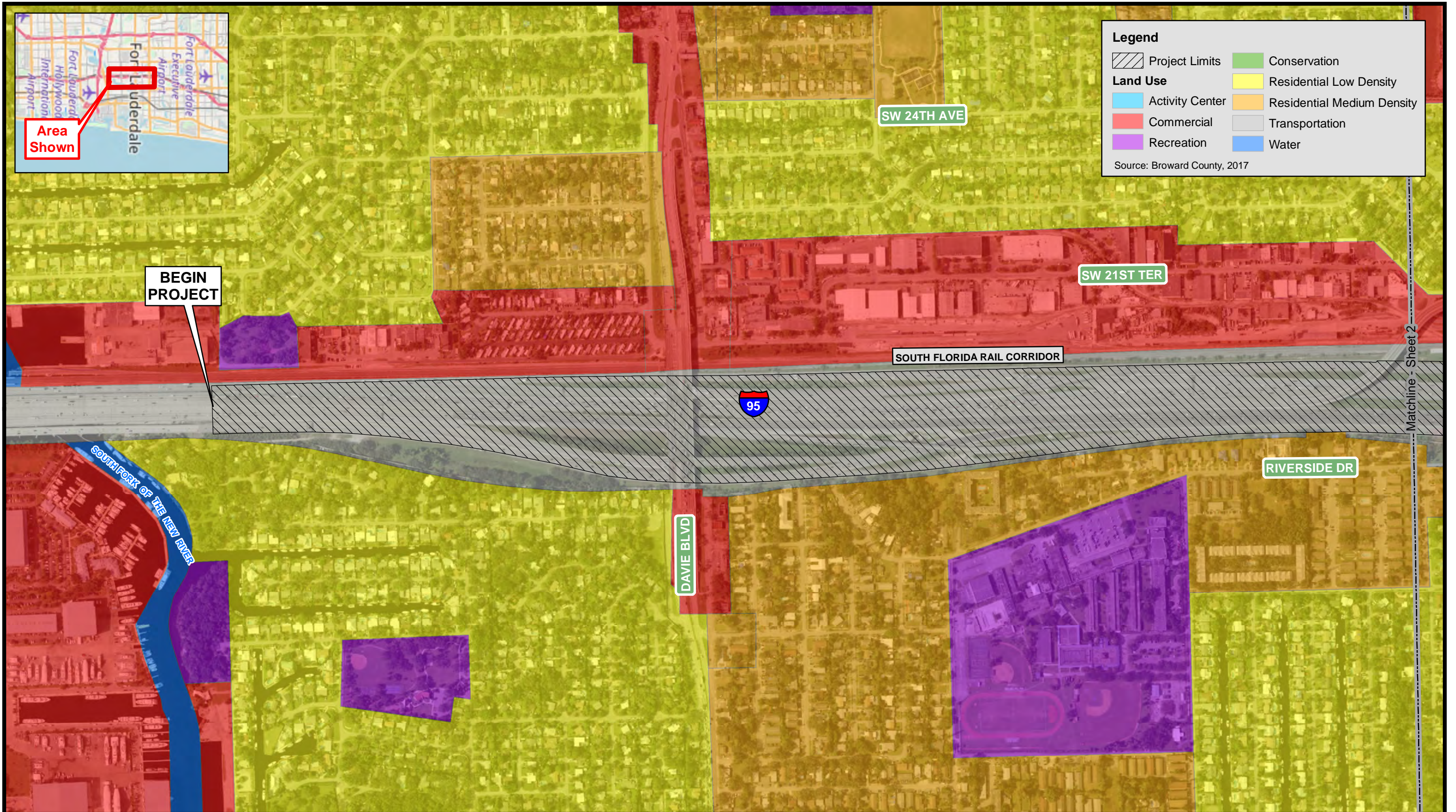
Figure 2
 Existing Land Use Map



Legend

Project Limits	Conservation
Activity Center	Residential Low Density
Commercial	Residential Medium Density
Recreation	Transportation
	Water

Source: Broward County, 2017



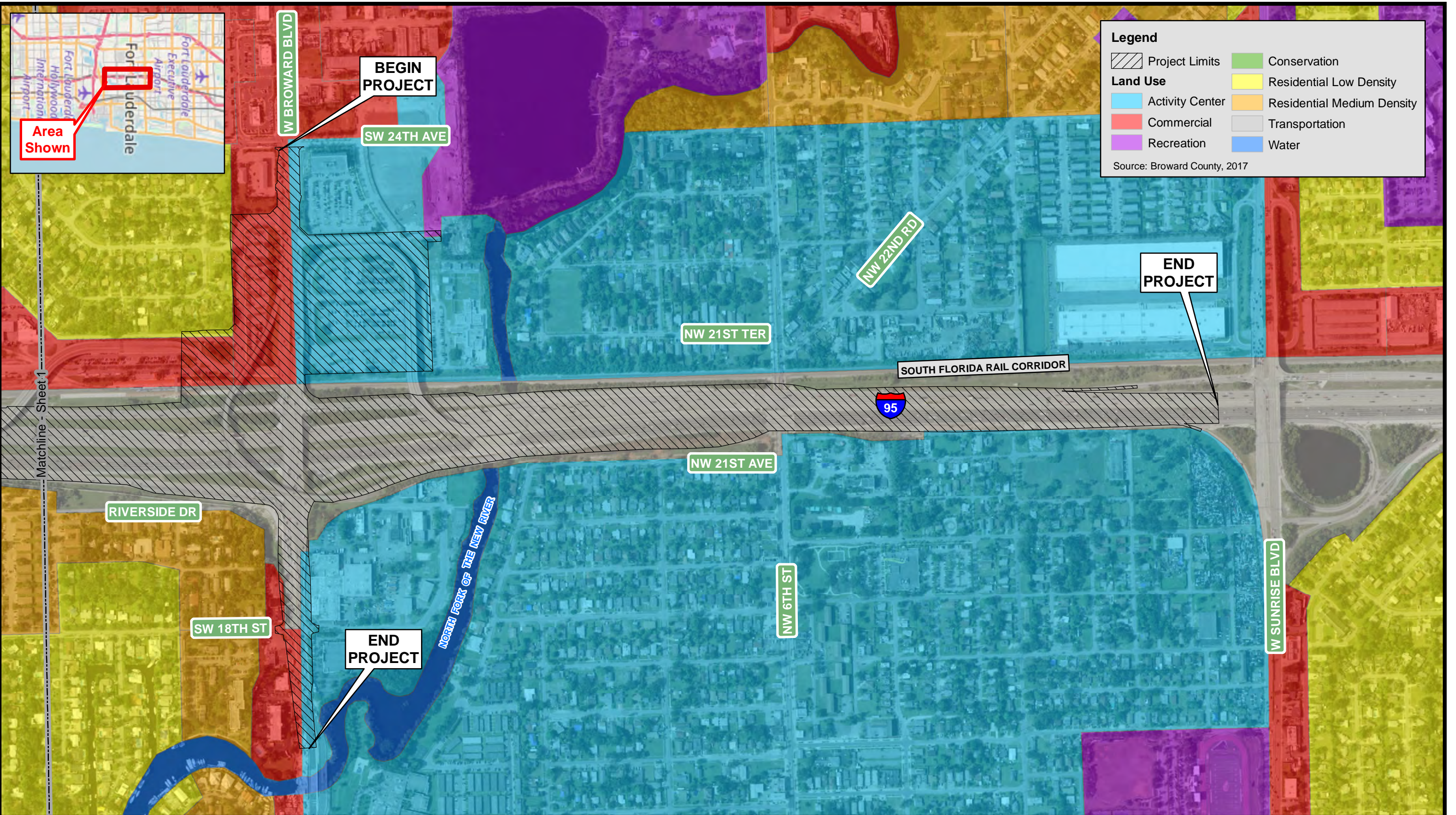
Matchline - Sheet 2



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 Broward County, Florida



Figure 3
 Future Land Use Map



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 ETDM # 14226
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 Broward County, Florida

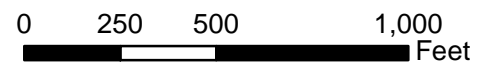
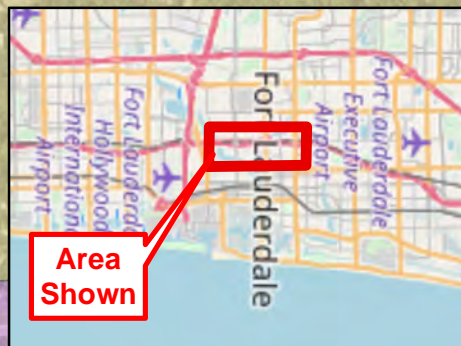
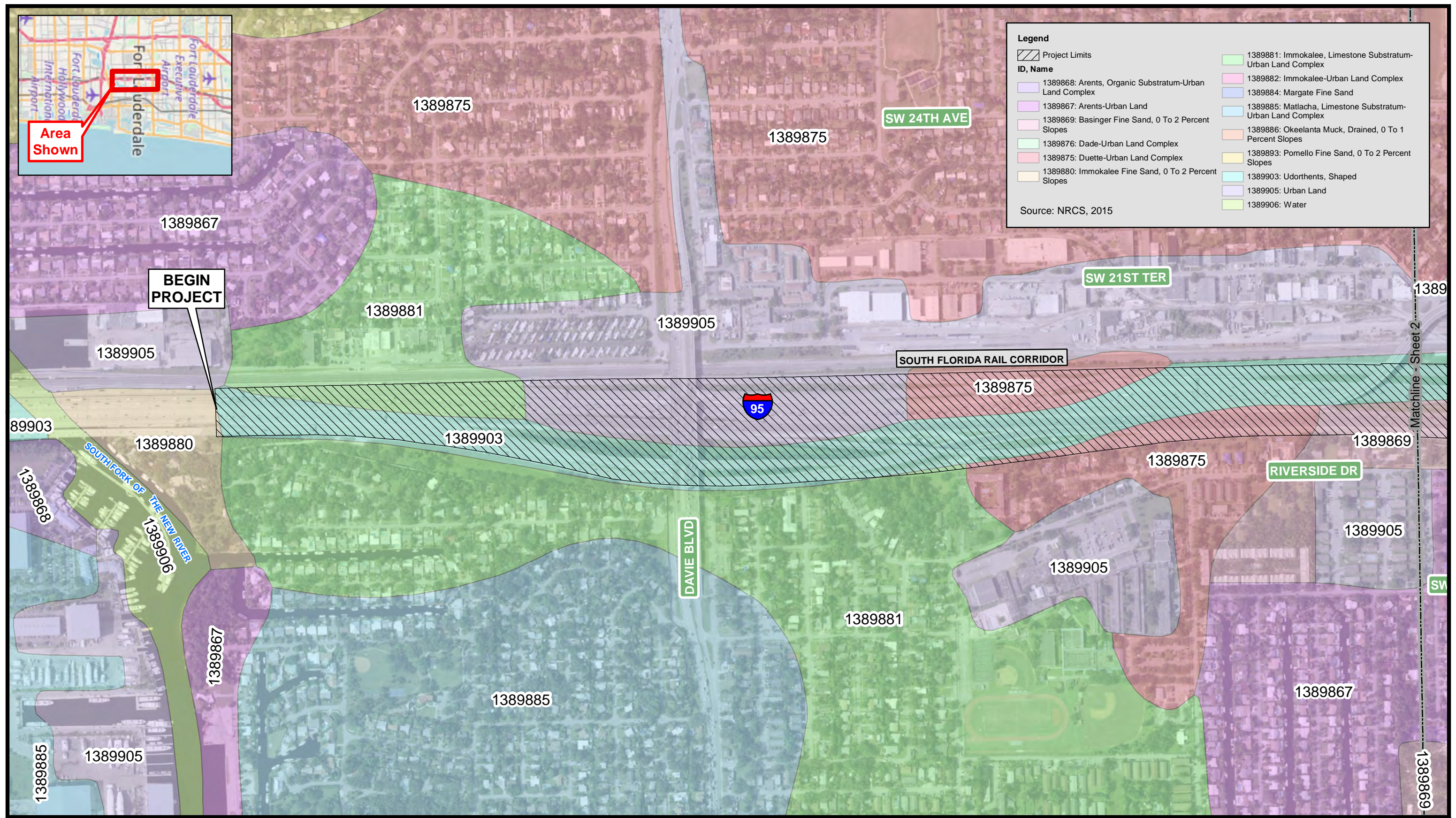


Figure 3
 Future Land Use Map



Legend	
	Project Limits
ID, Name	
	1389868: Arents, Organic Substratum-Urban Land Complex
	1389867: Arents-Urban Land
	1389869: Basinger Fine Sand, 0 To 2 Percent Slopes
	1389876: Dade-Urban Land Complex
	1389875: Duette-Urban Land Complex
	1389880: Immokalee Fine Sand, 0 To 2 Percent Slopes
	1389881: Immokalee, Limestone Substratum-Urban Land Complex
	1389882: Immokalee-Urban Land Complex
	1389884: Margate Fine Sand
	1389885: Matlacha, Limestone Substratum-Urban Land Complex
	1389886: Okeelanta Muck, Drained, 0 To 1 Percent Slopes
	1389893: Pomello Fine Sand, 0 To 2 Percent Slopes
	1389903: Udorthents, Shaped
	1389905: Urban Land
	1389906: Water

Source: NRCS, 2015



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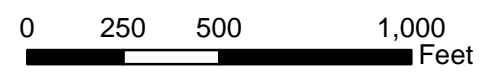
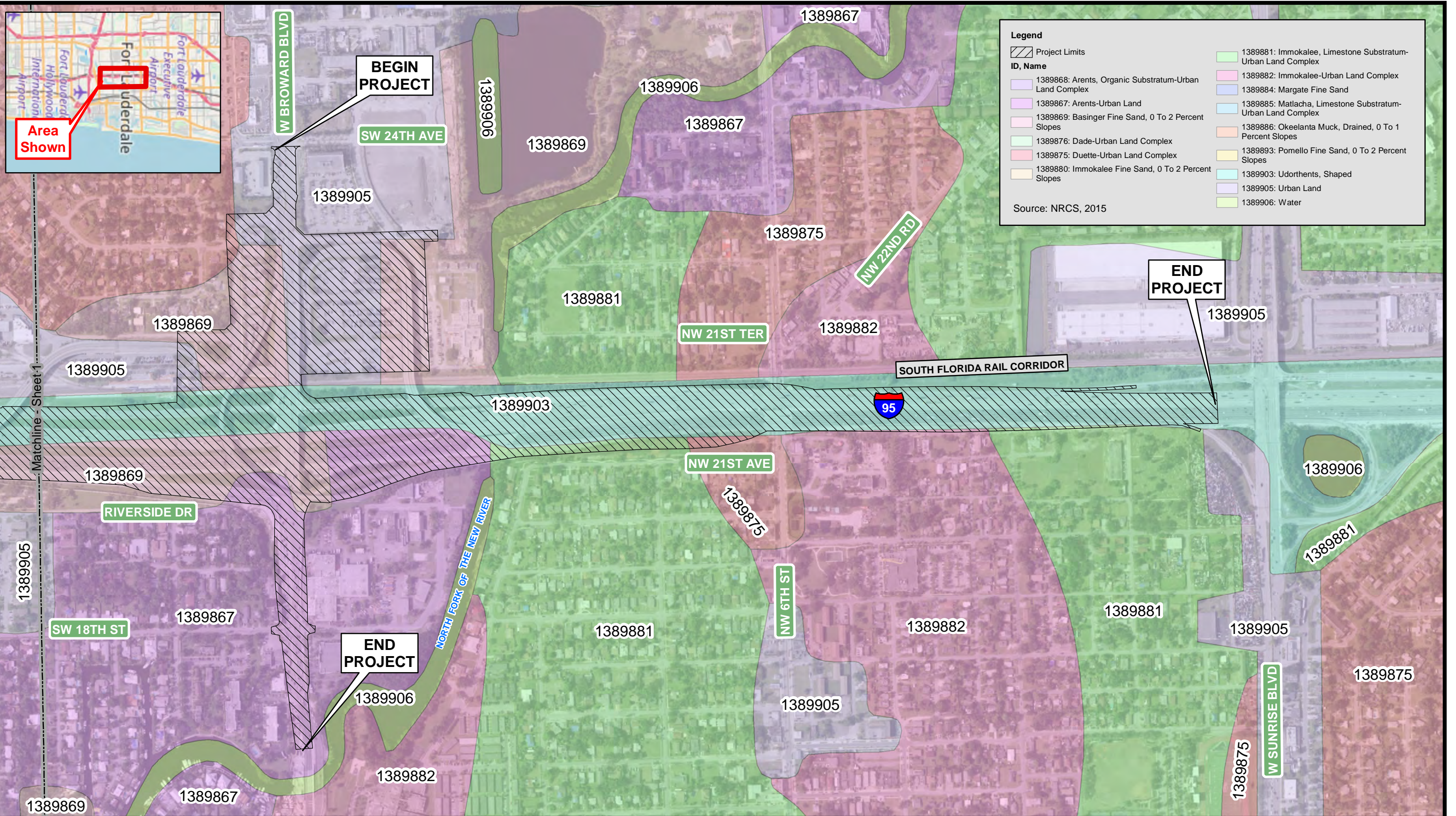


Figure 4
Soils Map



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 Broward County, Florida

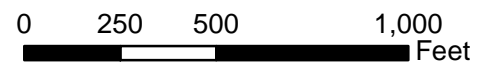
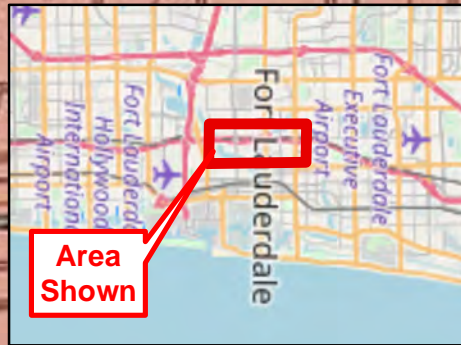


Figure 4
Soils Map



Legend

Project Limits

BEGIN PROJECT

BEGIN PROJECT

END PROJECT

END PROJECT



Florida Department of Transportation
I-95 at Broward Blvd PD&E Study
ETDM # 14226
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Broward County, Florida

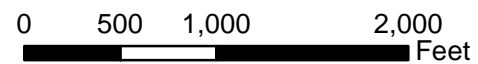
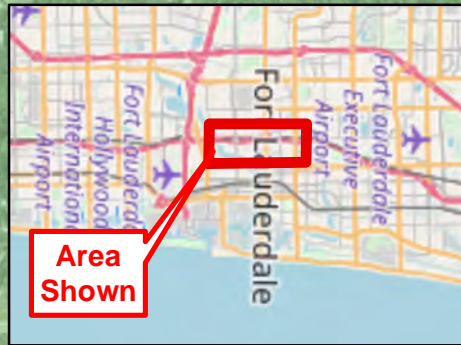


Figure 5
USGS Quadrangle Map



Legend

Project Limits

WBID, NAME

3276A, NEW RIVER (NORTH FORK)

3277A, NEW RIVER CANAL (SOUTH)

Source: FDEP, 2014

New River Canal (South)
 - Fecal Coliform
 - Copper
 - Mercury (In Fish Tissue)

BEGIN PROJECT

SW 24TH AVE

SW 21ST TER

SOUTH FLORIDA RAIL CORRIDOR



RIVERSIDE DR

DAVIE BLVD

New River (North Fork)
 - Dissolved Oxygen
 - Fecal Coliform
 - Nutrients (Chlorophyll-A)
 - Mercury (In Fish Tissue)

Matchline - Sheet 2



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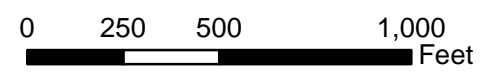


Figure 6
 Impaired Water Bodies Map



Legend

Project Limits

WBID, NAME

3276A, NEW RIVER (NORTH FORK)

3277A, NEW RIVER CANAL (SOUTH)

Source: FDEP, 2014

New River (North Fork)
 - Dissolved Oxygen
 - Fecal Coliform
 - Nutrients (Chlorophyll-A)
 - Mercury (In Fish Tissue)



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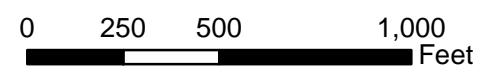
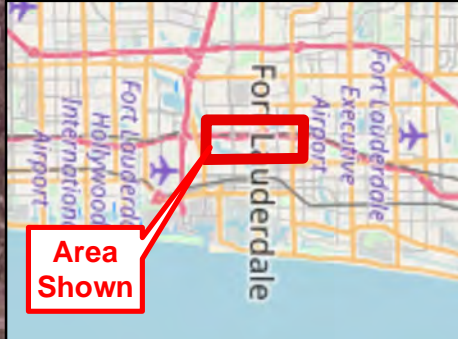


Figure 6
 Impaired Water Bodies Map



Legend

Project Limits

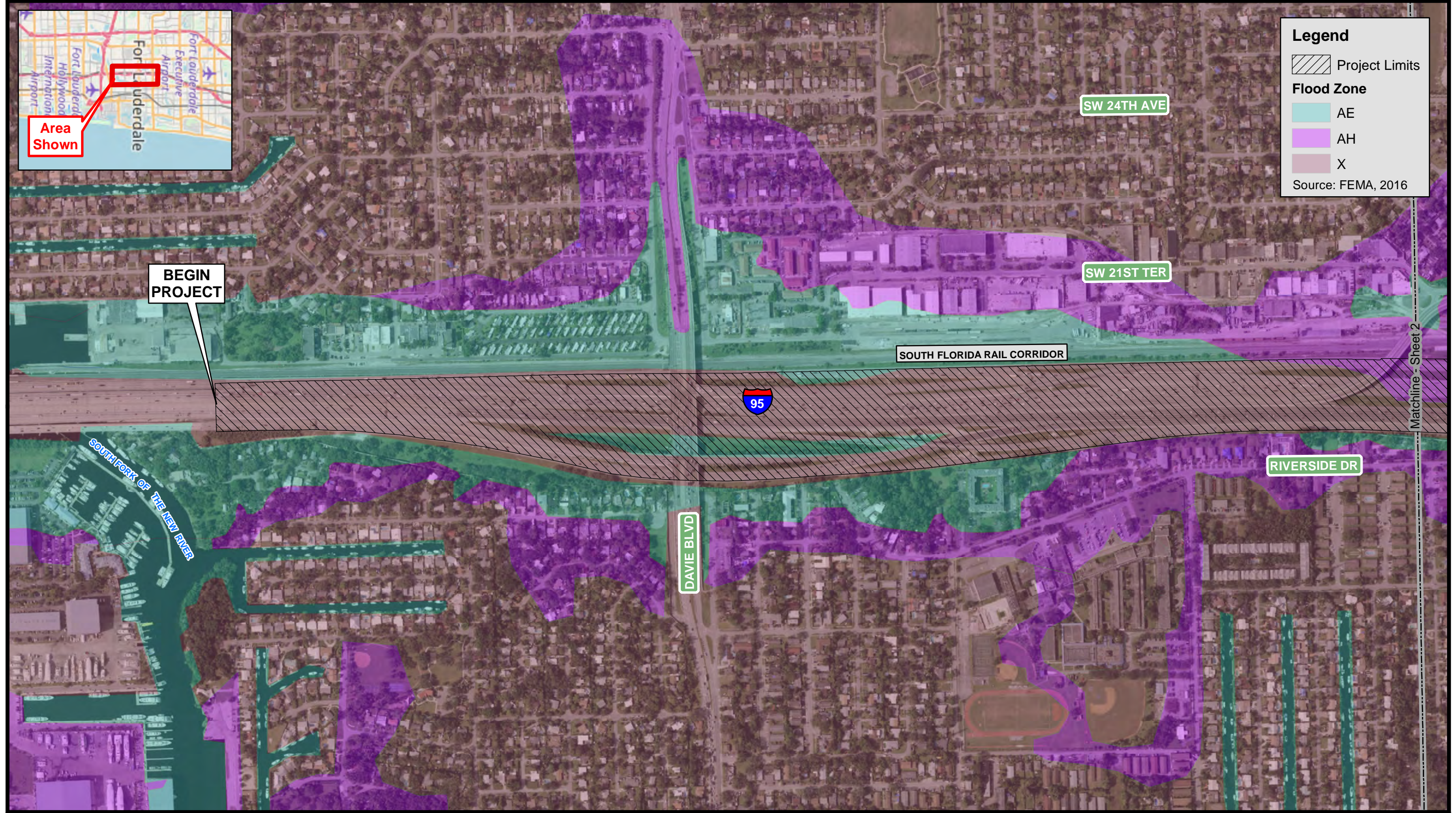
Flood Zone

AE

AH

X

Source: FEMA, 2016



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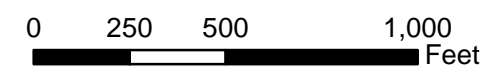
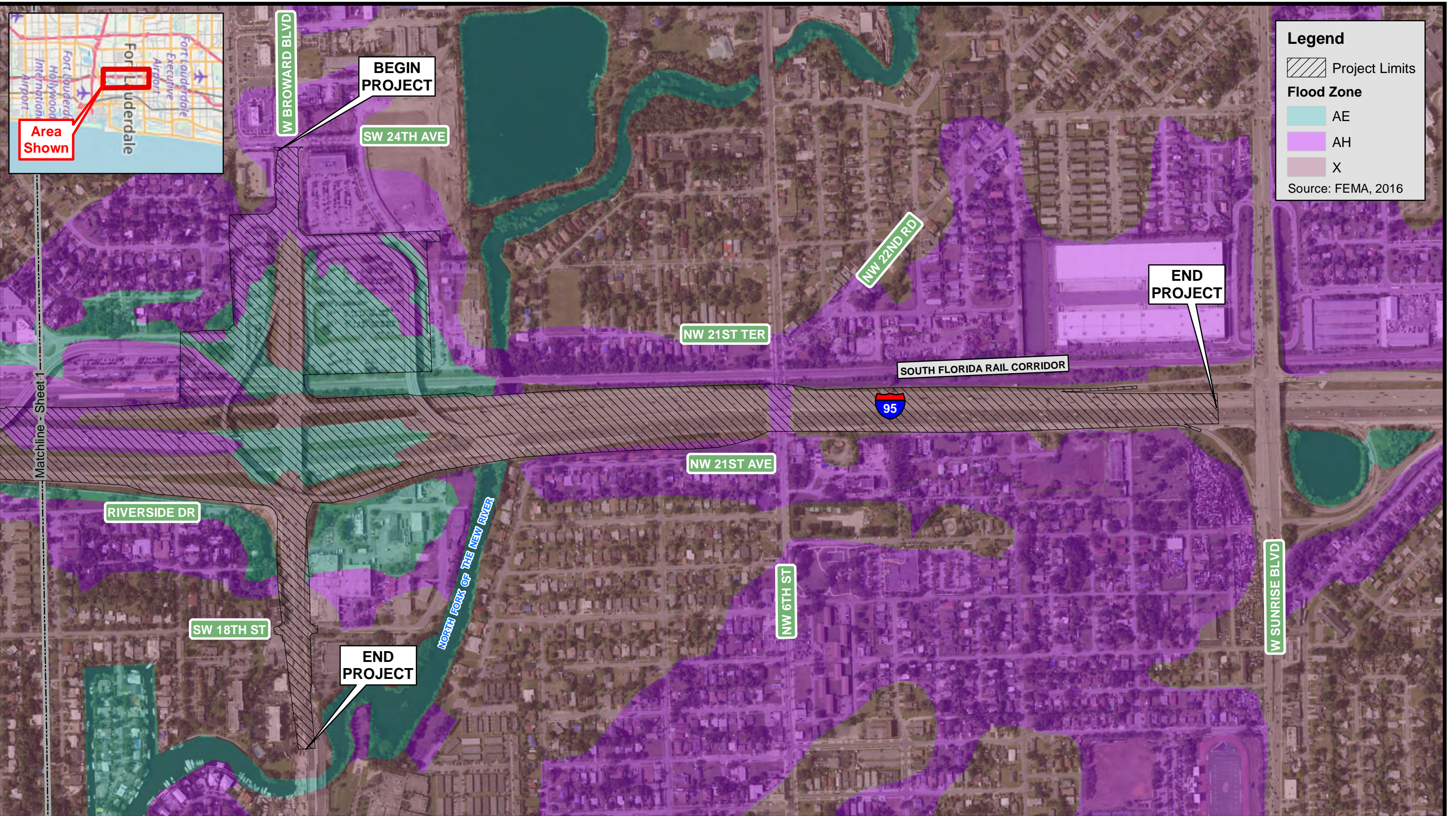


Figure 7
 Flood Zone Location Map



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 FM # 435513-1-22-02
 Broward County, Florida

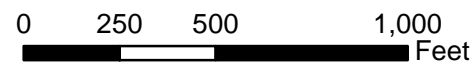
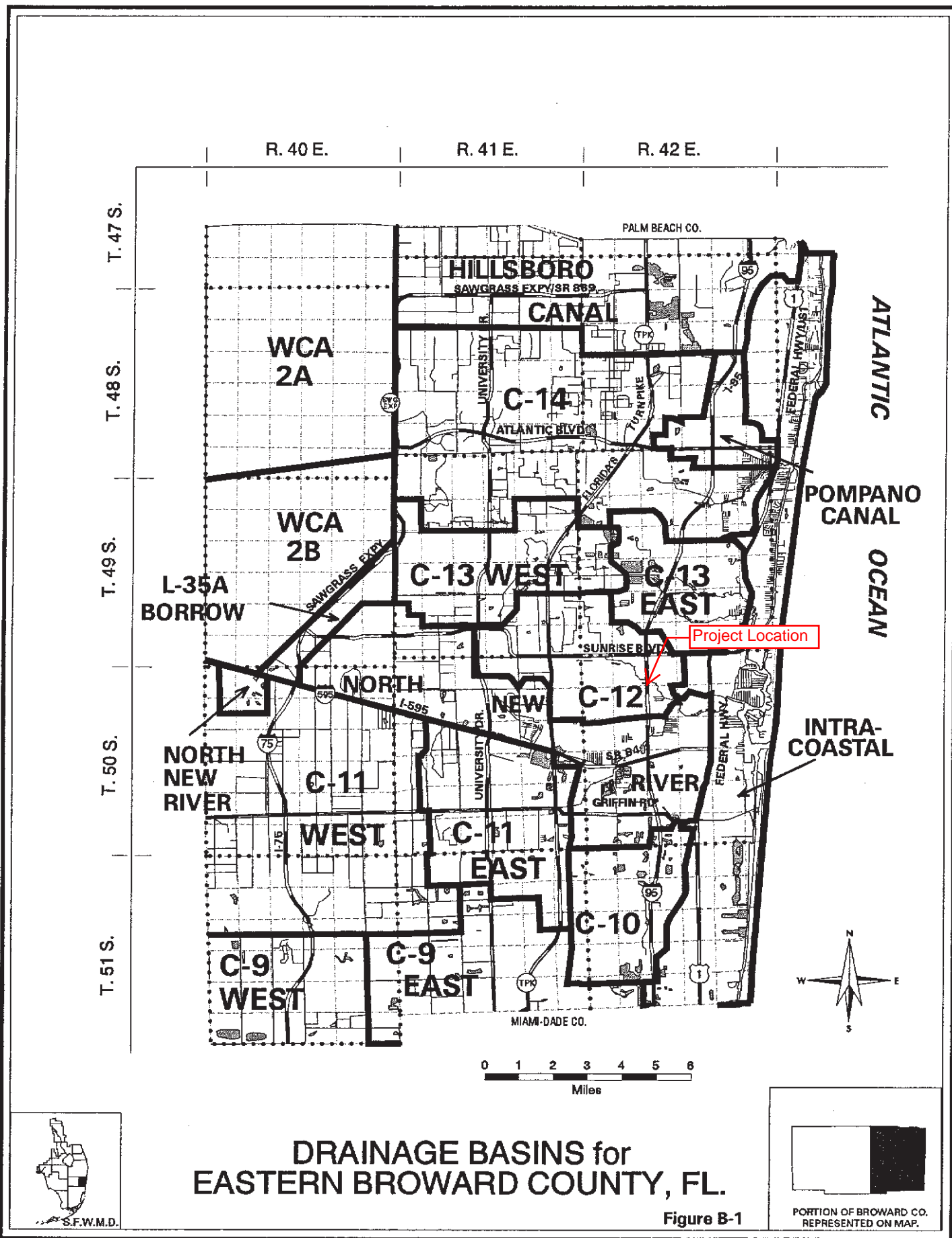


Figure 7
 Flood Zone Location Map



**DRAINAGE BASINS for
EASTERN BROWARD COUNTY, FL.**

Figure B-1

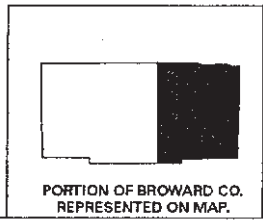


Figure 8 - SFWMD Drainage Basin Map

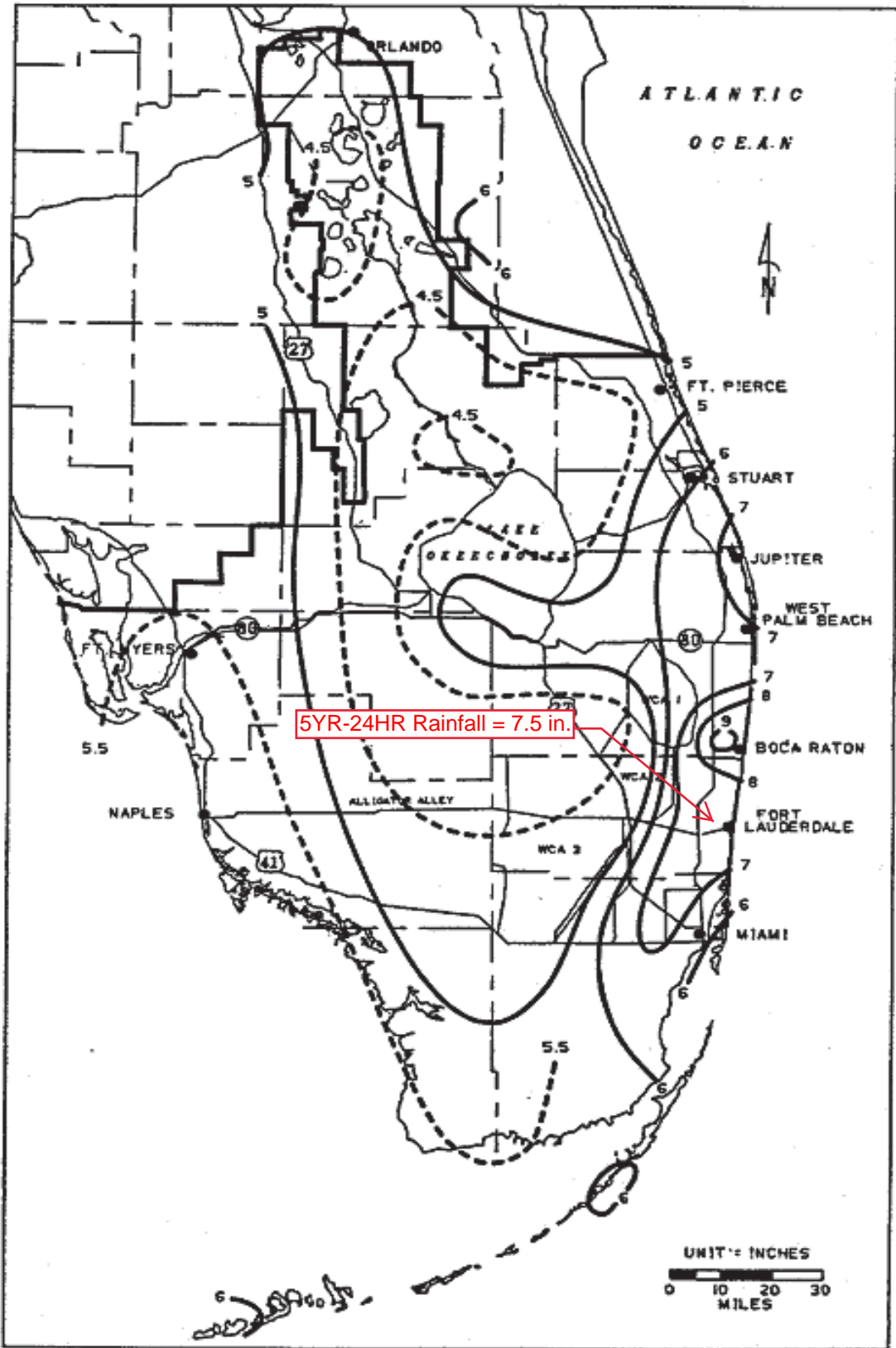


FIGURE C-3. 1-DAY RAINFALL: 5-YEAR RETURN PERIOD

Figure 9 - SFWMD Rainfall Maps

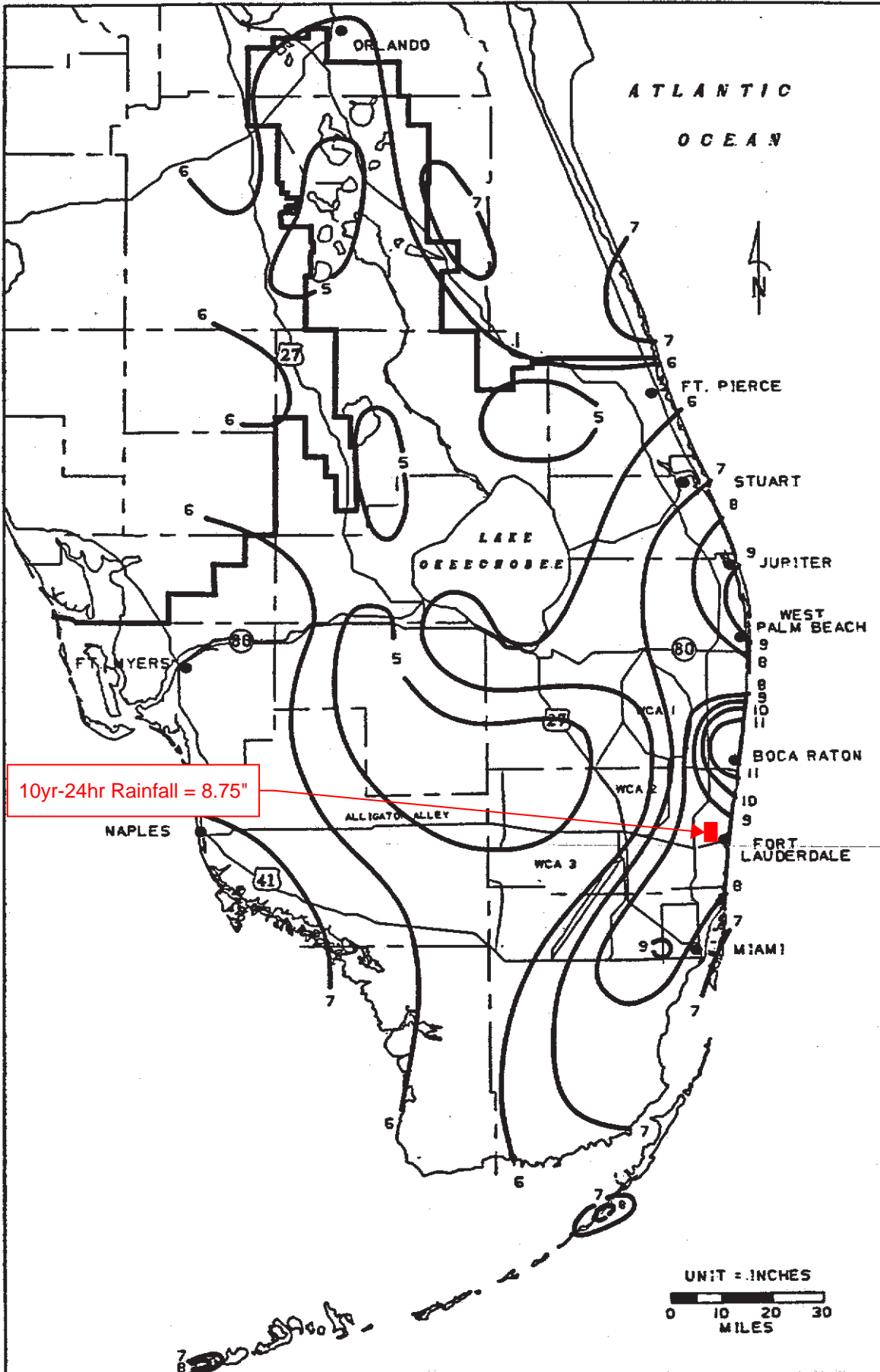


FIGURE C-4. 1-DAY RAINFALL: 10-YEAR RETURN PERIOD

Figure 9 - SFWMD Rainfall Maps

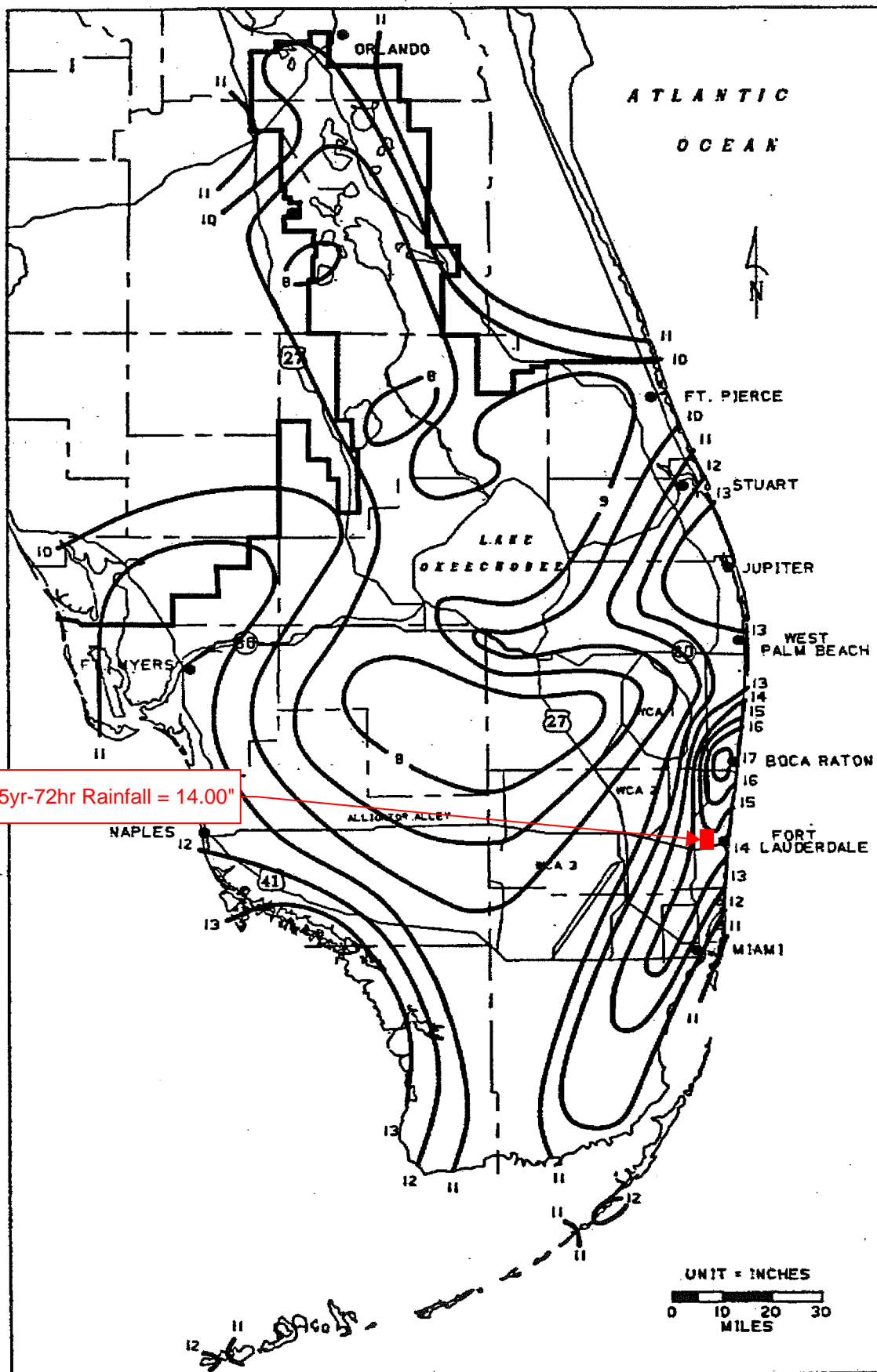


FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD

Figure 9 - SFWMD Rainfall Maps

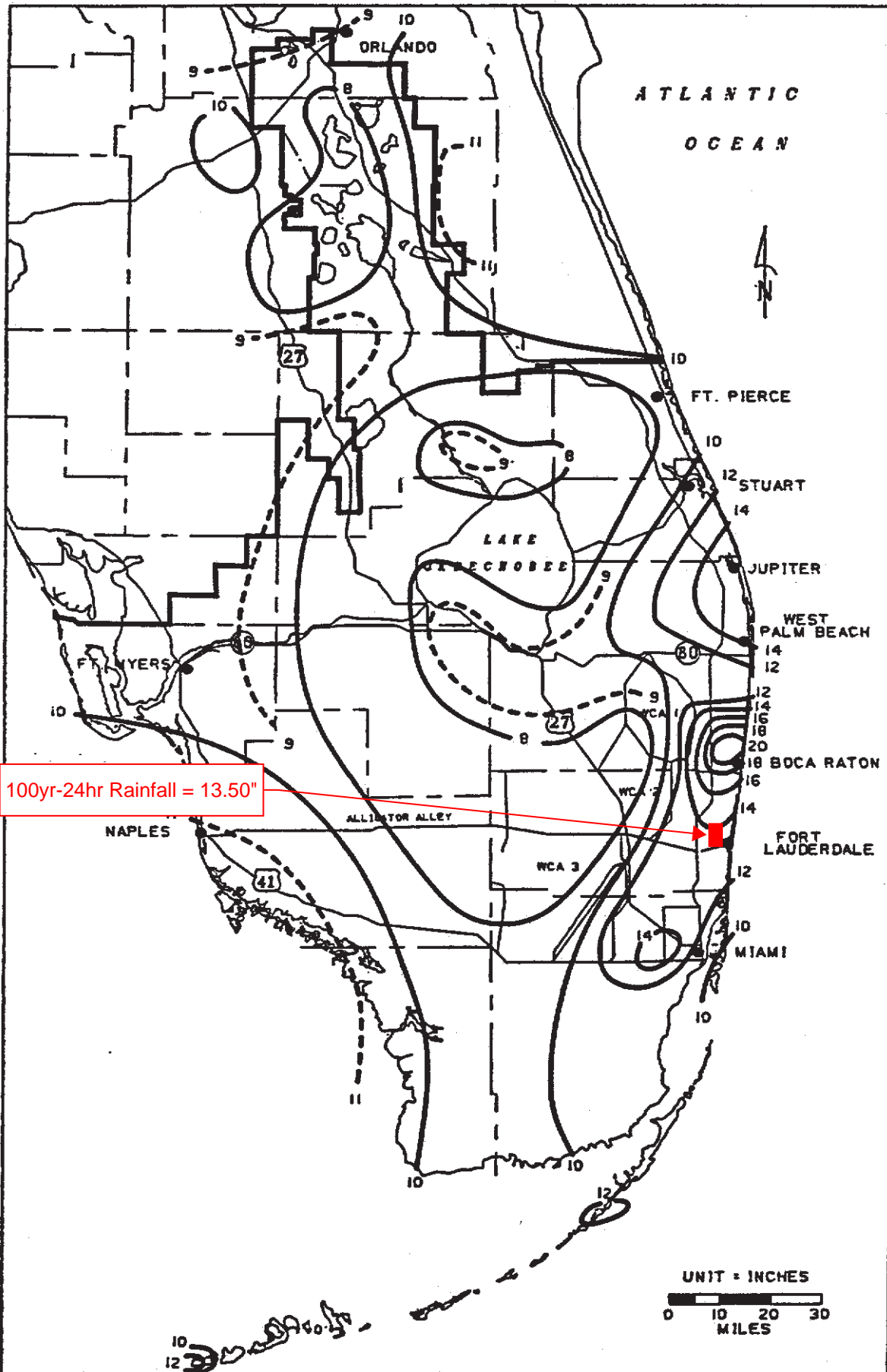


FIGURE C-6. 1-DAY RAINFALL: 100-YEAR RETURN PERIOD

Figure 9 - SFWMD Rainfall Maps

Table 2.6.3 Criteria for Grade Datum

CLEARANCE FOR THE ROADWAY BASE COURSE ABOVE THE BASE CLEARANCE WATER ELEVATION	
TYPE FACILITY	REQUIRED CLEARANCE
Freeways and Rural Multilane Mainline	3 ft.
Ramps (proper)	2 ft. ¹
Low Point on Ramps at Cross Roads	1 ft. ¹
Rural Two-lane with Design Year ADT Greater than 1500 VPD	2 ft. ¹
All Other Facilities Including Urban	1 ft. ¹

1. This clearance requires a reduction in the design resilient modulus (see the *Flexible Pavement Design Manual*). Notify the Pavement Design Engineer that the clearance is less than 3 feet.

Table 2.6.4 Grade Criteria for Curb and Gutter Sections

GRADES ON CURB AND GUTTER SECTIONS	
Minimum Distance Required between VPI's	250 ft.
Minimum Grade (%)	0.3 %

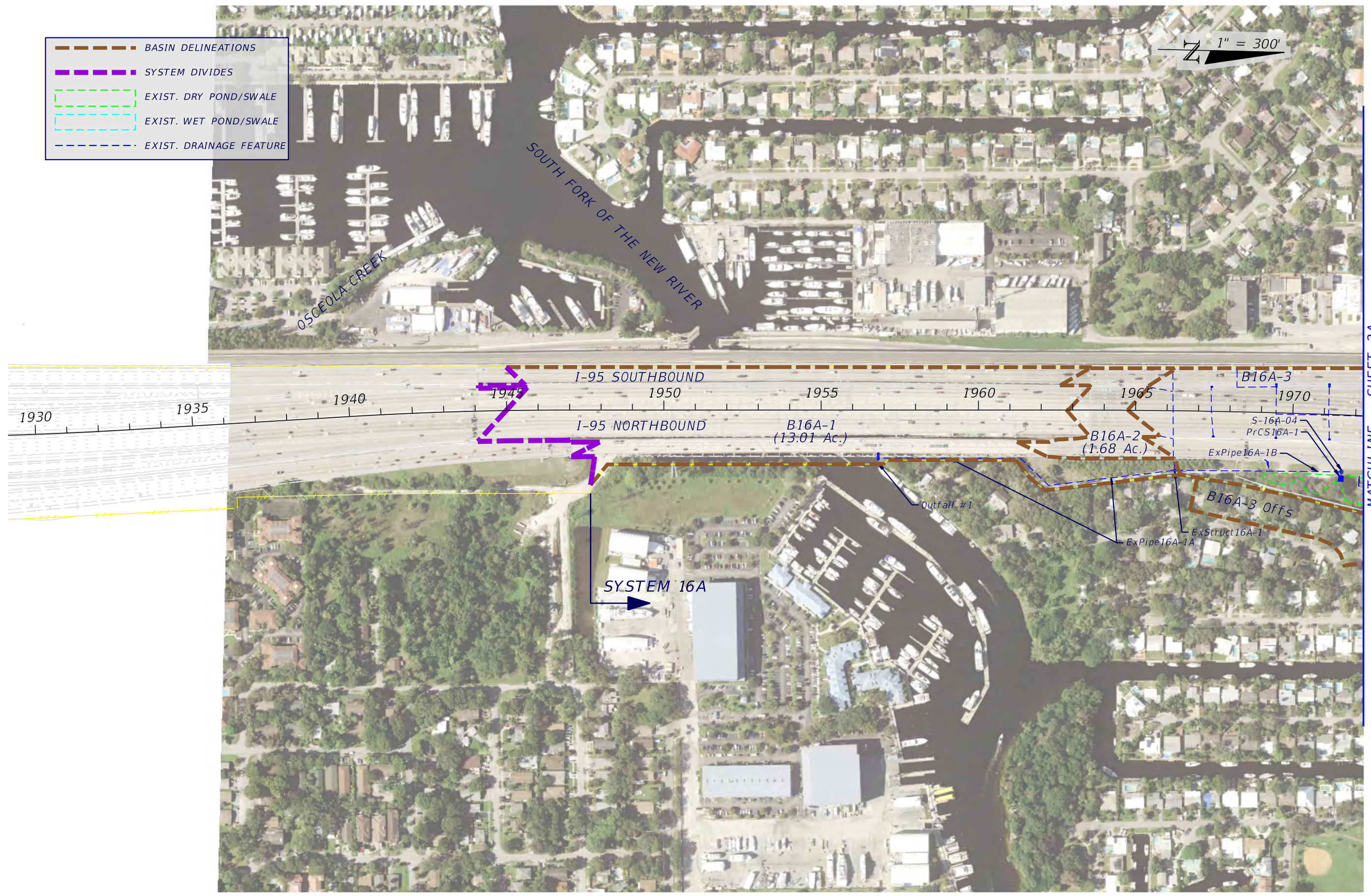
(See **Table 2.6.1** for Maximum Grades)



Appendix B
Pre-Development
Drainage Maps

1" = 300'

- - - - BASIN DELINEATIONS
- - - - SYSTEM DIVIDES
- - - - EXIST. DRY POND/SWALE
- - - - EXIST. WET POND/SWALE
- - - - EXIST. DRAINAGE FEATURE



MATCHLINE - SHEET 2A

REVISIONS		DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	SHEET NO.
DATE	DESCRIPTION						

RS&H, Inc. 3125 W. Commercial Blvd. - Suite 130 Fort Lauderdale, Florida 33309-3446 954-474-3005 FL Cert. No. EB0005620 Aylin Costa, P.E. No. 69865		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		PRE-DEVELOPMENT DRAINAGE MAP	SHEET NO. 1A
ROAD NO.	COUNTY	FINANCIAL PROJECT ID			
9	BROWARD	435513-1-22-02			

1" = 300'

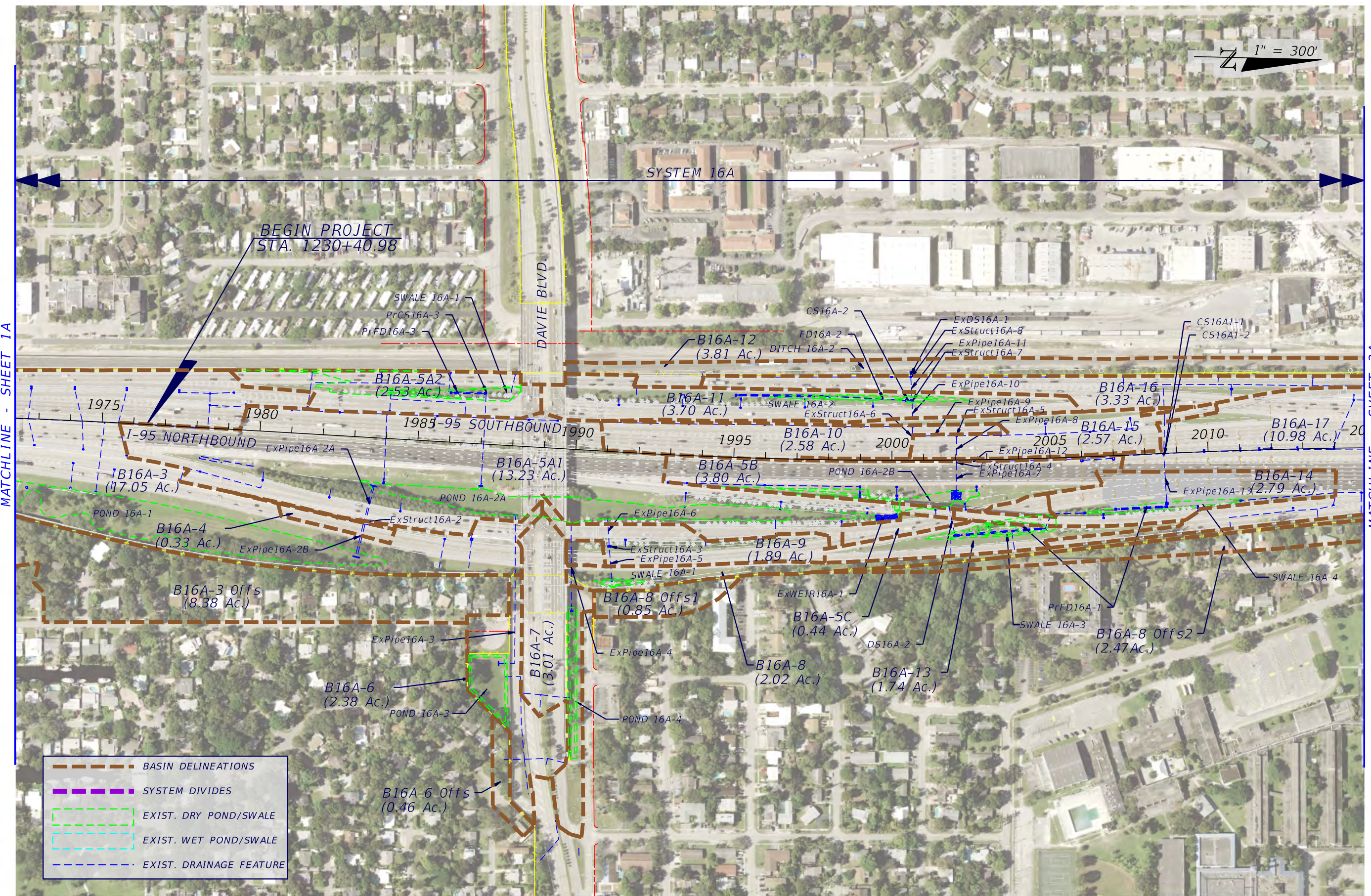
SYSTEM 16A

BEGIN PROJECT
STA. 1230+40.98

DAVIE BLVD.

MATCHLINE - SHEET 1A

MATCHLINE - SHEET 3A



	BASIN DELINEATIONS
	SYSTEM DIVIDES
	EXIST. DRY POND/SWALE
	EXIST. WET POND/SWALE
	EXIST. DRAINAGE FEATURE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
 3125 W. Commercial Blvd. - Suite 130
 Fort Lauderdale, Florida 33309-3446
 954-474-3005
 FL Cert. No. EB0005620
 Aylin Costa, P.E. No. 69865

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	435513-1-22-02

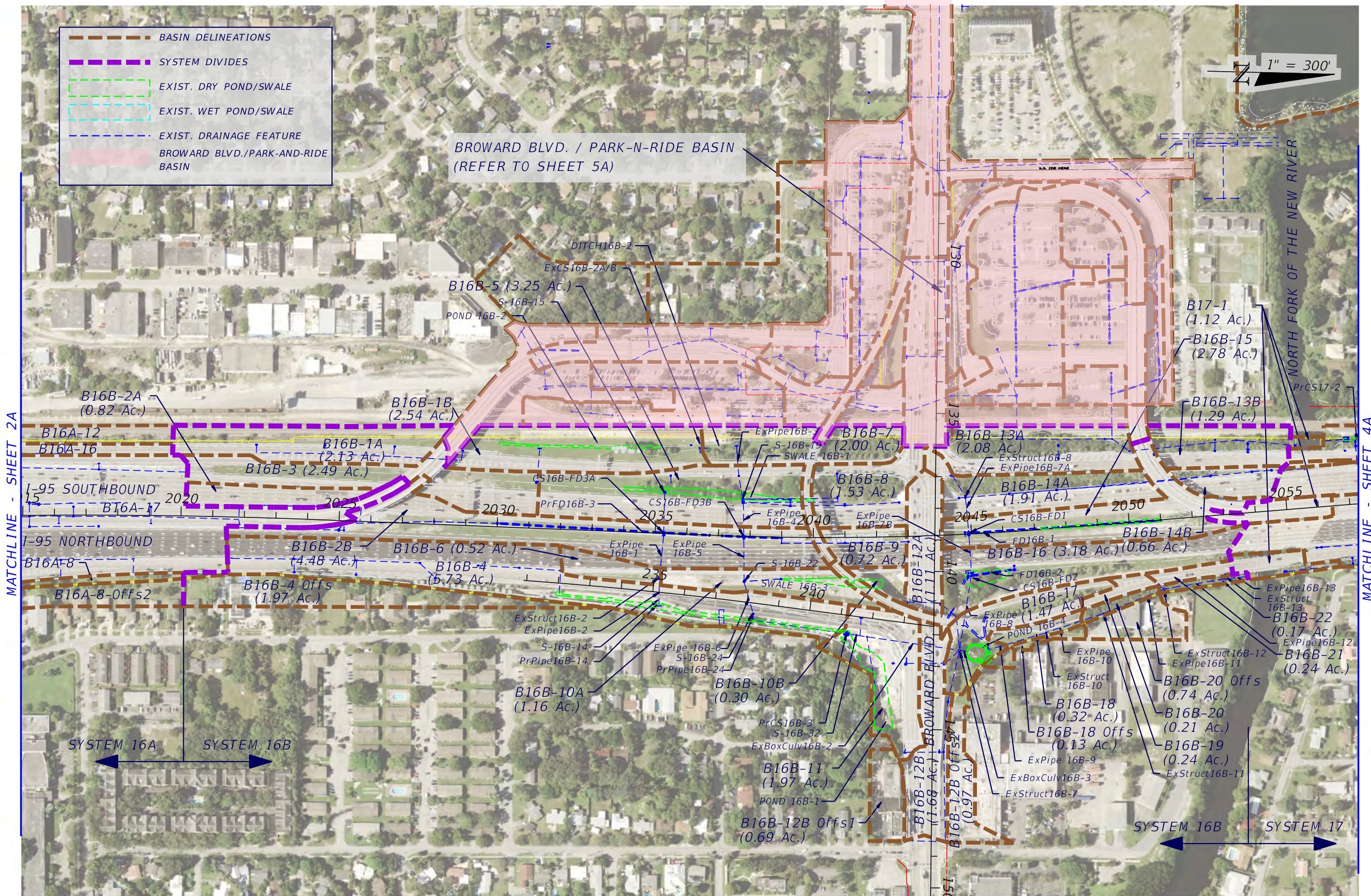
**PRE-DEVELOPMENT
DRAINAGE MAP**

SHEET NO.
2A

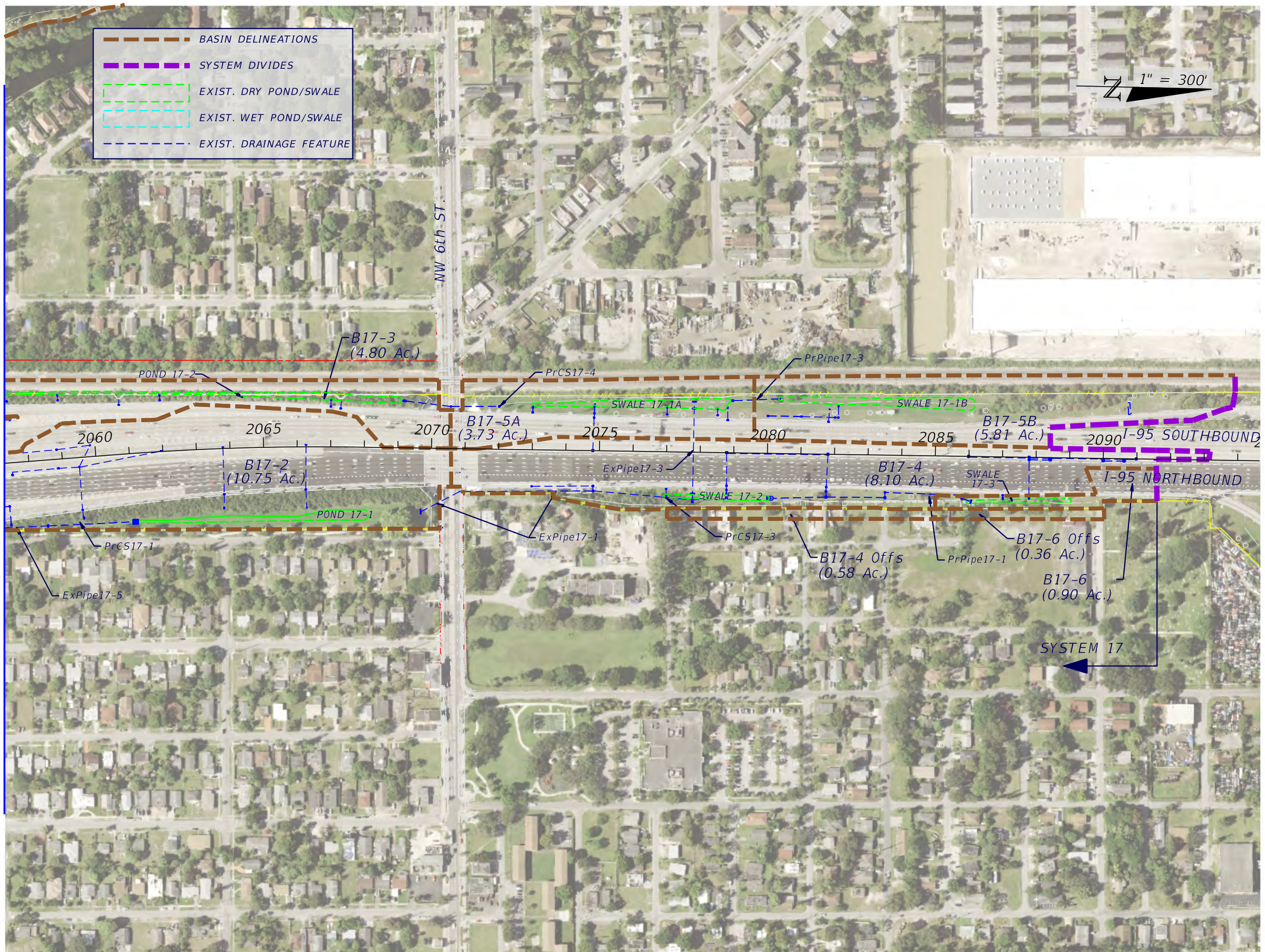
- - - - - BASIN DELINEATIONS
 - - - - - SYSTEM DIVIDES
 - - - - - EXIST. DRY POND/SWALE
 - - - - - EXIST. WET POND/SWALE
 - - - - - EXIST. DRAINAGE FEATURE
 BROWARD BLVD./PARK-AND-RIDE BASIN
 BROWARD BLVD./PARK-AND-RIDE BASIN

1" = 300'

BROWARD BLVD. / PARK-N-RIDE BASIN
(REFER TO SHEET 5A)



REVISIONS		RS&H, Inc.		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PRE-DEVELOPMENT DRAINAGE MAP	SHEET NO. 3A
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				9	BROWARD	435513-1-22-02		



MATCHLINE - SHEET 3A

	BASIN DELINEATIONS
	SYSTEM DIVIDES
	EXIST. DRY POND/SWALE
	EXIST. WET POND/SWALE
	EXIST. DRAINAGE FEATURE

1" = 300'

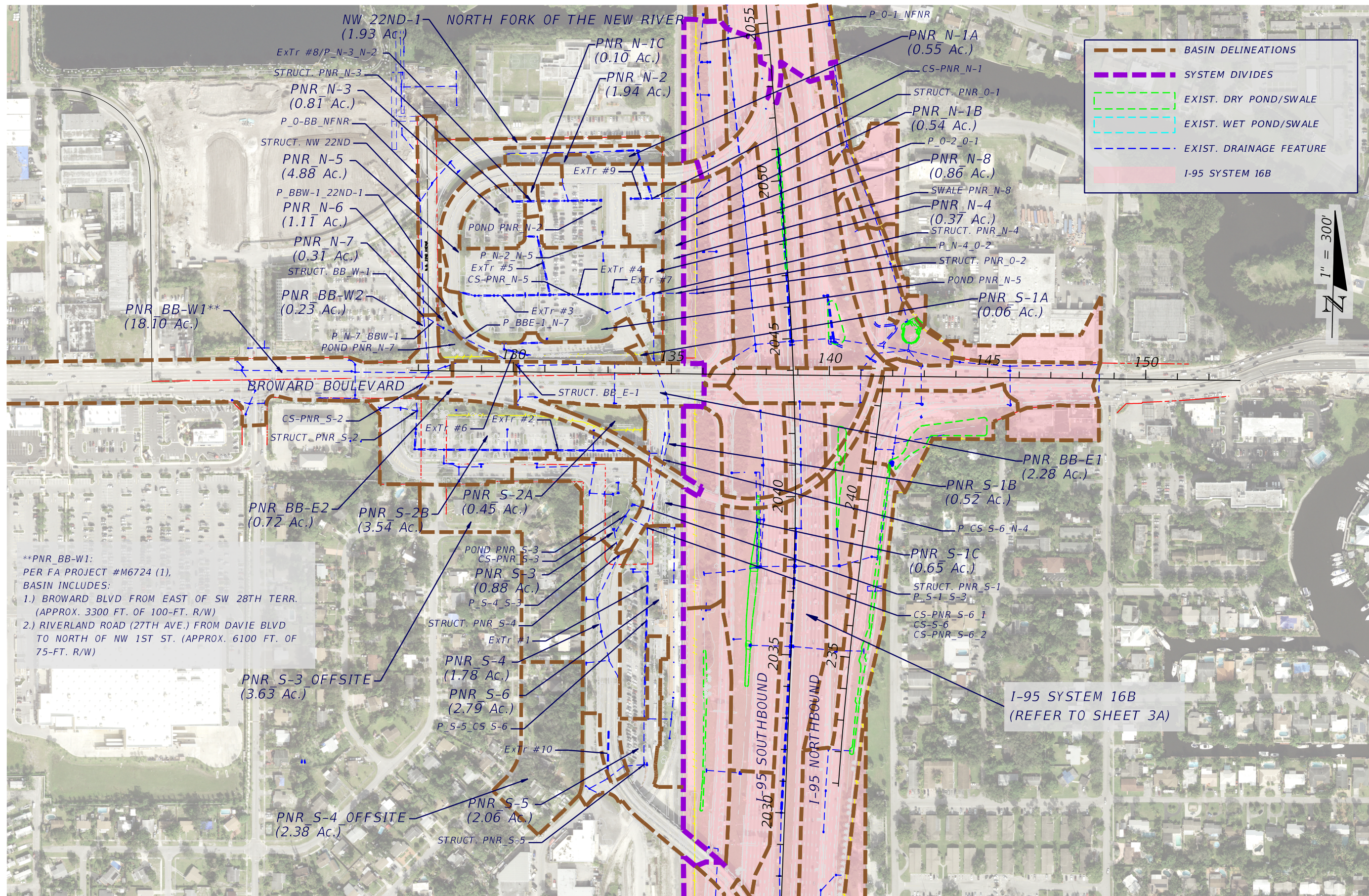
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
 3125 W. Commercial Blvd. - Suite 130
 Fort Lauderdale, Florida 33309-3446
 954-474-3005
 FL Cert. No. EB0005620
 Aylin Costa, P.E. No. 69865

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	435513-1-22-02

**PRE-DEVELOPMENT
DRAINAGE MAP**

SHEET NO.
4A



**PNR_BB-W1:
 PER FA PROJECT #M6724 (1),
 BASIN INCLUDES:
 1.) BROWARD BLVD FROM EAST OF SW 28TH TERR.
 (APPROX. 3300 FT. OF 100-FT. R/W)
 2.) RIVERLAND ROAD (27TH AVE.) FROM DAVIE BLVD
 TO NORTH OF NW 1ST ST. (APPROX. 6100 FT. OF
 75-FT. R/W)

I-95 SYSTEM 16B
 (REFER TO SHEET 3A)

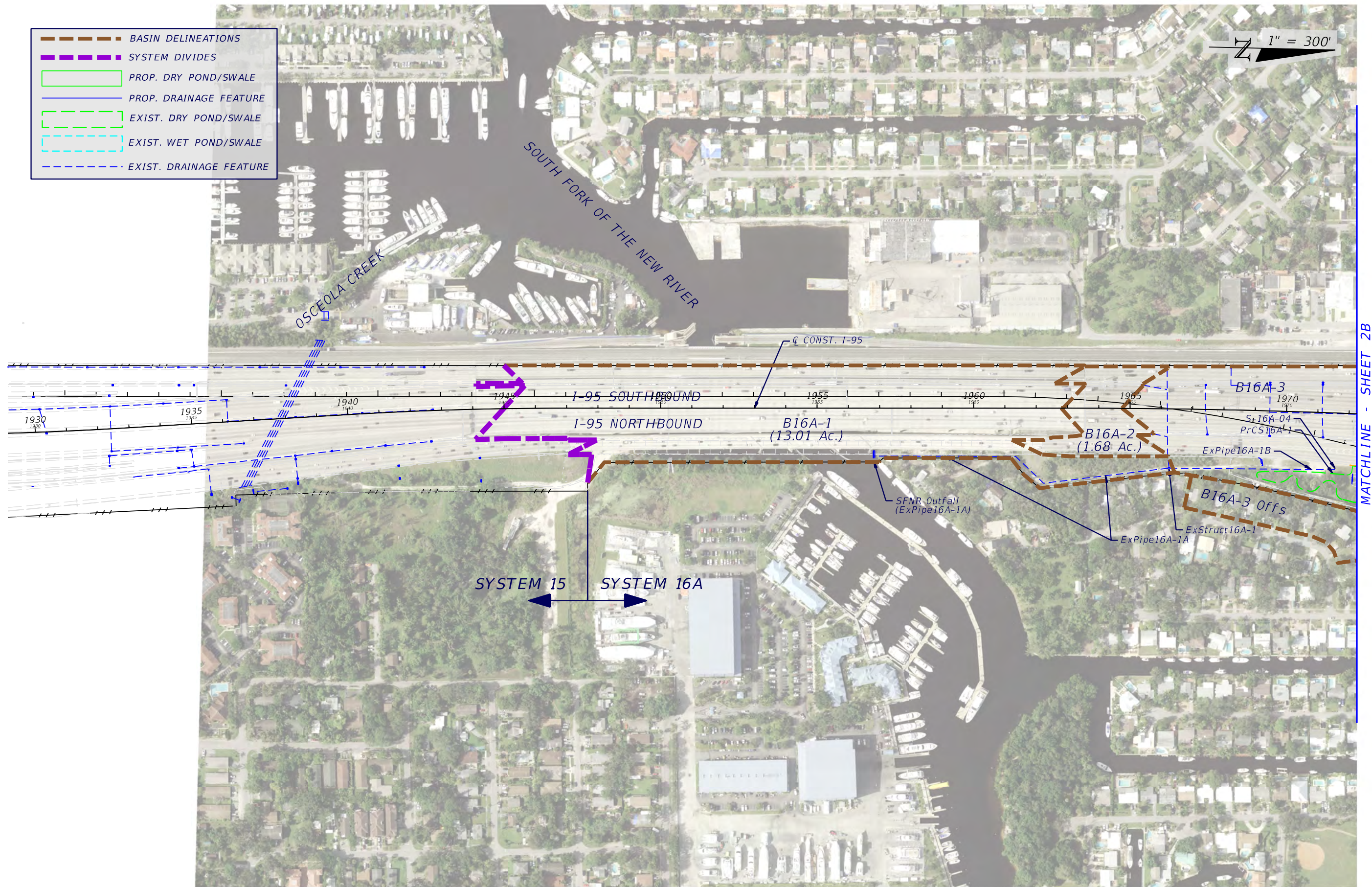
REVISIONS		REVISIONS		RS&H, Inc. 3125 W. Commercial Blvd. - Suite 130 Fort Lauderdale, Florida 33309-3446 954-474-3005 FL Cert. No. EB0005620 Aylin Costa, P.E. No. 69865	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PRE-DEVELOPMENT DRAINAGE MAP	SHEET NO. 5A
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					9	BROWARD	435513-1-22-02		



Appendix C
Post-Development
Drainage Maps

- - - - - BASIN DELINEATIONS
- - - - - SYSTEM DIVIDES
- PROP. DRY POND/SWALE
- PROP. DRAINAGE FEATURE
- EXIST. DRY POND/SWALE
- EXIST. WET POND/SWALE
- EXIST. DRAINAGE FEATURE

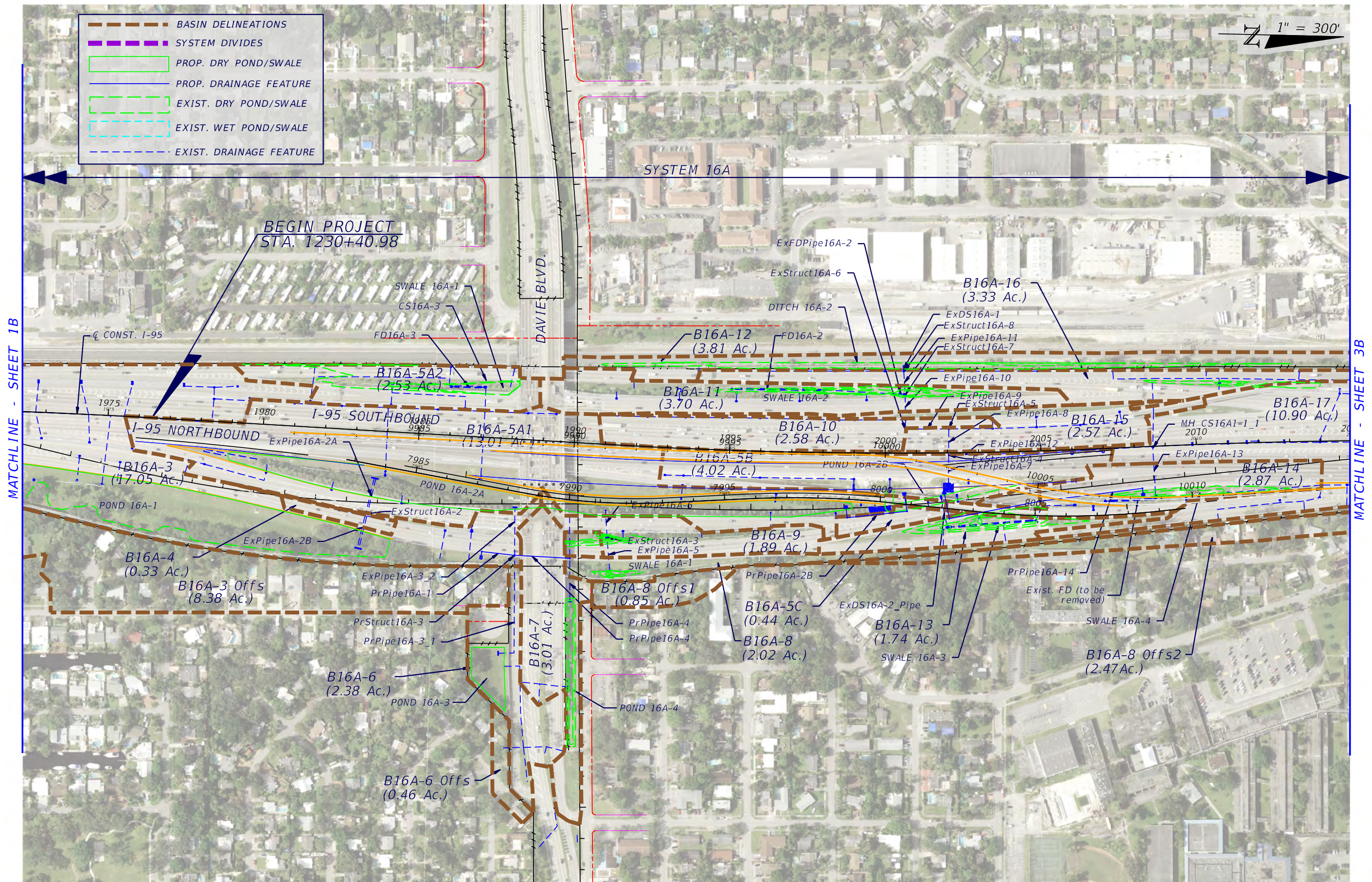
1" = 300'



REVISIONS				RS&H, Inc. 3125 W. Commercial Blvd. - Suite 130 Fort Lauderdale, Florida 33309-3446 954-474-3005 FL Cert. No. EB0005620 Aylin Costa, P.E. No. 69865	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		1B
					9	BROWARD	435513-1-22-02		

	BASIN DELINEATIONS
	SYSTEM DIVIDES
	PROP. DRY POND/SWALE
	PROP. DRAINAGE FEATURE
	EXIST. DRY POND/SWALE
	EXIST. WET POND/SWALE
	EXIST. DRAINAGE FEATURE

1" = 300'



MATCHLINE - SHEET 1B

MATCHLINE - SHEET 3B

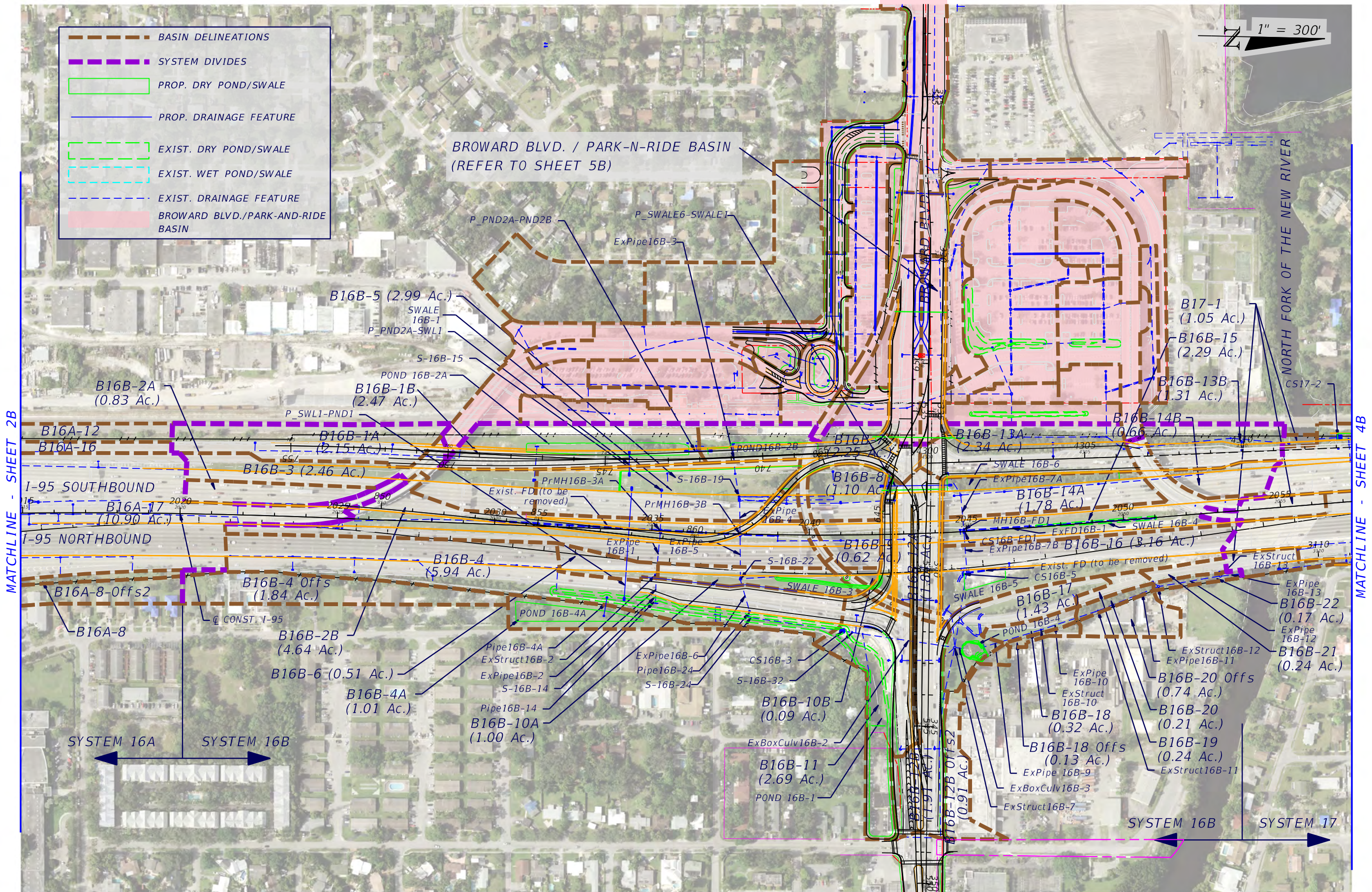
<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>				REVISIONS		DATE	DESCRIPTION			<p>RS&H, Inc. 3125 W. Commercial Blvd. - Suite 130 Fort Lauderdale, Florida 33309-3446 954-474-3005 FL Cert. No. EB0005620 Aylin Costa, P.E. No. 69865</p>	<p>STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION</p> <table border="1"> <thead> <tr> <th>ROAD NO.</th> <th>COUNTY</th> <th>FINANCIAL PROJECT ID</th> </tr> </thead> <tbody> <tr> <td>9</td> <td>BROWARD</td> <td>435513-1-22-02</td> </tr> </tbody> </table>	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	9	BROWARD	435513-1-22-02	<p>POST-DEVELOPMENT DRAINAGE MAP</p>	<p>SHEET NO. 2B</p>
REVISIONS																			
DATE	DESCRIPTION																		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID																	
9	BROWARD	435513-1-22-02																	
<p style="font-size: small; text-align: center;">SUSERS SDATES STIMES SFILES</p>																			

1" = 300'

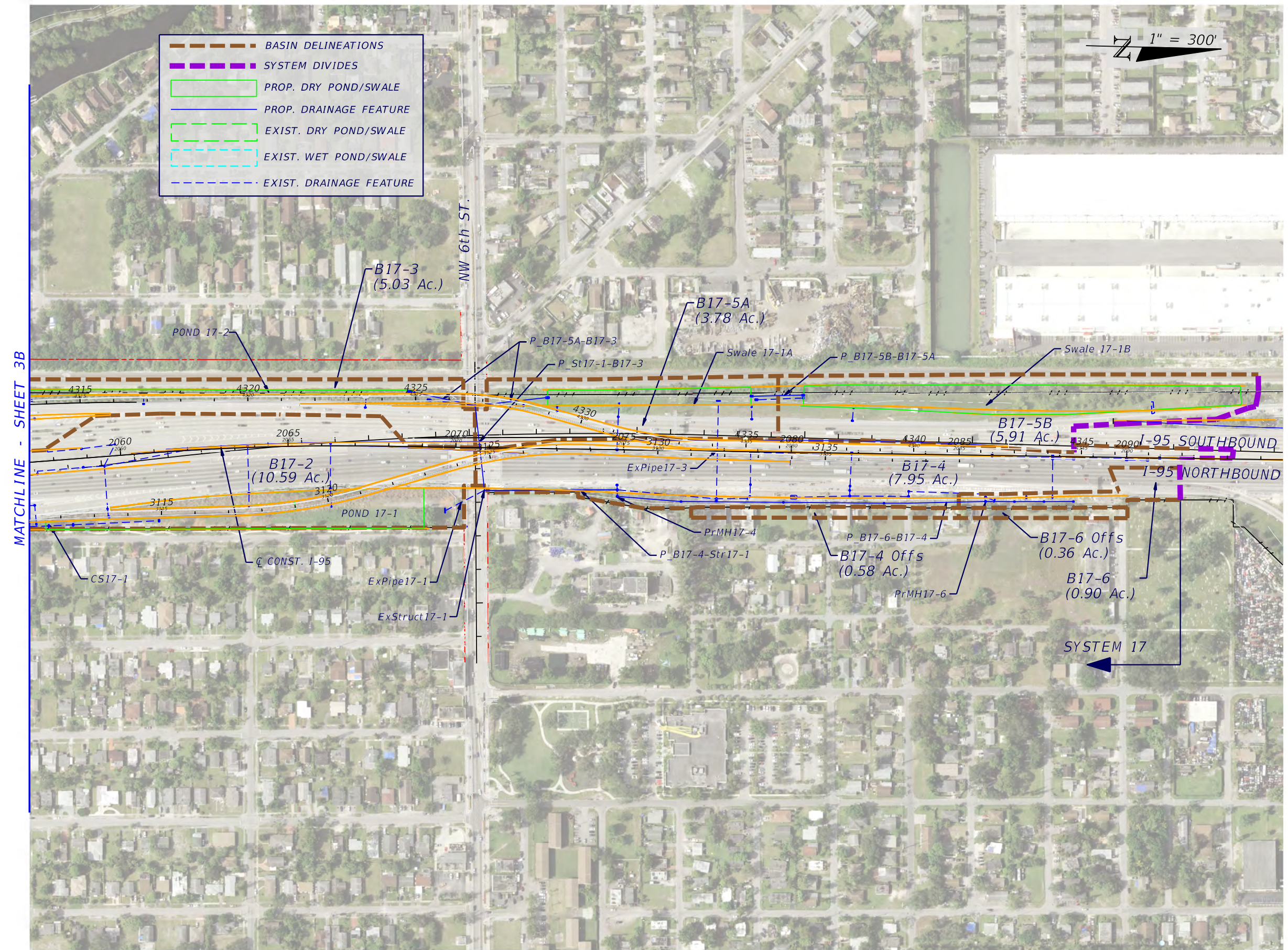
LEGEND

- BASIN DELINEATIONS
- SYSTEM DIVIDES
- PROP. DRY POND/SWALE
- PROP. DRAINAGE FEATURE
- EXIST. DRY POND/SWALE
- EXIST. WET POND/SWALE
- EXIST. DRAINAGE FEATURE
- BROWARD BLVD./PARK-AND-RIDE BASIN

BROWARD BLVD. / PARK-N-RIDE BASIN
(REFER TO SHEET 5B)

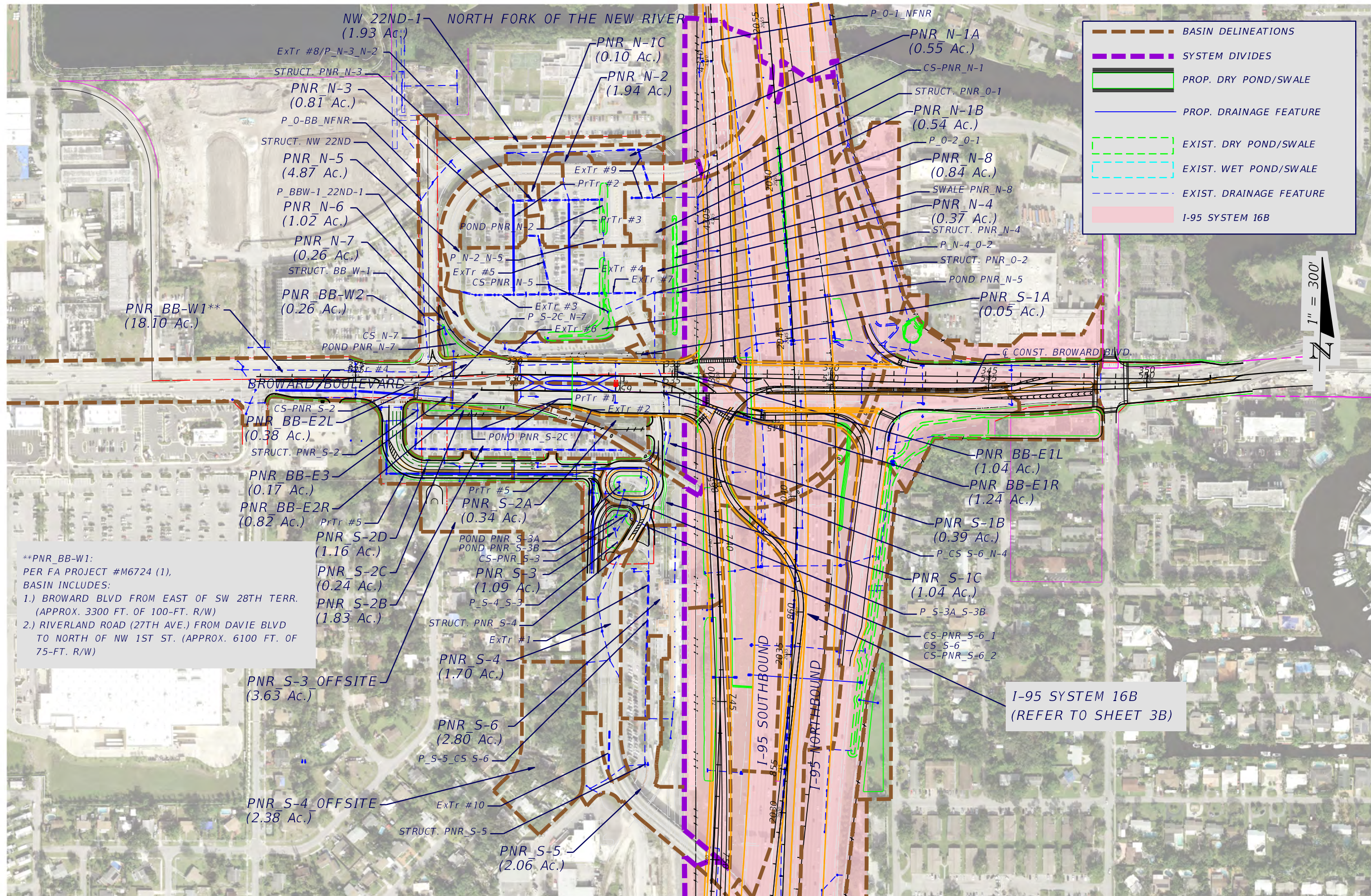


REVISIONS				RS&H, Inc. 3125 W. Commercial Blvd. - Suite 130 Fort Lauderdale, Florida 33309-3446 954-474-3005 FL Cert. No. EB0005620 Aylin Costa, P.E. No. 69865	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO. 3B
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					9	BROWARD	435513-1-22-02		



REVISIONS				RS&H, Inc. 3125 W. Commercial Blvd. - Suite 130 Fort Lauderdale, Florida 33309-3446 954-474-3005 FL Cert. No. EB0005620 Aylin Costa, P.E. No. 69865	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		4B
					9	BROWARD	435513-1-22-02		

SUSERS SDATES STIMES SFILES



****PNR_BB-W1:**
 PER FA PROJECT #M6724 (1),
 BASIN INCLUDES:
 1.) BROWARD BLVD FROM EAST OF SW 28TH TERR.
 (APPROX. 3300 FT. OF 100-FT. R/W)
 2.) RIVERLAND ROAD (27TH AVE.) FROM DAVIE BLVD
 TO NORTH OF NW 1ST ST. (APPROX. 6100 FT. OF
 75-FT. R/W)

I-95 SYSTEM 16B
 (REFER TO SHEET 3B)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
 3125 W. Commercial Blvd. - Suite 130
 Fort Lauderdale, Florida 33309-3446
 954-474-3005
 FL Cert. No. EB0005620
 Aylin Costa, P.E. No. 69865

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	435513-1-22-02

**POST-DEVELOPMENT
DRAINAGE MAP**

SHEET NO.
5B



Appendix D

System 16A Drainage Analysis Documentation

- Land-Use Tables
- Drainage Calculations
- Summary Tables
- ICPR: Pre-Development
- ICPR: Post-Development

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
PRE-DEVELOPMENT LAND-USE**

DRAINAGE SYSTEM: 16A

SHGWT EL. (ft-NAVD): 0.42

BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B16A-1	10	13.01	13.01	10.69	0.24	2.08	0.00	0.00	0.00	0.00	3.00	2.58	3.66	94.47
B16A-2	10	1.68	1.68	1.68	0.00	0.00	0.00	0.00	0.00	0.00	45.00	44.58	8.18	100.00
B16A-3	10	17.05	17.05	10.83	0.00	6.22	0.00	0.00	0.00	0.00	5.00	4.58	8.18	77.02
B16A-3 Offs	10	8.38	0.00	0.00	0.00	0.00	8.38	3.18	0.00	5.20	5.00	4.58	8.18	66.33
B16A-4	10	0.33	0.33	0.33	0.00	0.00	0.00	0.00	0.00	0.00	9.00	8.58	8.18	100.00
B16A-5A1	10	13.23	13.23	8.71	0.00	4.52	0.00	0.00	0.00	0.00	5.00	4.58	8.18	78.16
B16A-5A2	10	2.53	2.53	1.83	0.00	0.70	0.00	0.00	0.00	0.00	5.00	4.58	8.18	81.54
B16A-5B	10	3.80	3.80	2.78	0.00	1.02	0.00	0.00	0.00	0.00	5.00	4.58	8.18	82.00
B16A-5C	10	0.44	0.44	0.41	0.00	0.03	0.00	0.00	0.00	0.00	5.00	4.58	8.18	94.72
B16A-6	10	2.38	2.38	1.43	0.00	0.95	0.00	0.00	0.00	0.00	5.00	4.58	8.18	75.39
B16A-6 Offs	10	0.46	0.00	0.00	0.00	0.00	0.46	0.14	0.00	0.32	5.00	4.58	8.18	63.73
B16A-7	10	3.01	3.01	2.23	0.00	0.78	0.00	0.00	0.00	0.00	5.00	4.58	8.18	82.51
B16A-8	10	2.02	2.02	0.19	0.00	1.83	0.00	0.00	0.00	0.00	6.00	5.58	8.18	57.44
B16A-8 Offs1	10	0.85	0.00	0.00	0.00	0.00	0.85	0.44	0.00	0.41	5.00	4.58	8.18	71.71
B16A-8 Offs2	10	2.47	0.00	0.00	0.00	0.00	2.47	0.57	0.00	1.90	5.00	4.58	8.18	61.38
B16A-9	10	1.89	1.89	1.48	0.00	0.41	0.00	0.00	0.00	0.00	8.00	7.58	8.18	84.93
B16A-10	10	2.58	2.58	2.58	0.00	0.00	0.00	0.00	0.00	0.00	17.00	16.58	8.18	100.00
B16A-11	10	3.70	3.70	2.23	0.00	1.47	0.00	0.00	0.00	0.00	9.00	8.58	8.18	75.47
B16A-12	10	3.81	3.81	0.17	0.00	3.64	0.00	0.00	0.00	0.00	5.00	4.58	8.18	56.13
B16A-13	10	1.74	1.74	0.83	0.00	0.91	0.00	0.00	0.00	0.00	9.00	8.58	8.18	70.04
B16A-14	10	2.79	2.79	2.12	0.00	0.67	0.00	0.00	0.00	0.00	7.00	6.58	8.18	83.58
B16A-15	10	2.57	2.57	2.23	0.00	0.34	0.00	0.00	0.00	0.00	12.00	11.58	8.18	90.23
B16A-16	10	3.33	3.33	3.05	0.00	0.28	0.00	0.00	0.00	0.00	10.00	9.58	8.18	93.56
B16A-17	10	10.98	10.98	10.79	0.00	0.19	0.00	0.00	0.00	0.00	11.00	10.58	8.18	98.60
SYSTEM TOTALS		105.03	92.87	66.59	0.24	26.04	12.16	4.33	0.00	7.83	--	--	--	--

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
POST-DEVELOPMENT LAND-USE**

DRAINAGE SYSTEM: 16A

SHGWT EL. (ft-NAVD): 0.42

BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B16A-3	10	17.05	17.05	10.83	0.00	6.22	0.00	0.00	0.00	0.00	5.00	4.58	8.18	77.02
B16A-3 Offs	10	8.38	0.00	0.00	0.00	0.00	8.38	3.18	0.00	5.20	5.00	4.58	8.18	66.33
B16A-4	10	0.33	0.33	0.33	0.00	0.00	0.00	0.00	0.00	0.00	9.00	8.58	8.18	100.00
B16A-5A1	10	13.01	13.01	10.17	0.00	2.84	0.00	0.00	0.00	0.00	5.00	4.58	8.18	84.85
B16A-5A2	10	2.53	2.53	1.83	0.00	0.70	0.00	0.00	0.00	0.00	15.00	14.58	8.18	81.54
B16A-5B	10	4.02	4.02	3.58	0.00	0.44	0.00	0.00	0.00	0.00	5.00	4.58	8.18	91.78
B16A-5C	10	0.44	0.44	0.41	0.00	0.03	0.00	0.00	0.00	0.00	5.00	4.58	8.18	94.72
B16A-6	10	2.38	2.38	1.43	0.00	0.95	0.00	0.00	0.00	0.00	5.00	4.58	8.18	75.39
B16A-6 Offs	10	0.46	0.00	0.00	0.00	0.00	0.46	0.14	0.00	0.32	5.00	4.58	8.18	63.73
B16A-7	10	3.01	3.01	2.23	0.00	0.78	0.00	0.00	0.00	0.00	5.00	4.58	8.18	82.51
B16A-8	10	2.02	2.02	0.19	0.00	1.83	0.00	0.00	0.00	0.00	6.00	5.58	8.18	57.44
B16A-8 Offs1	10	0.85	0.00	0.00	0.00	0.00	0.85	0.44	0.00	0.41	5.00	4.58	8.18	71.71
B16A-8 Offs2	10	2.47	0.00	0.00	0.00	0.00	2.47	0.57	0.00	1.90	5.00	4.58	8.18	61.38
B16A-9	10	1.89	1.89	1.48	0.00	0.41	0.00	0.00	0.00	0.00	8.00	7.58	8.18	84.93
B16A-10	10	2.58	2.58	2.58	0.00	0.00	0.00	0.00	0.00	0.00	17.00	16.58	8.18	100.00
B16A-11	10	3.70	3.70	2.23	0.00	1.47	0.00	0.00	0.00	0.00	10.00	9.58	8.18	75.47
B16A-12	10	3.81	3.81	0.17	0.00	3.64	0.00	0.00	0.00	0.00	5.00	4.58	8.18	56.13
B16A-13	10	1.74	1.74	0.83	0.00	0.91	0.00	0.00	0.00	0.00	9.00	8.58	8.18	70.04
B16A-14	10	2.87	2.87	2.41	0.00	0.46	0.00	0.00	0.00	0.00	7.00	6.58	8.18	88.32
B16A-15	10	2.57	2.57	2.23	0.00	0.34	0.00	0.00	0.00	0.00	12.00	11.58	8.18	90.23
B16A-16	10	3.33	3.33	3.05	0.00	0.28	0.00	0.00	0.00	0.00	10.00	9.58	8.18	93.56
B16A-17	10	10.90	10.90	10.79	0.00	0.11	0.00	0.00	0.00	0.00	11.00	10.58	8.18	99.18
16A-PONDS		90.34	78.18	56.77	0.00	21.41	12.16	4.33	0.00	7.83				
B16A-1	10	13.01	13.01	10.69	0.24	2.08	0.00	0.00	0.00	0.00	3.00	2.58	3.66	94.47
B16A-2	10	1.68	1.68	1.68	0.00	0.00	0.00	0.00	0.00	0.00	45.00	44.58	8.18	100.00
DS of PrCS16A-1		14.69	14.69	12.37	0.24	2.08	0.00	0.00	0.00	0.00				
SYSTEM TOTALS		105.03	92.87	69.14	0.24	23.49	12.16	4.33	0.00	7.83	--	--	--	--

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
WATER QUALITY**

Drainage System: **16A**

SYSTEM	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) [POST-DEV.]	ONSITE IMPERVIOUS AREA (Ac.) [POST-DEV.]	ONSITE PERVIOUS AREA (Ac.) [POST-DEV.]	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET- RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	² TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
16A-PONDS	0.42	78.18	56.77	21.41	6.52	11.83	11.83	8.90	0.00	0.29	0.00	12.45	0.62
SYSTEM TOTAL	0.42	78.18	56.77	21.41	6.52	11.83	11.83	8.90	0.00	0.29	0.00	12.45	0.62

¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

³Water quality treatment in System 16A provided for all onsite contributing basins with the exception of B16A-1 and B16A-2 (14.69 acres, located downstream of existing control structure and project limits).

Pond 16A-1			Pond 16A-2A			Pond 16A-3			Pond 16A-4		
TYPE:	Dry Detention		TYPE:	Dry Detention		TYPE:	Dry Detention		TYPE:	Dry Detention	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
1.42	2.96	--	1.42	2.60	--	1.42	0.37	--	1.42	0.08	--
2.00	3.72	1.94	2.00	2.61	1.51	2.00	0.39	0.22	2.00	0.13	0.06
2.70	4.07	4.66	2.70	2.62	3.34	2.70	0.42	0.50	2.70	0.19	0.17
3.00	4.23	5.91	3.00	2.63	4.13	3.00	0.43	0.63	3.00	0.21	0.23
6.00	4.23	18.59	5.00	2.69	9.45	4.00	0.47	1.08	4.00	0.30	0.48
			8.00	2.72	17.56	5.00	0.55	1.59	5.00	0.39	0.82
						5.25	0.57	1.73	5.25	0.41	0.93

Pond 16A-2B			Ditch 16A-2		
TYPE:	Dry Detention		TYPE:	Dry Retention	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
1.42	0.16	--	3.00	0.0050	--
2.00	0.18	0.10	4.00	0.0710	0.04
2.70	0.19	0.23	5.00	0.22	0.18
3.00	0.20	0.28	5.42	0.30	0.29
4.00	0.22	0.50	6.00	0.4130	0.50
5.00	0.25	0.73	7.00	0.6910	1.05
8.00	0.34	1.63			
9.70	0.40	2.26			

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

Bleeder Sizing/Design

Drainage System: 16A

Pond/Swale Name:	Pond 16A-1
Control Structure No.:	PrCS16A-1
Contributing Area (Ac.):	90.34
Detention Volume(Ac-ft):	8.90
Bleed-Down Volume, V_{DET} (1/2 Detention Vol.) (Ac-ft):	4.45
Bleed-Down Time (hrs):	24.00
Bleed-Down Time (sec):	86400
Average Discharge Rate, Q (cfs):	2.24
Weir Elevation (ft-NAVD):	2.70
Bleeder Invert EL. [SHGWT EL.] (ft-NAVD):	0.42

Head, H (ft) 2.28

Weir Coefficient: 0.60

V-Notch Sizing

Minimum V-Notch Angle = 20°

Number of V-Notches Proposed: 1

Bleed-Down Volume per V-Notch, V_{DET} (Ac-ft): 4.45

Maximum V-Notch Angle, θ , (rad): 0.54

Maximum V-Notch Angle, θ , (deg): **31.18**

$$\theta = 2 \tan^{-1} \left[0.492 \frac{V_{DET}}{H^{2.5}} \right]$$

Proposed V-Notch(s) Angle (deg): 31

Proposed V-Notch Angle (rad): 0.54

V-Notch Height [= H] (ft): 2.28

V-Notch Top Width (ft): 1.26

V-Notch Sideslope [horz./vert.]: 0.2773

Circular Orifice Sizing

Minimum Orifice Diameter = 3"

Number of Circular Orifices Proposed: 0

Average Discharge per Orifice, Q (cfs): --

$$Q = 4.8A\sqrt{h}, A = \pi r^2, h = H - r$$

Select Orifice Diameter with Discharge nearest to but less than Q

Orifice Diameter (in)	Orifice Radius, r (ft)	Area, A (ft ²)	h (ft)	Discharge Rate (cfs)
3.0	0.125	0.049	2.155	0.35
4.0	0.167	0.087	2.113	0.61
5.0	0.208	0.136	2.072	0.94
6.0	0.250	0.196	2.030	1.34

Proposed Orifice(s) Diameter (in):

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: **16A**

Summary of Peak Discharges								
Receiving Waterbody:		South Fork of the New River						
PRE-DEVELOPMENT								
ICPR Link/Basin:	Outfall Pipe / Weir Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-24hr Peak Flow Velocity (fps)
ExPipe16A-1A	66" Pipe	23.75	48.27	2.03	111.67	4.70	119.19	5.02
B16A-1	Direct Discharge		67.27		80.58		104.61	
PRE-DEVELOPMENT TOTALS:		--	--	--	192.25	--	--	--
POST-DEVELOPMENT								
ICPR Link/Basin:	Outfall Pipe / Weir Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-24hr Peak Flow Velocity (fps)
ExPipe16A-1A	66" Pipe	23.75	92.63	3.90	103.53	4.36	108.70	4.58
B16A-1	Direct Discharge		67.27		80.58		104.61	
POST-DEVELOPMENT TOTALS:		--	--	--	184.11	--	--	--
Pre-Post 25yr-72hr Peak Discharge Reduction (cfs):				8.14				

Summary of Peak Stages									
Pond/ Swale/ FD #	Type: [Wet/Dry, Det./Ret., FD]	Disposition [Exist./ Prop./ Modified]	Warning EL. [Min. Berm/ Min. EOP] (ft-NAVD)	PRE-DEVELOPMENT			POST-DEVELOPMENT		
				Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)	Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)
Pond16A-1	Dry Detention	Modified	6.25	4.91	5.76	5.93	4.31	5.51	6.16
Pond16A-2A	Dry Detention	Modified	7.50	5.19	6.85	7.25	4.70	6.23	6.98
Pond16A-2B	Dry Detention	Modified	9.70	6.38	6.92	7.32	5.60	7.08	7.98
Pond16A-3	Dry Detention	Modified	6.50	5.20	6.87	7.27	4.40	5.64	6.31
Pond16A-4	Dry Detention	Exist.	6.50	5.20	6.87	7.27	4.40	5.64	6.31
Ditch16A-2	Ditch	Exist.	9.00	6.72	7.80	8.14	6.29	7.71	8.16
Swale16A-1	Dry Detention	Exist.	9.50	5.30	7.42	7.87	5.19	6.96	7.69
Swale16A-3	Dry Detention	Exist.	10.00	7.52	7.61	7.69	5.73	7.25	8.13
Swale 16A-4/ FD16A-1	Removed French Drain	Modified	8.50	7.27	7.77	8.42	5.81	7.30	8.25
Swale 16A-2/ FD16A-2	French Drain	Exist.	9.00	7.60	8.20	8.78	7.30	8.33	8.98
Swale 16A-1/ FD16A-3	French Drain	Exist.	15.00	9.82	9.99	10.16	5.06	6.92	8.41

Control Structure Summary Table - Proposed Conditions					
Control Structure:	Disposition [Exist./ Prop./ Modified]	Weir Type/ Geometry	Weir EL. (ft-NAVD)	Bleeder Type/ Geometry	Bleeder Invert EL. (ft-NAVD)
PrCS16A-1	Prop.	Raised Type H DBI (4 Grate)	2.70	V-Notch	0.42
ExDS16A-1	Exist.	DBI w/ internal weir wall	5.42	n/a	n/a
CS16A-2	Removed	DBI w/ internal weir wall	5.00	n/a	n/a
CS16A-3	Exist.	DBI w/ internal weir wall	2.70	Orifice	0.42

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Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CS16A-1_1	BASE	100Yr-24Hr	12.28	9.15	9.88	-0.0050	121	12.27	73.97	12.27	73.88
CS16A-1_2	BASE	100Yr-24Hr	12.28	8.69	9.88	0.0046	516	12.27	73.88	12.27	73.61
Ditch16A-2	BASE	100Yr-24Hr	13.07	8.14	7.00	0.0021	43895	12.27	20.17	15.45	7.13
ExStruct16A-1	BASE	100Yr-24Hr	13.07	3.32	6.00	0.0037	941	13.06	119.19	13.07	119.19
ExStruct16A-2	BASE	100Yr-24Hr	13.03	6.58	8.50	0.0047	152	12.91	88.15	12.91	88.14
ExStruct16A-3	BASE	100Yr-24Hr	12.88	7.47	8.50	-0.0050	509	12.27	23.93	12.27	23.73
ExStruct16A-4	BASE	100Yr-24Hr	12.30	7.93	16.16	-0.0050	537	12.28	119.30	12.29	119.18
ExStruct16A-5	BASE	100Yr-24Hr	12.31	8.32	13.88	0.0048	455	12.38	47.89	12.38	48.22
ExStruct16A-6	BASE	100Yr-24Hr	12.33	8.61	14.87	0.0038	454	12.44	33.25	12.43	33.40
ExStruct16A-7	BASE	100Yr-24Hr	12.41	8.73	8.50	0.0049	19580	12.36	18.16	12.61	21.47
ExStruct16A-8	BASE	100Yr-24Hr	12.33	9.34	7.80	0.0038	2303	12.27	16.13	12.30	14.03
FD16A-1	BASE	100Yr-24Hr	12.42	8.42	7.95	0.0049	19460	12.27	21.37	12.56	19.93
FD16A-2	BASE	100Yr-24Hr	12.43	8.78	8.50	0.0037	19688	12.27	26.48	12.58	19.02
FD16A-3	BASE	100Yr-24Hr	12.27	10.16	13.20	0.0022	261	12.27	19.10	12.27	19.09
Groundwater	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.42	16.79	0.00	0.00
Groundwater2	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.43	10.75	0.00	0.00
Groundwater3	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.27	1.02	0.00	0.00
Pond16A-1	BASE	100Yr-24Hr	13.12	5.93	6.00	-0.0042	191392	12.27	244.99	13.16	116.99
Pond16A-2A	BASE	100Yr-24Hr	13.00	7.25	7.00	-0.0028	145759	12.27	276.74	12.93	87.55
Pond16A-2B	BASE	100Yr-24Hr	12.94	7.32	9.70	0.0017	18143	12.28	162.17	12.31	160.06
Pond16A-3	BASE	100Yr-24Hr	13.04	7.27	5.25	0.0026	24269	12.27	19.84	13.71	6.31
Pond16A-4	BASE	100Yr-24Hr	13.03	7.27	5.25	0.0027	24915	12.27	22.88	13.62	6.64
S-16A-04	BASE	100Yr-24Hr	13.10	4.50	5.00	0.0049	194	13.16	116.99	13.16	117.00
SFNR	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	2585	12.30	162.29	0.00	0.00
Swale16A-1	BASE	100Yr-24Hr	12.81	7.87	9.50	0.0036	16414	12.27	31.38	12.49	10.80
Swale16A-3	BASE	100Yr-24Hr	12.32	7.69	8.50	0.0010	5979	12.27	11.70	12.32	11.06
CS16A-1_1	BASE	10Yr-24Hr	12.30	7.51	9.88	0.0084	121	12.27	48.35	12.30	48.48
CS16A-1_2	BASE	10Yr-24Hr	12.29	7.24	9.88	-0.0100	516	12.30	48.48	12.28	48.20
Ditch16A-2	BASE	10Yr-24Hr	12.74	6.72	7.00	0.0050	26681	12.28	9.60	13.14	6.52
ExStruct16A-1	BASE	10Yr-24Hr	13.76	0.91	6.00	0.0019	3983	13.74	48.27	13.76	48.27
ExStruct16A-2	BASE	10Yr-24Hr	13.48	5.03	8.50	-0.0100	152	12.42	75.54	12.44	76.06
ExStruct16A-3	BASE	10Yr-24Hr	13.00	5.23	8.50	-0.0100	123	12.15	19.55	12.15	19.36
ExStruct16A-4	BASE	10Yr-24Hr	12.30	6.92	16.16	-0.0099	537	12.28	86.73	12.28	86.45
ExStruct16A-5	BASE	10Yr-24Hr	12.30	7.19	13.88	0.0098	455	12.28	38.66	12.30	38.60
ExStruct16A-6	BASE	10Yr-24Hr	12.31	7.44	14.87	0.0083	454	12.35	26.40	12.35	26.68
ExStruct16A-7	BASE	10Yr-24Hr	12.32	7.55	8.50	-0.0098	3230	12.23	14.34	12.38	15.47
ExStruct16A-8	BASE	10Yr-24Hr	12.31	7.74	7.80	0.0060	818	12.88	9.99	12.84	10.43
FD16A-1	BASE	10Yr-24Hr	12.38	7.27	7.95	-0.0091	13960	12.27	13.10	12.52	17.61
FD16A-2	BASE	10Yr-24Hr	12.32	7.60	8.50	0.0099	3912	12.27	15.38	12.23	14.92
FD16A-3	BASE	10Yr-24Hr	12.27	9.82	13.20	0.0027	261	12.27	11.57	12.27	11.56
Groundwater	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.38	12.74	0.00	0.00
Groundwater2	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.32	7.85	0.00	0.00
Groundwater3	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.27	0.83	0.00	0.00
Pond16A-1	BASE	10Yr-24Hr	13.74	4.91	6.00	-0.0081	176325	12.28	168.71	13.74	47.36
Pond16A-2A	BASE	10Yr-24Hr	13.08	5.19	7.00	0.0048	122227	12.28	186.34	12.43	74.37
Pond16A-2B	BASE	10Yr-24Hr	12.32	6.38	9.70	0.0038	16848	12.28	112.40	12.32	110.04
Pond16A-3	BASE	10Yr-24Hr	13.10	5.20	5.25	0.0047	19905	12.27	11.35	13.24	2.21
Pond16A-4	BASE	10Yr-24Hr	13.09	5.20	5.25	0.0051	17706	12.27	13.94	13.18	2.49
S-16A-04	BASE	10Yr-24Hr	13.76	1.09	5.00	-0.0035	1511	13.74	47.36	13.75	47.36
SFNR	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	2585	12.30	90.22	0.00	0.00

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Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Swale16A-1	BASE	10Yr-24Hr	12.90	5.30	9.50	0.0086	7556	12.27	16.02	12.14	11.29
Swale16A-3	BASE	10Yr-24Hr	12.30	7.52	8.50	0.0015	5125	12.27	6.50	12.30	6.35
CS16A-1_1	BASE	25Yr-72Hr	60.04	8.10	9.88	-0.0050	121	60.02	57.40	60.02	57.34
CS16A-1_2	BASE	25Yr-72Hr	60.05	7.81	9.88	0.0046	516	60.02	57.34	60.03	57.14
Ditch16A-2	BASE	25Yr-72Hr	60.68	7.80	7.00	0.0020	39827	60.02	17.48	62.42	6.89
ExStruct16A-1	BASE	25Yr-72Hr	60.70	2.97	6.00	0.0037	941	60.69	111.68	60.70	111.67
ExStruct16A-2	BASE	25Yr-72Hr	60.69	6.30	8.50	0.0047	152	60.61	79.89	60.61	79.88
ExStruct16A-3	BASE	25Yr-72Hr	60.58	7.06	8.50	-0.0050	233	60.03	20.74	60.03	20.58
ExStruct16A-4	BASE	25Yr-72Hr	60.06	7.36	16.16	0.0050	537	60.04	100.25	60.04	100.14
ExStruct16A-5	BASE	25Yr-72Hr	60.06	7.70	13.88	0.0048	455	60.08	43.56	60.10	43.76
ExStruct16A-6	BASE	25Yr-72Hr	60.07	8.00	14.87	0.0033	454	60.15	30.69	60.15	30.90
ExStruct16A-7	BASE	25Yr-72Hr	60.12	8.14	8.50	0.0048	10099	59.82	17.29	60.22	19.82
ExStruct16A-8	BASE	25Yr-72Hr	60.08	8.53	7.80	0.0045	1547	60.02	12.02	60.05	10.96
FD16A-1	BASE	25Yr-72Hr	60.15	7.77	7.95	0.0050	16329	60.02	16.74	60.26	16.82
FD16A-2	BASE	25Yr-72Hr	60.13	8.20	8.50	-0.0047	11927	60.02	21.19	60.23	17.76
FD16A-3	BASE	25Yr-72Hr	60.02	9.99	13.20	0.0019	261	60.02	15.03	60.02	15.03
Groundwater	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	0	60.15	14.48	0.00	0.00
Groundwater2	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	0	60.13	9.32	0.00	0.00
Groundwater3	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	0	60.02	0.92	0.00	0.00
Pond16A-1	BASE	25Yr-72Hr	60.73	5.76	6.00	-0.0042	188812	60.03	204.71	60.76	109.48
Pond16A-2A	BASE	25Yr-72Hr	60.67	6.85	7.00	-0.0028	141188	60.03	225.99	60.63	79.32
Pond16A-2B	BASE	25Yr-72Hr	60.62	6.92	9.70	0.0025	17376	60.03	134.64	60.06	132.23
Pond16A-3	BASE	25Yr-72Hr	60.71	6.87	5.25	0.0026	23423	60.02	15.98	61.38	5.96
Pond16A-4	BASE	25Yr-72Hr	60.70	6.87	5.25	0.0026	23517	60.02	17.97	61.31	6.12
S-16A-04	BASE	25Yr-72Hr	60.71	3.99	5.00	0.0048	194	60.76	109.48	60.76	109.49
SFNR	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	2585	60.28	144.28	0.00	0.00
Swale16A-1	BASE	25Yr-72Hr	60.53	7.42	9.50	0.0031	14868	60.02	26.46	60.21	10.41
Swale16A-3	BASE	25Yr-72Hr	60.05	7.61	8.50	0.0005	5576	60.02	9.53	60.05	9.37

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Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS16A-2	BASE	100Yr-24Hr	11.98	9.55	3.481	12.43	8.78	12.41	8.73
CS16A-3	BASE	100Yr-24Hr	12.27	18.07	0.025	12.27	10.16	13.00	7.25
CS16A1-1	BASE	100Yr-24Hr	12.27	73.88	-1.953	12.28	9.15	12.28	8.69
ExDS16A-1	BASE	100Yr-24Hr	15.45	7.13	0.073	13.07	8.14	12.33	9.34
ExDS16A-2	BASE	100Yr-24Hr	12.32	11.06	-0.013	12.32	7.69	12.94	7.32
ExPipe16A-10	BASE	100Yr-24Hr	12.61	21.47	5.612	12.41	8.73	12.33	8.61
ExPipe16A-11	BASE	100Yr-24Hr	12.30	14.03	1.132	12.33	9.34	12.41	8.73
ExPipe16A-12	BASE	100Yr-24Hr	12.27	73.61	11.523	12.28	8.69	12.30	7.93
ExPipe16A-13	BASE	100Yr-24Hr	12.60	3.85	1.228	12.42	8.42	12.28	9.15
ExPipe16A-1A	BASE	100Yr-24Hr	13.07	119.19	1.055	13.07	3.32	0.00	0.42
ExPipe16A-1B	BASE	100Yr-24Hr	13.16	117.00	-6.638	13.10	4.50	13.07	3.32
ExPipe16A-2A	BASE	100Yr-24Hr	12.93	87.55	3.117	13.00	7.25	13.03	6.58
ExPipe16A-2B	BASE	100Yr-24Hr	12.91	88.14	-4.505	13.03	6.58	13.12	5.93
ExPipe16A-3	BASE	100Yr-24Hr	13.71	6.31	-0.910	13.04	7.27	13.00	7.25
ExPipe16A-4	BASE	100Yr-24Hr	13.62	6.64	-5.504	13.03	7.27	13.00	7.25
ExPipe16A-5	BASE	100Yr-24Hr	12.49	10.80	1.621	12.81	7.87	12.88	7.47
ExPipe16A-6	BASE	100Yr-24Hr	12.27	23.73	2.817	12.88	7.47	13.00	7.25
ExPipe16A-7	BASE	100Yr-24Hr	12.29	119.18	15.691	12.30	7.93	12.94	7.32
ExPipe16A-8	BASE	100Yr-24Hr	12.38	48.22	13.283	12.31	8.32	12.30	7.93
ExPipe16A-9	BASE	100Yr-24Hr	12.43	33.40	5.387	12.33	8.61	12.31	8.32
ExWeir16A-1	BASE	100Yr-24Hr	12.31	160.06	-0.166	12.94	7.32	13.00	7.25
FD16A-1	BASE	100Yr-24Hr	12.42	16.79	0.018	12.42	8.42	0.00	0.42
FD16A-2	BASE	100Yr-24Hr	12.43	10.75	0.009	12.43	8.78	0.00	0.42
FD16A-3	BASE	100Yr-24Hr	12.27	1.02	0.001	12.27	10.16	0.00	0.42
PrCS16A-1	BASE	100Yr-24Hr	13.16	116.99	0.818	13.12	5.93	13.10	4.50
CS16A-2	BASE	10Yr-24Hr	12.00	8.43	3.731	12.32	7.60	12.32	7.55
CS16A-3	BASE	10Yr-24Hr	12.27	10.73	-0.026	12.27	9.82	13.08	5.19
CS16A1-1	BASE	10Yr-24Hr	12.30	48.48	1.169	12.30	7.51	12.29	7.24
ExDS16A-1	BASE	10Yr-24Hr	13.14	6.52	-0.051	12.74	6.72	12.31	7.74
ExDS16A-2	BASE	10Yr-24Hr	12.30	6.35	0.011	12.30	7.52	12.32	6.38
ExPipe16A-10	BASE	10Yr-24Hr	12.38	15.47	7.372	12.32	7.55	12.31	7.44
ExPipe16A-11	BASE	10Yr-24Hr	12.84	10.43	2.673	12.31	7.74	12.32	7.55
ExPipe16A-12	BASE	10Yr-24Hr	12.28	48.20	16.246	12.29	7.24	12.30	6.92
ExPipe16A-13	BASE	10Yr-24Hr	12.58	6.10	-0.740	12.38	7.27	12.30	7.51
ExPipe16A-1A	BASE	10Yr-24Hr	13.76	48.27	4.045	13.76	0.91	0.00	0.42
ExPipe16A-1B	BASE	10Yr-24Hr	13.75	47.36	-6.791	13.76	1.09	13.76	0.91
ExPipe16A-2A	BASE	10Yr-24Hr	12.43	74.37	11.085	13.08	5.19	13.48	5.03
ExPipe16A-2B	BASE	10Yr-24Hr	12.44	76.06	6.159	13.48	5.03	13.74	4.91
ExPipe16A-3	BASE	10Yr-24Hr	13.24	2.21	-0.910	13.10	5.20	13.08	5.19
ExPipe16A-4	BASE	10Yr-24Hr	13.18	2.49	-5.504	13.09	5.20	13.08	5.19
ExPipe16A-5	BASE	10Yr-24Hr	12.14	11.29	2.201	12.90	5.30	13.00	5.23
ExPipe16A-6	BASE	10Yr-24Hr	12.15	19.36	3.966	13.00	5.23	13.08	5.19
ExPipe16A-7	BASE	10Yr-24Hr	12.28	86.45	24.394	12.30	6.92	12.32	6.38
ExPipe16A-8	BASE	10Yr-24Hr	12.30	38.60	19.389	12.30	7.19	12.30	6.92
ExPipe16A-9	BASE	10Yr-24Hr	12.35	26.68	7.071	12.31	7.44	12.30	7.19
ExWeir16A-1	BASE	10Yr-24Hr	12.32	110.04	0.198	12.32	6.38	13.08	5.19
FD16A-1	BASE	10Yr-24Hr	12.38	12.74	-0.032	12.38	7.27	0.00	0.42
FD16A-2	BASE	10Yr-24Hr	12.32	7.85	0.024	12.32	7.60	0.00	0.42
FD16A-3	BASE	10Yr-24Hr	12.27	0.83	0.001	12.27	9.82	0.00	0.42
PrCS16A-1	BASE	10Yr-24Hr	13.74	47.36	0.818	13.74	4.91	13.76	1.09

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS16A-2	BASE	25Yr-72Hr	59.69	10.09	3.288	60.13	8.20	60.12	8.14
CS16A-3	BASE	25Yr-72Hr	60.02	14.10	0.026	60.02	9.99	60.67	6.85
CS16A1-1	BASE	25Yr-72Hr	60.02	57.34	-1.443	60.04	8.10	60.05	7.81
ExDS16A-1	BASE	25Yr-72Hr	62.42	6.89	-0.103	60.68	7.80	60.08	8.53
ExDS16A-2	BASE	25Yr-72Hr	60.05	9.37	-0.012	60.05	7.61	60.62	6.92
ExPipe16A-10	BASE	25Yr-72Hr	60.22	19.82	4.013	60.12	8.14	60.07	8.00
ExPipe16A-11	BASE	25Yr-72Hr	60.05	10.96	1.050	60.08	8.53	60.12	8.14
ExPipe16A-12	BASE	25Yr-72Hr	60.03	57.14	10.102	60.05	7.81	60.06	7.36
ExPipe16A-13	BASE	25Yr-72Hr	60.27	2.79	1.207	60.15	7.77	60.04	8.10
ExPipe16A-1A	BASE	25Yr-72Hr	60.70	111.67	-0.806	60.70	2.97	0.00	0.42
ExPipe16A-1B	BASE	25Yr-72Hr	60.76	109.49	2.676	60.71	3.99	60.70	2.97
ExPipe16A-2A	BASE	25Yr-72Hr	60.63	79.32	7.349	60.67	6.85	60.69	6.30
ExPipe16A-2B	BASE	25Yr-72Hr	60.61	79.88	8.247	60.69	6.30	60.73	5.76
ExPipe16A-3	BASE	25Yr-72Hr	61.38	5.96	-0.910	60.71	6.87	60.67	6.85
ExPipe16A-4	BASE	25Yr-72Hr	61.31	6.12	-5.504	60.70	6.87	60.67	6.85
ExPipe16A-5	BASE	25Yr-72Hr	60.21	10.41	1.791	60.53	7.42	60.58	7.06
ExPipe16A-6	BASE	25Yr-72Hr	60.03	20.58	3.390	60.58	7.06	60.67	6.85
ExPipe16A-7	BASE	25Yr-72Hr	60.04	100.14	14.479	60.06	7.36	60.62	6.92
ExPipe16A-8	BASE	25Yr-72Hr	60.10	43.76	13.743	60.06	7.70	60.06	7.36
ExPipe16A-9	BASE	25Yr-72Hr	60.15	30.90	3.965	60.07	8.00	60.06	7.70
ExWeir16A-1	BASE	25Yr-72Hr	60.06	132.23	-0.164	60.62	6.92	60.67	6.85
FD16A-1	BASE	25Yr-72Hr	60.15	14.48	0.018	60.15	7.77	0.00	0.42
FD16A-2	BASE	25Yr-72Hr	60.13	9.32	-0.012	60.13	8.20	0.00	0.42
FD16A-3	BASE	25Yr-72Hr	60.02	0.92	0.001	60.02	9.99	0.00	0.42
PrCS16A-1	BASE	25Yr-72Hr	60.76	109.48	0.818	60.73	5.76	60.71	3.99

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100Yr-24Hr	B16A-1	BASE	12.27	104.61	12.818	605336
100Yr-24Hr	B16A-10	BASE	12.27	20.88	13.495	126390
100Yr-24Hr	B16A-11	BASE	12.27	26.48	10.252	137699
100Yr-24Hr	B16A-12	BASE	12.27	20.17	7.211	99733
100Yr-24Hr	B16A-13	BASE	12.27	11.70	9.445	59657
100Yr-24Hr	B16A-14	BASE	12.27	21.37	11.395	115403
100Yr-24Hr	B16A-15	BASE	12.27	20.39	12.278	114544
100Yr-24Hr	B16A-16	BASE	12.27	26.72	12.703	153558
100Yr-24Hr	B16A-17	BASE	12.27	88.82	13.327	531164
100Yr-24Hr	B16A-2	BASE	12.27	13.59	13.495	82301
100Yr-24Hr	B16A-3	BASE	12.27	123.90	10.476	648403
100Yr-24Hr	B16A-3 Offs	BASE	12.27	53.53	8.873	269910
100Yr-24Hr	B16A-4	BASE	12.27	2.67	13.495	16166
100Yr-24Hr	B16A-5A1	BASE	12.27	97.15	10.639	510961
100Yr-24Hr	B16A-5A2	BASE	12.27	19.10	11.114	102073
100Yr-24Hr	B16A-5B	BASE	12.27	28.79	11.178	154188
100Yr-24Hr	B16A-5C	BASE	12.27	3.54	12.849	20522
100Yr-24Hr	B16A-6	BASE	12.27	17.02	10.241	88474
100Yr-24Hr	B16A-6 Offs	BASE	12.27	2.82	8.462	14130
100Yr-24Hr	B16A-7	BASE	12.27	22.89	11.248	122901
100Yr-24Hr	B16A-8	BASE	12.27	11.01	7.432	54496
100Yr-24Hr	B16A-8 Offs1	BASE	12.27	5.84	9.697	29920
100Yr-24Hr	B16A-8 Offs2	BASE	12.27	14.54	8.083	72473
100Yr-24Hr	B16A-9	BASE	12.27	14.60	11.578	79432
10Yr-24Hr	B16A-1	BASE	12.27	67.27	8.082	381683
10Yr-24Hr	B16A-10	BASE	12.27	13.53	8.747	81920
10Yr-24Hr	B16A-11	BASE	12.27	15.38	5.778	77610
10Yr-24Hr	B16A-12	BASE	12.29	9.61	3.442	47598
10Yr-24Hr	B16A-13	BASE	12.27	6.50	5.118	32329
10Yr-24Hr	B16A-14	BASE	12.27	13.11	6.764	68505
10Yr-24Hr	B16A-15	BASE	12.27	12.93	7.570	70622
10Yr-24Hr	B16A-16	BASE	12.27	17.14	7.972	96368
10Yr-24Hr	B16A-17	BASE	12.27	57.53	8.579	341937
10Yr-24Hr	B16A-2	BASE	12.27	8.81	8.747	53343
10Yr-24Hr	B16A-3	BASE	12.27	72.79	5.967	369304
10Yr-24Hr	B16A-3 Offs	BASE	12.27	28.73	4.668	142010
10Yr-24Hr	B16A-4	BASE	12.27	1.73	8.747	10478
10Yr-24Hr	B16A-5A1	BASE	12.27	57.55	6.106	293220
10Yr-24Hr	B16A-5A2	BASE	12.27	11.57	6.516	59846
10Yr-24Hr	B16A-5B	BASE	12.27	17.49	6.572	90658
10Yr-24Hr	B16A-5C	BASE	12.27	2.28	8.112	12957
10Yr-24Hr	B16A-6	BASE	12.27	9.88	5.769	49838
10Yr-24Hr	B16A-6 Offs	BASE	12.27	1.47	4.354	7270
10Yr-24Hr	B16A-7	BASE	12.27	13.95	6.634	72488
10Yr-24Hr	B16A-8	BASE	12.27	5.33	3.598	26381
10Yr-24Hr	B16A-8 Offs1	BASE	12.27	3.29	5.321	16419
10Yr-24Hr	B16A-8 Offs2	BASE	12.27	7.40	4.070	36496
10Yr-24Hr	B16A-9	BASE	12.27	9.02	6.928	47531
25Yr-72Hr	B16A-1	BASE	60.02	80.58	13.317	628894
25Yr-72Hr	B16A-10	BASE	60.02	16.04	13.995	131070
25Yr-72Hr	B16A-11	BASE	60.02	21.20	10.732	144145

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
25Yr-72Hr	B16A-12	BASE	60.02	17.50	7.635	105588
25Yr-72Hr	B16A-13	BASE	60.02	9.54	9.914	62617
25Yr-72Hr	B16A-14	BASE	60.02	16.75	11.886	120380
25Yr-72Hr	B16A-15	BASE	60.02	15.79	12.775	119180
25Yr-72Hr	B16A-16	BASE	60.02	20.60	13.202	159584
25Yr-72Hr	B16A-17	BASE	60.02	68.25	13.826	551078
25Yr-72Hr	B16A-2	BASE	60.02	10.45	13.995	85348
25Yr-72Hr	B16A-3	BASE	60.02	98.74	10.959	678271
25Yr-72Hr	B16A-3 Offs	BASE	60.02	44.26	9.332	283875
25Yr-72Hr	B16A-4	BASE	60.02	2.05	13.995	16765
25Yr-72Hr	B16A-5A1	BASE	60.02	77.17	11.124	534224
25Yr-72Hr	B16A-5A2	BASE	60.02	15.04	11.603	106564
25Yr-72Hr	B16A-5B	BASE	60.02	22.64	11.668	160943
25Yr-72Hr	B16A-5C	BASE	60.02	2.73	13.348	21319
25Yr-72Hr	B16A-6	BASE	60.02	13.63	10.720	92619
25Yr-72Hr	B16A-6 Offs	BASE	60.02	2.36	8.913	14883
25Yr-72Hr	B16A-7	BASE	60.02	17.98	11.738	128258
25Yr-72Hr	B16A-8	BASE	60.02	9.48	7.861	57640
25Yr-72Hr	B16A-8 Offs1	BASE	60.02	4.73	10.170	31378
25Yr-72Hr	B16A-8 Offs2	BASE	60.02	12.28	8.527	76450
25Yr-72Hr	B16A-9	BASE	60.02	11.41	12.071	82813

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.790	Time Shift(hrs): 0.00
Curve Number: 83.58	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-15	Node: ExStruct16A-5	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.570	Time Shift(hrs): 0.00
Curve Number: 90.23	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-16	Node: ExStruct16A-8	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 3.330	Time Shift(hrs): 0.00
Curve Number: 93.56	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-17	Node: CS16A-1_1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 10.980	Time Shift(hrs): 0.00
Curve Number: 98.60	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-2	Node: ExStruct16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.680	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-3	Node: Pond16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 17.050	Time Shift(hrs): 0.00
Curve Number: 77.02	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: B16A-3 Offs Node: Pond16A-1 Status: Offsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 8.380 Time Shift(hrs): 0.00
Curve Number: 66.33 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-4 Node: ExStruct16A-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.330 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5A1 Node: Pond16A-2A Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 13.230 Time Shift(hrs): 0.00
Curve Number: 78.16 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5A2 Node: FD16A-3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.530 Time Shift(hrs): 0.00
Curve Number: 81.54 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5B Node: Pond16A-2B Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.800 Time Shift(hrs): 0.00
Curve Number: 82.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5C Node: Pond16A-2B Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.440 Time Shift(hrs): 0.00
Curve Number: 94.72 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.470	Time Shift(hrs): 0.00
Curve Number: 61.38	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-9	Node: ExStruct16A-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.890	Time Shift(hrs): 0.00	
Curve Number: 84.93	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

=====
=== Nodes =====
=====

Name: CS16A-1_1	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 9.880
Type: Stage/Area		

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Stage(ft)	Area(ac)
-1.080	0.0005
9.880	0.0005

Name: CS16A-1_2	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 9.880
Type: Stage/Area		

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Stage(ft)	Area(ac)
-1.080	0.0100
9.880	0.0100

Name: Ditch16A-2	Base Flow(cfs): 0.000	Init Stage(ft): 3.000
Group: BASE		Warn Stage(ft): 7.000
Type: Stage/Area		

Stage(ft)	Area(ac)
3.000	0.0050
4.000	0.0710
5.000	0.2170
6.000	0.4130
7.000	0.6910

Name: ExStruct16A-1	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 6.000
Type: Stage/Area		

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Stage(ft)	Area(ac)
-4.000	0.0006
6.000	0.0006

Name: ExStruct16A-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 8.500
 Type: Stage/Area

Structure Rim = 8.92

Stage(ft)	Area(ac)
-1.000	0.0003
8.000	0.0022
8.500	0.0250
9.000	0.0674
9.500	0.1446

Name: ExStruct16A-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 8.500
 Type: Stage/Area

Warning Stage = Adjacent EOP

Stage(ft)	Area(ac)
0.000	0.0004
6.990	0.0004
7.000	0.0042
7.500	0.0119
8.000	0.0267
8.500	0.0722

Name: ExStruct16A-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 16.160
 Type: Stage/Area

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
0.000	0.0100
16.160	0.0100

Name: ExStruct16A-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 13.880
 Type: Stage/Area

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
0.000	0.0100
13.880	0.0100

Name: ExStruct16A-6 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 14.870
 Type: Stage/Area

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

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 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Stage(ft)	Area(ac)
0.000	0.0100
14.870	0.0100

Name: ExStruct16A-7 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 8.500
 Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0040
7.000	0.0040
7.500	0.0617
8.000	0.1805
8.500	0.3654

Name: ExStruct16A-8 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.800
 Type: Stage/Area

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
0.000	0.0100
7.330	0.0100
7.800	0.0200

Name: FD16A-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.950
 Type: Stage/Area

Swale 16A-4 included in stage-area.
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-9.000	0.0259
4.300	0.0259
4.310	0.0060
6.000	0.0060
6.010	0.1808
7.950	0.3949

Name: FD16A-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 8.500
 Type: Stage/Area

Swale 16A-2 included in stage-area.
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-7.500	0.0267
5.000	0.0267
5.010	0.0060
7.500	0.0060
7.510	0.0617
8.500	0.3660

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-11	From Node: ExStruct16A-8	Length(ft): 70.00
Group: BASE	To Node: ExStruct16A-7	Count: 1
	Friction Equation: Automatic	
	Solution Algorithm: Most Restrictive	
	Flow: Both	
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 24.00	24.00	Bend Loss Coef: 0.00
Rise(in): 24.00	24.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 2.920	2.720	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-12	From Node: CS16A-1_2	Length(ft): 646.00
Group: BASE	To Node: ExStruct16A-4	Count: 1
	Friction Equation: Automatic	
	Solution Algorithm: Most Restrictive	
	Flow: Both	
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 60.00	60.00	Bend Loss Coef: 0.00
Rise(in): 60.00	60.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 0.920	0.320	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-13	From Node: FD16A-1	Length(ft): 152.00
Group: BASE	To Node: CS16A-1_1	Count: 1
	Friction Equation: Automatic	
	Solution Algorithm: Most Restrictive	
	Flow: Both	
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 24.00	24.00	Bend Loss Coef: 0.00
Rise(in): 24.00	24.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 0.920	0.320	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-1A	From Node: ExStruct16A-1	Length(ft): 977.00
Group: BASE	To Node: SFNR	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 66.00	66.00	Exit Loss Coef: 1.00
Rise(in): 66.00	66.00	Bend Loss Coef: 0.00
Invert(ft): -3.080	-3.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-1B	From Node: S-16A-04	Length(ft): 588.00
Group: BASE	To Node: ExStruct16A-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 66.00	66.00	Exit Loss Coef: 0.00
Rise(in): 66.00	66.00	Bend Loss Coef: 0.00
Invert(ft): -3.080	-3.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-2A	From Node: Pond16A-2A	Length(ft): 118.00
Group: BASE	To Node: ExStruct16A-2	Count: 2
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 42.00	42.00	Exit Loss Coef: 0.00
Rise(in): 42.00	42.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.770	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-2B	From Node: ExStruct16A-2	Length(ft): 107.00
Group: BASE	To Node: Pond16A-1	Count: 2
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 42.00	42.00	Exit Loss Coef: 0.00
Rise(in): 42.00	42.00	Bend Loss Coef: 0.00
Invert(ft): 0.770	0.620	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-3	From Node: Pond16A-3	Length(ft): 527.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.920	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-4	From Node: Pond16A-4	Length(ft): 277.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-5	From Node: Swale16A-1	Length(ft): 106.00
Group: BASE	To Node: ExStruct16A-3	Count: 1
	Friction Equation: Automatic	
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 24.00	24.00	Entrance Loss Coef: 0.50
Rise(in): 24.00	24.00	Exit Loss Coef: 0.00
Invert(ft): 1.420	1.020	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-6	From Node: ExStruct16A-3	Length(ft): 78.00
Group: BASE	To Node: Pond16A-2A	Count: 1
	Friction Equation: Automatic	
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 30.00	30.00	Entrance Loss Coef: 0.50
Rise(in): 30.00	30.00	Exit Loss Coef: 0.00
Invert(ft): 1.020	0.920	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-7	From Node: ExStruct16A-4	Length(ft): 102.00
Group: BASE	To Node: Pond16A-2B	Count: 1
	Friction Equation: Automatic	
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 60.00	60.00	Entrance Loss Coef: 0.50
Rise(in): 60.00	60.00	Exit Loss Coef: 0.00
Invert(ft): 0.320	0.120	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-8	From Node: ExStruct16A-5	Length(ft): 78.00
Group: BASE	To Node: ExStruct16A-4	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 48.00	48.00	Exit Loss Coef: 0.00
Rise(in): 48.00	48.00	Bend Loss Coef: 0.00
Invert(ft): 1.720	1.320	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-9	From Node: ExStruct16A-6	Length(ft): 136.00
Group: BASE	To Node: ExStruct16A-5	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 42.00	42.00	Exit Loss Coef: 0.00
Rise(in): 42.00	42.00	Bend Loss Coef: 0.00
Invert(ft): 2.520	2.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

==== Drop Structures =====

Name: CS16A-3	From Node: FD16A-3	Length(ft): 275.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	
Span(in): 24.00	24.00	

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INPUT REPORT

Rise(in): 24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft): 1.420	1.420	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 1 for Drop Structure CS16A-3 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 54.00	Invert(ft): 9.000
Rise(in): 16.00	Control Elev(ft): 9.000

Name: ExDS16A-1	From Node: Ditch16A-2	Length(ft): 12.00
Group: BASE	To Node: ExStruct16A-8	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 15.00	15.00	Flow: Both
Rise(in): 15.00	15.00	Entrance Loss Coef: 0.500
Invert(ft): 3.020	2.920	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 1 for Drop Structure ExDS16A-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 27.00	Invert(ft): 5.420
Rise(in): 36.00	Control Elev(ft): 5.420

Name: ExDS16A-2	From Node: Swale16A-3	Length(ft): 88.00
Group: BASE	To Node: Pond16A-2B	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft): 3.420	2.420	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 1 for Drop Structure ExDS16A-2 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 25.00	Invert(ft): 7.220
Rise(in): 46.00	Control Elev(ft): 7.220

Name: PrCS16A-1	From Node: Pond16A-1	Length(ft): 12.00
Group: BASE	To Node: S-16A-04	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 66.00	66.00	Flow: Both
Rise(in): 66.00	66.00	Entrance Loss Coef: 0.500
Invert(ft): -5.650	-6.000	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 3 for Drop Structure PrCS16A-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 105.00	Invert(ft): 4.800
Rise(in): 36.00	Control Elev(ft): 4.800

*** Weir 2 of 3 for Drop Structure PrCS16A-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Circular	Orifice Disc Coef: 0.600
Span(in): 6.00	Invert(ft): 0.420
Rise(in): 6.00	Control Elev(ft): 0.420

*** Weir 3 of 3 for Drop Structure PrCS16A-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 84.00	Invert(ft): 2.800
Rise(in): 12.00	Control Elev(ft): 2.800

=====
 Weirs =====
 =====

Name: CS16A-2 From Node: FD16A-2
 Group: BASE To Node: ExStruct16A-7
 Flow: Both Count: 1
 Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
 Rise(in): 16.00
 Invert(ft): 5.000
 Control Elevation(ft): 5.000

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: CS16A1-1 From Node: CS16A-1_1
 Group: BASE To Node: CS16A-1_2
 Flow: Both Count: 1
 Type: Vertical: Mavis Geometry: Rectangular

Span(in): 84.00
 Rise(in): 53.00
 Invert(ft): 4.300
 Control Elevation(ft): 4.300

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExWeir16A-1 From Node: Pond16A-2B
 Group: BASE To Node: Pond16A-2A
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 5.00
 Left Side Slope(h/v): 2.00
 Right Side Slope(h/v): 2.00
 Invert(ft): 3.920
 Control Elevation(ft): 3.920
 Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

=====
 Rating Curves =====
 =====

Name: FD16A-1 From Node: FD16A-1 Count: 1
 Group: BASE To Node: Groundwater Flow: Both

TABLE ELEV ON(ft) ELEV OFF(ft)

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 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

#1: FD16A-1	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

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 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: FD16A-2 From Node: FD16A-2 Count: 1
 Group: BASE To Node: Groundwater2 Flow: Both

	TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1:	FD16A-2	0.000	0.000
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: FD16A-3 From Node: FD16A-3 Count: 1
 Group: BASE To Node: Groundwater3 Flow: Both

	TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1:	FD16A-3	0.000	0.000
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

=====
 Hydrology Simulations =====
 =====

Name: 100Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16A\100Yr-24Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16A\10Yr-24Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00

24.330 5.00

Name: 25Yr-72Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16A\25Yr-72Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

==== Routing Simulations =====

Name: 100Yr-24Hr Hydrology Sim: 100Yr-24Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16A\100Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 48.00
Min Calc Time(sec): 0.0500	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 10Yr-24Hr Hydrology Sim: 10Yr-24Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16A\10Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.01000
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 48.00
Min Calc Time(sec): 0.0500	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run

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DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

BASE Yes

Name: 25Yr-72Hr Hydrology Sim: 25Yr-72Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16A\25Yr-72Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.0500 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
-----	-----
BASE	Yes

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 NODE LINK DIAGRAM

Nodes

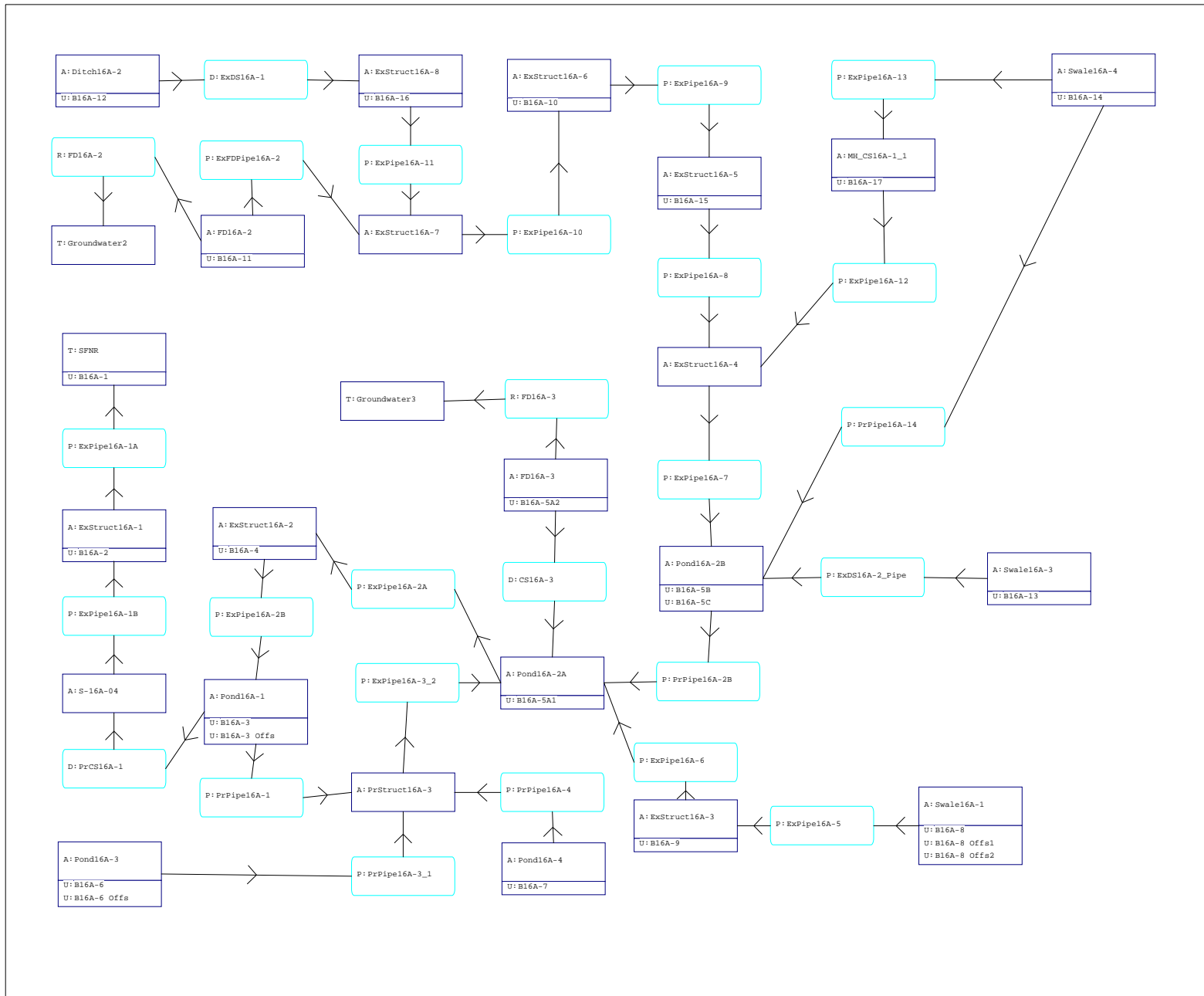
A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole

Basins

O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA

Links

P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



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DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Ditch16A-2	BASE	100Yr-24Hr	13.16	8.16	9.00	0.0018	44161	12.27	20.17	15.50	7.44
ExStruct16A-1	BASE	100Yr-24Hr	13.46	2.84	6.00	0.0020	941	13.44	108.70	13.46	108.70
ExStruct16A-2	BASE	100Yr-24Hr	13.16	6.50	8.50	0.0043	152	12.61	84.07	12.61	83.99
ExStruct16A-3	BASE	100Yr-24Hr	12.84	7.24	8.50	-0.0035	353	12.27	25.02	12.27	24.82
ExStruct16A-4	BASE	100Yr-24Hr	12.37	8.52	16.16	-0.0050	537	12.22	106.86	12.22	105.90
ExStruct16A-5	BASE	100Yr-24Hr	12.38	8.74	13.88	0.0043	455	11.98	47.64	11.98	44.95
ExStruct16A-6	BASE	100Yr-24Hr	12.41	8.89	14.87	0.0035	454	11.97	35.63	11.97	33.47
ExStruct16A-7	BASE	100Yr-24Hr	12.46	8.93	8.50	0.0044	22856	11.97	21.85	11.97	21.02
ExStruct16A-8	BASE	100Yr-24Hr	12.35	9.37	7.80	0.0035	2331	12.25	15.96	12.29	13.19
FD16A-2	BASE	100Yr-24Hr	12.54	8.98	9.00	0.0048	23663	12.27	26.48	12.00	16.99
FD16A-3	BASE	100Yr-24Hr	12.30	8.41	15.00	0.0031	196	12.27	19.10	12.27	18.71
Groundwater2	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.54	11.24	0.00	0.00
Groundwater3	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.30	0.35	0.00	0.00
MH_CS16A-1_1	BASE	100Yr-24Hr	12.31	9.13	9.88	-0.0050	201	12.27	72.17	12.27	71.87
Pond16A-1	BASE	100Yr-24Hr	13.52	6.16	6.25	0.0017	184302	12.27	249.24	14.17	79.65
Pond16A-2A	BASE	100Yr-24Hr	12.95	6.98	7.50	0.0028	118116	12.25	260.64	12.63	82.91
Pond16A-2B	BASE	100Yr-24Hr	12.48	7.98	9.70	0.0028	14905	12.18	172.41	12.26	147.82
Pond16A-3	BASE	100Yr-24Hr	13.46	6.31	6.50	0.0018	28577	12.27	19.84	16.90	6.67
Pond16A-4	BASE	100Yr-24Hr	13.46	6.31	6.50	0.0018	21598	12.27	22.88	12.05	6.66
PrStruct16A-3	BASE	100Yr-24Hr	13.45	6.30	8.75	0.0050	280	25.36	14.59	0.00	0.00
S-16A-04	BASE	100Yr-24Hr	13.49	3.74	5.00	-0.0036	194	13.56	107.15	13.57	107.15
SFNR	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	2585	12.27	204.71	0.00	0.00
Swale16A-1	BASE	100Yr-24Hr	12.78	7.69	9.50	0.0028	15807	12.27	31.38	12.45	11.67
Swale16A-3	BASE	100Yr-24Hr	12.53	8.13	10.00	0.0048	8587	12.27	11.70	12.04	8.16
Swale16A-4	BASE	100Yr-24Hr	12.45	8.25	8.50	0.0050	11249	12.27	22.58	12.03	16.98
Ditch16A-2	BASE	10Yr-24Hr	12.66	6.29	9.00	0.0028	21445	12.28	9.60	13.21	6.64
ExStruct16A-1	BASE	10Yr-24Hr	13.02	2.09	6.00	0.0047	2309	12.99	92.63	13.02	92.63
ExStruct16A-2	BASE	10Yr-24Hr	12.96	4.48	8.50	0.0059	152	12.47	83.10	12.48	82.94
ExStruct16A-3	BASE	10Yr-24Hr	12.65	4.85	8.50	-0.0083	123	12.15	19.58	12.14	19.40
ExStruct16A-4	BASE	10Yr-24Hr	12.34	6.03	16.16	0.0068	537	12.23	90.62	12.23	89.22
ExStruct16A-5	BASE	10Yr-24Hr	12.34	6.30	13.88	0.0089	455	12.21	44.58	12.21	43.27
ExStruct16A-6	BASE	10Yr-24Hr	12.33	6.57	14.87	0.0075	454	12.19	33.04	12.10	32.07
ExStruct16A-7	BASE	10Yr-24Hr	12.33	6.72	8.50	0.0081	210	12.11	20.68	12.10	20.46
ExStruct16A-8	BASE	10Yr-24Hr	12.33	6.95	7.80	0.0095	439	12.00	12.82	12.10	12.10
FD16A-2	BASE	10Yr-24Hr	12.32	7.30	9.00	0.0098	287	12.27	15.38	12.29	14.71
FD16A-3	BASE	10Yr-24Hr	12.32	5.06	15.00	0.0049	196	12.27	11.57	12.27	11.34
Groundwater2	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.32	7.11	0.00	0.00
Groundwater3	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.32	0.21	0.00	0.00
MH_CS16A-1_1	BASE	10Yr-24Hr	12.33	6.27	9.88	-0.0091	201	12.23	49.22	12.25	49.05
Pond16A-1	BASE	10Yr-24Hr	13.10	4.31	6.25	-0.0026	184302	12.30	171.21	13.93	74.05
Pond16A-2A	BASE	10Yr-24Hr	12.85	4.70	7.50	-0.0079	116864	12.28	191.18	12.48	82.07
Pond16A-2B	BASE	10Yr-24Hr	12.36	5.60	9.70	0.0061	11805	12.23	138.98	12.31	123.18
Pond16A-3	BASE	10Yr-24Hr	13.06	4.40	6.50	0.0021	21931	12.27	11.35	14.88	8.12
Pond16A-4	BASE	10Yr-24Hr	13.06	4.40	6.50	0.0021	14691	12.27	13.94	14.88	8.39
PrStruct16A-3	BASE	10Yr-24Hr	13.02	4.40	8.75	0.0100	280	11.55	14.75	24.09	3.03
S-16A-04	BASE	10Yr-24Hr	13.06	2.56	5.00	-0.0099	365	13.14	91.14	13.15	91.14
SFNR	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	2585	12.37	131.38	0.00	0.00
Swale16A-1	BASE	10Yr-24Hr	12.49	5.19	9.50	0.0086	7170	12.27	16.02	12.14	11.34
Swale16A-3	BASE	10Yr-24Hr	12.35	5.73	10.00	-0.0096	153	12.27	6.50	12.11	6.58
Swale16A-4	BASE	10Yr-24Hr	12.35	5.81	8.50	0.0084	194	12.27	14.20	12.25	13.94

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Ditch16A-2	BASE	25Yr-72Hr	60.64	7.71	9.00	0.0015	38701	60.02	17.48	61.77	7.70
ExStruct16A-1	BASE	25Yr-72Hr	61.01	2.61	6.00	-0.0023	941	61.00	103.54	61.01	103.53
ExStruct16A-2	BASE	25Yr-72Hr	60.74	5.82	8.50	-0.0047	152	59.92	76.55	59.92	76.41
ExStruct16A-3	BASE	25Yr-72Hr	60.54	6.49	8.50	0.0040	123	60.02	22.88	60.02	22.72
ExStruct16A-4	BASE	25Yr-72Hr	60.11	7.55	16.16	0.0050	537	60.00	94.16	60.00	93.33
ExStruct16A-5	BASE	25Yr-72Hr	60.10	7.81	13.88	0.0050	455	59.78	44.37	59.78	42.40
ExStruct16A-6	BASE	25Yr-72Hr	60.12	8.03	14.87	0.0031	454	59.78	33.48	59.78	31.91
ExStruct16A-7	BASE	25Yr-72Hr	60.14	8.12	8.50	0.0031	9769	59.76	21.51	59.75	20.94
ExStruct16A-8	BASE	25Yr-72Hr	60.09	8.42	7.80	0.0031	1454	59.66	14.93	59.69	12.91
FD16A-2	BASE	25Yr-72Hr	60.18	8.33	9.00	0.0049	13283	60.02	21.19	59.83	16.55
FD16A-3	BASE	25Yr-72Hr	60.07	6.92	15.00	0.0027	196	60.02	15.03	60.03	14.73
Groundwater2	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	0	60.18	9.65	0.00	0.00
Groundwater3	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	0	60.07	0.29	0.00	0.00
MH_CS16A-1_1	BASE	25Yr-72Hr	60.07	7.90	9.88	0.0050	201	60.02	55.03	60.02	54.74
Pond16A-1	BASE	25Yr-72Hr	61.05	5.51	6.25	0.0013	184302	59.95	212.14	61.66	76.15
Pond16A-2A	BASE	25Yr-72Hr	60.63	6.23	7.50	0.0050	117787	60.01	221.00	60.34	74.90
Pond16A-2B	BASE	25Yr-72Hr	60.17	7.08	9.70	-0.0031	13735	60.00	152.11	60.04	132.74
Pond16A-3	BASE	25Yr-72Hr	60.99	5.64	6.50	0.0015	26274	60.02	15.98	63.00	6.90
Pond16A-4	BASE	25Yr-72Hr	60.99	5.64	6.50	0.0015	19295	60.02	17.97	60.05	6.58
PrStruct16A-3	BASE	25Yr-72Hr	60.98	5.64	8.75	0.0050	280	53.87	14.87	72.42	2.44
S-16A-04	BASE	25Yr-72Hr	61.02	3.32	5.00	0.0035	194	61.13	102.10	61.13	102.11
SFNR	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	2585	60.03	177.74	0.00	0.00
Swale16A-1	BASE	25Yr-72Hr	60.44	6.96	9.50	0.0031	13262	60.02	26.46	60.17	12.10
Swale16A-3	BASE	25Yr-72Hr	60.18	7.25	10.00	0.0044	3769	60.02	9.53	59.87	7.93
Swale16A-4	BASE	25Yr-72Hr	60.15	7.30	8.50	0.0050	5954	60.02	17.53	59.86	15.08

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DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS16A-3	BASE	100Yr-24Hr	12.27	18.36	0.468	12.30	8.41	12.95	6.98
ExDS16A-1	BASE	100Yr-24Hr	15.50	7.44	-0.028	13.16	8.16	12.35	9.37
ExDS16A-2_Pipe	BASE	100Yr-24Hr	12.04	8.16	-1.585	12.53	8.13	12.48	7.98
ExFDPipe16A-2	BASE	100Yr-24Hr	11.97	10.02	-0.769	12.54	8.98	12.46	8.93
ExPipe16A-10	BASE	100Yr-24Hr	11.97	21.02	0.915	12.46	8.93	12.41	8.89
ExPipe16A-11	BASE	100Yr-24Hr	12.29	13.19	0.991	12.35	9.37	12.46	8.93
ExPipe16A-12	BASE	100Yr-24Hr	12.27	71.87	10.566	12.31	9.13	12.37	8.52
ExPipe16A-13	BASE	100Yr-24Hr	17.13	1.00	1.473	12.45	8.25	12.31	9.13
ExPipe16A-1A	BASE	100Yr-24Hr	13.46	108.70	2.721	13.46	2.84	0.00	0.42
ExPipe16A-1B	BASE	100Yr-24Hr	13.57	107.15	-6.704	13.49	3.74	13.46	2.84
ExPipe16A-2A	BASE	100Yr-24Hr	12.63	82.91	3.592	12.95	6.98	13.16	6.50
ExPipe16A-2B	BASE	100Yr-24Hr	12.61	83.99	2.688	13.16	6.50	13.52	6.16
ExPipe16A-3_2	BASE	100Yr-24Hr	0.00	0.00	1.002	13.45	6.30	12.95	6.98
ExPipe16A-5	BASE	100Yr-24Hr	12.45	11.67	-1.045	12.78	7.69	12.84	7.24
ExPipe16A-6	BASE	100Yr-24Hr	12.27	24.82	1.010	12.84	7.24	12.95	6.98
ExPipe16A-7	BASE	100Yr-24Hr	12.22	105.90	11.223	12.37	8.52	12.48	7.98
ExPipe16A-8	BASE	100Yr-24Hr	11.98	44.95	-9.990	12.38	8.74	12.37	8.52
ExPipe16A-9	BASE	100Yr-24Hr	11.97	33.47	0.841	12.41	8.89	12.38	8.74
FD16A-2	BASE	100Yr-24Hr	12.54	11.24	0.012	12.54	8.98	0.00	0.42
FD16A-3	BASE	100Yr-24Hr	12.30	0.35	0.000	12.30	8.41	0.00	0.42
PrCS16A-1	BASE	100Yr-24Hr	13.56	107.15	0.046	13.52	6.16	13.49	3.74
PrPipe16A-1	BASE	100Yr-24Hr	25.37	5.29	-7.208	13.52	6.16	13.45	6.30
PrPipe16A-14	BASE	100Yr-24Hr	12.03	29.32	4.582	12.45	8.25	12.48	7.98
PrPipe16A-2B	BASE	100Yr-24Hr	12.26	147.82	8.737	12.48	7.98	12.95	6.98
PrPipe16A-3_1	BASE	100Yr-24Hr	16.90	6.67	5.816	13.46	6.31	13.45	6.30
PrPipe16A-4	BASE	100Yr-24Hr	12.05	6.66	7.383	13.46	6.31	13.45	6.30
CS16A-3	BASE	10Yr-24Hr	12.27	11.13	0.482	12.32	5.06	12.85	4.70
ExDS16A-1	BASE	10Yr-24Hr	13.21	6.64	0.059	12.66	6.29	12.33	6.95
ExDS16A-2_Pipe	BASE	10Yr-24Hr	12.11	6.58	1.395	12.35	5.73	12.36	5.60
ExFDPipe16A-2	BASE	10Yr-24Hr	12.20	8.95	0.060	12.32	7.30	12.33	6.72
ExPipe16A-10	BASE	10Yr-24Hr	12.10	20.46	0.307	12.33	6.72	12.33	6.57
ExPipe16A-11	BASE	10Yr-24Hr	12.10	12.10	0.473	12.33	6.95	12.33	6.72
ExPipe16A-12	BASE	10Yr-24Hr	12.25	49.05	-5.731	12.33	6.27	12.34	6.03
ExPipe16A-13	BASE	10Yr-24Hr	14.34	1.05	-1.739	12.35	5.81	12.33	6.27
ExPipe16A-1A	BASE	10Yr-24Hr	13.02	92.63	3.607	13.02	2.09	0.00	0.42
ExPipe16A-1B	BASE	10Yr-24Hr	13.15	91.14	9.537	13.06	2.56	13.02	2.09
ExPipe16A-2A	BASE	10Yr-24Hr	12.48	82.07	-4.044	12.85	4.70	12.96	4.48
ExPipe16A-2B	BASE	10Yr-24Hr	12.48	82.94	3.501	12.96	4.48	13.10	4.31
ExPipe16A-3_2	BASE	10Yr-24Hr	24.09	3.03	-5.361	13.02	4.40	12.85	4.70
ExPipe16A-5	BASE	10Yr-24Hr	12.14	11.34	1.510	12.49	5.19	12.65	4.85
ExPipe16A-6	BASE	10Yr-24Hr	12.14	19.40	-1.098	12.65	4.85	12.85	4.70
ExPipe16A-7	BASE	10Yr-24Hr	12.23	89.22	5.637	12.34	6.03	12.36	5.60
ExPipe16A-8	BASE	10Yr-24Hr	12.21	43.27	-10.477	12.34	6.30	12.34	6.03
ExPipe16A-9	BASE	10Yr-24Hr	12.10	32.07	0.678	12.33	6.57	12.34	6.30
FD16A-2	BASE	10Yr-24Hr	12.32	7.11	0.023	12.32	7.30	0.00	0.42
FD16A-3	BASE	10Yr-24Hr	12.32	0.21	0.000	12.32	5.06	0.00	0.42
PrCS16A-1	BASE	10Yr-24Hr	13.14	91.14	0.128	13.10	4.31	13.06	2.56
PrPipe16A-1	BASE	10Yr-24Hr	11.55	3.99	-9.278	13.10	4.31	13.02	4.40
PrPipe16A-14	BASE	10Yr-24Hr	12.29	23.53	2.659	12.35	5.81	12.36	5.60
PrPipe16A-2B	BASE	10Yr-24Hr	12.31	123.18	10.566	12.36	5.60	12.85	4.70

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DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
PrPipe16A-3_1	BASE	10Yr-24Hr	14.88	8.12	-8.392	13.06	4.40	13.02	4.40
PrPipe16A-4	BASE	10Yr-24Hr	14.88	8.39	9.288	13.06	4.40	13.02	4.40
CS16A-3	BASE	25Yr-72Hr	60.02	14.45	0.468	60.07	6.92	60.63	6.23
ExDS16A-1	BASE	25Yr-72Hr	61.77	7.70	-0.024	60.64	7.71	60.09	8.42
ExDS16A-2_Pipe	BASE	25Yr-72Hr	59.87	7.93	-1.543	60.18	7.25	60.17	7.08
ExFDPipe16A-2	BASE	25Yr-72Hr	59.78	9.72	-0.351	60.18	8.33	60.14	8.12
ExPipe16A-10	BASE	25Yr-72Hr	59.75	20.94	0.659	60.14	8.12	60.12	8.03
ExPipe16A-11	BASE	25Yr-72Hr	59.69	12.91	0.818	60.09	8.42	60.14	8.12
ExPipe16A-12	BASE	25Yr-72Hr	60.02	54.74	9.397	60.07	7.90	60.11	7.55
ExPipe16A-13	BASE	25Yr-72Hr	63.67	1.02	-1.434	60.15	7.30	60.07	7.90
ExPipe16A-1A	BASE	25Yr-72Hr	61.01	103.53	3.271	61.01	2.61	0.00	0.42
ExPipe16A-1B	BASE	25Yr-72Hr	61.13	102.11	7.130	61.02	3.32	61.01	2.61
ExPipe16A-2A	BASE	25Yr-72Hr	60.34	74.90	3.554	60.63	6.23	60.74	5.82
ExPipe16A-2B	BASE	25Yr-72Hr	59.92	76.41	5.490	60.74	5.82	61.05	5.51
ExPipe16A-3_2	BASE	25Yr-72Hr	72.42	2.44	-4.319	60.98	5.64	60.63	6.23
ExPipe16A-5	BASE	25Yr-72Hr	60.17	12.10	-0.864	60.44	6.96	60.54	6.49
ExPipe16A-6	BASE	25Yr-72Hr	60.02	22.72	2.435	60.54	6.49	60.63	6.23
ExPipe16A-7	BASE	25Yr-72Hr	60.00	93.33	9.398	60.11	7.55	60.17	7.08
ExPipe16A-8	BASE	25Yr-72Hr	59.78	42.40	-10.439	60.10	7.81	60.11	7.55
ExPipe16A-9	BASE	25Yr-72Hr	59.78	31.91	1.214	60.12	8.03	60.10	7.81
FD16A-2	BASE	25Yr-72Hr	60.18	9.65	0.012	60.18	8.33	0.00	0.42
FD16A-3	BASE	25Yr-72Hr	60.07	0.29	0.000	60.07	6.92	0.00	0.42
PrCS16A-1	BASE	25Yr-72Hr	61.13	102.10	0.045	61.05	5.51	61.02	3.32
PrPipe16A-1	BASE	25Yr-72Hr	73.14	5.29	-7.423	61.05	5.51	60.98	5.64
PrPipe16A-14	BASE	25Yr-72Hr	59.86	26.19	4.528	60.15	7.30	60.17	7.08
PrPipe16A-2B	BASE	25Yr-72Hr	60.04	132.74	-7.737	60.17	7.08	60.63	6.23
PrPipe16A-3_1	BASE	25Yr-72Hr	63.00	6.90	6.188	60.99	5.64	60.98	5.64
PrPipe16A-4	BASE	25Yr-72Hr	60.05	6.58	5.911	60.99	5.64	60.98	5.64

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100Yr-24Hr	B16A-1	BASE	12.27	104.61	12.818	605336
100Yr-24Hr	B16A-10	BASE	12.27	20.88	13.495	126390
100Yr-24Hr	B16A-11	BASE	12.27	26.48	10.252	137699
100Yr-24Hr	B16A-12	BASE	12.27	20.17	7.211	99733
100Yr-24Hr	B16A-13	BASE	12.27	11.70	9.445	59657
100Yr-24Hr	B16A-14	BASE	12.27	22.58	12.029	125321
100Yr-24Hr	B16A-15	BASE	12.27	20.39	12.278	114544
100Yr-24Hr	B16A-16	BASE	12.27	26.72	12.703	153558
100Yr-24Hr	B16A-17	BASE	12.27	88.19	13.397	530071
100Yr-24Hr	B16A-2	BASE	12.27	13.59	13.495	82301
100Yr-24Hr	B16A-3	BASE	12.27	123.90	10.476	648403
100Yr-24Hr	B16A-3 Offs	BASE	12.27	53.53	8.873	269910
100Yr-24Hr	B16A-4	BASE	12.27	2.67	13.495	16166
100Yr-24Hr	B16A-5A1	BASE	12.27	100.46	11.567	546269
100Yr-24Hr	B16A-5A2	BASE	12.27	19.10	11.114	102073
100Yr-24Hr	B16A-5B	BASE	12.27	32.08	12.477	182079
100Yr-24Hr	B16A-5C	BASE	12.27	3.54	12.849	20522
100Yr-24Hr	B16A-6	BASE	12.27	17.02	10.241	88474
100Yr-24Hr	B16A-6 Offs	BASE	12.27	2.82	8.462	14130
100Yr-24Hr	B16A-7	BASE	12.27	22.89	11.248	122901
100Yr-24Hr	B16A-8	BASE	12.27	11.01	7.432	54496
100Yr-24Hr	B16A-8 Offs1	BASE	12.27	5.84	9.697	29920
100Yr-24Hr	B16A-8 Offs2	BASE	12.27	14.54	8.083	72473
100Yr-24Hr	B16A-9	BASE	12.27	14.60	11.578	79432
10Yr-24Hr	B16A-1	BASE	12.27	67.27	8.082	381683
10Yr-24Hr	B16A-10	BASE	12.27	13.53	8.747	81920
10Yr-24Hr	B16A-11	BASE	12.27	15.38	5.778	77610
10Yr-24Hr	B16A-12	BASE	12.29	9.61	3.442	47598
10Yr-24Hr	B16A-13	BASE	12.27	6.50	5.118	32329
10Yr-24Hr	B16A-14	BASE	12.27	14.20	7.339	76457
10Yr-24Hr	B16A-15	BASE	12.27	12.93	7.570	70622
10Yr-24Hr	B16A-16	BASE	12.27	17.14	7.972	96368
10Yr-24Hr	B16A-17	BASE	12.27	57.15	8.649	342201
10Yr-24Hr	B16A-2	BASE	12.27	8.81	8.747	53343
10Yr-24Hr	B16A-3	BASE	12.27	72.79	5.967	369304
10Yr-24Hr	B16A-3 Offs	BASE	12.27	28.73	4.668	142010
10Yr-24Hr	B16A-4	BASE	12.27	1.73	8.747	10478
10Yr-24Hr	B16A-5A1	BASE	12.27	62.05	6.918	326725
10Yr-24Hr	B16A-5A2	BASE	12.27	11.57	6.516	59846
10Yr-24Hr	B16A-5B	BASE	12.27	20.46	7.757	113200
10Yr-24Hr	B16A-5C	BASE	12.27	2.28	8.112	12957
10Yr-24Hr	B16A-6	BASE	12.27	9.88	5.769	49838
10Yr-24Hr	B16A-6 Offs	BASE	12.27	1.47	4.354	7270
10Yr-24Hr	B16A-7	BASE	12.27	13.95	6.634	72488
10Yr-24Hr	B16A-8	BASE	12.27	5.33	3.598	26381
10Yr-24Hr	B16A-8 Offs1	BASE	12.27	3.29	5.321	16419
10Yr-24Hr	B16A-8 Offs2	BASE	12.27	7.40	4.070	36496
10Yr-24Hr	B16A-9	BASE	12.27	9.02	6.928	47531
25Yr-72Hr	B16A-1	BASE	60.02	80.58	13.317	628894
25Yr-72Hr	B16A-10	BASE	60.02	16.04	13.995	131070
25Yr-72Hr	B16A-11	BASE	60.02	21.20	10.732	144145

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
25Yr-72Hr	B16A-12	BASE	60.02	17.50	7.635	105588
25Yr-72Hr	B16A-13	BASE	60.02	9.54	9.914	62617
25Yr-72Hr	B16A-14	BASE	60.02	17.54	12.525	130485
25Yr-72Hr	B16A-15	BASE	60.02	15.79	12.775	119180
25Yr-72Hr	B16A-16	BASE	60.02	20.60	13.202	159584
25Yr-72Hr	B16A-17	BASE	60.02	67.77	13.896	549841
25Yr-72Hr	B16A-2	BASE	60.02	10.45	13.995	85348
25Yr-72Hr	B16A-3	BASE	60.02	98.74	10.959	678271
25Yr-72Hr	B16A-3 Offs	BASE	60.02	44.26	9.332	283875
25Yr-72Hr	B16A-4	BASE	60.02	2.05	13.995	16765
25Yr-72Hr	B16A-5A1	BASE	60.02	78.52	12.060	569541
25Yr-72Hr	B16A-5A2	BASE	60.02	15.04	11.603	106564
25Yr-72Hr	B16A-5B	BASE	60.02	24.78	12.975	189343
25Yr-72Hr	B16A-5C	BASE	60.02	2.73	13.348	21319
25Yr-72Hr	B16A-6	BASE	60.02	13.63	10.720	92619
25Yr-72Hr	B16A-6 Offs	BASE	60.02	2.36	8.913	14883
25Yr-72Hr	B16A-7	BASE	60.02	17.98	11.738	128258
25Yr-72Hr	B16A-8	BASE	60.02	9.48	7.861	57640
25Yr-72Hr	B16A-8 Offs1	BASE	60.02	4.73	10.170	31378
25Yr-72Hr	B16A-8 Offs2	BASE	60.02	12.28	8.527	76450
25Yr-72Hr	B16A-9	BASE	60.02	11.41	12.071	82813

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.870	Time Shift(hrs): 0.00
Curve Number: 88.32	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-15	Node: ExStruct16A-5	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.570	Time Shift(hrs): 0.00
Curve Number: 90.23	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-16	Node: ExStruct16A-8	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 3.330	Time Shift(hrs): 0.00
Curve Number: 93.56	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-17	Node: MH_CS16A-1_1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 10.900	Time Shift(hrs): 0.00
Curve Number: 99.18	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-2	Node: ExStruct16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.680	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-3	Node: Pond16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 17.050	Time Shift(hrs): 0.00
Curve Number: 77.02	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: B16A-3 Offs Node: Pond16A-1 Status: Offsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 8.380 Time Shift(hrs): 0.00
Curve Number: 66.33 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-4 Node: ExStruct16A-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.330 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5A1 Node: Pond16A-2A Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 13.010 Time Shift(hrs): 0.00
Curve Number: 84.85 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5A2 Node: FD16A-3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.530 Time Shift(hrs): 0.00
Curve Number: 81.54 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5B Node: Pond16A-2B Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 4.020 Time Shift(hrs): 0.00
Curve Number: 91.78 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-5C Node: Pond16A-2B Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.440 Time Shift(hrs): 0.00
Curve Number: 94.72 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 2.470 Time Shift(hrs): 0.00
 Curve Number: 61.38 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: B16A-9 Node: ExStruct16A-3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 1.890 Time Shift(hrs): 0.00
 Curve Number: 84.93 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

=====
=== Nodes =====
=====

Name: Ditch16A-2 Base Flow(cfs): 0.000 Init Stage(ft): 3.000
Group: BASE Warn Stage(ft): 9.000
Type: Stage/Area

Stage(ft)	Area(ac)
3.000	0.0050
4.000	0.0710
5.000	0.2170
6.000	0.4130
7.000	0.6910

Name: ExStruct16A-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 6.000
Type: Stage/Area

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Phase 3-A-1

Stage(ft)	Area(ac)
-4.000	0.0006
6.000	0.0006

Name: ExStruct16A-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 8.500
Type: Stage/Area

Structure Rim = 8.92

Stage(ft)	Area(ac)
-1.000	0.0003
8.000	0.0022
8.500	0.0250
9.000	0.0674
9.500	0.1446

Name: ExStruct16A-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 8.500
Type: Stage/Area

Warning Stage = Adjacent EOP

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	9.00	0.38
0.420	13.20	2.70
1.420	1.42	0.00
1.420	9.00	0.35
1.420	13.20	0.64

=====
Pipes
=====

```

Name: ExDS16A-2_Pipe      From Node: Swale16A-3      Length(ft): 88.00
Group: BASE                To Node: Pond16A-2B        Count: 1
                             Friction Equation: Automatic
                             Solution Algorithm: Most Restrictive
                             Flow: Both
UPSTREAM                    DOWNSTREAM
Geometry: Circular          Circular
Span(in): 24.00             24.00
Rise(in): 24.00             24.00
Invert(ft): 3.420          2.420
Manning's N: 0.013000      0.013000
Top Clip(in): 0.000        0.000
Bot Clip(in): 0.000        0.000
                             Entrance Loss Coef: 0.50
                             Exit Loss Coef: 0.00
                             Bend Loss Coef: 0.00
                             Outlet Ctrl Spec: Use dc or tw
                             Inlet Ctrl Spec: Use dc
                             Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```

Name: ExFDPipe16A-2      From Node: FD16A-2      Length(ft): 516.00
Group: BASE                To Node: ExStruct16A-7  Count: 1
                             Friction Equation: Automatic
                             Solution Algorithm: Most Restrictive
                             Flow: Both
UPSTREAM                    DOWNSTREAM
Geometry: Circular          Circular
Span(in): 24.00             24.00
Rise(in): 24.00             24.00
Invert(ft): 2.250          2.250
Manning's N: 0.012000      0.012000
Top Clip(in): 0.000        0.000
Bot Clip(in): 0.000        0.000
                             Entrance Loss Coef: 0.50
                             Exit Loss Coef: 0.50
                             Bend Loss Coef: 0.00
                             Outlet Ctrl Spec: Use dc or tw
                             Inlet Ctrl Spec: Use dc
                             Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Link Replaces Existing Weir CS16A-2

```

Name: ExPipe16A-10      From Node: ExStruct16A-7  Length(ft): 82.00
Group: BASE                To Node: ExStruct16A-6  Count: 1
                             Friction Equation: Automatic
                             Solution Algorithm: Most Restrictive
                             Flow: Both
UPSTREAM                    DOWNSTREAM
Geometry: Circular          Circular
Span(in): 36.00             36.00
Rise(in): 36.00             36.00
Invert(ft): 2.720          2.620
Manning's N: 0.012000      0.012000
Top Clip(in): 0.000        0.000
Bot Clip(in): 0.000        0.000
                             Entrance Loss Coef: 0.50
                             Exit Loss Coef: 0.00
                             Bend Loss Coef: 0.00
                             Outlet Ctrl Spec: Use dc or tw
                             Inlet Ctrl Spec: Use dc
                             Stabilizer Option: None

```

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

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Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-11	From Node: ExStruct16A-8	Length(ft): 70.00
Group: BASE	To Node: ExStruct16A-7	Count: 1
	Friction Equation: Automatic	
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 24.00	24.00	Entrance Loss Coef: 0.50
Rise(in): 24.00	24.00	Exit Loss Coef: 0.00
Invert(ft): 2.920	2.720	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-12	From Node: MH_CS16A-1_1	Length(ft): 646.00
Group: BASE	To Node: ExStruct16A-4	Count: 1
	Friction Equation: Automatic	
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 60.00	60.00	Entrance Loss Coef: 0.50
Rise(in): 60.00	60.00	Exit Loss Coef: 0.00
Invert(ft): 0.920	0.320	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-13	From Node: Swale16A-4	Length(ft): 152.00
Group: BASE	To Node: MH_CS16A-1_1	Count: 1
	Friction Equation: Automatic	
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 24.00	24.00	Entrance Loss Coef: 0.50
Rise(in): 24.00	24.00	Exit Loss Coef: 0.00
Invert(ft): 0.920	0.320	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-1A	From Node: ExStruct16A-1	Length(ft): 977.00
Group: BASE	To Node: SFNR	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 66.00	66.00	Exit Loss Coef: 1.00
Rise(in): 66.00	66.00	Bend Loss Coef: 0.00
Invert(ft): -3.080	-3.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-1B	From Node: S-16A-04	Length(ft): 588.00
Group: BASE	To Node: ExStruct16A-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 66.00	66.00	Exit Loss Coef: 0.00
Rise(in): 66.00	66.00	Bend Loss Coef: 0.00
Invert(ft): -3.080	-3.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-2A	From Node: Pond16A-2A	Length(ft): 118.00
Group: BASE	To Node: ExStruct16A-2	Count: 2
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 42.00	42.00	Exit Loss Coef: 0.00
Rise(in): 42.00	42.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.770	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-2B	From Node: ExStruct16A-2	Length(ft): 107.00
Group: BASE	To Node: Pond16A-1	Count: 2
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 42.00	42.00	Exit Loss Coef: 0.00
Rise(in): 42.00	42.00	Bend Loss Coef: 0.00
Invert(ft): 0.770	0.620	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16A-3_2	From Node: PrStruct16A-3	Length(ft): 161.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.920	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1
527 ft Total

Name: ExPipe16A-5	From Node: Swale16A-1	Length(ft): 106.00
Group: BASE	To Node: ExStruct16A-3	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 1.420	1.020	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-6	From Node: ExStruct16A-3	Length(ft): 78.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 30.00	30.00	Bend Loss Coef: 0.00
Rise(in): 30.00	30.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 1.020	0.920	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-7	From Node: ExStruct16A-4	Length(ft): 102.00
Group: BASE	To Node: Pond16A-2B	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 60.00	60.00	Bend Loss Coef: 0.00
Rise(in): 60.00	60.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 0.320	0.120	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16A-8	From Node: ExStruct16A-5	Length(ft): 78.00
Group: BASE	To Node: ExStruct16A-4	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 48.00	48.00	Bend Loss Coef: 0.00
Rise(in): 48.00	48.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 1.720	1.320	Inlet Ctrl Spec: Use dc
Manning's N: 0.012000	0.012000	
Top Clip(in): 0.000	0.000	

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipel6A-9	From Node: ExStruct16A-6	Length(ft): 136.00
Group: BASE	To Node: ExStruct16A-5	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 42.00	42.00	Exit Loss Coef: 0.00
Rise(in): 42.00	42.00	Bend Loss Coef: 0.00
Invert(ft): 2.520	2.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: PrPipel6A-1	From Node: Pond16A-1	Length(ft): 132.00
Group: BASE	To Node: PrStruct16A-3	Count: 2
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Name: PrPipel6A-14	From Node: Swale16A-4	Length(ft): 730.00
Group: BASE	To Node: Pond16A-2B	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 48.00	48.00	Exit Loss Coef: 0.00
Rise(in): 48.00	48.00	Bend Loss Coef: 0.00
Invert(ft): 0.000	-3.880	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: PrPipel6A-2B	From Node: Pond16A-2B	Length(ft): 285.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 60.00	60.00	Exit Loss Coef: 0.00
Rise(in): 60.00	60.00	Bend Loss Coef: 0.00
Invert(ft): -4.980	-4.980	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: PrPipel6A-3_1	From Node: Pond16A-3	Length(ft): 366.00
Group: BASE	To Node: PrStruct16A-3	Count: 2
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: PrPipel6A-4	From Node: Pond16A-4	Length(ft): 314.00
Group: BASE	To Node: PrStruct16A-3	Count: 2
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

=====
=== Drop Structures ===
=====

Name: CS16A-3 From Node: FD16A-3 Length(ft): 275.00
Group: BASE To Node: Pond16A-2A Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft): 1.420	1.420	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Modified structure

*** Weir 1 of 3 for Drop Structure CS16A-3 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 9.000	
Rise(in): 16.00	Control Elev(ft): 9.000	

*** Weir 2 of 3 for Drop Structure CS16A-3 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 6.00	Invert(ft): 0.420	
Rise(in): 6.00	Control Elev(ft): 0.420	

*** Weir 3 of 3 for Drop Structure CS16A-3 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 84.00	Invert(ft): 2.700	
Rise(in): 12.00	Control Elev(ft): 2.700	

Name: ExDS16A-1 From Node: Ditch16A-2 Length(ft): 12.00
Group: BASE To Node: ExStruct16A-8 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 15.00	15.00	Flow: Both
Rise(in): 15.00	15.00	Entrance Loss Coef: 0.500
Invert(ft): 3.020	2.920	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc

Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

*** Weir 1 of 1 for Drop Structure ExDS16A-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 27.00	Invert(ft): 5.420
Rise(in): 36.00	Control Elev(ft): 5.420

Name: PrCS16A-1	From Node: Pond16A-1	Length(ft): 12.00
Group: BASE	To Node: S-16A-04	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 48.00	48.00	Flow: Both
Rise(in): 48.00	48.00	Entrance Loss Coef: 0.500
Invert(ft): -3.080	-3.080	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure PrCS16A-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 105.00	Invert(ft): 2.700
Rise(in): 36.00	Control Elev(ft): 2.700

*** Weir 2 of 2 for Drop Structure PrCS16A-1 ***

TABLE

Count: 1	Bottom Clip(ft): 0.000
Type: Vertical: Mavis	Top Clip(ft): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Trapezoidal	Orifice Disc Coef: 0.600
Bottom Width(ft): 0.00	Invert(ft): 0.420
Left Sd Slp(h/v): 0.28	Control Elev(ft): 0.420
Right Sd Slp(h/v): 0.28	Struct Opening Dim(ft): 2.28

=====
 Rating Curves
 =====

Name: FD16A-2	From Node: FD16A-2	Count: 1
Group: BASE	To Node: Groundwater2	Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
-------	-------------	--------------

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 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

#1: FD16A-2	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: FD16A-3 From Node: FD16A-3 Count: 1
 Group: BASE To Node: Groundwater3 Flow: Both

	TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1:	FD16A-3	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

==== Hydrology Simulations =====

Name: 100Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16A\100Yr-24Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16A\10Yr-24Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 25Yr-72Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16A\25Yr-72Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

=====
==== Routing Simulations =====
=====

Name: 100Yr-24Hr Hydrology Sim: 100Yr-24Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16A\100Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 48.00
Min Calc Time(sec): 0.0500 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 10Yr-24Hr Hydrology Sim: 10Yr-24Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16A\10Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.01000
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 48.00
Min Calc Time(sec): 0.0500 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 25Yr-72Hr Hydrology Sim: 25Yr-72Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16A\25Yr-72Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.0500 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

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INPUT REPORT

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
BASE	Yes



Appendix E

System 16B Drainage Analysis Documentation

- Land-Use Tables
- Drainage Calculations
- Summary Tables
- ICPR: Pre-Development
- ICPR: Post-Development

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
DRAINAGE SYSTEM SUMMARY TABLES

DRAINAGE SYSTEM: 16B

SHGWT EL. (ft-NAVD): 0.42

BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B16B-1A	10	2.13	2.13	0.96	0.00	1.17	0.00	0.00	0.00	0.00	6.00	5.58	8.18	69.00
B16B-1B	10	2.54	2.54	1.11	0.00	1.43	0.00	0.00	0.00	0.00	7.00	6.58	8.18	68.47
B16B-2A	10	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	12.00	11.58	8.18	100.00
B16B-2B	10	4.48	4.48	3.34	0.00	1.14	0.00	0.00	0.00	0.00	7.00	6.58	8.18	82.77
B16B-3	10	2.49	2.49	1.55	0.00	0.94	0.00	0.00	0.00	0.00	8.00	7.58	8.18	76.41
B16B-4	10	5.73	5.73	4.08	0.00	1.65	0.00	0.00	0.00	0.00	5.00	4.58	8.18	80.94
B16B-4 Offs	10	1.97	0.00	0.00	0.00	0.00	1.97	0.69	0.00	1.28	5.00	4.58	8.18	65.30
B16B-5	10	3.25	3.25	1.88	0.00	1.37	0.00	0.00	0.00	0.00	8.00	7.58	8.18	74.36
B16B-6	10	0.52	0.52	0.35	0.00	0.17	0.00	0.00	0.00	0.00	9.00	8.58	8.18	78.90
B16B-7	10	2.00	2.00	0.77	0.00	1.23	0.00	0.00	0.00	0.00	15.00	14.58	8.18	66.53
B16B-8	10	1.53	1.53	0.97	0.00	0.56	0.00	0.00	0.00	0.00	9.00	8.58	8.18	76.96
B16B-9	10	0.72	0.72	0.63	0.00	0.09	0.00	0.00	0.00	0.00	6.00	5.58	8.18	90.72
B16B-10A	10	1.16	1.16	0.28	0.00	0.88	0.00	0.00	0.00	0.00	12.00	11.58	8.18	61.71
B16B-10B	10	0.30	0.30	0.09	0.00	0.21	0.00	0.00	0.00	0.00	14.00	13.58	8.18	63.59
B16B-11	10	1.97	1.97	0.86	0.00	1.11	0.00	0.00	0.00	0.00	10.00	9.58	8.18	68.45
B16B-14A	10	1.91	1.91	1.20	0.00	0.71	0.00	0.00	0.00	0.00	16.00	15.58	8.18	76.68
B16B-14B	10	0.66	0.66	0.60	0.00	0.06	0.00	0.00	0.00	0.00	12.00	11.58	8.18	93.08
B16B-15	10	2.78	2.78	2.05	0.00	0.73	0.00	0.00	0.00	0.00	7.00	6.58	8.18	82.32
B16B-16	10	3.18	3.18	1.69	0.00	1.49	0.00	0.00	0.00	0.00	13.00	12.58	8.18	72.29
B16B-12A	10	1.11	1.11	1.10	0.00	0.01	0.00	0.00	0.00	0.00	30.00	29.58	8.18	99.27
B16B-12B	10	1.68	1.68	1.61	0.00	0.07	0.00	0.00	0.00	0.00	15.00	14.58	8.18	96.70
B16B-12B Offs1	10	0.69	0.00	0.00	0.00	0.00	0.69	0.54	0.00	0.15	5.00	4.58	8.18	84.90
B16B-12B Offs2	10	0.97	0.00	0.00	0.00	0.00	0.97	0.77	0.00	0.20	5.00	4.58	8.18	85.57
B16B-13A	10	2.08	2.08	0.82	0.00	1.26	0.00	0.00	0.00	0.00	7.00	6.58	8.18	66.87
B16B-13B	10	1.29	1.29	0.49	0.00	0.80	0.00	0.00	0.00	0.00	7.00	6.58	8.18	66.34
B16B-17	10	1.47	1.47	0.56	0.04	0.87	0.00	0.00	0.00	0.00	10.00	9.58	8.18	67.38
B16B-18	10	0.32	0.32	0.14	0.00	0.18	0.00	0.00	0.00	0.00	6.00	5.58	8.18	68.49
B16B-18 Offs	10	0.13	0.00	0.00	0.00	0.00	0.13	0.03	0.00	0.10	5.00	4.58	8.18	61.38
B16B-19	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	23.00	22.58	8.18	100.00
B16B-20	10	0.21	0.21	0.00	0.00	0.21	0.00	0.00	0.00	0.00	9.00	8.58	8.18	55.01
B16B-20 Offs	10	0.74	0.00	0.00	0.00	0.00	0.74	0.43	0.00	0.31	5.00	4.58	8.18	74.48
B16B-21	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	14.00	13.58	8.18	100.00
B16B-22	10	0.17	0.17	0.01	0.00	0.16	0.00	0.00	0.00	0.00	10.00	9.58	8.18	56.50
DS of Control Structures		11.34	6.02	2.50	0.04	3.48	2.53	1.77	0.00	0.76	--	--	--	--
SYSTEM TOTALS:		51.48	46.98	28.44	0.04	18.50	4.50	2.46	0.00	2.04	--	--	--	--

Water quality treatment not provided for basins downstream of existing/proposed control structures (11.34 acres).

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
DRAINAGE SYSTEM SUMMARY TABLES

DRAINAGE SYSTEM: 16B

SHGWT EL. (ft.-NAVD): 0.42

BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft.-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B16B-1A	10	2.15	2.15	0.99	0.00	1.16	0.00	0.00	0.00	0.00	6.00	5.58	8.18	69.38
B16B-1B	10	2.47	2.47	1.54	0.00	0.93	0.00	0.00	0.00	0.00	7.00	6.58	8.18	76.45
B16B-2A	10	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	12.00	11.58	8.18	100.00
B16B-2B	10	4.64	4.64	3.54	0.00	1.10	0.00	0.00	0.00	0.00	7.00	6.58	8.18	83.76
B16B-3	10	2.46	2.46	1.65	0.00	0.81	0.00	0.00	0.00	0.00	8.00	7.58	8.18	78.78
B16B-4	10	5.94	5.94	4.20	0.00	1.74	0.00	0.00	0.00	0.00	5.00	4.58	8.18	80.67
B16B-4 Offs	10	1.84	0.00	0.00	0.00	0.00	1.84	0.68	0.00	1.16	5.00	4.58	8.18	66.03
B16B-4A	10	1.01	1.01	0.00	0.00	1.01	0.00	0.00	0.00	0.00	5.00	4.58	8.18	55.01
B16B-5	10	2.99	2.99	1.72	0.00	1.27	0.00	0.00	0.00	0.00	8.00	7.58	8.18	74.21
B16B-6	10	0.52	0.51	0.36	0.00	0.15	0.00	0.00	0.00	0.00	9.00	8.58	8.18	79.89
B16B-7	10	2.25	2.25	1.87	0.00	0.38	0.00	0.00	0.00	0.00	15.00	14.58	8.18	87.86
B16B-8	10	1.10	1.10	0.58	0.00	0.52	0.00	0.00	0.00	0.00	9.00	8.58	8.18	72.11
B16B-9	10	0.62	0.62	0.48	0.00	0.14	0.00	0.00	0.00	0.00	6.00	5.58	8.18	84.41
B16B-10A	10	1.00	1.00	0.30	0.00	0.70	0.00	0.00	0.00	0.00	12.00	11.58	8.18	63.59
B16B-10B	10	0.09	0.09	0.02	0.00	0.07	0.00	0.00	0.00	0.00	14.00	13.58	8.18	61.12
B16B-11	10	2.69	2.69	1.12	0.00	1.57	0.00	0.00	0.00	0.00	10.00	9.58	8.18	67.69
B16B-12A	10	1.84	1.84	1.84	0.00	0.00	0.00	0.00	0.00	0.00	30.00	29.58	8.18	100.00
B16B-12B	10	1.91	1.91	1.91	0.00	0.00	0.00	0.00	0.00	0.00	15.00	14.58	8.18	100.00
B16B-13A	10	2.34	2.34	1.81	0.00	0.53	0.00	0.00	0.00	0.00	7.00	6.58	8.18	84.37
B16B-14A	10	1.78	1.78	1.17	0.00	0.61	0.00	0.00	0.00	0.00	16.00	15.58	8.18	78.11
B16B-14B	10	0.66	0.66	0.55	0.00	0.11	0.00	0.00	0.00	0.00	12.00	11.58	8.18	88.00
B16B-15	10	2.29	2.29	1.15	0.00	1.14	0.00	0.00	0.00	0.00	7.00	6.58	8.18	71.06
B16B-16	10	3.16	3.16	1.63	0.00	1.53	0.00	0.00	0.00	0.00	13.00	12.58	8.18	71.63
Subtotal		46.58	44.73	29.26	0.00	15.47	1.84	0.68	0.00	1.16				
B16B-12B Offs2	10	0.91	0.00	0.00	0.00	0.00	0.91	0.75	0.00	0.16	5.00	4.58	8.18	87.43
B16B-13B	10	1.31	1.31	0.93	0.00	0.38	0.00	0.00	0.00	0.00	7.00	6.58	8.18	80.82
B16B-17	10	1.43	1.43	0.50	0.04	0.89	0.00	0.00	0.00	0.00	10.00	9.58	8.18	66.26
B16B-18	10	0.32	0.32	0.14	0.00	0.18	0.00	0.00	0.00	0.00	6.00	5.58	8.18	68.49
B16B-18 Offs	10	0.13	0.00	0.00	0.00	0.00	0.13	0.03	0.00	0.10	5.00	4.58	8.18	61.38
B16B-19	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	23.00	22.58	8.18	100.00
B16B-20	10	0.21	0.21	0.00	0.00	0.21	0.00	0.00	0.00	0.00	9.00	8.58	8.18	55.01
B16B-20 Offs	10	0.74	0.00	0.00	0.00	0.00	0.74	0.43	0.00	0.31	5.00	4.58	8.18	74.48
B16B-21	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	14.00	13.58	8.18	100.00
B16B-22	10	0.17	0.17	0.01	0.00	0.16	0.00	0.00	0.00	0.00	10.00	9.58	8.18	56.50
DS of Control Structures		5.70	3.92	2.06	0.04	1.82	1.78	1.21	0.00	0.57	--	--	--	--
SYSTEM TOTALS:		52.28	48.65	31.32	0.04	17.29	3.62	1.89	0.00	1.73	--	--	--	--

Water quality treatment not provided for basins downstream of existing/proposed control structures (8.21 acres).

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: **16B**

SYSTEM	SHGWT EL. (ft-NAVD)	TOTAL AREA (Ac.) [POST-DEV.]	IMPERVIOUS AREA (Ac.) [POST-DEV.]	PERVIOUS AREA (Ac.) [POST-DEV.]	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET- RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	² TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	³ SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
16B Total	0.42	46.58	29.94	16.63	3.88	6.24	6.24	4.64	0.00	0.00	0.29	6.48	0.24

¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

³Water quality treatment provided for all onsite contributing basins with the exception of basins downstream of existing/proposed control structures (8.21 acres), water quality treatment provided for offsite contributing basins upstream of existing/proposed control structures (1.84 acres).

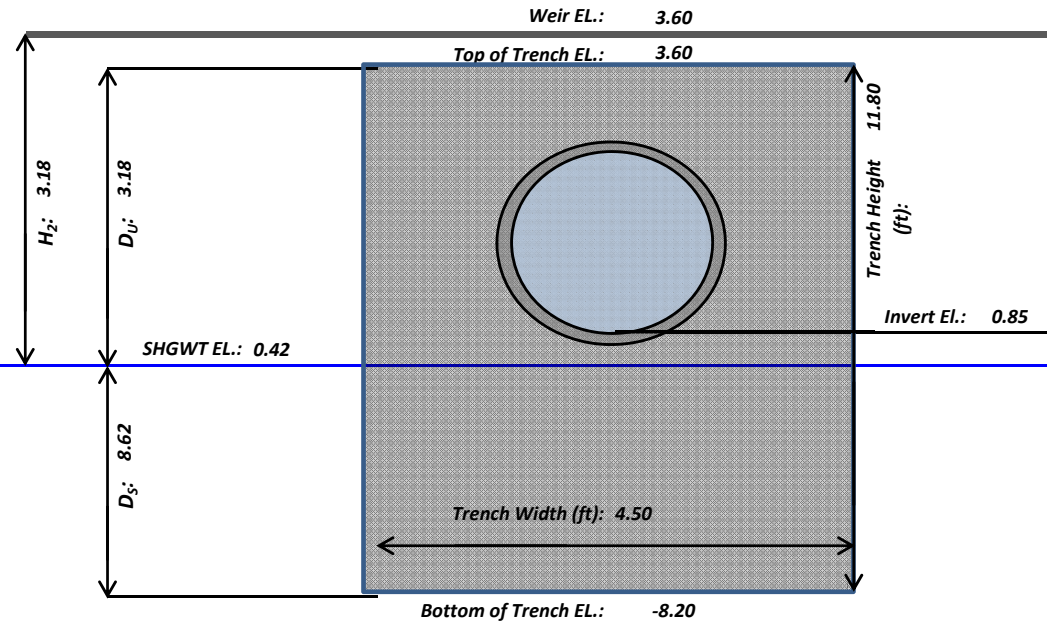
Pond 16B-1			Pond16B-2A			Pond16B-2B			Pond16B-4A		
TYPE:	Dry Detention		TYPE:	Dry Detention		TYPE:	Dry Detention		TYPE:	Dry Detention	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
1.42	1.02	--	1.42	0.42	--	1.42	0.21	--	1.42	0.37	--
2.00	1.15	0.63	2.00	0.45	0.25	2.00	0.22	0.13	2.00	0.42	0.23
2.45	1.26	1.17	2.45	0.47	0.46	2.45	0.24	0.23	2.45	0.46	0.42
3.00	1.39	1.90	4.00	0.53	1.23	4.00	0.28	0.63	3.00	0.51	0.69
4.50	1.75	4.25	5.50	0.59	2.07	5.50	0.33	1.09	4.00	0.61	1.25
									5.00	0.72	1.92

Swale 16B-1			Swale 16B-3			Swale 16B-5			Swale 16B-6		
TYPE:	Dry Detention		TYPE:	Dry Detention		TYPE:	Dry Detention		TYPE:	Dry Detention	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
1.42	1.52	--	1.42	0.14	--	1.42	0.12	--	1.42	0.48	--
2.00	1.52	0.88	2.00	0.16	0.09	2.00	0.13	0.07	2.00	0.48	0.28
2.45	1.52	1.57	2.45	0.18	0.16	2.45	0.14	0.14	2.45	0.48	0.49
4.00	1.53	3.93	3.00	0.19	0.26	3.00	0.15	0.21	3.00	0.48	0.76
5.50	1.53	6.22	4.00	0.23	0.47	4.50	0.17	0.45	5.50	0.49	1.97

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: 16B

French Drain (ICPR Link Name):	ExFD16B-1
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	550
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	0.85
Top of Trench EL. (ft-NAVD):	3.60
Bottom of Trench EL. (ft-NAVD):	-8.20
Trench Height, H_T (ft):	11.80
Weir EL. (ft-NAVD):	3.60
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	6.750E-05
Depth to Water Table, H_2 (ft):	3.18
Non-Saturated Trench Depth, D_U (ft):	3.18
Saturated Trench Depth, D_S (ft):	8.62
$H_2 W$:	14.31
$2H_2 D_U$:	20.22
D_U^2 :	10.11
$2H_2 D_S$:	54.82
$(1.39 \times 10^{-4})WD_U$:	0.001989
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	4.04
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	3.50
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.29



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6. (See Sheets 3-14 through 3-20)

Drainage System: 16B

French Drain (ICPR Link Name):	ExFD16B-1	Average Hydraulic Conductivity, K_{10}	6.750E-05	SHGWT EL. (ft-NAVD):	0.42
Existing/Proposed:	Existing	(cfs/ft²/ft-head):		Max GW EL. (ft-NAVD):	
Pipe Size (in):	24	Pipe Invert EL. (ft-NAVD):	0.85	<i>Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.</i>	
Length of French Drain, L (LF):	275.00	Top of Trench EL. (ft-NAVD):	3.60		
Trench Height, H_T (ft):	11.80	Bottom of Trench EL. (ft-NAVD):	-8.20		
Trench Width, W (ft):	4.50	Weir EL. (ft-NAVD):	3.60		
FS =	2.00	Downstream Structure Rim/Grate EL. (ft-NAVD):	8.07		

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	-	-	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.60	3.18	8.62	3.18	0.00438	1.205	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	8.07	3.18	8.62	7.65	0.01150	3.164	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Structure Rim/Grate EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data			
Stage (ft-NAVD)		Area (Ac.)	
Bottom of Trench EL.		-8.20	Area within Trench x 50% (0.5 x L x W)
Top of Trench EL.		3.60	Area within Trench x 50% (0.5 x L x W)
0.1' Above Top of Trench EL.		3.70	Area within Drainage Structure(s)
Structure Rim/Grate EL.		5.00	Area within Drainage Structure(s)
Swale 16B-4		5.01	Area within Swale
Swale 16B-4		6.00	Area within Swale
Swale 16B-4		7.57	Area within Swale

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: 16B

Pond/Swale Name:	Pond 16B-1
Control Structure No.:	CS16B-3
¹ Contributing Area (Ac.):	23.29
Detention Volume, 1" x Total Area (Ac-ft):	2.27
Bleed-Down Volume, V_{DET} (1/2 Detention Vol.) (Ac-ft):	1.14
Bleed-Down Time (hrs):	24.00
Bleed-Down Time (sec):	86400
Average Discharge Rate, Q (cfs):	0.57
Weir Elevation (ft-NAVD):	2.45
Bleeder Invert EL. [SHGWT EL.] (ft-NAVD):	0.42

Head, H (ft) 2.03

Weir Coefficient: 0.60

V-Notch Sizing

Minimum V-Notch Angle = 20°

Number of V-Notches Proposed: --

Bleed-Down Volume per V-Notch, V_{DET} (Ac-ft): #VALUE!

Maximum V-Notch Angle, θ , (rad): #VALUE!

Maximum V-Notch Angle, θ , (deg): #VALUE!

$$\theta = 2 \tan^{-1} \left[0.492 \frac{V_{DET}}{H^{2.5}} \right]$$

Proposed V-Notch(s) Angle (deg): --

Proposed V-Notch Angle (rad): #VALUE!

V-Notch Height [= H] (ft): 2.03

V-Notch Top Width (ft): #VALUE!

V-Notch Sideslope [horz./vert.]: #VALUE!

Circular Orifice Sizing

Minimum Orifice Diameter = 3"

Number of Circular Orifices Proposed: 1

Average Discharge per Orifice, Q (cfs): 0.57

$$Q = 4.8A\sqrt{h}, A = \pi r^2, h = H - r$$

Select Orifice Diameter with Discharge nearest to but less than Q

Orifice Diameter (in)	Orifice Radius, r (ft)	Area, A (ft ²)	h (ft)	Discharge Rate (cfs)
3.0	0.125	0.049	1.905	0.33
4.0	0.167	0.087	1.863	0.57
5.0	0.208	0.136	1.822	0.88
6.0	0.250	0.196	1.780	1.26

Proposed Orifice(s) Diameter (in): 4.0

¹ System 16B bleed-down provided for all onsite contributing basins within System 16B - Dry Pond 16B-1/3.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: 16B

Pond/Swale Name:	Swale 16B-5
Control Structure No.:	CS16B-5
¹ Contributing Area (Ac.):	23.29
Detention Volume, 1" x Total Area (Ac-ft):	2.27
Bleed-Down Volume, V_{DET} (1/2 Detention Vol.) (Ac-ft):	1.14
Bleed-Down Time (hrs):	24.00
Bleed-Down Time (sec):	86400
Average Discharge Rate, Q (cfs):	0.57
Weir Elevation (ft-NAVD):	2.45
Bleeder Invert EL. [SHGWT EL.] (ft-NAVD):	0.42

Head, H (ft) 2.03

Weir Coefficient: 0.60

V-Notch Sizing

Minimum V-Notch Angle = 20°

Number of V-Notches Proposed: --

Bleed-Down Volume per V-Notch, V_{DET} (Ac-ft): #VALUE!

Maximum V-Notch Angle, θ , (rad): #VALUE!

Maximum V-Notch Angle, θ , (deg): #VALUE!

$$\theta = 2 \tan^{-1} \left[0.492 \frac{V_{DET}}{H^{2.5}} \right]$$

Proposed V-Notch(s) Angle (deg): --

Proposed V-Notch Angle (rad): #VALUE!

V-Notch Height [= H] (ft): 2.03

V-Notch Top Width (ft): #VALUE!

V-Notch Sideslope [horz./vert.]: #VALUE!

Circular Orifice Sizing

Minimum Orifice Diameter = 3"

Number of Circular Orifices Proposed: 1

Average Discharge per Orifice, Q (cfs): 0.57

$$Q = 4.8A\sqrt{h}, A = \pi r^2, h = H - r$$

Select Orifice Diameter with Discharge nearest to but less than Q

Orifice Diameter (in)	Orifice Radius, r (ft)	Area, A (ft ²)	h (ft)	Discharge Rate (cfs)
3.0	0.125	0.049	1.905	0.33
4.0	0.167	0.087	1.863	0.57
5.0	0.208	0.136	1.822	0.88
6.0	0.250	0.196	1.780	1.26

Proposed Orifice(s) Diameter (in): 4.0

¹ System 16B bleed-down provided for all onsite contributing basins within System 16B - Dry Pond 16B-1/3.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: **16B**

Summary of Peak Discharges								
Receiving Waterbody:		North Fork of the New River						
PRE-DEVELOPMENT								
ICPR Node:	Outfall Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-72hr Peak Flow Velocity (fps)
NFNR	54" Pipe	15.90	78.29		93.19		100.60	
PRE-DEVELOPMENT TOTALS:		--	--	--	93.19	--	--	--
POST-DEVELOPMENT								
ICPR Node:	Pipe/Weir Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-72hr Peak Flow Velocity (fps)
NFNR	54" Pipe	15.90	56.96		77.35		82.47	
POST-DEVELOPMENT TOTALS:		--	--	--	77.35	--	--	--
Pre-Post 25yr-72hr Peak Discharge Reduction (cfs):				15.84				

Summary of Peak Stages									
Pre - Dev. Pond/Swale/FD #	Post - Dev. Pond/Swale/FD #	Disposition [Exist./ Prop./ Modified]	Warning EL. [Min. Berm/ Min. EOP] (ft-NAVD)	PRE-DEVELOPMENT			POST-DEVELOPMENT		
				Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)	Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)
FD16B-1	ExFD16B-1	Existing	7.57	5.98	6.98	7.74	4.22	5.05	5.45
Pond16B-1	Pond16B-1	Existing	5.00	4.63	5.47	5.87	3.76	5.01	5.39
Pond16B-2	Pond16B-2A	Modified	5.50	5.52	6.58	7.02	3.82	5.13	5.52
Ditch16B-2	Pond16B-2B	Modified	5.50	5.50	6.57	7.01	3.82	5.13	5.53
Pond16B-4	Pond16B-4	Existing	5.00	2.74	3.79	4.19	1.71	3.07	3.37
--	Pond16B-4A	Proposed	5.50	--	--	--	3.76	5.01	5.39
FD16B-3	PrMH16B-3A	Modified	7.20	4.93	5.82	6.21	3.82	5.12	5.51
	PrMH16B-3B	Modified					3.81	5.10	5.48
Swale16B-1	Swale16B-1	Modified	11.00	5.12	6.04	6.42	3.81	5.11	5.50
Swale16B-3	Swale16B-3	Modified	5.50	6.52	6.71	6.65	3.82	5.11	5.49
FD16B-2	Swale16B-5	Modified	7.00	5.10	6.24	6.94	3.34	4.86	5.28
--	Swale16B-6	Proposed	5.50	--	--	--	3.81	5.11	5.51

Control Structure Summary Table - Proposed Conditions					
Control Structure:	Disposition [Exist./ Prop./ Modified]	Weir Type/ Geometry	Weir EL. (ft-NAVD)	Bleeder Type/ Geometry	Bleeder Invert EL. (ft-NAVD)
CS16B-3	Modified	Raised Ditch Bottom Inlet (Type H) - Vert. Weir	2.45	Circular Orifice (4")	0.42
CS16B-5	Proposed	Raised Ditch Bottom Inlet (Type E)	2.50	Circular Orifice (4")	0.42

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 NODE LINK DIAGRAM

Nodes

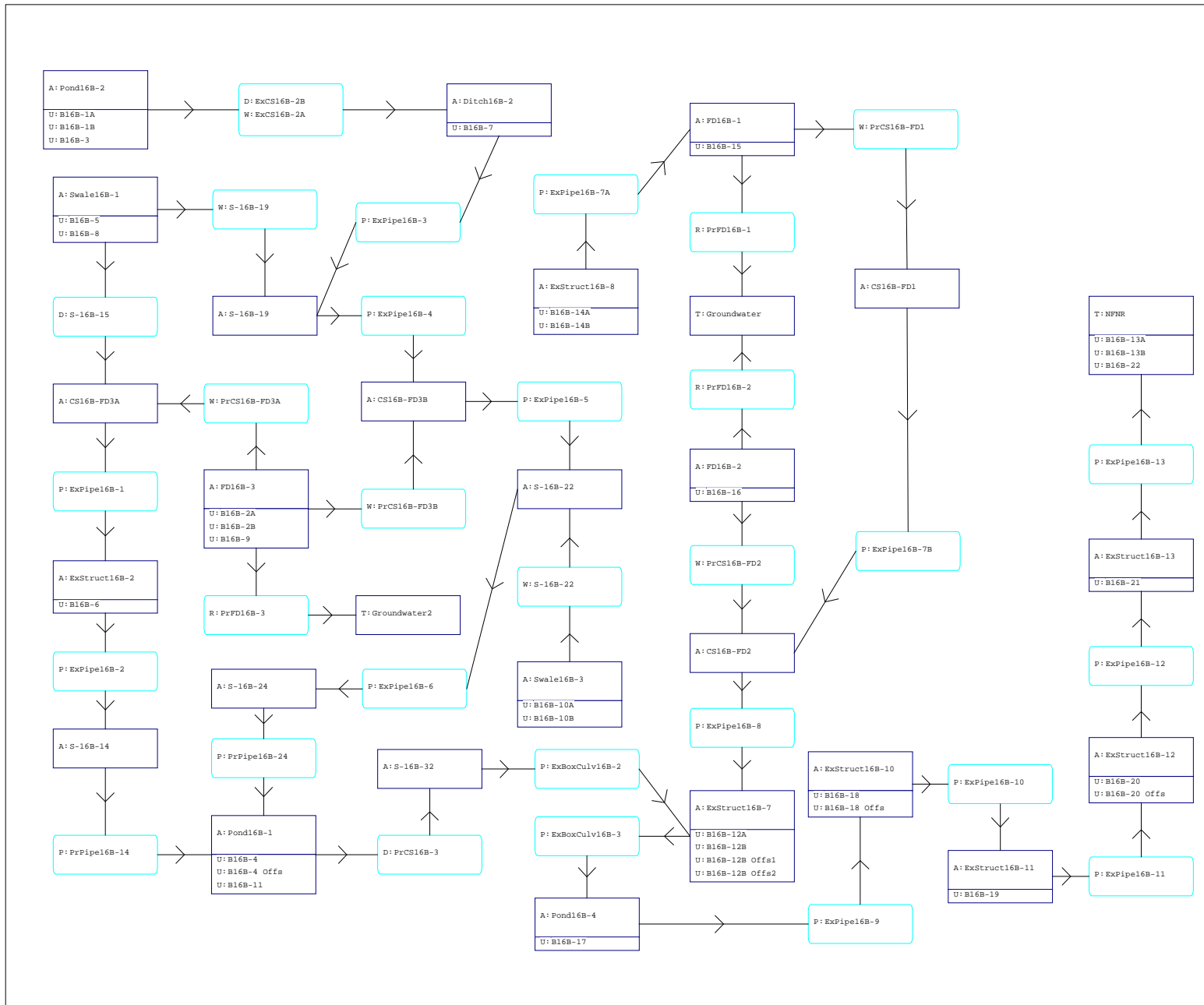
A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole

Basins

O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA

Links

P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CS16B-FD1	BASE	100yr24hr	12.57	7.47	7.57	0.0139	119	11.89	12.07	12.85	11.73
CS16B-FD2	BASE	100yr24hr	12.53	6.86	7.29	0.0082	131	12.50	16.73	12.50	16.72
CS16B-FD3A	BASE	100yr24hr	12.82	6.20	7.20	0.0111	123	12.00	21.41	12.00	18.84
CS16B-FD3B	BASE	100yr24hr	12.80	6.21	7.20	0.0081	130	12.01	20.45	12.01	19.44
Ditch16B-2	BASE	100yr24hr	12.86	7.01	5.00	0.0043	22484	12.04	38.50	12.67	17.18
ExStruct16B-10	BASE	100yr24hr	12.59	3.46	3.50	0.0021	155	12.86	74.68	12.86	74.71
ExStruct16B-11	BASE	100yr24hr	12.53	2.69	5.00	-0.0033	156	12.80	75.24	12.81	75.27
ExStruct16B-12	BASE	100yr24hr	12.38	1.91	5.50	0.0038	158	12.48	78.01	12.47	78.03
ExStruct16B-13	BASE	100yr24hr	12.37	1.37	5.50	-0.0040	180	12.37	79.37	12.37	79.37
ExStruct16B-2	BASE	100yr24hr	12.86	6.08	9.00	-0.0064	128	12.00	21.61	12.05	21.42
ExStruct16B-7	BASE	100yr24hr	12.56	4.98	8.00	0.0379	164	12.33	73.01	12.33	72.90
ExStruct16B-8	BASE	100yr24hr	12.33	8.67	7.00	0.0056	118	12.25	19.08	12.25	18.85
FD16B-1	BASE	100yr24hr	12.58	7.74	7.57	0.0027	20631	12.25	39.90	12.72	19.43
FD16B-2	BASE	100yr24hr	12.52	6.94	7.29	0.0031	8127	12.25	21.90	12.45	12.31
FD16B-3	BASE	100yr24hr	12.81	6.21	7.20	0.0018	13596	12.25	46.41	12.28	35.78
Groundwater	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.55	14.51	0.00	0.00
Groundwater2	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.81	10.13	0.00	0.00
NFNR	BASE	100yr24hr	0.00	0.42	0.42	0.0000	150	12.25	100.60	0.00	0.00
Pond16B-1	BASE	100yr24hr	12.92	5.87	5.00	-0.0087	97587	12.25	106.76	14.11	54.87
Pond16B-2	BASE	100yr24hr	12.86	7.02	7.80	0.0022	29791	12.25	48.65	12.04	28.95
Pond16B-4	BASE	100yr24hr	12.64	4.19	3.00	0.0029	27809	12.28	81.64	12.92	73.94
S-16B-14	BASE	100yr24hr	12.89	5.97	9.67	0.0115	119	12.05	21.42	12.05	21.27
S-16B-19	BASE	100yr24hr	12.95	6.44	5.28	0.0040	131	14.34	15.20	14.34	15.23
S-16B-22	BASE	100yr24hr	12.86	6.10	8.48	0.0071	132	12.01	19.44	12.02	19.22
S-16B-24	BASE	100yr24hr	12.89	5.97	13.95	0.0100	124	12.02	19.22	12.02	19.07
S-16B-32	BASE	100yr24hr	12.78	5.46	14.81	0.0249	149	14.11	54.87	14.11	54.95
Swale16B-1	BASE	100yr24hr	13.00	6.42	5.28	0.0018	71619	12.25	34.00	14.28	14.38
Swale16B-3	BASE	100yr24hr	12.81	6.65	8.48	0.0014	16396	12.25	8.65	12.81	2.77
CS16B-FD1	BASE	10yr24hr	12.43	5.69	7.57	0.0107	119	12.01	12.63	12.04	12.01
CS16B-FD2	BASE	10yr24hr	12.43	5.04	7.29	0.0077	131	12.04	17.58	12.04	17.12
CS16B-FD3A	BASE	10yr24hr	12.70	4.92	7.20	0.0147	123	12.30	20.90	12.30	17.63
CS16B-FD3B	BASE	10yr24hr	12.71	4.92	7.20	0.0061	130	12.31	19.18	12.31	17.89
Ditch16B-2	BASE	10yr24hr	12.70	5.50	5.00	0.0043	14665	12.34	28.38	12.59	13.57
ExStruct16B-10	BASE	10yr24hr	12.36	2.23	3.50	-0.0038	155	12.39	62.26	12.38	63.03
ExStruct16B-11	BASE	10yr24hr	12.35	1.78	5.00	0.0047	156	12.38	64.03	12.39	63.27
ExStruct16B-12	BASE	10yr24hr	12.36	1.45	5.50	-0.0032	202	12.35	66.19	12.38	66.44
ExStruct16B-13	BASE	10yr24hr	12.35	1.09	5.50	0.0046	371	12.38	67.44	12.35	67.27
ExStruct16B-2	BASE	10yr24hr	12.74	4.81	9.00	0.0066	128	12.30	19.78	12.30	19.35
ExStruct16B-7	BASE	10yr24hr	12.36	3.27	8.00	0.0298	164	12.18	58.24	12.18	57.95
ExStruct16B-8	BASE	10yr24hr	12.34	6.36	7.00	0.0055	118	12.25	11.45	12.25	11.30
FD16B-1	BASE	10yr24hr	12.43	5.98	7.57	-0.0021	9388	12.25	24.11	12.42	16.69
FD16B-2	BASE	10yr24hr	12.44	5.10	7.29	0.0016	5673	12.25	12.38	12.23	8.69
FD16B-3	BASE	10yr24hr	12.68	4.93	7.20	0.0014	7543	12.25	28.70	12.30	25.38
Groundwater	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.43	8.67	0.00	0.00
Groundwater2	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.68	6.21	0.00	0.00
NFNR	BASE	10yr24hr	0.00	0.42	0.42	0.0000	150	12.31	78.29	0.00	0.00
Pond16B-1	BASE	10yr24hr	12.83	4.63	5.00	-0.0087	72827	12.25	75.20	13.04	39.66
Pond16B-2	BASE	10yr24hr	12.70	5.52	7.80	0.0020	20314	12.25	27.29	12.35	22.25
Pond16B-4	BASE	10yr24hr	12.37	2.74	3.00	0.0029	3883	12.25	62.81	12.42	61.12
S-16B-14	BASE	10yr24hr	12.80	4.71	9.67	0.0112	119	12.30	19.35	12.30	19.24

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
S-16B-19	BASE	10yr24hr	12.73	5.14	5.28	0.0043	131	13.14	11.86	13.14	11.88
S-16B-22	BASE	10yr24hr	12.76	4.80	8.48	0.0075	132	12.31	17.89	12.31	17.67
S-16B-24	BASE	10yr24hr	12.80	4.71	13.95	-0.0111	124	12.31	17.67	12.31	17.56
S-16B-32	BASE	10yr24hr	12.38	3.43	14.81	0.0288	149	13.04	39.66	13.04	39.81
Swale16B-1	BASE	10yr24hr	12.73	5.12	5.28	0.0011	30394	12.25	19.67	12.25	11.87
Swale16B-3	BASE	10yr24hr	22.01	6.52	8.48	0.0008	16010	12.25	4.42	22.01	0.12
CS16B-FD1	BASE	25yr72hr	60.26	6.73	7.57	0.0143	119	59.68	12.02	59.81	10.98
CS16B-FD2	BASE	25yr72hr	60.24	6.18	7.29	0.0077	131	59.81	16.86	60.23	15.71
CS16B-FD3A	BASE	25yr72hr	60.54	5.82	7.20	0.0115	123	59.80	20.94	59.80	18.25
CS16B-FD3B	BASE	25yr72hr	60.51	5.82	7.20	0.0071	130	59.80	20.35	59.80	18.93
Ditch16B-2	BASE	25yr72hr	60.57	6.57	5.00	0.0043	20314	59.81	34.08	60.37	16.33
ExStruct16B-10	BASE	25yr72hr	60.27	3.11	3.50	0.0021	155	60.44	71.80	60.44	71.81
ExStruct16B-11	BASE	25yr72hr	60.21	2.39	5.00	0.0041	156	60.40	72.42	60.41	72.43
ExStruct16B-12	BASE	25yr72hr	60.12	1.75	5.50	-0.0049	169	60.20	75.11	60.12	75.62
ExStruct16B-13	BASE	25yr72hr	60.13	1.29	5.50	-0.0040	224	60.12	76.82	60.13	76.20
ExStruct16B-2	BASE	25yr72hr	60.57	5.68	9.00	-0.0062	128	59.80	20.68	59.84	20.33
ExStruct16B-7	BASE	25yr72hr	60.30	4.51	8.00	0.0396	164	60.08	67.94	60.08	67.82
ExStruct16B-8	BASE	25yr72hr	60.09	7.57	7.00	0.0059	118	60.00	15.06	60.00	14.88
FD16B-1	BASE	25yr72hr	60.27	6.98	7.57	0.0027	15026	60.00	31.41	60.34	17.48
FD16B-2	BASE	25yr72hr	60.24	6.24	7.29	0.0030	6829	60.00	17.71	60.20	10.53
FD16B-3	BASE	25yr72hr	60.53	5.82	7.20	0.0018	11269	60.00	36.21	60.02	27.71
Groundwater	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.25	12.15	0.00	0.00
Groundwater2	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.53	8.95	0.00	0.00
NFNR	BASE	25yr72hr	0.00	0.42	0.42	0.0000	150	60.06	93.19	0.00	0.00
Pond16B-1	BASE	25yr72hr	60.63	5.47	5.00	-0.0084	89480	60.00	92.66	61.38	52.65
Pond16B-2	BASE	25yr72hr	60.57	6.58	7.80	0.0022	26141	60.00	39.47	59.80	25.68
Pond16B-4	BASE	25yr72hr	60.31	3.79	3.00	0.0028	19609	60.08	75.02	60.55	70.91
S-16B-14	BASE	25yr72hr	60.60	5.57	9.67	0.0128	119	59.84	20.33	59.84	20.21
S-16B-19	BASE	25yr72hr	60.63	6.05	5.28	0.0050	131	61.52	14.34	61.53	14.37
S-16B-22	BASE	25yr72hr	60.55	5.72	8.48	0.0072	132	60.10	19.14	60.10	19.04
S-16B-24	BASE	25yr72hr	60.60	5.58	13.95	0.0110	124	60.10	19.04	60.10	18.95
S-16B-32	BASE	25yr72hr	60.52	5.03	14.81	0.0256	149	61.38	52.65	61.38	52.77
Swale16B-1	BASE	25yr72hr	60.65	6.04	5.28	0.0020	58525	60.00	27.23	61.48	12.86
Swale16B-3	BASE	25yr72hr	60.20	6.71	8.48	0.0007	16588	60.00	7.29	60.20	4.77

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExBoxCulv16B-2	BASE	100yr24hr	14.11	54.95	4.239	12.78	5.46	12.56	4.98
ExBoxCulv16B-3	BASE	100yr24hr	12.33	72.90	17.159	12.56	4.98	12.64	4.19
ExCS16B-2A	BASE	100yr24hr	12.04	27.50	-0.128	12.86	7.02	12.86	7.01
ExCS16B-2B	BASE	100yr24hr	11.95	2.91	0.249	12.86	7.02	12.86	7.01
ExPipe16B-1	BASE	100yr24hr	12.00	18.84	-2.965	12.82	6.20	12.86	6.08
ExPipe16B-10	BASE	100yr24hr	12.86	74.71	6.713	12.59	3.46	12.53	2.69
ExPipe16B-11	BASE	100yr24hr	12.81	75.27	-6.441	12.53	2.69	12.38	1.91
ExPipe16B-12	BASE	100yr24hr	12.47	78.03	6.000	12.38	1.91	12.37	1.37
ExPipe16B-13	BASE	100yr24hr	12.37	79.37	-4.594	12.37	1.37	0.00	0.42
ExPipe16B-2	BASE	100yr24hr	12.05	21.42	-6.995	12.86	6.08	12.89	5.97
ExPipe16B-3	BASE	100yr24hr	12.67	17.18	-2.247	12.86	7.01	12.95	6.44
ExPipe16B-4	BASE	100yr24hr	14.34	15.23	-3.906	12.95	6.44	12.80	6.21
ExPipe16B-5	BASE	100yr24hr	12.01	19.44	-4.055	12.80	6.21	12.86	6.10
ExPipe16B-6	BASE	100yr24hr	12.02	19.22	-7.489	12.86	6.10	12.89	5.97
ExPipe16B-7A	BASE	100yr24hr	12.25	18.85	-1.159	12.33	8.67	12.58	7.74
ExPipe16B-7B	BASE	100yr24hr	12.85	11.73	-1.566	12.57	7.47	12.53	6.86
ExPipe16B-8	BASE	100yr24hr	12.50	16.72	0.297	12.53	6.86	12.56	4.98
ExPipe16B-9	BASE	100yr24hr	12.92	73.94	-4.292	12.64	4.19	12.59	3.46
PrCS16B-3	BASE	100yr24hr	14.11	54.87	0.049	12.92	5.87	12.78	5.46
PrCS16B-FD1	BASE	100yr24hr	11.89	12.07	-2.417	12.58	7.74	12.57	7.47
PrCS16B-FD2	BASE	100yr24hr	12.42	5.82	-2.167	12.52	6.94	12.53	6.86
PrCS16B-FD3A	BASE	100yr24hr	12.28	16.77	3.268	12.81	6.21	12.82	6.20
PrCS16B-FD3B	BASE	100yr24hr	12.25	9.99	1.928	12.81	6.21	12.80	6.21
PrFD16B-1	BASE	100yr24hr	12.58	7.96	0.004	12.58	7.74	0.00	0.42
PrFD16B-2	BASE	100yr24hr	12.52	6.57	0.005	12.52	6.94	0.00	0.42
PrFD16B-3	BASE	100yr24hr	12.81	10.13	0.005	12.81	6.21	0.00	0.42
PrPipe16B-14	BASE	100yr24hr	12.05	21.27	8.877	12.89	5.97	12.92	5.87
PrPipe16B-24	BASE	100yr24hr	12.02	19.07	5.486	12.89	5.97	12.92	5.87
S-16B-15	BASE	100yr24hr	14.29	13.79	-0.688	13.00	6.42	12.82	6.20
S-16B-19	BASE	100yr24hr	11.96	5.26	-0.058	13.00	6.42	12.95	6.44
S-16B-22	BASE	100yr24hr	12.81	2.77	0.013	12.81	6.65	12.86	6.10
ExBoxCulv16B-2	BASE	10yr24hr	13.04	39.81	4.071	12.38	3.43	12.36	3.27
ExBoxCulv16B-3	BASE	10yr24hr	12.18	57.95	17.290	12.36	3.27	12.37	2.74
ExCS16B-2A	BASE	10yr24hr	12.35	20.87	-0.214	12.70	5.52	12.70	5.50
ExCS16B-2B	BASE	10yr24hr	12.26	2.72	0.249	12.70	5.52	12.70	5.50
ExPipe16B-1	BASE	10yr24hr	12.30	17.63	-3.467	12.70	4.92	12.74	4.81
ExPipe16B-10	BASE	10yr24hr	12.38	63.03	-3.262	12.36	2.23	12.35	1.78
ExPipe16B-11	BASE	10yr24hr	12.39	63.27	6.617	12.35	1.78	12.36	1.45
ExPipe16B-12	BASE	10yr24hr	12.38	66.44	-8.413	12.36	1.45	12.35	1.09
ExPipe16B-13	BASE	10yr24hr	12.35	67.27	5.483	12.35	1.09	0.00	0.42
ExPipe16B-2	BASE	10yr24hr	12.30	19.35	-6.909	12.74	4.81	12.80	4.71
ExPipe16B-3	BASE	10yr24hr	12.59	13.57	-2.026	12.70	5.50	12.73	5.14
ExPipe16B-4	BASE	10yr24hr	13.14	11.88	-3.472	12.73	5.14	12.71	4.92
ExPipe16B-5	BASE	10yr24hr	12.31	17.89	-5.512	12.71	4.92	12.76	4.80
ExPipe16B-6	BASE	10yr24hr	12.31	17.67	-7.435	12.76	4.80	12.80	4.71
ExPipe16B-7A	BASE	10yr24hr	12.25	11.30	-1.176	12.34	6.36	12.43	5.98
ExPipe16B-7B	BASE	10yr24hr	12.04	12.01	-1.930	12.43	5.69	12.43	5.04
ExPipe16B-8	BASE	10yr24hr	12.04	17.12	0.818	12.43	5.04	12.36	3.27
ExPipe16B-9	BASE	10yr24hr	12.42	61.12	-4.258	12.37	2.74	12.36	2.23
PrCS16B-3	BASE	10yr24hr	13.04	39.66	0.035	12.83	4.63	12.38	3.43

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
PrCS16B-FD1	BASE	10yr24hr	12.01	12.63	-0.527	12.43	5.98	12.43	5.69
PrCS16B-FD2	BASE	10yr24hr	12.23	5.79	1.976	12.44	5.10	12.43	5.04
PrCS16B-FD3A	BASE	10yr24hr	12.30	13.67	4.023	12.68	4.93	12.70	4.92
PrCS16B-FD3B	BASE	10yr24hr	12.21	7.69	1.631	12.68	4.93	12.71	4.92
PrFD16B-1	BASE	10yr24hr	12.43	5.09	-0.003	12.43	5.98	0.00	0.42
PrFD16B-2	BASE	10yr24hr	12.44	3.58	0.003	12.44	5.10	0.00	0.42
PrFD16B-3	BASE	10yr24hr	12.68	6.21	0.004	12.68	4.93	0.00	0.42
PrPipe16B-14	BASE	10yr24hr	12.30	19.24	9.291	12.80	4.71	12.83	4.63
PrPipe16B-24	BASE	10yr24hr	12.31	17.56	7.997	12.80	4.71	12.83	4.63
S-16B-15	BASE	10yr24hr	12.96	9.48	-0.172	12.73	5.12	12.70	4.92
S-16B-19	BASE	10yr24hr	12.25	4.90	0.057	12.73	5.12	12.73	5.14
S-16B-22	BASE	10yr24hr	22.01	0.12	0.000	22.01	6.52	12.76	4.80
ExBoxCulv16B-2	BASE	25yr72hr	61.38	52.77	4.326	60.52	5.03	60.30	4.51
ExBoxCulv16B-3	BASE	25yr72hr	60.08	67.82	17.244	60.30	4.51	60.31	3.79
ExCS16B-2A	BASE	25yr72hr	59.81	24.30	-0.114	60.57	6.58	60.57	6.57
ExCS16B-2B	BASE	25yr72hr	59.70	2.84	0.249	60.57	6.58	60.57	6.57
ExPipe16B-1	BASE	25yr72hr	59.80	18.25	-2.922	60.54	5.82	60.57	5.68
ExPipe16B-10	BASE	25yr72hr	60.44	71.81	6.716	60.27	3.11	60.21	2.39
ExPipe16B-11	BASE	25yr72hr	60.41	72.43	-6.439	60.21	2.39	60.12	1.75
ExPipe16B-12	BASE	25yr72hr	60.12	75.62	5.993	60.12	1.75	60.13	1.29
ExPipe16B-13	BASE	25yr72hr	60.13	76.20	-4.245	60.13	1.29	0.00	0.42
ExPipe16B-2	BASE	25yr72hr	59.84	20.33	-7.412	60.57	5.68	60.60	5.57
ExPipe16B-3	BASE	25yr72hr	60.37	16.33	-2.644	60.57	6.57	60.63	6.05
ExPipe16B-4	BASE	25yr72hr	61.53	14.37	-3.822	60.63	6.05	60.51	5.82
ExPipe16B-5	BASE	25yr72hr	59.80	18.93	-4.190	60.51	5.82	60.55	5.72
ExPipe16B-6	BASE	25yr72hr	60.10	19.04	-7.906	60.55	5.72	60.60	5.58
ExPipe16B-7A	BASE	25yr72hr	60.00	14.88	-1.174	60.09	7.57	60.27	6.98
ExPipe16B-7B	BASE	25yr72hr	59.81	10.98	-1.568	60.26	6.73	60.24	6.18
ExPipe16B-8	BASE	25yr72hr	60.23	15.71	0.337	60.24	6.18	60.30	4.51
ExPipe16B-9	BASE	25yr72hr	60.55	70.91	-4.270	60.31	3.79	60.27	3.11
PrCS16B-3	BASE	25yr72hr	61.38	52.65	0.053	60.63	5.47	60.52	5.03
PrCS16B-FD1	BASE	25yr72hr	59.68	12.02	-2.018	60.27	6.98	60.26	6.73
PrCS16B-FD2	BASE	25yr72hr	59.69	5.93	1.941	60.24	6.24	60.24	6.18
PrCS16B-FD3A	BASE	25yr72hr	59.80	12.91	3.495	60.53	5.82	60.54	5.82
PrCS16B-FD3B	BASE	25yr72hr	59.94	7.81	1.981	60.53	5.82	60.51	5.82
PrFD16B-1	BASE	25yr72hr	60.27	6.71	0.004	60.27	6.98	0.00	0.42
PrFD16B-2	BASE	25yr72hr	60.24	5.43	0.005	60.24	6.24	0.00	0.42
PrFD16B-3	BASE	25yr72hr	60.53	8.95	0.006	60.53	5.82	0.00	0.42
PrPipe16B-14	BASE	25yr72hr	59.84	20.21	5.013	60.60	5.57	60.63	5.47
PrPipe16B-24	BASE	25yr72hr	60.10	18.95	5.472	60.60	5.58	60.63	5.47
S-16B-15	BASE	25yr72hr	61.48	12.88	-0.179	60.65	6.04	60.54	5.82
S-16B-19	BASE	25yr72hr	59.72	4.37	0.087	60.65	6.04	60.63	6.05
S-16B-22	BASE	25yr72hr	60.20	4.77	0.018	60.20	6.71	60.55	5.72

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100yr24hr	B16B-10A	BASE	12.27	6.87	8.137	34262
100yr24hr	B16B-10B	BASE	12.27	1.84	8.439	9191
100yr24hr	B16B-11	BASE	12.27	12.97	9.202	65804
100yr24hr	B16B-12A	BASE	12.27	8.98	13.408	54023
100yr24hr	B16B-12B	BASE	12.27	13.56	13.095	79856
100yr24hr	B16B-12B Offs1	BASE	12.27	5.33	11.574	28989
100yr24hr	B16B-12B Offs2	BASE	12.27	7.52	11.664	41070
100yr24hr	B16B-13A	BASE	12.27	13.39	8.957	67631
100yr24hr	B16B-13B	BASE	12.27	8.24	8.875	41557
100yr24hr	B16B-14A	BASE	12.27	13.83	10.428	72297
100yr24hr	B16B-14B	BASE	12.27	5.29	12.643	30290
100yr24hr	B16B-15	BASE	12.27	21.11	11.222	113246
100yr24hr	B16B-16	BASE	12.27	21.98	9.784	112938
100yr24hr	B16B-17	BASE	12.27	9.54	9.037	48220
100yr24hr	B16B-18	BASE	12.27	2.11	9.208	10696
100yr24hr	B16B-18 Offs	BASE	12.27	0.77	8.083	3814
100yr24hr	B16B-19	BASE	12.27	1.94	13.495	11757
100yr24hr	B16B-1A	BASE	12.27	14.13	9.286	71801
100yr24hr	B16B-1B	BASE	12.27	16.73	9.205	84872
100yr24hr	B16B-20	BASE	12.27	1.08	7.021	5352
100yr24hr	B16B-20 Offs	BASE	12.27	5.24	10.108	27151
100yr24hr	B16B-21	BASE	12.27	1.94	13.495	11757
100yr24hr	B16B-22	BASE	12.27	0.91	7.274	4489
100yr24hr	B16B-2A	BASE	12.27	6.64	13.495	40171
100yr24hr	B16B-2B	BASE	12.27	34.13	11.284	183504
100yr24hr	B16B-3	BASE	12.27	17.99	10.389	93899
100yr24hr	B16B-4	BASE	12.27	43.06	11.031	229443
100yr24hr	B16B-4 Offs	BASE	12.27	12.39	8.711	62294
100yr24hr	B16B-5	BASE	12.27	22.99	10.090	119039
100yr24hr	B16B-6	BASE	12.27	3.84	10.745	20281
100yr24hr	B16B-7	BASE	12.27	12.81	8.904	64645
100yr24hr	B16B-8	BASE	12.27	11.11	10.468	58137
100yr24hr	B16B-9	BASE	12.27	5.72	12.341	32256
10yr24hr	B16B-10A	BASE	12.27	3.51	4.110	17307
10yr24hr	B16B-10B	BASE	12.27	0.96	4.337	4723
10yr24hr	B16B-11	BASE	12.27	7.10	4.925	35222
10yr24hr	B16B-12A	BASE	12.27	5.82	8.659	34892
10yr24hr	B16B-12B	BASE	12.27	8.77	8.351	50925
10yr24hr	B16B-12B Offs1	BASE	12.27	3.29	6.924	17343
10yr24hr	B16B-12B Offs2	BASE	12.27	4.66	7.006	24667
10yr24hr	B16B-13A	BASE	12.27	7.23	4.734	35742
10yr24hr	B16B-13B	BASE	12.27	4.42	4.670	21866
10yr24hr	B16B-14A	BASE	12.27	8.11	5.926	41084
10yr24hr	B16B-14B	BASE	12.27	3.39	7.914	18961
10yr24hr	B16B-15	BASE	12.27	12.85	6.611	66716
10yr24hr	B16B-16	BASE	12.27	12.45	5.392	62240
10yr24hr	B16B-17	BASE	12.27	5.17	4.796	25590
10yr24hr	B16B-18	BASE	12.27	1.15	4.930	5727
10yr24hr	B16B-18 Offs	BASE	12.27	0.39	4.070	1921
10yr24hr	B16B-19	BASE	12.27	1.26	8.747	7620
10yr24hr	B16B-1A	BASE	12.27	7.78	4.992	38599

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10yr24hr	B16B-1B	BASE	12.27	9.16	4.928	45436
10yr24hr	B16B-20	BASE	12.29	0.51	3.308	2522
10yr24hr	B16B-20 Offs	BASE	12.27	3.02	5.658	15199
10yr24hr	B16B-21	BASE	12.27	1.26	8.747	7620
10yr24hr	B16B-22	BASE	12.29	0.43	3.486	2151
10yr24hr	B16B-2A	BASE	12.27	4.30	8.747	26037
10yr24hr	B16B-2B	BASE	12.27	20.83	6.666	108402
10yr24hr	B16B-3	BASE	12.27	10.52	5.893	53263
10yr24hr	B16B-4	BASE	12.27	25.99	6.443	134024
10yr24hr	B16B-4 Offs	BASE	12.27	6.58	4.544	32492
10yr24hr	B16B-5	BASE	12.27	13.24	5.643	66579
10yr24hr	B16B-6	BASE	12.27	2.29	6.196	11695
10yr24hr	B16B-7	BASE	12.27	6.89	4.693	34069
10yr24hr	B16B-8	BASE	12.27	6.53	5.960	33099
10yr24hr	B16B-9	BASE	12.27	3.64	7.629	19940
25yr72hr	B16B-10A	BASE	60.02	5.79	8.581	36134
25yr72hr	B16B-10B	BASE	60.02	1.54	8.890	9682
25yr72hr	B16B-11	BASE	60.02	10.64	9.667	69127
25yr72hr	B16B-12A	BASE	60.02	6.90	13.907	56037
25yr72hr	B16B-12B	BASE	60.02	10.43	13.594	82901
25yr72hr	B16B-12B Offs1	BASE	60.02	4.17	12.067	30223
25yr72hr	B16B-12B Offs2	BASE	60.02	5.87	12.157	42808
25yr72hr	B16B-13A	BASE	60.02	11.05	9.418	71109
25yr72hr	B16B-13B	BASE	60.02	6.81	9.334	43707
25yr72hr	B16B-14A	BASE	60.02	11.04	10.910	75639
25yr72hr	B16B-14B	BASE	60.02	4.08	13.141	31484
25yr72hr	B16B-15	BASE	60.02	16.59	11.712	118192
25yr72hr	B16B-16	BASE	60.02	17.78	10.258	118407
25yr72hr	B16B-17	BASE	60.02	7.85	9.499	50685
25yr72hr	B16B-18	BASE	60.02	1.73	9.673	11236
25yr72hr	B16B-18 Offs	BASE	60.02	0.65	8.527	4024
25yr72hr	B16B-19	BASE	60.02	1.49	13.995	12193
25yr72hr	B16B-1A	BASE	60.02	11.56	9.753	75405
25yr72hr	B16B-1B	BASE	60.02	13.72	9.670	89158
25yr72hr	B16B-20	BASE	60.02	0.95	7.439	5671
25yr72hr	B16B-20 Offs	BASE	60.02	4.21	10.586	28436
25yr72hr	B16B-21	BASE	60.02	1.49	13.995	12193
25yr72hr	B16B-22	BASE	60.02	0.79	7.699	4751
25yr72hr	B16B-2A	BASE	60.02	5.10	13.995	41658
25yr72hr	B16B-2B	BASE	60.02	26.79	11.775	191482
25yr72hr	B16B-3	BASE	60.02	14.36	10.870	98252
25yr72hr	B16B-4	BASE	60.02	33.96	11.519	239600
25yr72hr	B16B-4 Offs	BASE	60.02	10.29	9.167	65556
25yr72hr	B16B-5	BASE	60.02	18.47	10.568	124676
25yr72hr	B16B-6	BASE	60.02	3.05	11.230	21198
25yr72hr	B16B-7	BASE	60.02	10.59	9.364	67982
25yr72hr	B16B-8	BASE	60.02	8.86	10.950	60817
25yr72hr	B16B-9	BASE	60.02	4.43	12.839	33555

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.690	Time Shift(hrs): 0.00
Curve Number: 84.90	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-12B Offs2	Node: ExStruct16B-7	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.970	Time Shift(hrs): 0.00
Curve Number: 85.57	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-13A	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.080	Time Shift(hrs): 0.00
Curve Number: 66.87	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-13B	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.290	Time Shift(hrs): 0.00
Curve Number: 66.34	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-14A	Node: ExStruct16B-8	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.910	Time Shift(hrs): 0.00
Curve Number: 76.68	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-14B	Node: ExStruct16B-8	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.660	Time Shift(hrs): 0.00
Curve Number: 93.08	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-1A Node: Pond16B-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.130 Time Shift(hrs): 0.00
Curve Number: 69.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-1B Node: Pond16B-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.540 Time Shift(hrs): 0.00
Curve Number: 68.47 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-20 Node: ExStruct16B-12 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.210 Time Shift(hrs): 0.00
Curve Number: 55.01 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-20 Offs Node: ExStruct16B-12 Status: Offsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.740 Time Shift(hrs): 0.00
Curve Number: 74.48 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-21 Node: ExStruct16B-13 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.240 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-22 Node: NFNR Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.170	Time Shift(hrs): 0.00
Curve Number: 56.50	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-2A	Node: FD16B-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.820	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-2B	Node: FD16B-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 4.480	Time Shift(hrs): 0.00	
Curve Number: 82.77	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-3	Node: Pond16B-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.490	Time Shift(hrs): 0.00	
Curve Number: 76.41	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-4	Node: Pond16B-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 5.730	Time Shift(hrs): 0.00	
Curve Number: 80.94	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-4 Offs	Node: Pond16B-1	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.970	Time Shift(hrs): 0.00	
Curve Number: 65.30	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-5	Node: Swale16B-1	Status: Onsite
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I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Group: BASE

Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 3.250	Time Shift(hrs): 0.00
Curve Number: 74.36	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-6

Node: ExStruct16B-2

Status: Onsite

Group: BASE

Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.520	Time Shift(hrs): 0.00
Curve Number: 78.90	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-7

Node: Ditch16B-2

Status: Onsite

Group: BASE

Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.000	Time Shift(hrs): 0.00
Curve Number: 66.53	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-8

Node: Swale16B-1

Status: Onsite

Group: BASE

Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.530	Time Shift(hrs): 0.00
Curve Number: 76.96	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-9

Node: FD16B-3

Status: Onsite

Group: BASE

Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.720	Time Shift(hrs): 0.00
Curve Number: 90.72	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

=====
 === Nodes =====
 =====

Name: CS16B-FD1	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 7.570
Type: Stage/Area		

Warning Stage = Lowest edge of shoulder.
 Lowest edge of pavement = 8.29'

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Group: BASE
 Type: Stage/Area

Warn Stage(ft): 8.000

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-2.000	0.0010
8.000	0.0010

Name: ExStruct16B-8 Base Flow(cfs): 0.000
 Group: BASE
 Type: Stage/Area

Init Stage(ft): 0.420
 Warn Stage(ft): 7.000

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
0.000	0.0008
7.000	0.0008

Name: FD16B-1 Base Flow(cfs): 0.000
 Group: BASE
 Type: Stage/Area

Init Stage(ft): 0.420
 Warn Stage(ft): 7.570

Combined storage for PrFD16B-1 and Swale 16B-4.
 Warning stage = lowest edge of shoulder.
 Lowest edge of pavement = 8.29'
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-8.200	0.0284
3.600	0.0284
5.010	0.0835
6.000	0.2181
7.570	0.4221
8.000	0.5551

Name: FD16B-2 Base Flow(cfs): 0.000
 Group: BASE
 Type: Stage/Area

Init Stage(ft): 0.420
 Warn Stage(ft): 7.290

Combined storage for PrFD16B-2 and Swale 16B-5.
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-9.000	0.0246
3.600	0.0246
4.610	0.1187
6.500	0.1628
6.510	0.1801
7.000	0.1875

Name: FD16B-3 Base Flow(cfs): 0.000
 Group: BASE
 Type: Stage/Area

Init Stage(ft): 0.420
 Warn Stage(ft): 7.200

Combined storage for PrFD16B-3 and Swale 16B-2.
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExBoxCulv16B-3	From Node: ExStruct16B-7	Length(ft): 23.00
Group: BASE	To Node: Pond16B-4	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Rectangular	Rectangular	Exit Loss Coef: 0.00
Span(in): 60.00	60.00	Bend Loss Coef: 0.00
Rise(in): 30.00	30.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): -1.080	-1.580	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-1	From Node: CS16B-FD3A	Length(ft): 138.00
Group: BASE	To Node: ExStruct16B-2	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 36.00	36.00	Bend Loss Coef: 0.00
Rise(in): 36.00	36.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): -0.280	-0.580	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-10	From Node: ExStruct16B-10	Length(ft): 190.00
Group: BASE	To Node: ExStruct16B-11	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 54.00	54.00	Bend Loss Coef: 0.00
Rise(in): 54.00	54.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): -2.780	-2.980	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	
Top Clip(in): 0.000	0.000	

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipel6B-11	From Node: ExStruct16B-11	Length(ft): 196.00
Group: BASE	To Node: ExStruct16B-12	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 54.00	54.00	54.00
Rise(in): 54.00	54.00	54.00
Invert(ft): -2.980	-3.080	-3.080
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
	Friction Equation: Automatic	
	Solution Algorithm: Most Restrictive	
	Flow: Both	
	Entrance Loss Coef: 0.50	
	Exit Loss Coef: 0.00	
	Bend Loss Coef: 0.00	
	Outlet Ctrl Spec: Use dc or tw	
	Inlet Ctrl Spec: Use dc	
	Stabilizer Option: None	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipel6B-12	From Node: ExStruct16B-12	Length(ft): 202.00
Group: BASE	To Node: ExStruct16B-13	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 54.00	54.00	54.00
Rise(in): 54.00	54.00	54.00
Invert(ft): -3.080	-3.180	-3.180
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
	Friction Equation: Automatic	
	Solution Algorithm: Most Restrictive	
	Flow: Both	
	Entrance Loss Coef: 0.50	
	Exit Loss Coef: 0.00	
	Bend Loss Coef: 0.00	
	Outlet Ctrl Spec: Use dc or tw	
	Inlet Ctrl Spec: Use dc	
	Stabilizer Option: None	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipel6B-13	From Node: ExStruct16B-13	Length(ft): 86.00
Group: BASE	To Node: NFN	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 54.00	54.00	54.00
Rise(in): 54.00	54.00	54.00
Invert(ft): -3.180	-3.280	-3.280
Manning's N: 0.013000	0.013000	0.013000
	Friction Equation: Automatic	
	Solution Algorithm: Most Restrictive	
	Flow: Both	
	Entrance Loss Coef: 0.50	
	Exit Loss Coef: 1.00	
	Bend Loss Coef: 0.00	
	Outlet Ctrl Spec: Use dc or tw	

Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-2	From Node: ExStruct16B-2	Length(ft): 58.00
Group: BASE	To Node: S-16B-14	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 36.00	36.00	Exit Loss Coef: 0.00
Rise(in): 36.00	36.00	Bend Loss Coef: 0.00
Invert(ft): -0.580	-0.780	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-3	From Node: Ditch16B-2	Length(ft): 175.00
Group: BASE	To Node: S-16B-19	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 30.00	30.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-4	From Node: S-16B-19	Length(ft): 111.00
Group: BASE	To Node: CS16B-FD3B	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 30.00	30.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.120	

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Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-5	From Node: CS16B-FD3B	Length(ft): 130.00
Group: BASE	To Node: S-16B-22	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 36.00	36.00	Bend Loss Coef: 0.00
Rise(in): 36.00	36.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): -0.380	-0.580	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-6	From Node: S-16B-22	Length(ft): 102.00
Group: BASE	To Node: S-16B-24	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Horz Ellipse	Horz Ellipse	Exit Loss Coef: 0.00
Span(in): 45.00	45.00	Bend Loss Coef: 0.00
Rise(in): 29.00	29.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): -0.580	-1.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-7A	From Node: ExStruct16B-8	Length(ft): 105.00
Group: BASE	To Node: FD16B-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 24.00	24.00	
Rise(in): 24.00	24.00	

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 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Invert(ft): 2.420	2.120	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16B-7B	From Node: CS16B-FD1	Length(ft): 127.00
Group: BASE	To Node: CS16B-FD2	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 1.020	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16B-8	From Node: CS16B-FD2	Length(ft): 225.00
Group: BASE	To Node: ExStruct16B-7	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	-1.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16B-9	From Node: Pond16B-4	Length(ft): 180.00
Group: BASE	To Node: ExStruct16B-10	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 54.00	54.00	

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 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rise(in): 54.00	54.00	Exit Loss Coef: 0.00
Invert(ft): -2.580	-2.780	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: PrPipe16B-14	From Node: S-16B-14	Length(ft): 19.00
Group: BASE	To Node: Pond16B-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 36.00	36.00	Exit Loss Coef: 0.00
Rise(in): 36.00	36.00	Bend Loss Coef: 0.00
Invert(ft): -0.780	-0.880	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: PrPipe16B-24	From Node: S-16B-24	Length(ft): 17.00
Group: BASE	To Node: Pond16B-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 36.00	36.00	Exit Loss Coef: 0.00
Rise(in): 36.00	36.00	Bend Loss Coef: 0.00
Invert(ft): -0.300	-0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

=====
 Drop Structures
 =====

Name: ExCS16B-2B	From Node: Pond16B-2	Length(ft): 40.00
Group: BASE	To Node: Ditch16B-2	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	15.00	15.00	Flow: Both
Rise(in):	15.00	15.00	Entrance Loss Coef: 0.500
Invert(ft):	1.120	0.920	Exit Loss Coef: 0.000
Manning's N:	0.024000	0.024000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 2 for Drop Structure ExCS16B-2B ***

TABLE

Count:	2	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	4.00	Invert(ft):	1.720
Rise(in):	4.00	Control Elev(ft):	1.720

*** Weir 2 of 2 for Drop Structure ExCS16B-2B ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	54.00	Invert(ft):	4.920
Rise(in):	8.80	Control Elev(ft):	4.920

Name:	PrCS16B-3	From Node:	Pond16B-1	Length(ft):	38.00
Group:	BASE	To Node:	S-16B-32	Count:	1

	UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	48.00	48.00	Flow: Both
Rise(in):	48.00	48.00	Entrance Loss Coef: 0.500
Invert(ft):	-1.200	-1.300	Exit Loss Coef: 0.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

This drop structure has three weirs: one horizontal weir, one vertical slot, and one orifice.
From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 3 for Drop Structure PrCS16B-3 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	4.400
Rise(in):	36.00	Control Elev(ft):	4.400

*** Weir 2 of 3 for Drop Structure PrCS16B-3 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Vertical: Mavis Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Circular Orifice Disc Coef: 0.600
Span(in): 4.00 Invert(ft): 0.420
Rise(in): 4.00 Control Elev(ft): 0.420

*** Weir 3 of 3 for Drop Structure PrCS16B-3 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Vertical: Mavis Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600
Span(in): 66.00 Invert(ft): 2.400
Rise(in): 12.00 Control Elev(ft): 2.400

Name: S-16B-15 From Node: Swale16B-1 Length(ft): 132.00
Group: BASE To Node: CS16B-FD3A Count: 1

UPSTREAM	DOWNSTEAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.500
Invert(ft): 0.420	0.220	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Horizontal Weir - DBI-E.
From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 1 for Drop Structure S-16B-15 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600
Span(in): 54.00 Invert(ft): 4.500
Rise(in): 36.00 Control Elev(ft): 4.500

==== Weirs =====

Name: ExCS16B-2A From Node: Pond16B-2
Group: BASE To Node: Ditch16B-2
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 25.00
Left Side Slope(h/v): 2.00
Right Side Slope(h/v): 3.00
Invert(ft): 4.920
Control Elevation(ft): 4.920
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000

Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: PrCS16B-FD1 From Node: FD16B-1
Group: BASE To Node: CS16B-FD1
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
Rise(in): 12.00
Invert(ft): 3.600
Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: PrCS16B-FD2 From Node: FD16B-2
Group: BASE To Node: CS16B-FD2
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 49.00
Rise(in): 12.00
Invert(ft): 3.600
Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: PrCS16B-FD3A From Node: FD16B-3
Group: BASE To Node: CS16B-FD3A
Flow: Both Count: 2
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
Rise(in): 12.00
Invert(ft): 3.600
Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Control structure with two weirs, one in each side.
From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: PrCS16B-FD3B From Node: FD16B-3
Group: BASE To Node: CS16B-FD3B
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
 Rise(in): 12.00
 Invert(ft): 3.600
 Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Control structure with two weirs, one in each side.
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: S-16B-19 From Node: Swale16B-1
 Group: BASE To Node: S-16B-19
 Flow: Both Count: 1
 Type: Horizontal Geometry: Rectangular

Span(in): 27.00
 Rise(in): 36.00
 Invert(ft): 4.500
 Control Elevation(ft): 4.500

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Horizontal weir DBI-E.
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: S-16B-22 From Node: Swale16B-3
 Group: BASE To Node: S-16B-22
 Flow: Both Count: 1
 Type: Horizontal Geometry: Rectangular

Span(in): 54.00
 Rise(in): 36.00
 Invert(ft): 6.500
 Control Elevation(ft): 6.500

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Horizontal weir DBI-E.
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

=====
 Rating Curves
 =====

Name: PrFD16B-1 From Node: FD16B-1 Count: 1
 Group: BASE To Node: Groundwater Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: PrFD16B-1	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```
-----
Name: PrFD16B-2          From Node: FD16B-2          Count: 1
Group: BASE              To Node: Groundwater        Flow: Both
```

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: PrFD16B-2	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

```
-----
Name: PrFD16B-3          From Node: FD16B-3          Count: 1
Group: BASE              To Node: Groundwater2      Flow: Both
```

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: PrFD16B-3	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

```
=====
=== Hydrology Simulations =====
=====
```

```
Name: 100yr24hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16B\100yr24hr.R32
```

```
Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 13.50
```

Time(hrs)	Print Inc(min)
30.000	5.00

```
Name: 10yr24hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16B\10yr24hr.R32
```

```
Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.75
```

Time(hrs)	Print Inc(min)
30.000	5.00

```
Name: 25yr72hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16B\25yr72hr.R32
```

```
Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 14.00
```

Time(hrs)	Print Inc(min)
48.000	15.00
72.000	5.00
84.000	15.00

==== Routing Simulations =====
=====

Name: 100yr24hr Hydrology Sim: 100yr24hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16B\100yr24hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Name: 10yr24hr Hydrology Sim: 10yr24hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16B\10yr24hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Name: 25yr72hr Hydrology Sim: 25yr72hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 16B\25yr72hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 84.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
72.000	5.000
84.000	15.000

Group	Run
BASE	Yes

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExFD16B-1	BASE	100yr24hr	12.82	5.45	7.57	0.0012	6229	12.25	15.54	12.20	12.82
ExStruct16B-10	BASE	100yr24hr	12.56	2.76	3.50	0.0015	155	12.91	68.35	12.91	68.36
ExStruct16B-11	BASE	100yr24hr	12.47	2.12	5.00	0.0013	156	12.83	68.86	12.83	68.87
ExStruct16B-12	BASE	100yr24hr	12.39	1.63	5.50	-0.0013	186	12.46	71.67	12.46	71.67
ExStruct16B-13	BASE	100yr24hr	12.38	1.21	5.50	0.0013	303	12.38	73.08	12.38	73.08
ExStruct16B-2	BASE	100yr24hr	13.01	5.46	9.00	-0.0058	128	12.25	23.76	12.25	23.60
ExStruct16B-7	BASE	100yr24hr	12.80	4.03	8.00	0.0333	152	13.26	65.32	13.26	65.34
Groundwater	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.82	2.01	0.00	0.00
MH16B-FD1	BASE	100yr24hr	12.83	5.43	7.50	-0.0038	125	15.84	9.48	15.85	9.51
NFNR	BASE	100yr24hr	0.00	0.42	0.42	0.0000	150	12.33	82.47	0.00	0.00
Pond16B-1	BASE	100yr24hr	13.08	5.39	5.00	0.0029	85553	12.25	116.91	13.63	52.52
Pond16B-2A	BASE	100yr24hr	12.98	5.52	5.50	-0.0053	25752	12.25	50.19	12.27	21.29
Pond16B-2B	BASE	100yr24hr	12.98	5.53	5.50	0.0014	14424	12.25	16.82	12.79	3.97
Pond16B-4	BASE	100yr24hr	12.66	3.37	5.00	0.0027	8651	12.81	67.03	12.99	67.67
Pond16B-4A	BASE	100yr24hr	13.09	5.39	5.50	-0.0020	33227	12.25	5.17	14.88	4.92
PrMH16B-3A	BASE	100yr24hr	13.01	5.51	7.20	0.0064	132	12.25	20.09	12.25	19.90
PrMH16B-3B	BASE	100yr24hr	13.01	5.48	7.20	0.0059	130	12.23	5.98	27.10	7.89
S-16B-14	BASE	100yr24hr	13.06	5.42	9.67	0.0065	119	12.25	23.60	12.25	23.46
S-16B-19	BASE	100yr24hr	12.99	5.51	5.28	0.0054	133	12.79	4.55	12.84	4.03
S-16B-22	BASE	100yr24hr	12.99	5.47	8.48	0.0058	139	12.50	13.15	12.42	11.94
S-16B-24	BASE	100yr24hr	13.06	5.42	13.95	0.0058	124	12.42	11.94	12.39	11.86
S-16B-32	BASE	100yr24hr	13.00	4.86	14.81	0.0212	149	13.63	52.52	13.63	52.54
Swale 16B-5	BASE	100yr24hr	12.71	5.28	11.00	0.0019	7865	12.17	24.53	11.98	15.21
Swale16B-1	BASE	100yr24hr	12.99	5.50	5.50	0.0019	66723	12.25	68.41	12.94	19.05
Swale16B-3	BASE	100yr24hr	12.98	5.49	7.00	0.0015	12629	12.25	21.49	12.29	8.58
Swale16B-6	BASE	100yr24hr	12.98	5.51	5.50	-0.0042	21375	12.25	36.20	12.62	10.16
ExFD16B-1	BASE	10yr24hr	12.28	4.22	7.57	0.0016	2287	12.25	8.69	12.28	8.45
ExStruct16B-10	BASE	10yr24hr	12.77	1.51	3.50	0.0011	463	12.81	52.49	12.82	52.50
ExStruct16B-11	BASE	10yr24hr	12.76	1.31	5.00	0.0011	491	12.80	52.87	12.80	52.88
ExStruct16B-12	BASE	10yr24hr	12.75	1.09	5.50	-0.0013	579	12.76	54.07	12.76	54.07
ExStruct16B-13	BASE	10yr24hr	12.74	0.85	5.50	0.0013	506	12.74	54.49	12.74	54.49
ExStruct16B-2	BASE	10yr24hr	12.88	3.80	9.00	0.0062	128	12.25	14.16	12.25	14.06
ExStruct16B-7	BASE	10yr24hr	12.80	2.12	8.00	0.0354	152	12.86	50.41	13.75	55.42
Groundwater	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.28	1.48	0.00	0.00
MH16B-FD1	BASE	10yr24hr	12.74	3.65	7.50	-0.0040	211	12.93	8.44	12.93	8.48
NFNR	BASE	10yr24hr	0.00	0.42	0.42	0.0000	150	12.64	56.96	0.00	0.00
Pond16B-1	BASE	10yr24hr	12.91	3.76	5.00	0.0028	68569	12.25	60.97	12.96	36.73
Pond16B-2A	BASE	10yr24hr	12.89	3.82	5.50	-0.0052	22784	12.25	29.02	12.29	12.12
Pond16B-2B	BASE	10yr24hr	12.89	3.82	5.50	0.0008	11978	12.25	9.62	12.73	2.47
Pond16B-4	BASE	10yr24hr	12.78	1.71	5.00	0.0029	3112	13.75	56.03	12.83	52.00
Pond16B-4A	BASE	10yr24hr	12.92	3.76	5.50	-0.0020	25544	12.25	2.41	13.92	2.29
PrMH16B-3A	BASE	10yr24hr	12.86	3.82	7.20	0.0060	132	12.25	11.98	12.27	11.86
PrMH16B-3B	BASE	10yr24hr	12.92	3.81	7.20	-0.0048	130	12.61	4.18	25.99	7.89
S-16B-14	BASE	10yr24hr	12.90	3.78	9.67	-0.0090	119	12.25	14.06	12.26	13.97
S-16B-19	BASE	10yr24hr	12.85	3.81	5.28	0.0044	133	13.28	2.73	12.61	2.84
S-16B-22	BASE	10yr24hr	12.85	3.80	8.48	0.0050	139	26.00	11.49	12.35	7.82
S-16B-24	BASE	10yr24hr	12.92	3.78	13.95	0.0055	124	12.35	7.82	24.53	9.49
S-16B-32	BASE	10yr24hr	12.85	2.56	14.81	0.0199	149	12.96	36.73	12.96	36.75
Swale 16B-5	BASE	10yr24hr	12.66	3.34	11.00	0.0010	6736	12.33	17.84	12.23	15.41
Swale16B-1	BASE	10yr24hr	12.90	3.81	5.50	0.0018	67003	12.26	36.28	13.28	12.20
Swale16B-3	BASE	10yr24hr	12.87	3.82	7.00	0.0004	9708	12.25	13.07	12.32	5.96
Swale16B-6	BASE	10yr24hr	12.90	3.81	5.50	-0.0042	21490	12.25	22.02	12.33	6.18
ExFD16B-1	BASE	25yr72hr	60.53	5.05	7.57	0.0004	3860	60.00	12.62	60.00	10.87
ExStruct16B-10	BASE	25yr72hr	60.24	2.50	3.50	0.0010	155	60.65	66.10	60.66	66.12
ExStruct16B-11	BASE	25yr72hr	60.20	1.93	5.00	0.0011	156	60.60	66.53	60.61	66.54
ExStruct16B-12	BASE	25yr72hr	60.15	1.53	5.50	-0.0013	196	60.19	68.81	60.19	68.82
ExStruct16B-13	BASE	25yr72hr	60.14	1.14	5.50	0.0017	344	60.14	69.92	60.14	69.91
ExStruct16B-2	BASE	25yr72hr	60.69	5.08	9.00	-0.0063	128	60.00	18.77	60.00	18.65

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POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExStruct16B-7	BASE	25yr72hr	60.54	3.71	8.00	0.0390	152	60.88	63.49	60.88	63.51
Groundwater	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.53	1.84	0.00	0.00
MH16B-FD1	BASE	25yr72hr	60.55	5.03	7.50	0.0037	125	62.56	9.52	62.57	9.56
NFNR	BASE	25yr72hr	0.00	0.42	0.42	0.0000	150	60.08	77.35	0.00	0.00
Pond16B-1	BASE	25yr72hr	60.73	5.01	5.00	0.0029	81592	60.00	97.90	61.17	50.87
Pond16B-2A	BASE	25yr72hr	60.66	5.13	5.50	-0.0053	25069	60.00	40.22	60.01	18.50
Pond16B-2B	BASE	25yr72hr	60.67	5.13	5.50	0.0007	13854	60.00	13.39	60.52	3.58
Pond16B-4	BASE	25yr72hr	60.46	3.07	5.00	0.0027	5028	60.58	65.00	60.68	65.51
Pond16B-4A	BASE	25yr72hr	60.73	5.01	5.50	-0.0020	31412	60.00	4.52	62.33	4.93
PrMH16B-3A	BASE	25yr72hr	60.64	5.12	7.20	0.0064	132	60.00	15.86	60.00	15.72
PrMH16B-3B	BASE	25yr72hr	60.68	5.10	7.20	-0.0060	130	60.15	5.44	74.83	7.89
S-16B-14	BASE	25yr72hr	60.71	5.04	9.67	0.0064	119	60.00	18.65	60.00	18.55
S-16B-19	BASE	25yr72hr	60.69	5.11	5.28	-0.0040	133	60.55	4.03	60.87	3.65
S-16B-22	BASE	25yr72hr	60.69	5.08	8.48	0.0059	139	60.20	11.98	60.15	10.71
S-16B-24	BASE	25yr72hr	60.69	5.04	13.95	0.0058	124	60.15	10.71	60.15	10.59
S-16B-32	BASE	25yr72hr	60.65	4.48	14.81	0.0218	149	61.17	50.87	61.17	50.89
Swale 16B-5	BASE	25yr72hr	60.44	4.86	11.00	0.0008	7622	59.83	21.64	59.71	14.37
Swale16B-1	BASE	25yr72hr	60.68	5.11	5.50	0.0018	66723	60.00	55.43	60.80	19.53
Swale16B-3	BASE	25yr72hr	60.66	5.11	7.00	0.0006	11956	60.00	16.95	60.06	7.28
Swale16B-6	BASE	25yr72hr	60.67	5.11	5.50	-0.0042	21306	60.00	28.42	60.29	8.90

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DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS16B-3	BASE	100yr24hr	13.63	52.52	0.027	13.08	5.39	13.00	4.86
CS16B-5	BASE	100yr24hr	11.98	15.21	-0.144	12.71	5.28	12.80	4.03
CS16B-FD1	BASE	100yr24hr	12.20	11.16	1.900	12.82	5.45	12.83	5.43
ExBoxCulv16B-2	BASE	100yr24hr	13.63	52.54	3.976	13.00	4.86	12.80	4.03
ExBoxCulv16B-3	BASE	100yr24hr	13.26	65.34	16.711	12.80	4.03	12.66	3.37
ExPipe16B-1	BASE	100yr24hr	12.25	19.90	2.853	13.01	5.51	13.01	5.46
ExPipe16B-10	BASE	100yr24hr	12.91	68.36	-4.219	12.56	2.76	12.47	2.12
ExPipe16B-11	BASE	100yr24hr	12.83	68.87	3.013	12.47	2.12	12.39	1.63
ExPipe16B-12	BASE	100yr24hr	12.46	71.67	5.021	12.39	1.63	12.38	1.21
ExPipe16B-13	BASE	100yr24hr	12.38	73.08	2.700	12.38	1.21	0.00	0.42
ExPipe16B-2	BASE	100yr24hr	12.25	23.60	-2.906	13.01	5.46	13.06	5.42
ExPipe16B-3	BASE	100yr24hr	12.79	3.97	-0.992	12.98	5.53	12.99	5.51
ExPipe16B-4	BASE	100yr24hr	12.84	4.03	3.510	12.99	5.51	13.01	5.48
ExPipe16B-5	BASE	100yr24hr	27.10	7.89	-4.504	13.01	5.48	12.99	5.47
ExPipe16B-6	BASE	100yr24hr	12.42	11.94	3.087	12.99	5.47	13.06	5.42
ExPipe16B-7A	BASE	100yr24hr	15.47	9.69	0.621	12.98	5.51	12.83	5.43
ExPipe16B-7B	BASE	100yr24hr	15.85	9.51	1.464	12.83	5.43	12.71	5.28
ExPipe16B-9	BASE	100yr24hr	12.99	67.67	2.134	12.66	3.37	12.56	2.76
FD16B-1	BASE	100yr24hr	12.82	2.01	0.001	12.82	5.45	0.00	0.42
P-SWL3 16B-22	BASE	100yr24hr	12.29	8.58	-2.119	12.98	5.49	12.99	5.47
P_PND2A-PND2B	BASE	100yr24hr	3.65	0.65	-0.992	12.98	5.52	12.98	5.53
P_PND2A-SWL1	BASE	100yr24hr	12.26	22.05	-11.996	12.98	5.52	12.99	5.50
P_SWALE6-SWALE1	BASE	100yr24hr	12.26	17.85	4.385	12.98	5.51	12.99	5.50
P_SWL1-PND1	BASE	100yr24hr	12.62	23.19	-5.322	12.99	5.50	13.08	5.39
Pipe16B-14	BASE	100yr24hr	12.25	23.46	2.582	13.06	5.42	13.08	5.39
Pipe16B-24	BASE	100yr24hr	12.39	11.86	-2.766	13.06	5.42	13.08	5.39
Pipe16B-4A	BASE	100yr24hr	14.88	4.92	-1.453	13.09	5.39	13.08	5.39
S-16B-15	BASE	100yr24hr	14.92	2.53	-2.412	12.99	5.50	13.01	5.51
S-16B-19	BASE	100yr24hr	12.79	0.58	-0.851	12.99	5.50	12.99	5.51
CS16B-3	BASE	10yr24hr	12.96	36.73	0.013	12.91	3.76	12.85	2.56
CS16B-5	BASE	10yr24hr	12.23	15.41	-0.155	12.66	3.34	12.80	2.12
CS16B-FD1	BASE	10yr24hr	12.28	6.98	0.010	12.28	4.22	12.74	3.65
ExBoxCulv16B-2	BASE	10yr24hr	12.96	36.75	3.763	12.85	2.56	12.80	2.12
ExBoxCulv16B-3	BASE	10yr24hr	13.75	55.42	17.017	12.80	2.12	12.78	1.71
ExPipe16B-1	BASE	10yr24hr	12.27	11.86	-4.806	12.86	3.82	12.88	3.80
ExPipe16B-10	BASE	10yr24hr	12.82	52.50	4.320	12.77	1.51	12.76	1.31
ExPipe16B-11	BASE	10yr24hr	12.80	52.88	3.015	12.76	1.31	12.75	1.09
ExPipe16B-12	BASE	10yr24hr	12.76	54.07	5.024	12.75	1.09	12.74	0.85
ExPipe16B-13	BASE	10yr24hr	12.74	54.49	2.699	12.74	0.85	0.00	0.42
ExPipe16B-2	BASE	10yr24hr	12.25	14.06	3.327	12.88	3.80	12.90	3.78
ExPipe16B-3	BASE	10yr24hr	12.73	2.47	0.606	12.89	3.82	12.85	3.81
ExPipe16B-4	BASE	10yr24hr	12.61	2.84	-2.636	12.85	3.81	12.92	3.81
ExPipe16B-5	BASE	10yr24hr	25.99	7.89	-3.985	12.92	3.81	12.85	3.80
ExPipe16B-6	BASE	10yr24hr	12.35	7.82	3.100	12.85	3.80	12.92	3.78
ExPipe16B-7A	BASE	10yr24hr	12.93	7.35	-0.044	12.90	3.81	11.97	4.12
ExPipe16B-7B	BASE	10yr24hr	12.93	8.48	1.401	12.74	3.65	12.66	3.34
ExPipe16B-9	BASE	10yr24hr	12.83	52.00	2.136	12.78	1.71	12.77	1.51
FD16B-1	BASE	10yr24hr	12.28	1.48	0.001	12.28	4.22	0.00	0.42
P-SWL3 16B-22	BASE	10yr24hr	12.32	5.96	0.649	12.87	3.82	12.85	3.80
P_PND2A-PND2B	BASE	10yr24hr	5.66	0.66	-0.980	12.89	3.82	12.89	3.82
P_PND2A-SWL1	BASE	10yr24hr	12.29	13.59	-11.689	12.89	3.82	12.90	3.81
P_SWALE6-SWALE1	BASE	10yr24hr	12.27	6.65	4.385	12.90	3.81	12.90	3.81
P_SWL1-PND1	BASE	10yr24hr	12.78	12.32	-4.948	12.90	3.81	12.91	3.76
Pipe16B-14	BASE	10yr24hr	12.26	13.97	5.827	12.90	3.78	12.91	3.76
Pipe16B-24	BASE	10yr24hr	24.53	9.49	3.488	12.92	3.78	12.91	3.76
Pipe16B-4A	BASE	10yr24hr	13.92	2.29	-1.453	12.92	3.76	12.91	3.76
S-16B-15	BASE	10yr24hr	14.19	1.16	1.685	12.90	3.81	12.86	3.82
S-16B-19	BASE	10yr24hr	18.54	0.45	-0.635	12.90	3.81	12.85	3.81

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS16B-3	BASE	25yr72hr	61.17	50.87	0.013	60.73	5.01	60.65	4.48
CS16B-5	BASE	25yr72hr	59.71	14.37	-0.160	60.44	4.86	60.54	3.71
CS16B-FD1	BASE	25yr72hr	59.99	9.24	1.004	60.53	5.05	60.55	5.03
ExBoxCulv16B-2	BASE	25yr72hr	61.17	50.89	3.978	60.65	4.48	60.54	3.71
ExBoxCulv16B-3	BASE	25yr72hr	60.88	63.51	16.678	60.54	3.71	60.46	3.07
ExPipe16B-1	BASE	25yr72hr	60.00	15.72	2.170	60.64	5.12	60.69	5.08
ExPipe16B-10	BASE	25yr72hr	60.66	66.12	-4.327	60.24	2.50	60.20	1.93
ExPipe16B-11	BASE	25yr72hr	60.61	66.54	-4.208	60.20	1.93	60.15	1.53
ExPipe16B-12	BASE	25yr72hr	60.19	68.82	5.021	60.15	1.53	60.14	1.14
ExPipe16B-13	BASE	25yr72hr	60.14	69.91	-4.548	60.14	1.14	0.00	0.42
ExPipe16B-2	BASE	25yr72hr	60.00	18.65	-3.643	60.69	5.08	60.71	5.04
ExPipe16B-3	BASE	25yr72hr	60.52	3.58	0.969	60.67	5.13	60.69	5.11
ExPipe16B-4	BASE	25yr72hr	60.87	3.65	3.285	60.69	5.11	60.68	5.10
ExPipe16B-5	BASE	25yr72hr	74.83	7.89	5.360	60.68	5.10	60.69	5.08
ExPipe16B-6	BASE	25yr72hr	60.15	10.71	3.103	60.69	5.08	60.69	5.04
ExPipe16B-7A	BASE	25yr72hr	62.54	9.75	0.446	60.67	5.11	60.55	5.03
ExPipe16B-7B	BASE	25yr72hr	62.57	9.56	1.432	60.55	5.03	60.44	4.86
ExPipe16B-9	BASE	25yr72hr	60.68	65.51	-3.739	60.46	3.07	60.24	2.50
FD16B-1	BASE	25yr72hr	60.53	1.84	0.000	60.53	5.05	0.00	0.42
P-SWL3_16B-22	BASE	25yr72hr	60.06	7.28	-2.240	60.66	5.11	60.69	5.08
P_PND2A-PND2B	BASE	25yr72hr	11.82	0.67	-0.983	60.66	5.13	60.67	5.13
P_PND2A-SWL1	BASE	25yr72hr	60.01	18.77	-11.755	60.66	5.13	60.68	5.11
P_SWALE6-SWALE1	BASE	25yr72hr	60.03	13.96	4.385	60.67	5.11	60.68	5.11
P_SWL1-PND1	BASE	25yr72hr	60.32	20.60	-5.311	60.68	5.11	60.73	5.01
Pipe16B-14	BASE	25yr72hr	60.00	18.55	2.289	60.71	5.04	60.73	5.01
Pipe16B-24	BASE	25yr72hr	60.15	10.59	-2.803	60.69	5.04	60.73	5.01
Pipe16B-4A	BASE	25yr72hr	62.33	4.93	-1.453	60.73	5.01	60.73	5.01
S-16B-15	BASE	25yr72hr	62.25	2.62	-2.354	60.68	5.11	60.64	5.12
S-16B-19	BASE	25yr72hr	60.97	0.58	-0.839	60.68	5.11	60.69	5.11

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100yr24hr	B16B-10A	BASE	12.27	6.12	8.439	30635
100yr24hr	B16B-10B	BASE	12.27	0.53	8.041	2627
100yr24hr	B16B-11	BASE	12.27	17.53	9.085	88709
100yr24hr	B16B-12A	BASE	12.27	14.89	13.495	90139
100yr24hr	B16B-12B	BASE	12.27	15.46	13.495	93568
100yr24hr	B16B-12B Offs2	BASE	12.27	7.13	11.912	39348
100yr24hr	B16B-13A	BASE	12.27	18.02	11.502	97701
100yr24hr	B16B-13B	BASE	12.27	9.84	11.014	52376
100yr24hr	B16B-14A	BASE	12.27	13.07	10.632	68700
100yr24hr	B16B-14B	BASE	12.27	5.19	11.987	28719
100yr24hr	B16B-15	BASE	12.27	15.60	9.599	79797
100yr24hr	B16B-16	BASE	12.27	21.68	9.685	111095
100yr24hr	B16B-17	BASE	12.27	9.13	8.862	46002
100yr24hr	B16B-18	BASE	12.27	2.11	9.208	10696
100yr24hr	B16B-18 Offs	BASE	12.27	0.77	8.083	3814
100yr24hr	B16B-19	BASE	12.27	1.94	13.495	11757
100yr24hr	B16B-1A	BASE	12.27	14.34	9.344	72929
100yr24hr	B16B-1B	BASE	12.27	17.85	10.394	93197
100yr24hr	B16B-20	BASE	12.27	1.08	7.021	5352
100yr24hr	B16B-20 Offs	BASE	12.27	5.24	10.108	27151
100yr24hr	B16B-21	BASE	12.27	1.94	13.495	11757
100yr24hr	B16B-22	BASE	12.27	0.91	7.274	4489
100yr24hr	B16B-2A	BASE	12.27	6.72	13.495	40661
100yr24hr	B16B-2B	BASE	12.27	35.58	11.419	192337
100yr24hr	B16B-3	BASE	12.27	18.16	10.728	95795
100yr24hr	B16B-4	BASE	12.27	44.55	10.993	237040
100yr24hr	B16B-4 Offs	BASE	12.27	11.70	8.826	58950
100yr24hr	B16B-4A	BASE	12.27	5.21	7.021	25740
100yr24hr	B16B-5	BASE	12.27	21.12	10.068	109276
100yr24hr	B16B-6	BASE	12.27	3.88	10.884	20545
100yr24hr	B16B-7	BASE	12.27	17.67	11.969	97754
100yr24hr	B16B-8	BASE	12.27	7.59	9.757	38959
100yr24hr	B16B-9	BASE	12.27	4.77	11.508	25899
10yr24hr	B16B-10A	BASE	12.27	3.19	4.337	15743
10yr24hr	B16B-10B	BASE	12.27	0.27	4.039	1320
10yr24hr	B16B-11	BASE	12.27	9.53	4.833	47195
10yr24hr	B16B-12A	BASE	12.27	9.65	8.747	58423
10yr24hr	B16B-12B	BASE	12.27	10.02	8.747	60646
10yr24hr	B16B-12B Offs2	BASE	12.27	4.46	7.231	23886
10yr24hr	B16B-13A	BASE	12.27	11.10	6.860	58271
10yr24hr	B16B-13B	BASE	12.27	5.93	6.429	30571
10yr24hr	B16B-14A	BASE	12.27	7.74	6.099	39411
10yr24hr	B16B-14B	BASE	12.27	3.26	7.300	17490
10yr24hr	B16B-15	BASE	12.27	8.74	5.242	43578
10yr24hr	B16B-16	BASE	12.27	12.21	5.312	60928
10yr24hr	B16B-17	BASE	12.27	4.89	4.660	24189
10yr24hr	B16B-18	BASE	12.27	1.15	4.930	5727
10yr24hr	B16B-18 Offs	BASE	12.27	0.39	4.070	1921
10yr24hr	B16B-19	BASE	12.27	1.26	8.747	7620
10yr24hr	B16B-1A	BASE	12.27	7.92	5.038	39321
10yr24hr	B16B-1B	BASE	12.27	10.44	5.898	52879
10yr24hr	B16B-20	BASE	12.29	0.51	3.308	2522
10yr24hr	B16B-20 Offs	BASE	12.27	3.02	5.658	15199
10yr24hr	B16B-21	BASE	12.27	1.26	8.747	7620
10yr24hr	B16B-22	BASE	12.29	0.43	3.486	2151
10yr24hr	B16B-2A	BASE	12.27	4.35	8.747	26354
10yr24hr	B16B-2B	BASE	12.27	21.84	6.786	114298
10yr24hr	B16B-3	BASE	12.27	10.80	6.181	55195
10yr24hr	B16B-4	BASE	12.27	26.84	6.411	138229

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10yr24hr	B16B-4 Offs	BASE	12.27	6.26	4.632	30938
10yr24hr	B16B-4A	BASE	12.29	2.44	3.308	12130
10yr24hr	B16B-5	BASE	12.27	12.15	5.625	61055
10yr24hr	B16B-6	BASE	12.27	2.32	6.316	11922
10yr24hr	B16B-7	BASE	12.27	11.08	7.283	59485
10yr24hr	B16B-8	BASE	12.27	4.29	5.370	21442
10yr24hr	B16B-9	BASE	12.27	2.94	6.865	15450
25yr72hr	B16B-10A	BASE	60.02	5.12	8.890	32272
25yr72hr	B16B-10B	BASE	60.02	0.45	8.483	2772
25yr72hr	B16B-11	BASE	60.02	14.41	9.547	93228
25yr72hr	B16B-12A	BASE	60.02	11.44	13.995	93476
25yr72hr	B16B-12B	BASE	60.02	11.88	13.995	97033
25yr72hr	B16B-12B Offs2	BASE	60.02	5.54	12.407	40984
25yr72hr	B16B-13A	BASE	60.02	14.09	11.994	101883
25yr72hr	B16B-13B	BASE	60.02	7.76	11.502	54697
25yr72hr	B16B-14A	BASE	60.02	10.38	11.117	71829
25yr72hr	B16B-14B	BASE	60.02	4.03	12.483	29906
25yr72hr	B16B-15	BASE	60.02	12.67	10.070	83712
25yr72hr	B16B-16	BASE	60.02	17.57	10.157	116513
25yr72hr	B16B-17	BASE	60.02	7.55	9.321	48384
25yr72hr	B16B-18	BASE	60.02	1.73	9.673	11236
25yr72hr	B16B-18 Offs	BASE	60.02	0.65	8.527	4024
25yr72hr	B16B-19	BASE	60.02	1.49	13.995	12193
25yr72hr	B16B-1A	BASE	60.02	11.71	9.812	76574
25yr72hr	B16B-1B	BASE	60.02	14.25	10.876	97515
25yr72hr	B16B-20	BASE	60.02	0.95	7.439	5671
25yr72hr	B16B-20 Offs	BASE	60.02	4.21	10.586	28436
25yr72hr	B16B-21	BASE	60.02	1.49	13.995	12193
25yr72hr	B16B-22	BASE	60.02	0.79	7.699	4751
25yr72hr	B16B-2A	BASE	60.02	5.16	13.995	42166
25yr72hr	B16B-2B	BASE	60.02	27.87	11.911	200618
25yr72hr	B16B-3	BASE	60.02	14.40	11.213	100129
25yr72hr	B16B-4	BASE	60.02	35.15	11.481	247562
25yr72hr	B16B-4 Offs	BASE	60.02	9.69	9.284	62011
25yr72hr	B16B-4A	BASE	60.02	4.55	7.439	27274
25yr72hr	B16B-5	BASE	60.02	16.98	10.546	114460
25yr72hr	B16B-6	BASE	60.02	3.06	11.371	21464
25yr72hr	B16B-7	BASE	60.02	13.73	12.464	101799
25yr72hr	B16B-8	BASE	60.02	6.14	10.230	40849
25yr72hr	B16B-9	BASE	60.02	3.73	12.000	27007

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.340	Time Shift(hrs): 0.00
Curve Number: 84.37	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-13B	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.310	Time Shift(hrs): 0.00
Curve Number: 80.82	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-14A	Node: Swale16B-6	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.780	Time Shift(hrs): 0.00
Curve Number: 78.11	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-14B	Node: Swale16B-6	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.660	Time Shift(hrs): 0.00
Curve Number: 88.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-15	Node: ExFD16B-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.290	Time Shift(hrs): 0.00
Curve Number: 71.06	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-16	Node: Swale 16B-5	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 3.160	Time Shift(hrs): 0.00
Curve Number: 71.63	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-17	Node: Pond16B-4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.430	Time Shift(hrs): 0.00
Curve Number: 66.26	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.740	Time Shift(hrs): 0.00
Curve Number: 74.48	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-21	Node: ExStruct16B-13	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.240	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-22	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.170	Time Shift(hrs): 0.00
Curve Number: 56.50	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-2A	Node: PrMH16B-3A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.830	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-2B	Node: PrMH16B-3A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 4.640	Time Shift(hrs): 0.00
Curve Number: 83.76	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-3	Node: Pond16B-2A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.460	Time Shift(hrs): 0.00
Curve Number: 78.78	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-4	Node: Pond16B-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 5.940	Time Shift(hrs): 0.00
Curve Number: 80.67	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

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 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.620	Time Shift(hrs): 0.00
Curve Number: 84.41	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

=====
 Nodes =====
 =====

Name: ExFD16B-1	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 7.570
Type: Stage/Area		

Combined storage for FD16B-1 and Swale 16B-4.
 Warning stage = lowest edge of shoulder.
 Lowest edge of pavement = 8.29'
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-8.200	0.0284
3.600	0.0284
5.010	0.0835
6.000	0.2181
7.570	0.4221
8.000	0.5551

Name: ExStruct16B-10	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 3.500
Type: Stage/Area		

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-4.000	0.0006
3.420	0.0006

Name: ExStruct16B-11	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 5.000
Type: Stage/Area		

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 Phase 3-A-1

Stage(ft)	Area(ac)
0.420	0.0006
3.220	0.0006

Name: ExStruct16B-12	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 5.500
Type: Stage/Area		

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-4.000	0.0006
3.420	0.0006

Name: ExStruct16B-13	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 5.500
Type: Stage/Area		

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-4.000	0.0006
3.420	0.0006

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 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

-4.000 0.0006
 4.520 0.0006

Name: ExStruct16B-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 9.000
 Type: Stage/Area

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 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-1.000	0.0004
7.620	0.0004

Name: ExStruct16B-7 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 8.000
 Type: Stage/Area

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 Phase 3-A-1

Stage(ft)	Area(ac)
-2.000	0.0010
8.000	0.0010

Name: Groundwater Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

Name: MH16B-FD1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.500
 Type: Stage/Area

Warning Stage = Edge of shoulder

Stage(ft)	Area(ac)
-2.750	0.0004
4.600	0.0004

Name: NFNR Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

Name: Pond16B-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

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 Phase 3-A-1

Stage(ft)	Area(ac)
-2.000	0.0010
0.420	0.0010
1.410	0.0010
1.420	1.0200
2.000	1.1500
2.500	1.2700
3.000	1.3900

4.500 1.7500

Name: Pond16B-2A Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.500
 Type: Stage/Area

Stage(ft)	Area(ac)
-2.000	0.0010
0.420	0.0010
1.410	0.0010
1.420	0.4200
2.000	0.4500
4.000	0.5300
5.500	0.5900

Name: Pond16B-2B Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.500
 Type: Stage/Area

Stage(ft)	Area(ac)
0.420	0.0010
1.410	0.0010
1.420	0.2100
2.000	0.2200
4.000	0.2800
5.500	0.3300

Name: Pond16B-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

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 Phase 3-A-1

Stage(ft)	Area(ac)
-3.000	0.0190
0.000	0.0380
0.420	0.0430
1.000	0.0550
1.420	0.0620
2.000	0.0730
3.000	0.0940
3.500	0.2350
4.000	0.6050
5.000	0.7750

Name: Pond16B-4A Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.500
 Type: Stage/Area

Stage(ft)	Area(ac)
-4.000	0.0001
1.410	0.0001
1.420	0.3700
2.000	0.4200
3.000	0.5100
4.000	0.6100
5.000	0.7200

Name: PrMH16B-3A Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.200
 Type: Stage/Area

Stage(ft)	Area(ac)
-0.380	0.0001
7.200	0.0001

Phase 3-A-1

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.60	1.21
0.420	8.07	3.16

=====
 Pipes =====
 =====

```

Name: ExBoxCulv16B-2      From Node: S-16B-32      Length(ft): 291.00
Group: BASE                To Node: ExStruct16B-7      Count: 1
                             Friction Equation: Automatic
                             Solution Algorithm: Most Restrictive
                             Flow: Both
UPSTREAM                    DOWNSTREAM
Geometry: Rectangular      Rectangular
Span(in): 60.00            60.00
Rise(in): 30.00            30.00
Invert(ft): -1.080        -1.080
Manning's N: 0.013000     0.013000
Top Clip(in): 0.000        0.000
Bot Clip(in): 0.000        0.000
                             Entrance Loss Coef: 0.50
                             Exit Loss Coef: 0.00
                             Bend Loss Coef: 0.00
                             Outlet Ctrl Spec: Use dc or tw
                             Inlet Ctrl Spec: Use dc
                             Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

Name: ExBoxCulv16B-3      From Node: ExStruct16B-7      Length(ft): 23.00
Group: BASE                To Node: Pond16B-4          Count: 1
                             Friction Equation: Automatic
                             Solution Algorithm: Most Restrictive
                             Flow: Both
UPSTREAM                    DOWNSTREAM
Geometry: Rectangular      Rectangular
Span(in): 60.00            60.00
Rise(in): 30.00            30.00
Invert(ft): -1.080        -1.580
Manning's N: 0.013000     0.013000
Top Clip(in): 0.000        0.000
Bot Clip(in): 0.000        0.000
                             Entrance Loss Coef: 0.50
                             Exit Loss Coef: 0.00
                             Bend Loss Coef: 0.00
                             Outlet Ctrl Spec: Use dc or tw
                             Inlet Ctrl Spec: Use dc
                             Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

Name: ExPipe16B-1         From Node: PrMH16B-3A      Length(ft): 138.00
Group: BASE                To Node: ExStruct16B-2      Count: 1
                             Friction Equation: Automatic
                             Solution Algorithm: Most Restrictive
                             Flow: Both
UPSTREAM                    DOWNSTREAM
Geometry: Circular          Circular
Span(in): 36.00            36.00
Rise(in): 36.00            36.00
Invert(ft): -0.280        -0.580
Manning's N: 0.013000     0.013000
Top Clip(in): 0.000        0.000
Bot Clip(in): 0.000        0.000
                             Entrance Loss Coef: 0.50
                             Exit Loss Coef: 0.00
                             Bend Loss Coef: 0.00
                             Outlet Ctrl Spec: Use dc or tw
                             Inlet Ctrl Spec: Use dc
                             Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: ExPipe16B-10      From Node: ExStruct16B-10  Length(ft): 190.00
Group: BASE            To Node: ExStruct16B-11    Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 54.00       54.00
Rise(in): 54.00       54.00
Invert(ft): -2.780    -2.980
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.00
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: ExPipe16B-11      From Node: ExStruct16B-11  Length(ft): 196.00
Group: BASE            To Node: ExStruct16B-12    Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 54.00       54.00
Rise(in): 54.00       54.00
Invert(ft): -2.980    -3.080
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.00
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: ExPipe16B-12      From Node: ExStruct16B-12  Length(ft): 202.00
Group: BASE            To Node: ExStruct16B-13    Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 54.00       54.00
Rise(in): 54.00       54.00
Invert(ft): -3.080    -3.180
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.00
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: ExPipe16B-13      From Node: ExStruct16B-13  Length(ft): 86.00
Group: BASE            To Node: NFNR              Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 54.00       54.00
Rise(in): 54.00       54.00
Invert(ft): -3.180    -3.280
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 1.00
                        Bend Loss Coef: 0.00
  
```

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INPUT REPORT

Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-2	From Node: ExStruct16B-2	Length(ft): 58.00
Group: BASE	To Node: S-16B-14	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 36.00	36.00	Exit Loss Coef: 0.00
Rise(in): 36.00	36.00	Bend Loss Coef: 0.00
Invert(ft): -0.580	-0.780	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-3	From Node: Pond16B-2B	Length(ft): 175.00
Group: BASE	To Node: S-16B-19	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 30.00	30.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-4	From Node: S-16B-19	Length(ft): 111.00
Group: BASE	To Node: PrMH16B-3B	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 30.00	30.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.120	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
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Phase 3-A-1

Name: ExPipe16B-5	From Node: PrMH16B-3B	Length(ft): 130.00
Group: BASE	To Node: S-16B-22	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.50
Invert(ft): -0.380	-0.580	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
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Phase 3-A-1

Name: ExPipe16B-6	From Node: S-16B-22	Length(ft): 102.00
Group: BASE	To Node: S-16B-24	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Horz Ellipse	Horz Ellipse	Solution Algorithm: Most Restrictive
Span(in): 45.00	45.00	Flow: Both
Rise(in): 29.00	29.00	Entrance Loss Coef: 0.50
Invert(ft): -0.580	-1.000	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-7A	From Node: Swale16B-6	Length(ft): 105.00
Group: BASE	To Node: MH16B-FD1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.50
Invert(ft): 2.420	2.120	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name: ExPipe16B-7B	From Node: MH16B-FD1	Length(ft): 127.00
Group: BASE	To Node: Swale 16B-5	Count: 1
		Friction Equation: Automatic

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 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 24.00	24.00	Entrance Loss Coef: 0.50
Rise(in): 24.00	24.00	Exit Loss Coef: 0.00
Invert(ft): 1.020	0.420	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: ExPipe16B-9	From Node: Pond16B-4	Length(ft): 180.00
Group: BASE	To Node: ExStruct16B-10	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 54.00	54.00	Flow: Both
Rise(in): 54.00	54.00	Entrance Loss Coef: 0.50
Invert(ft): -2.580	-2.780	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: P-SWL3_16B-22	From Node: Swale16B-3	Length(ft): 112.00
Group: BASE	To Node: S-16B-22	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.00
Invert(ft): -1.000	-1.000	Exit Loss Coef: 1.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_PND2A-PND2B	From Node: Pond16B-2A	Length(ft): 40.00
Group: BASE	To Node: Pond16B-2B	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.50
Invert(ft): 0.420	0.420	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_PND2A-SWL1      From Node: Pond16B-2A      Length(ft): 70.00
Group: BASE             To Node: Swale16B-1        Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 48.00         48.00
Rise(in): 48.00         48.00
Invert(ft): -2.000     -2.000
Manning's N: 0.013000  0.013000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
                          Entrance Loss Coef: 0.50
                          Exit Loss Coef: 0.00
                          Bend Loss Coef: 0.00
                          Outlet Ctrl Spec: Use dc or tw
                          Inlet Ctrl Spec: Use dc
                          Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_SWALE6-SWALE1   From Node: Swale16B-6      Length(ft): 240.00
Group: BASE             To Node: Swale16B-1        Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 48.00         48.00
Rise(in): 48.00         48.00
Invert(ft): 0.420      0.420
Manning's N: 0.013000  0.013000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
                          Entrance Loss Coef: 0.50
                          Exit Loss Coef: 0.00
                          Bend Loss Coef: 0.00
                          Outlet Ctrl Spec: Use dc or tw
                          Inlet Ctrl Spec: Use dc
                          Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: P_SWL1-PND1      From Node: Swale16B-1      Length(ft): 350.00
Group: BASE             To Node: Pond16B-1        Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 48.00         48.00
Rise(in): 48.00         48.00
Invert(ft): -2.000     -2.000
Manning's N: 0.013000  0.013000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
                          Entrance Loss Coef: 0.50
                          Exit Loss Coef: 0.00
                          Bend Loss Coef: 0.00
                          Outlet Ctrl Spec: Use dc or tw
                          Inlet Ctrl Spec: Use dc
                          Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: Pipe16B-14       From Node: S-16B-14       Length(ft): 19.00
Group: BASE             To Node: Pond16B-1        Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 36.00         36.00
                          Entrance Loss Coef: 0.50
  
```

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rise(in): 36.00	36.00	Exit Loss Coef: 0.00
Invert(ft): -0.780	-0.880	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: Pipe16B-24	From Node: S-16B-24	Length(ft): 17.00
Group: BASE	To Node: Pond16B-1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.50
Invert(ft): -0.300	-0.420	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: Pipe16B-4A	From Node: Pond16B-4A	Length(ft): 40.00
Group: BASE	To Node: Pond16B-1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.50
Invert(ft): -4.000	-4.000	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: S-16B-15	From Node: Swale16B-1	Length(ft): 132.00
Group: BASE	To Node: PrMH16B-3A	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.50
Invert(ft): 0.420	0.220	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

```

-----
Name: S-16B-19          From Node: Swale16B-1      Length(ft): 64.00
Group: BASE            To Node: S-16B-19          Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 18.00       18.00
Rise(in): 18.00       18.00
Invert(ft): 0.420     0.420
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.00
                        Exit Loss Coef: 1.00
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

==== Drop Structures =====

```

-----
Name: CS16B-3          From Node: Pond16B-1      Length(ft): 38.00
Group: BASE            To Node: S-16B-32        Count: 1
                        Friction Equation: Average Conveyance
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 48.00       48.00
Rise(in): 48.00       48.00
Invert(ft): -1.200    -1.300
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.500
                        Exit Loss Coef: 0.000
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Solution Incs: 10
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure CS16B-3 ***

```

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Span(in): 105.00
Rise(in): 36.00
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 4.100
Control Elev(ft): 4.100
  
```

*** Weir 2 of 3 for Drop Structure CS16B-3 ***

```

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Circular
Span(in): 4.00
Rise(in): 4.00
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 0.420
Control Elev(ft): 0.420
  
```

*** Weir 3 of 3 for Drop Structure CS16B-3 ***

```

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Rectangular
Span(in): 93.00
Rise(in): 16.60
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 2.450
Control Elev(ft): 2.450
  
```

```

-----
Name: CS16B-5          From Node: Swale 16B-5      Length(ft): 225.00
Group: BASE            To Node: ExStruct16B-7    Count: 1
  
```


	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	24.00	24.00	Flow: Both
Rise(in):	24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft):	-0.900	-1.080	Exit Loss Coef: 0.000
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure CS16B-5 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 2.500	
Rise(in): 36.00	Control Elev(ft): 2.500	

*** Weir 2 of 2 for Drop Structure CS16B-5 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 4.00	Invert(ft): 0.420	
Rise(in): 4.00	Control Elev(ft): 0.420	

==== Weirs =====

Name: CS16B-FD1	From Node: ExFD16B-1
Group: BASE	To Node: MH16B-FD1
Flow: Both	Count: 1
Type: Vertical: Mavis	Geometry: Rectangular

Span(in): 54.00
 Rise(in): 12.00
 Invert(ft): 3.600
 Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

==== Rating Curves =====

Name: FD16B-1	From Node: ExFD16B-1	Count: 1
Group: BASE	To Node: Groundwater	Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: ExFD16B-1	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

==== Hydrology Simulations =====

Name: 100yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16B\100yr24hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 10yr24hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16B\10yr24hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 25yr72hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16B\25yr72hr.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
72.000	5.00
84.000	15.00

=====
=== Routing Simulations ===
=====

Name: 100yr24hr Hydrology Sim: 100yr24hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16B\100yr24hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.50000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Name: 10yr24hr Hydrology Sim: 10yr24hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16B\10yr24hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.50000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run

BASE Yes

Name: 25yr72hr Hydrology Sim: 25yr72hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 16B\25yr72hr.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 84.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
72.000	5.000
84.000	15.000

Group	Run
-----	-----
BASE	Yes



Appendix F

System 17 Drainage Analysis

Documentation

- Land-Use Tables
- Drainage Calculations
- Summary Tables
- ICPR: Pre-Development
- ICPR: Post-Development

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 17

SHGWT EL. (ft.-NAVD): 0.42

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft.-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B17-1	10	1.12	1.12	0.75	0.18	0.19	0.00	0.00	0.00	0.00	3.00	2.58	3.66	94.15
B17-2	10	10.75	10.75	8.01	0.00	2.74	0.00	0.00	0.00	0.00	8.00	7.58	8.18	82.75
B17-3	10	4.80	4.80	2.64	0.00	2.16	0.00	0.00	0.00	0.00	5.00	4.58	8.18	73.09
B17-4	10	8.10	8.10	6.47	0.00	1.63	0.00	0.00	0.00	0.00	5.00	4.58	8.18	85.87
B17-4 Offs	10	0.58	0.00	0.00	0.00	0.00	0.58	0.17	0.00	0.41	5.00	4.58	8.18	63.36
B17-5A	10	3.73	3.73	1.39	0.00	2.34	0.00	0.00	0.00	0.00	5.00	4.58	8.18	66.09
B17-5B	10	5.81	5.81	2.17	0.00	3.64	0.00	0.00	0.00	0.00	5.00	4.58	8.18	66.12
B17-6	10	0.90	0.90	0.35	0.00	0.55	0.00	0.00	0.00	0.00	5.00	4.58	8.18	66.67
B17-6 Offs	10	0.36	0.00	0.00	0.00	0.00	0.36	0.02	0.00	0.34	5.00	4.58	8.18	56.42
SYSTEM TOTALS:		36.15	35.21	21.78	0.18	13.25	0.94	0.19	0.00	0.75	--	--	--	--

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 17

SHGWT EL. (ft.-NAVD): 0.42

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft.-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B17-1	10	1.05	1.05	0.68	0.18	0.19	0.00	0.00	0.00	0.00	3.00	2.58	3.66	93.79
B17-2	10	10.59	10.59	8.63	0.00	1.96	0.00	0.00	0.00	0.00	8.00	7.58	8.18	86.85
B17-3	10	5.03	5.03	4.41	0.00	0.62	0.00	0.00	0.00	0.00	5.00	4.58	8.18	90.84
B17-4	10	7.95	7.95	7.12	0.00	0.83	0.00	0.00	0.00	0.00	5.00	4.58	8.18	92.13
B17-4 Offs	10	0.58	0.00	0.00	0.00	0.00	0.58	0.17	0.00	0.41	5.00	4.58	8.18	63.36
B17-5A	10	3.78	3.78	2.75	0.00	1.03	0.00	0.00	0.00	0.00	5.00	4.58	8.18	81.77
B17-5B	10	5.91	5.91	3.21	0.00	2.70	0.00	0.00	0.00	0.00	5.00	4.58	8.18	72.80
B17-6	10	0.90	0.90	0.50	0.00	0.40	0.00	0.00	0.00	0.00	5.00	4.58	8.18	73.34
B17-6 Offs	10	0.36	0.00	0.00	0.00	0.00	0.36	0.02	0.00	0.34	5.00	4.58	8.18	56.42
SYSTEM TOTALS:		36.15	35.21	27.30	0.18	7.73	0.94	0.19	0.00	0.75	--	--	--	--

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS WATER QUALITY

Drainage System: **17**

SYSTEM	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) <i>[POST-DEV.]</i>	ONSITE IMPERVIOUS AREA (Ac.) <i>[POST-DEV.]</i>	ONSITE PERVIOUS AREA (Ac.) <i>[POST-DEV.]</i>	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETECTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETECTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	² TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	³ SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
17	0.42	35.21	27.30	7.73	2.93	5.69	5.69	4.34	0.00	0.00	0.00	5.79	0.10

¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

³Water quality treatment in System 17 provided for all onsite contributing basins with the exception of B17-1 (which is located downstream of existing/proposed control structures and consists of 0.87 acres of non-water surface area). Compensatory water quality in System 17 provided for all offsite contributing basins (0.94 acres).

Pond 17-1			Pond 17-2			Swale 17-1A			Swale 17-1B		
TYPE:	Dry Retention		TYPE:	Dry Retention		TYPE:	Dry Retention		TYPE:	Dry Retention	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)	STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
1.42	1.93	--	1.42	0.36	--	1.42	0.66	--	1.42	2.26	--
2.00	1.95	1.12	2.00	0.36	0.21	2.00	0.67	0.39	2.00	2.26	1.31
2.25	1.95	1.61	2.25	0.36	0.30	2.25	0.67	0.55	2.25	2.27	1.88
5.50	1.97	7.98	5.50	0.37	1.48	5.00	0.68	2.42	5.00	2.28	8.13

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

Bleeder Sizing/Design

Drainage System: 17

Pond/Swale Name:	Pond 17-1
Control Structure No.:	CS17-1
Contributing Area (Ac.):	17.61
Detention Volume, 1" x Total Area (Ac-ft):	1.47
Bleed-Down Volume, V_{DET} (1/2 Detention Vol.) (Ac-ft):	0.73
Bleed-Down Time (hrs):	24.00
Bleed-Down Time (sec):	86400
Average Discharge Rate, Q (cfs):	0.37
Weir Elevation (ft-NAVD):	2.25
Bleeder Invert EL. [SHGWT EL.] (ft-NAVD):	0.42

Head, H (ft) 1.83

Weir Coefficient: 0.60

V-Notch Sizing

Minimum V-Notch Angle = 20°

Number of V-Notches Proposed: --

Bleed-Down Volume per V-Notch, V_{DET} (Ac-ft): #VALUE!

Maximum V-Notch Angle, θ , (rad): #VALUE!

Maximum V-Notch Angle, θ , (deg): #VALUE!

$$\theta = 2 \tan^{-1} \left[0.492 \frac{V_{DET}}{H^{2.5}} \right]$$

Proposed V-Notch(s) Angle (deg): --

Proposed V-Notch Angle (rad): #VALUE!

V-Notch Height [= H] (ft): 1.83

V-Notch Top Width (ft): #VALUE!

V-Notch Sideslope [horz./vert.]: #VALUE!

Circular Orifice Sizing

Minimum Orifice Diameter = 3"

Number of Circular Orifices Proposed: 1

Average Discharge per Orifice, Q (cfs): 0.37

$$Q = 4.8A\sqrt{h}, A = \pi r^2, h = H - r$$

Select Orifice Diameter with Discharge nearest to but less than Q

Orifice Diameter (in)	Orifice Radius, r (ft)	Area, A (ft ²)	h (ft)	Discharge Rate (cfs)
3.0	0.125	0.049	1.705	0.31
4.0	0.167	0.087	1.663	0.54
5.0	0.208	0.136	1.622	0.83
6.0	0.250	0.196	1.580	1.18

Proposed Orifice(s) Diameter (in): 3.0

Note: Contributing area to System divided by two since two control structures are utilized in System 17.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

Bleeder Sizing/Design

Drainage System: 17

Pond/Swale Name:	Pond 17-2
Control Structure No.:	CS17-2
Contributing Area (Ac.):	17.61
Detention Volume, 1" x Total Area (Ac-ft):	1.47
Bleed-Down Volume, V_{DET} (1/2 Detention Vol.) (Ac-ft):	0.73
Bleed-Down Time (hrs):	24.00
Bleed-Down Time (sec):	86400
Average Discharge Rate, Q (cfs):	0.37
Weir Elevation (ft-NAVD):	2.25
Bleeder Invert EL. [SHGWT EL.] (ft-NAVD):	0.42

Head, H (ft) 1.83

Weir Coefficient: 0.60

V-Notch Sizing

Minimum V-Notch Angle = 20°

Number of V-Notches Proposed: --

Bleed-Down Volume per V-Notch, V_{DET} (Ac-ft): #VALUE!

Maximum V-Notch Angle, θ , (rad): #VALUE!

Maximum V-Notch Angle, θ , (deg): #VALUE!

$$\theta = 2 \tan^{-1} \left[0.492 \frac{V_{DET}}{H^{2.5}} \right]$$

Proposed V-Notch(s) Angle (deg): --

Proposed V-Notch Angle (rad): #VALUE!

V-Notch Height [= H] (ft): 1.83

V-Notch Top Width (ft): #VALUE!

V-Notch Sideslope [horz./vert.]: #VALUE!

Circular Orifice Sizing

Minimum Orifice Diameter = 3"

Number of Circular Orifices Proposed: 1

Average Discharge per Orifice, Q (cfs): 0.37

$$Q = 4.8A\sqrt{h}, A = \pi r^2, h = H - r$$

Select Orifice Diameter with Discharge nearest to but less than Q

Orifice Diameter (in)	Orifice Radius, r (ft)	Area, A (ft ²)	h (ft)	Discharge Rate (cfs)
3.0	0.125	0.049	1.705	0.31
4.0	0.167	0.087	1.663	0.54
5.0	0.208	0.136	1.622	0.83
6.0	0.250	0.196	1.580	1.18

Proposed Orifice(s) Diameter (in): 3.0

Note: Contributing area to System divided by two since two control structures are utilized in System 17.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: **17**

Summary of Peak Discharges								
Receiving Waterbody:		North Fork of the New River						
PRE-DEVELOPMENT								
ICPR Node:	Outfall Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-24hr Peak Flow Velocity (fps)
NFNR	48" Pipe and 30" Pipe		50.04		87.34		111.16	
PRE-DEVELOPMENT TOTALS:		--	--	--	87.34	--	--	--
POST-DEVELOPMENT								
ICPR Link:	Pipe/Weir Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-24hr Peak Flow Velocity (fps)
NFNR	48" Pipe and 30" Pipe		68.74		80.59		90.39	
POST-DEVELOPMENT TOTALS:		--	--	--	80.59	--	--	--
Pre-Post 25yr-72hr Peak Discharge Reduction (cfs):				6.75				

Summary of Peak Stages									
Exist./Prop. Pond/Swale/FD #	Type: [Wet/Dry, Det./Ret., FD]	Disposition [Exist./Prop./Modified]	Warning EL. [Min. Berm/Min. EOP] (ft-NAVD)	PRE-DEVELOPMENT			POST-DEVELOPMENT		
				Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)	Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)
Pond17-1	Dry Detention	Modified	5.50	4.45	4.97	5.22	3.42	3.90	4.43
Pond17-2	Dry Detention	Modified	5.50	3.97	4.49	4.69	3.50	4.06	4.73
Swale 17-2/PrMH17-4	Dry Detention	Modified	5.00	4.63	5.54	6.08	3.91	4.79	5.87
Swale 17-3 PrMH17-6	Dry Detention	Modified	4.50	4.65	5.58	6.05	3.91	4.80	5.88
Swale17-1A	Dry Detention	Modified	5.00	4.39	5.29	5.62	3.61	4.22	4.81
Swale17-1B	Dry Detention	Modified	5.00	4.44	5.43	5.76	2.86	3.94	3.97

Control Structure Summary Table - Proposed Conditions					
Control Structure:	Disposition [Exist./Prop./Modified]	Weir Type/Geometry	Weir EL. (ft-NAVD)	Bleeder Type/Geometry	Bleeder Invert EL. (ft-NAVD)
CS17-1	Modified	Type C Ditch Bottom Inlet	2.25	Circular Orifice (3")	0.42
CS17-2	Modified	Type C Ditch Bottom Inlet	2.25	Circular Orifice (3")	0.42

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 NODE LINK DIAGRAM

Nodes

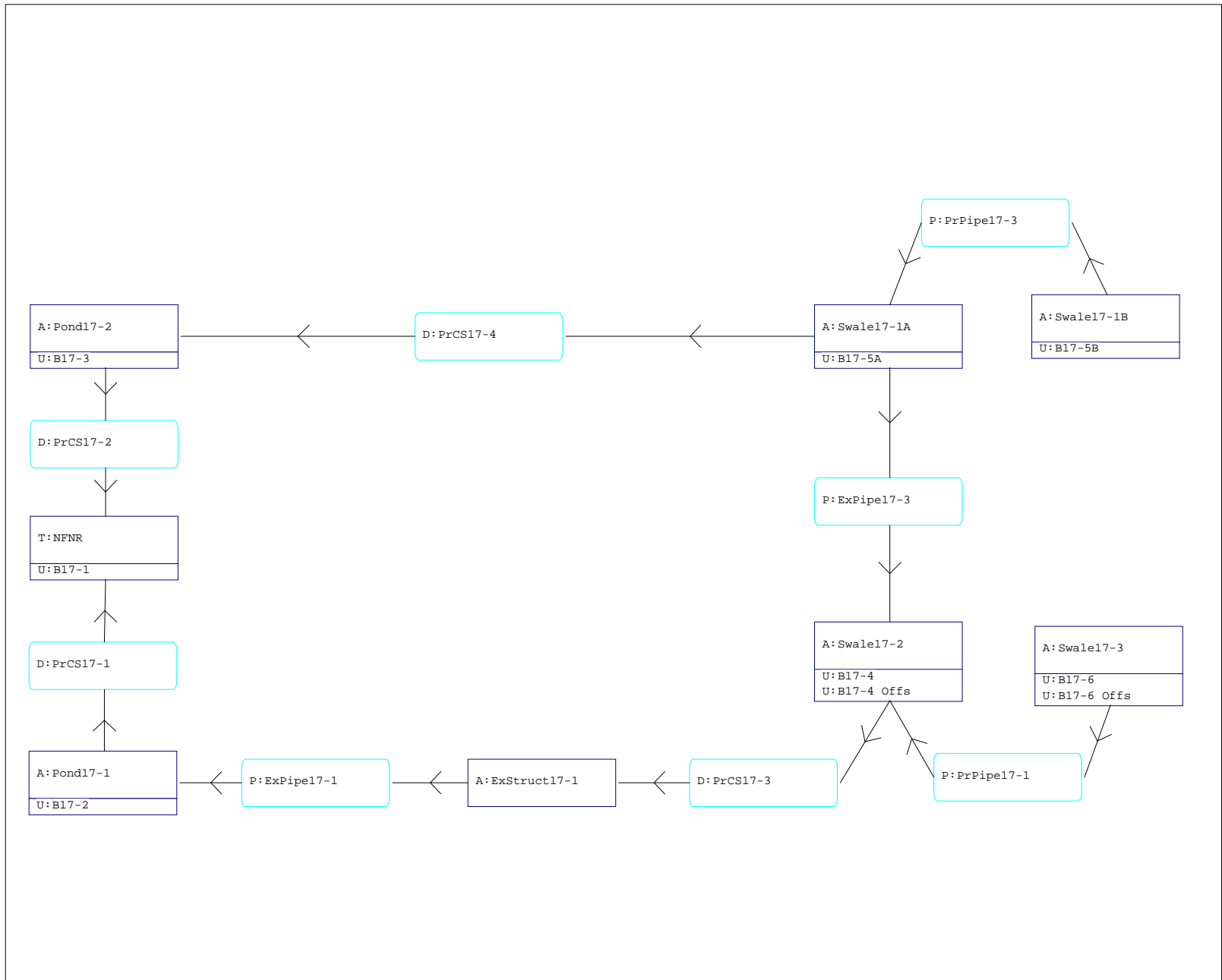
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 17
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExStruct17-1	BASE	100Yr-24Hr	12.43	5.74	6.00	0.0053	152	12.70	19.31	12.70	19.35
NFNR	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.40	111.16	0.00	0.00
Pond17-1	BASE	100Yr-24Hr	12.40	5.22	5.50	0.0037	48402	12.27	97.97	12.40	77.68
Pond17-2	BASE	100Yr-24Hr	12.79	4.69	6.00	0.0032	39954	12.28	46.89	12.79	29.25
Swale17-1A	BASE	100Yr-24Hr	12.88	5.62	6.00	0.0043	37304	12.27	24.43	13.47	19.36
Swale17-1B	BASE	100Yr-24Hr	13.08	5.76	6.00	-0.0030	43834	12.27	36.99	14.32	10.50
Swale17-2	BASE	100Yr-24Hr	12.44	6.08	6.00	0.0050	18751	12.25	39.28	12.70	19.31
Swale17-3	BASE	100Yr-24Hr	12.69	6.05	4.50	0.0034	14970	12.27	7.70	13.04	4.86
ExStruct17-1	BASE	10Yr-24Hr	12.58	4.53	6.00	0.0063	152	13.53	11.24	13.55	11.20
NFNR	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.71	50.04	0.00	0.00
Pond17-1	BASE	10Yr-24Hr	12.56	4.45	5.50	-0.0030	40856	12.27	56.95	12.56	32.33
Pond17-2	BASE	10Yr-24Hr	12.95	3.97	6.00	0.0032	33662	12.25	32.21	12.95	17.13
Swale17-1A	BASE	10Yr-24Hr	12.92	4.39	6.00	0.0041	31285	12.27	11.62	13.51	12.26
Swale17-1B	BASE	10Yr-24Hr	13.05	4.44	6.00	0.0029	35718	12.27	19.81	13.93	6.64
Swale17-2	BASE	10Yr-24Hr	12.59	4.63	6.00	0.0050	14747	12.28	18.53	13.53	11.24
Swale17-3	BASE	10Yr-24Hr	12.66	4.65	4.50	0.0030	10987	12.27	4.03	13.00	2.79
ExStruct17-1	BASE	25Yr-72Hr	60.20	5.31	6.00	-0.0050	152	60.51	16.02	60.52	15.91
NFNR	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	0	60.19	87.34	0.00	0.00
Pond17-1	BASE	25Yr-72Hr	60.19	4.97	5.50	0.0041	45909	60.03	77.75	60.19	57.31
Pond17-2	BASE	25Yr-72Hr	60.54	4.49	6.00	0.0021	39697	60.03	39.79	60.54	26.73
Swale17-1A	BASE	25Yr-72Hr	60.60	5.29	6.00	0.0047	35683	60.02	21.21	61.39	17.97
Swale17-1B	BASE	25Yr-72Hr	60.75	5.43	6.00	0.0029	41766	60.02	30.59	61.86	9.76
Swale17-2	BASE	25Yr-72Hr	60.20	5.54	6.00	0.0050	17271	60.00	30.55	60.51	16.02
Swale17-3	BASE	25Yr-72Hr	60.42	5.58	4.50	0.0038	13640	60.02	6.43	60.77	3.96

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 17
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExPipe17-1	BASE	100Yr-24Hr	12.70	19.35	2.725	12.43	5.74	12.40	5.22
ExPipe17-3	BASE	100Yr-24Hr	15.62	4.61	0.322	12.88	5.62	12.44	6.08
PrCS17-1	BASE	100Yr-24Hr	12.40	77.68	-0.207	12.40	5.22	0.00	0.42
PrCS17-2	BASE	100Yr-24Hr	12.79	29.25	0.047	12.79	4.69	0.00	0.42
PrCS17-3	BASE	100Yr-24Hr	12.70	19.31	1.554	12.44	6.08	12.43	5.74
PrCS17-4	BASE	100Yr-24Hr	12.94	18.96	0.027	12.88	5.62	12.79	4.69
PrPipe17-1	BASE	100Yr-24Hr	13.04	4.86	0.666	12.69	6.05	12.44	6.08
PrPipe17-3	BASE	100Yr-24Hr	14.32	10.50	0.466	13.08	5.76	12.88	5.62
ExPipe17-1	BASE	10Yr-24Hr	13.55	11.20	2.974	12.58	4.53	12.56	4.45
ExPipe17-3	BASE	10Yr-24Hr	14.49	3.73	0.307	12.92	4.39	12.59	4.63
PrCS17-1	BASE	10Yr-24Hr	12.56	32.33	0.056	12.56	4.45	0.00	0.42
PrCS17-2	BASE	10Yr-24Hr	12.95	17.13	0.063	12.95	3.97	0.00	0.42
PrCS17-3	BASE	10Yr-24Hr	13.53	11.24	1.956	12.59	4.63	12.58	4.53
PrCS17-4	BASE	10Yr-24Hr	12.20	13.46	0.068	12.92	4.39	12.95	3.97
PrPipe17-1	BASE	10Yr-24Hr	13.00	2.79	0.347	12.66	4.65	12.59	4.63
PrPipe17-3	BASE	10Yr-24Hr	13.93	6.64	0.453	13.05	4.44	12.92	4.39
ExPipe17-1	BASE	25Yr-72Hr	60.52	15.91	2.869	60.20	5.31	60.19	4.97
ExPipe17-3	BASE	25Yr-72Hr	62.71	5.07	0.345	60.60	5.29	60.20	5.54
PrCS17-1	BASE	25Yr-72Hr	60.19	57.31	-0.157	60.19	4.97	0.00	0.42
PrCS17-2	BASE	25Yr-72Hr	60.54	26.73	0.045	60.54	4.49	0.00	0.42
PrCS17-3	BASE	25Yr-72Hr	60.51	16.02	1.370	60.20	5.54	60.20	5.31
PrCS17-4	BASE	25Yr-72Hr	60.66	17.53	0.029	60.60	5.29	60.54	4.49
PrPipe17-1	BASE	25Yr-72Hr	60.77	3.96	0.611	60.42	5.58	60.20	5.54
PrPipe17-3	BASE	25Yr-72Hr	61.86	9.76	0.482	60.75	5.43	60.60	5.29

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 17
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100Yr-24Hr	B17-1	BASE	12.27	9.00	12.778	51949
100Yr-24Hr	B17-2	BASE	12.27	81.87	11.281	440220
100Yr-24Hr	B17-3	BASE	12.27	33.49	9.903	172547
100Yr-24Hr	B17-4	BASE	12.27	62.93	11.704	344139
100Yr-24Hr	B17-4 Offs	BASE	12.27	3.53	8.403	17691
100Yr-24Hr	B17-5A	BASE	12.27	23.74	8.835	119630
100Yr-24Hr	B17-5B	BASE	12.27	37.00	8.840	186439
100Yr-24Hr	B17-6	BASE	12.27	5.78	8.926	29161
100Yr-24Hr	B17-6 Offs	BASE	12.27	1.92	7.260	9488
10Yr-24Hr	B17-1	BASE	12.27	5.78	8.043	32701
10Yr-24Hr	B17-2	BASE	12.27	49.97	6.663	260022
10Yr-24Hr	B17-3	BASE	12.27	19.09	5.489	95641
10Yr-24Hr	B17-4	BASE	12.27	39.08	7.042	207056
10Yr-24Hr	B17-4 Offs	BASE	12.27	1.84	4.309	9073
10Yr-24Hr	B17-5A	BASE	12.27	12.71	4.639	62816
10Yr-24Hr	B17-5B	BASE	12.27	19.81	4.643	97922
10Yr-24Hr	B17-6	BASE	12.27	3.11	4.710	15386
10Yr-24Hr	B17-6 Offs	BASE	12.29	0.92	3.476	4543
25Yr-72Hr	B17-1	BASE	60.02	6.93	13.276	53977
25Yr-72Hr	B17-2	BASE	60.02	64.29	11.772	459362
25Yr-72Hr	B17-3	BASE	60.02	27.01	10.378	180829
25Yr-72Hr	B17-4	BASE	60.02	49.08	12.198	358655
25Yr-72Hr	B17-4 Offs	BASE	60.02	2.96	8.853	18639
25Yr-72Hr	B17-5A	BASE	60.02	19.65	9.294	125837
25Yr-72Hr	B17-5B	BASE	60.02	30.62	9.299	196109
25Yr-72Hr	B17-6	BASE	60.02	4.77	9.386	30664
25Yr-72Hr	B17-6 Offs	BASE	60.02	1.66	7.685	10043

I-95 AT BROWARD BLVD PD&E STUDY
DRAINAGE SYSTEM 17
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

=====
=== Basins ===
=====

Name: B17-1	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.120	Time Shift(hrs): 0.00	
Curve Number: 94.15	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B17-2	Node: Pond17-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 10.750	Time Shift(hrs): 0.00	
Curve Number: 82.75	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B17-3	Node: Pond17-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 4.800	Time Shift(hrs): 0.00	
Curve Number: 73.09	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B17-4	Node: Swale17-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 8.100	Time Shift(hrs): 0.00	
Curve Number: 85.87	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B17-4 Offs	Node: Swale17-2	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.580	Time Shift(hrs): 0.00	
Curve Number: 63.36	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B17-5A	Node: Swale17-1A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 3.730 Time Shift(hrs): 0.00
 Curve Number: 66.09 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: B17-5B Node: Swale17-1B Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 5.810 Time Shift(hrs): 0.00
 Curve Number: 66.12 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: B17-6 Node: Swale17-3 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 0.900 Time Shift(hrs): 0.00
 Curve Number: 66.67 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: B17-6 Offs Node: Swale17-3 Status: Offsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 0.360 Time Shift(hrs): 0.00
 Curve Number: 56.42 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

=====
 Nodes
 =====

Name: ExStruct17-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.000
 Type: Stage/Area

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-1.000	0.0006
6.000	0.0006

Name: NFNR Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

100.00 0.420

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-----
Name: Pond17-1          Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE             Warn Stage(ft): 5.500
Type: Stage/Area
  
```

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-0.730	0.0001
1.410	0.0001
1.420	0.2721
2.500	0.5331
4.470	0.9409
5.500	1.1721

```

-----
Name: Pond17-2          Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE             Warn Stage(ft): 6.000
Type: Stage/Area
  
```

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-0.750	0.0001
1.410	0.0001
1.420	0.3345
4.000	0.7786
4.010	0.8971
5.500	0.9414

```

-----
Name: Swale17-1A        Base Flow(cfs): 0.000      Init Stage(ft): 1.250
Group: BASE             Warn Stage(ft): 6.000
Type: Stage/Area
  
```

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
1.250	0.0001
1.410	0.0001
1.420	0.2679
2.000	0.3186
2.500	0.3898
3.000	0.4550
3.500	0.5217
4.000	0.6035
4.010	0.6748
5.250	0.8141

```

-----
Name: Swale17-1B        Base Flow(cfs): 0.000      Init Stage(ft): 1.420
Group: BASE             Warn Stage(ft): 6.000
Type: Stage/Area
  
```

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
1.420	0.3177
2.000	0.3773
3.000	0.5244

4.000	0.7571
5.250	0.9336

```

-----
Name: Swale17-2           Base Flow(cfs): 0.000           Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 6.000
Type: Stage/Area
    
```

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
0.420	0.0001
1.410	0.0001
1.420	0.0941
4.000	0.2651
4.010	0.3082
4.350	0.3199
6.500	0.4562

```

-----
Name: Swale17-3           Base Flow(cfs): 0.000           Init Stage(ft): 1.420
Group: BASE              Warn Stage(ft): 4.500
Type: Stage/Area
    
```

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
1.420	0.0806
4.000	0.1975
4.010	0.2225
4.340	0.2310
6.500	0.3724

```

=====
=== Pipes =====
=====
    
```

```

Name: ExPipe17-1           From Node: ExStruct17-1           Length(ft): 524.00
Group: BASE              To Node: Pond17-1                Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
Geometry: Circular        Entrance Loss Coef: 0.50
Span(in): 36.00           Exit Loss Coef: 0.00
Rise(in): 36.00           Bend Loss Coef: 0.00
Invert(ft): 0.090        Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000    Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000      Stabilizer Option: None
Bot Clip(in): 0.000
                                UPSTREAM        DOWNSTREAM
                                Geometry: Circular        Circular
                                Span(in): 36.00           36.00
                                Rise(in): 36.00           36.00
                                Invert(ft): 0.090        -0.730
                                Manning's N: 0.012000
                                Top Clip(in): 0.000
                                Bot Clip(in): 0.000
    
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: ExPipe17-3           From Node: Swale17-1A           Length(ft): 252.00
Group: BASE              To Node: Swale17-2             Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
Geometry: Circular        Entrance Loss Coef: 0.50
Span(in): 30.00
    
```

I-95 AT BROWARD BLVD PD&E STUDY
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rise(in): 30.00	30.00	Exit Loss Coef: 0.00
Invert(ft): 1.250	1.110	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: PrPipe17-1	From Node: Swale17-3	Length(ft): 578.00
Group: BASE	To Node: Swale17-2	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 1.420	0.500	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Name: PrPipe17-3	From Node: Swale17-1B	Length(ft): 122.00
Group: BASE	To Node: Swale17-1A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 1.420	1.250	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

=====
 Drop Structures
 =====

Name: PrCS17-1	From Node: Pond17-1	Length(ft): 607.00
Group: BASE	To Node: NFNR	Count: 1

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 INPUT REPORT

	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	48.00	48.00	Flow: Both
Rise(in):	48.00	48.00	Entrance Loss Coef: 0.500
Invert(ft):	-4.000	-3.780	Exit Loss Coef: 0.000
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

*** Weir 1 of 3 for Drop Structure PrCS17-1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	4.500
Rise(in):	36.00	Control Elev(ft):	4.500

*** Weir 2 of 3 for Drop Structure PrCS17-1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	3.00	Invert(ft):	0.420
Rise(in):	3.00	Control Elev(ft):	0.420

*** Weir 3 of 3 for Drop Structure PrCS17-1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Vertical: Mavis	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	66.00	Invert(ft):	2.500
Rise(in):	12.00	Control Elev(ft):	2.500

Name: PrCS17-2	From Node: Pond17-2	Length(ft): 63.00
Group: BASE	To Node: NFNR	Count: 1

	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	30.00	30.00	Flow: Both
Rise(in):	30.00	30.00	Entrance Loss Coef: 0.500
Invert(ft):	-2.400	-2.500	Exit Loss Coef: 0.000
Manning's N:	0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

*** Weir 1 of 3 for Drop Structure PrCS17-2 ***

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 79.00	Invert(ft): 5.000
Rise(in): 36.00	Control Elev(ft): 5.000

TABLE

*** Weir 2 of 3 for Drop Structure PrCS17-2 ***

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Circular	Orifice Disc Coef: 0.600
Span(in): 3.00	Invert(ft): 0.420
Rise(in): 3.00	Control Elev(ft): 0.420

TABLE

*** Weir 3 of 3 for Drop Structure PrCS17-2 ***

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 66.00	Invert(ft): 3.000
Rise(in): 12.00	Control Elev(ft): 3.000

TABLE

Name: PrCS17-3	From Node: Swale17-2	Length(ft): 214.00
Group: BASE	To Node: ExStruct17-1	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.500
Invert(ft): 0.500	0.160	Exit Loss Coef: 0.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

S-17-17 CONNECTING TO EXPIPE17-2
 From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

*** Weir 1 of 2 for Drop Structure PrCS17-3 ***

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 105.00	Invert(ft): 5.000
Rise(in): 36.00	Control Elev(ft): 5.000

TABLE

*** Weir 2 of 2 for Drop Structure PrCS17-3 ***

Count: 1	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 84.00	Invert(ft): 3.000
Rise(in): 12.00	Control Elev(ft): 3.000

TABLE

Name: PrCS17-4 From Node: Swale17-1A Length(ft): 274.00
Group: BASE To Node: Pond17-2 Count: 1

UPSTREAM	DOWNSREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.500
Invert(ft): -0.500	-0.750	Exit Loss Coef: 0.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

THIS DROP STRUCTURE REPRESENTS PrCS17-4 AND PrPipe17-2.
From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

*** Weir 1 of 1 for Drop Structure PrCS17-4 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 49.00	Invert(ft): 3.000
Rise(in): 37.00	Control Elev(ft): 3.000

==== Hydrology Simulations =====

Name: 100Yr-24Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 17\100Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10Yr-24Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 17\10Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00

24.330 5.00

Name: 25Yr-72Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 17\25Yr-72Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

==== Routing Simulations =====

Name: 100Yr-24Hr Hydrology Sim: 100Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 17\100Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 48.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 10Yr-24Hr Hydrology Sim: 10Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 17\10Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 48.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run

BASE Yes

Name: 25Yr-72Hr Hydrology Sim: 25Yr-72Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\System 17\25Yr-72Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
-----	-----
BASE	Yes

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 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT CONDITIONS
 NODE LINK DIAGRAM

Nodes

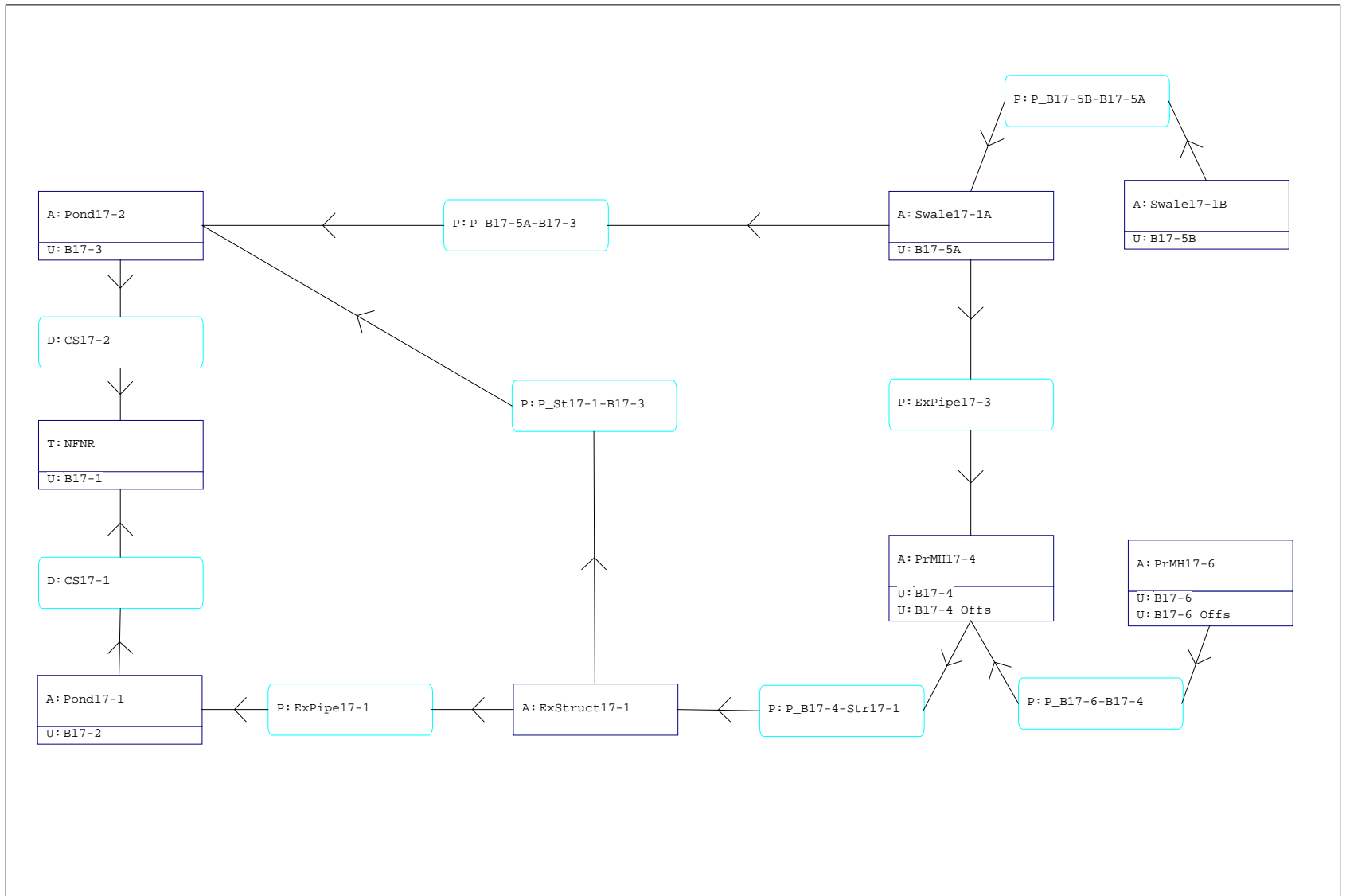
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



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DRAINAGE SYSTEM 17
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExStruct17-1	BASE	100Yr-24Hr	12.31	5.26	6.00	0.0042	257	12.27	49.17	12.27	48.89
NFNR	BASE	100Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.46	90.39	0.00	0.00
Pond17-1	BASE	100Yr-24Hr	12.68	4.43	5.50	0.0021	85479	12.27	112.53	12.68	44.23
Pond17-2	BASE	100Yr-24Hr	12.45	4.73	5.50	0.0077	16016	12.26	59.04	12.45	42.29
PrMH17-4	BASE	100Yr-24Hr	12.29	5.87	5.00	0.0039	308	12.26	51.03	12.27	49.17
PrMH17-6	BASE	100Yr-24Hr	12.30	5.88	4.50	0.0058	143	12.27	8.21	12.26	9.54
Swale17-1A	BASE	100Yr-24Hr	12.49	4.81	5.00	-0.0134	29632	14.44	15.95	13.86	18.34
Swale17-1B	BASE	100Yr-24Hr	13.39	3.97	5.00	0.0015	99099	12.27	41.09	14.44	13.62
ExStruct17-1	BASE	10Yr-24Hr	12.32	3.69	6.00	0.0047	257	12.26	29.74	12.27	29.50
NFNR	BASE	10Yr-24Hr	0.00	0.42	0.42	0.0000	0	12.41	68.74	0.00	0.00
Pond17-1	BASE	10Yr-24Hr	12.59	3.42	5.50	0.0008	85127	12.27	69.83	12.59	32.44
Pond17-2	BASE	10Yr-24Hr	12.40	3.50	5.50	0.0077	15802	12.27	40.60	12.40	33.45
PrMH17-4	BASE	10Yr-24Hr	12.31	3.91	5.00	0.0026	354	12.25	32.29	12.26	29.74
PrMH17-6	BASE	10Yr-24Hr	12.31	3.91	4.50	-0.0051	143	12.27	4.51	12.25	6.81
Swale17-1A	BASE	10Yr-24Hr	12.45	3.61	5.00	-0.0134	29481	12.21	6.63	0.00	12.22
Swale17-1B	BASE	10Yr-24Hr	13.62	2.86	5.00	0.0005	98926	12.27	23.37	14.38	4.54
ExStruct17-1	BASE	25Yr-72Hr	60.07	4.42	6.00	0.0042	257	60.04	38.08	60.04	37.84
NFNR	BASE	25Yr-72Hr	0.00	0.42	0.42	0.0000	0	60.17	80.59	0.00	0.00
Pond17-1	BASE	25Yr-72Hr	60.40	3.90	5.50	0.0012	85294	60.02	87.41	60.40	38.50
Pond17-2	BASE	25Yr-72Hr	60.17	4.06	5.50	0.0077	15900	60.02	50.05	60.17	38.85
PrMH17-4	BASE	25Yr-72Hr	60.07	4.79	5.00	-0.0033	308	60.01	39.43	60.04	38.08
PrMH17-6	BASE	25Yr-72Hr	60.07	4.80	4.50	0.0066	143	60.02	6.73	59.98	8.01
Swale17-1A	BASE	25Yr-72Hr	60.26	4.22	5.00	-0.0134	29489	61.71	15.63	61.20	18.65
Swale17-1B	BASE	25Yr-72Hr	60.83	3.94	5.00	0.0009	99093	60.02	33.16	61.76	13.67

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DRAINAGE SYSTEM 17
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS17-1	BASE	100Yr-24Hr	12.68	44.23	0.046	12.68	4.43	0.00	0.42
CS17-2	BASE	100Yr-24Hr	12.45	42.29	0.062	12.45	4.73	0.00	0.42
ExPipe17-1	BASE	100Yr-24Hr	12.27	29.87	-1.424	12.31	5.26	12.68	4.43
ExPipe17-3	BASE	100Yr-24Hr	14.42	7.83	0.354	12.49	4.81	12.29	5.87
P_B17-4-Str17-1	BASE	100Yr-24Hr	12.27	49.17	-1.539	12.29	5.87	12.31	5.26
P_B17-5A-B17-3	BASE	100Yr-24Hr	13.41	12.64	12.218	12.49	4.81	12.45	4.73
P_B17-5B-B17-5A	BASE	100Yr-24Hr	14.44	13.62	0.243	13.39	3.97	12.49	4.81
P_B17-6-B17-4	BASE	100Yr-24Hr	12.26	9.54	7.915	12.30	5.88	12.29	5.87
P_St17-1-B17-3	BASE	100Yr-24Hr	12.26	19.05	1.016	12.31	5.26	12.45	4.73
CS17-1	BASE	10Yr-24Hr	12.59	32.44	0.035	12.59	3.42	0.00	0.42
CS17-2	BASE	10Yr-24Hr	12.40	33.45	0.035	12.40	3.50	0.00	0.42
ExPipe17-1	BASE	10Yr-24Hr	12.27	18.22	-1.853	12.32	3.69	12.59	3.42
ExPipe17-3	BASE	10Yr-24Hr	14.26	2.33	0.483	12.45	3.61	12.31	3.91
P_B17-4-Str17-1	BASE	10Yr-24Hr	12.26	29.74	-1.439	12.31	3.91	12.32	3.69
P_B17-5A-B17-3	BASE	10Yr-24Hr	0.00	12.22	12.218	12.45	3.61	12.40	3.50
P_B17-5B-B17-5A	BASE	10Yr-24Hr	14.38	4.54	0.136	13.62	2.86	12.45	3.61
P_B17-6-B17-4	BASE	10Yr-24Hr	12.25	6.81	7.011	12.31	3.91	12.31	3.91
P_St17-1-B17-3	BASE	10Yr-24Hr	12.25	11.33	1.001	12.32	3.69	12.40	3.50
CS17-1	BASE	25Yr-72Hr	60.40	38.50	0.039	60.40	3.90	0.00	0.42
CS17-2	BASE	25Yr-72Hr	60.17	38.85	0.047	60.17	4.06	0.00	0.42
ExPipe17-1	BASE	25Yr-72Hr	60.05	23.35	-1.607	60.07	4.42	60.40	3.90
ExPipe17-3	BASE	25Yr-72Hr	61.74	8.04	0.517	60.26	4.22	60.07	4.79
P_B17-4-Str17-1	BASE	25Yr-72Hr	60.04	38.08	-1.792	60.07	4.79	60.07	4.42
P_B17-5A-B17-3	BASE	25Yr-72Hr	60.88	12.40	12.218	60.26	4.22	60.17	4.06
P_B17-5B-B17-5A	BASE	25Yr-72Hr	61.76	13.67	0.261	60.83	3.94	60.26	4.22
P_B17-6-B17-4	BASE	25Yr-72Hr	59.98	8.01	8.464	60.07	4.80	60.07	4.79
P_St17-1-B17-3	BASE	25Yr-72Hr	60.04	14.52	-0.973	60.07	4.42	60.17	4.06

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BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100Yr-24Hr	B17-1	BASE	12.27	8.43	12.732	48530
100Yr-24Hr	B17-2	BASE	12.27	82.72	11.835	454955
100Yr-24Hr	B17-3	BASE	12.27	40.00	12.357	225623
100Yr-24Hr	B17-4	BASE	12.27	63.51	12.522	361371
100Yr-24Hr	B17-4 Offs	BASE	12.27	3.53	8.403	17691
100Yr-24Hr	B17-5A	BASE	12.27	28.59	11.146	152941
100Yr-24Hr	B17-5B	BASE	12.27	41.10	9.860	211524
100Yr-24Hr	B17-6	BASE	12.27	6.30	9.940	32473
100Yr-24Hr	B17-6 Offs	BASE	12.27	1.92	7.260	9488
10Yr-24Hr	B17-1	BASE	12.27	5.41	8.000	30492
10Yr-24Hr	B17-2	BASE	12.27	51.63	7.161	275274
10Yr-24Hr	B17-3	BASE	12.27	25.42	7.644	139567
10Yr-24Hr	B17-4	BASE	12.27	40.55	7.800	225086
10Yr-24Hr	B17-4 Offs	BASE	12.27	1.84	4.309	9073
10Yr-24Hr	B17-5A	BASE	12.27	17.34	6.544	89798
10Yr-24Hr	B17-5B	BASE	12.27	23.37	5.454	117002
10Yr-24Hr	B17-6	BASE	12.27	3.60	5.519	18032
10Yr-24Hr	B17-6 Offs	BASE	12.29	0.92	3.476	4543
25Yr-72Hr	B17-1	BASE	60.02	6.50	13.231	50430
25Yr-72Hr	B17-2	BASE	60.02	64.39	12.329	473966
25Yr-72Hr	B17-3	BASE	60.02	30.94	12.854	234703
25Yr-72Hr	B17-4	BASE	60.02	49.04	13.020	375740
25Yr-72Hr	B17-4 Offs	BASE	60.02	2.96	8.853	18639
25Yr-72Hr	B17-5A	BASE	60.02	22.50	11.636	159656
25Yr-72Hr	B17-5B	BASE	60.02	33.18	10.335	221710
25Yr-72Hr	B17-6	BASE	60.02	5.08	10.416	34028
25Yr-72Hr	B17-6 Offs	BASE	60.02	1.66	7.685	10043

=====
=== Basins ===
=====

```

Name: B17-1           Node: NFNR           Status: Onsite
Group: BASE          Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256           Peaking Factor: 256.0
Rainfall File:                   Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000       Time of Conc(min): 10.00
Area(ac): 1.050                 Time Shift(hrs): 0.00
Curve Number: 93.79            Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

```

```

-----
Name: B17-2           Node: Pond17-1       Status: Onsite
Group: BASE          Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256           Peaking Factor: 256.0
Rainfall File:                   Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000       Time of Conc(min): 10.00
Area(ac): 10.590               Time Shift(hrs): 0.00
Curve Number: 86.85            Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

```

```

-----
Name: B17-3           Node: Pond17-2       Status: Onsite
Group: BASE          Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256           Peaking Factor: 256.0
Rainfall File:                   Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000       Time of Conc(min): 10.00
Area(ac): 5.030                Time Shift(hrs): 0.00
Curve Number: 90.84            Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

```

```

-----
Name: B17-4           Node: PrMH17-4       Status: Onsite
Group: BASE          Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256           Peaking Factor: 256.0
Rainfall File:                   Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000       Time of Conc(min): 10.00
Area(ac): 7.950                Time Shift(hrs): 0.00
Curve Number: 92.13            Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

```

```

-----
Name: B17-4 Offs     Node: PrMH17-4       Status: Offsite
Group: BASE          Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256           Peaking Factor: 256.0
Rainfall File:                   Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000       Time of Conc(min): 10.00
Area(ac): 0.580                Time Shift(hrs): 0.00
Curve Number: 63.36            Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

```

```

-----
Name: B17-5A          Node: Swale17-1A     Status: Onsite
Group: BASE          Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256           Peaking Factor: 256.0

```

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Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 3.780 Time Shift(hrs): 0.00
 Curve Number: 81.77 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: B17-5B Node: Swale17-1B Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 5.910 Time Shift(hrs): 0.00
 Curve Number: 72.80 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: B17-6 Node: PrMH17-6 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 0.900 Time Shift(hrs): 0.00
 Curve Number: 73.34 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: B17-6 Offs Node: PrMH17-6 Status: Offsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 0.360 Time Shift(hrs): 0.00
 Curve Number: 56.42 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

=====
 === Nodes =====
 =====

Name: ExStruct17-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.000
 Type: Stage/Area

from SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

Stage(ft)	Area(ac)
-2.000	0.0006
6.000	0.0006

Name: NFNR Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420

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2.000	0.6700
3.000	0.6700
5.000	0.6800

```

-----
Name: Swale17-1B          Base Flow(cfs): 0.000          Init Stage(ft): 1.420
Group: BASE              Warn Stage(ft): 5.000
Type: Stage/Area
  
```

Stage(ft)	Area(ac)
1.420	2.2600
2.000	2.2600
3.000	2.2700
5.000	2.2800

==== Pipes =====

```

-----
Name: ExPipe17-1          From Node: ExStruct17-1      Length(ft): 524.00
Group: BASE              To Node: Pond17-1          Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
                          Entrance Loss Coef: 0.50
                          Exit Loss Coef: 0.00
                          Bend Loss Coef: 0.00
                          Outlet Ctrl Spec: Use dc or tw
                          Inlet Ctrl Spec: Use dc
                          Stabilizer Option: None

      UPSTREAM          DOWNSTREAM
Geometry: Circular      Circular
Span(in): 36.00         36.00
Rise(in): 36.00         36.00
Invert(ft): 0.090       -0.730
Manning's N: 0.012000   0.012000
Top Clip(in): 0.000     0.000
Bot Clip(in): 0.000     0.000
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: ExPipe17-3          From Node: Swale17-1A      Length(ft): 252.00
Group: BASE              To Node: PrMH17-4          Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
                          Entrance Loss Coef: 0.50
                          Exit Loss Coef: 0.00
                          Bend Loss Coef: 0.00
                          Outlet Ctrl Spec: Use dc or tw
                          Inlet Ctrl Spec: Use dc
                          Stabilizer Option: None

      UPSTREAM          DOWNSTREAM
Geometry: Circular      Circular
Span(in): 30.00         30.00
Rise(in): 30.00         30.00
Invert(ft): 1.250       1.110
Manning's N: 0.012000   0.012000
Top Clip(in): 0.000     0.000
Bot Clip(in): 0.000     0.000
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
 Permit Mod. Application No. 160919-13
 Phase 3-A-1

```

-----
Name: P_B17-4-Str17-1     From Node: PrMH17-4        Length(ft): 785.00
Group: BASE              To Node: ExStruct17-1      Count: 1
  
```


	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive
Span(in):	54.00	54.00	Flow: Both
Rise(in):	54.00	54.00	Entrance Loss Coef: 0.50
Invert(ft):	-2.000	-2.000	Exit Loss Coef: 0.00
Manning's N:	0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
			Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	P_B17-5A-B17-3	From Node:	Swale17-1A	Length(ft):	274.00
Group:	BASE	To Node:	Pond17-2	Count:	1
	UPSTREAM		DOWNSTREAM	Friction Equation:	Automatic
Geometry:	Circular		Circular	Solution Algorithm:	Most Restrictive
Span(in):	30.00		30.00	Flow:	Both
Rise(in):	30.00		30.00	Entrance Loss Coef:	0.50
Invert(ft):	-0.500		-0.750	Exit Loss Coef:	0.00
Manning's N:	0.012000		0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000		0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000		0.000	Inlet Ctrl Spec:	Use dc
				Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name:	P_B17-5B-B17-5A	From Node:	Swale17-1B	Length(ft):	122.00
Group:	BASE	To Node:	Swale17-1A	Count:	1
	UPSTREAM		DOWNSTREAM	Friction Equation:	Automatic
Geometry:	Circular		Circular	Solution Algorithm:	Most Restrictive
Span(in):	24.00		24.00	Flow:	Both
Rise(in):	24.00		24.00	Entrance Loss Coef:	0.50
Invert(ft):	1.420		1.250	Exit Loss Coef:	0.00
Manning's N:	0.012000		0.012000	Bend Loss Coef:	0.00
Top Clip(in):	0.000		0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000		0.000	Inlet Ctrl Spec:	Use dc
				Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

From SFWMD ERP No. 06-01465-S
Permit Mod. Application No. 160919-13
Phase 3-A-1

Name:	P_B17-6-B17-4	From Node:	PrMH17-6	Length(ft):	300.00
Group:	BASE	To Node:	PrMH17-4	Count:	1
	UPSTREAM		DOWNSTREAM	Friction Equation:	Automatic
Geometry:	Circular		Circular	Solution Algorithm:	Most Restrictive
				Flow:	Both

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Span(in): 48.00	48.00	Entrance Loss Coef: 0.50
Rise(in): 48.00	48.00	Exit Loss Coef: 0.00
Invert(ft): -1.500	-2.000	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_St17-1-B17-3	From Node: ExStruct17-1	Length(ft): 258.00
Group: BASE	To Node: Pond17-2	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.50
Invert(ft): -0.750	-0.750	Exit Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

==== Drop Structures =====

Name: CS17-1	From Node: Pond17-1	Length(ft): 607.00
Group: BASE	To Node: NFNR	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 48.00	48.00	Flow: Both
Rise(in): 48.00	48.00	Entrance Loss Coef: 0.500
Invert(ft): -4.000	-3.780	Exit Loss Coef: 0.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure CS17-1 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 37.00	Invert(ft): 2.250
Rise(in): 24.00	Control Elev(ft): 2.250

*** Weir 2 of 2 for Drop Structure CS17-1 ***

TABLE

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Circular
Span(in): 3.00
Rise(in): 3.00

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 0.420
Control Elev(ft): 0.420

Name: CS17-2 From Node: Pond17-2 Length(ft): 63.00
Group: BASE To Node: NFNR Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.500
Invert(ft): -2.400	-2.500	Exit Loss Coef: 0.000
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure CS17-2 ***

TABLE

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Span(in): 37.00
Rise(in): 24.00

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 2.250
Control Elev(ft): 2.250

*** Weir 2 of 2 for Drop Structure CS17-2 ***

TABLE

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Circular
Span(in): 3.00
Rise(in): 3.00

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 0.420
Control Elev(ft): 0.420

=====
=== Hydrology Simulations ===
=====

Name: 100Yr-24Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 17\100Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 17\10Yr-24Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 25Yr-72Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 17\25Yr-72Hr.R32

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

==== Routing Simulations =====

Name: 100Yr-24Hr Hydrology Sim: 100Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 17\100Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 10Yr-24Hr Hydrology Sim: 10Yr-24Hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 17\10Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

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Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 48.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 25Yr-72Hr Hydrology Sim: 25Yr-72Hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\System 17\25Yr-72Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
BASE	Yes



Appendix G

Broward Blvd and Park & Ride Drainage Analysis Documentation

- Land-Use Tables
- Drainage Calculations
- Summary Tables
- ICPR: Pre-Development
- ICPR: Post-Development

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: Broward Blvd & Park-n-Ride

SHGWT EL. (ft-NAVD): 0.42

SYSTEM	BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
PARK 'N' RIDE (NORTH LOT)	PNR_N-1A	10	0.55	0.55	0.43	0.00	0.12	0.00	0.00	0.00	0.00	5.00	4.58	8.18	84.86
	PNR_N-1B	10	0.54	0.54	0.51	0.00	0.03	0.00	0.00	0.00	0.00	6.00	5.58	8.18	95.65
	PNR_N-1C	10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	5.50	5.08	8.18	100.00
	PNR_N-2	10	1.94	1.94	1.78	0.00	0.16	0.00	0.00	0.00	0.00	6.00	5.58	8.18	93.68
	PNR_N-3	10	0.81	0.81	0.62	0.00	0.19	0.00	0.00	0.00	0.00	6.00	5.58	8.18	83.90
	PNR_N-4	10	0.37	0.37	0.35	0.00	0.02	0.00	0.00	0.00	0.00	6.00	5.58	8.18	95.77
	PNR_N-5	10	4.88	4.88	3.91	0.00	0.97	0.00	0.00	0.00	0.00	6.00	5.58	8.18	86.01
	PNR_N-6	10	1.11	1.11	1.06	0.00	0.05	0.00	0.00	0.00	0.00	8.00	7.58	8.18	96.45
	PNR_N-7	10	0.31	0.31	0.00	0.00	0.31	0.00	0.00	0.00	0.00	5.00	4.58	8.18	55.01
PNR_N-8	10	0.86	0.86	0.00	0.00	0.86	0.00	0.00	0.00	0.00	5.00	4.58	8.18	55.01	
PARK 'N' RIDE NORTH LOT SYSTEM TOTALS:			11.47	11.47	8.76	0.00	2.71	0.00	0.00	0.00	0.00	--	--	--	--

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: Broward Blvd & Park-n-Ride

SHGWT EL. (ft-NAVD): 0.42

SYSTEM	BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
PARK 'N' RIDE (SOUTH LOT)	PNR_S-1A	10	0.06	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	7.00	6.58	8.18	100.00
	PNR_S-1B	10	0.52	0.52	0.37	0.00	0.15	0.00	0.00	0.00	0.00	7.00	6.58	8.18	80.91
	PNR_S-1C	10	0.65	0.65	0.50	0.00	0.15	0.00	0.00	0.00	0.00	6.00	5.58	8.18	84.12
	PNR_S-2A	10	0.45	0.45	0.12	0.00	0.33	0.00	0.00	0.00	0.00	7.00	6.58	8.18	62.51
	PNR_S-2B	10	3.54	3.54	2.47	0.00	1.07	0.00	0.00	0.00	0.00	5.00	4.58	8.18	80.18
	PNR_S-3	10	0.88	0.88	0.05	0.10	0.73	0.00	0.00	0.00	0.00	4.00	3.58	4.95	70.89
	PNR_S-3_Offsite	10	3.63	0.00	0.00	0.00	0.00	3.63	1.27	0.00	2.36	4.00	3.58	4.95	75.66
	PNR_S-4	10	1.78	1.78	1.43	0.00	0.35	0.00	0.00	0.00	0.00	8.00	7.58	8.18	86.14
	PNR_S-4_Offsite	10	2.38	0.00	0.00	0.00	0.00	2.38	0.83	0.00	1.55	8.00	7.58	8.18	65.29
	PNR_S-5	10	2.06	2.06	1.88	0.00	0.18	0.00	0.00	0.00	0.00	6.00	5.58	8.18	93.33
PNR_S-6	10	2.79	2.79	2.17	0.00	0.62	0.00	0.00	0.00	0.00	8.00	7.58	8.18	84.62	
PARK 'N' RIDE SOUTH LOT SYSTEM TOTALS:			18.74	12.73	9.05	0.10	3.58	6.01	2.10	0.00	3.91	--	--	--	--

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
PRE-DEVELOPMENT LAND-USE**

DRAINAGE SYSTEM: Broward Blvd & Park-n-Ride

SHGWT EL. (ft-NAVD): 0.42

SYSTEM	BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
BROWARD BOULEVARD SYSTEMS WITHIN PROJECT LIMITS	PNR_BB-E1	10	2.28	2.28	2.16	0.00	0.12	0.00	0.00	0.00	0.00	24.00	23.58	8.18	95.87
	PNR_BB-E2	10	0.72	0.72	0.72	0.00	0.00	0.00	0.00	0.00	0.00	18.00	17.58	8.18	100.00
	PNR_BB-W2	10	0.23	0.23	0.23	0.00	0.00	0.00	0.00	0.00	0.00	5.00	4.58	8.18	100.00
	NW 22ND-1	10	1.93	1.93	1.16	0.00	0.77	0.00	0.00	0.00	0.00	4.00	3.58	4.95	83.51
BROWARD BOULEVARD SYSTEM TOTALS:			5.16	5.16	4.27	0.00	0.89	0.00	0.00	0.00	0.00	--	--	--	--
PROJECT TOTALS:			35.37	29.36	22.08	0.10	7.18	6.01	2.10	0.00	3.91	--	--	--	--
BROWARD BOULEVARD SYSTEM OUTSIDE PROJECT LIMITS	PNR_BB-W1*	10	18.10	18.10	18.10	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	98.00

*Basin includes:

- 1) Broward Blvd from east of SW 28 Terr. to NW 22nd Avenue (approximately 3,300 ft of 100-ft R/W) = 10.50 ac. (approx.)
- 2) Riverland Road from Davie Blvd. to north of NW 1st Street (approximately 6,100 ft of 75-ft R/W) = 7.60 ac. (approx.)

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
PRE-DEVELOPMENT LAND-USE**

DRAINAGE SYSTEM: Bridge Riverbend

SHGWT EL. (ft-NAVD): 0.42

BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
RVR BND_SITE*	30	17.85	0.00	0.00	0.00	0.00	17.85	15.05	0.00	2.80	6.29	5.87	8.18	88.63
DELEV PK_LAKE**	10	20.60	0.00	0.00	0.00	0.00	20.60	0.78	16.84	2.98	1.00	0.58	0.45	99.35
SYSTEM TOTALS:		38.45	0.00	0.00	0.00	0.00	38.45	15.83	16.84	5.78	--	--	--	--

* Basin Land-Use information obtained from Bridge Riverbend Project Drainage Calculations, prepared by Flynn Engineering Services, P.A.

** Basin Land-Use information based on topographical survey information.

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
EXFILTRATION TRENCH PERCOLATION RATES**

Drainage System: *Broward Blvd & Park-n-Ride*

Exfiltration Trench	Used for Pre Development			Used for Post Development (To Remain)		
	Previous Project Permit Plans*			Information Obtained from As-Built Plans		
	Length (ft.)	Width (ft.)	K Value [cfs/ft ²]	Length (ft.)	Width (ft.)	K Value [cfs/ft ²]
1	345	4	1.40E-04	677	4	1.40E-04
2	672	4	9.40E-05	624	4	9.40E-05
3	298	14	4.00E-05	171	14	4.00E-05
4	248	14	4.00E-05	98	14	4.00E-05
5	231	14	4.00E-05	187	14	4.00E-05
6	260	14	4.00E-05	163	14	4.00E-05
7	76	14	4.00E-05	73	14	4.00E-05
8	477	14	4.00E-05	201	14	4.00E-05
9	243	14	4.00E-05	311	14	4.00E-05
10	140	4	1.40E-04	140	4	1.40E-04

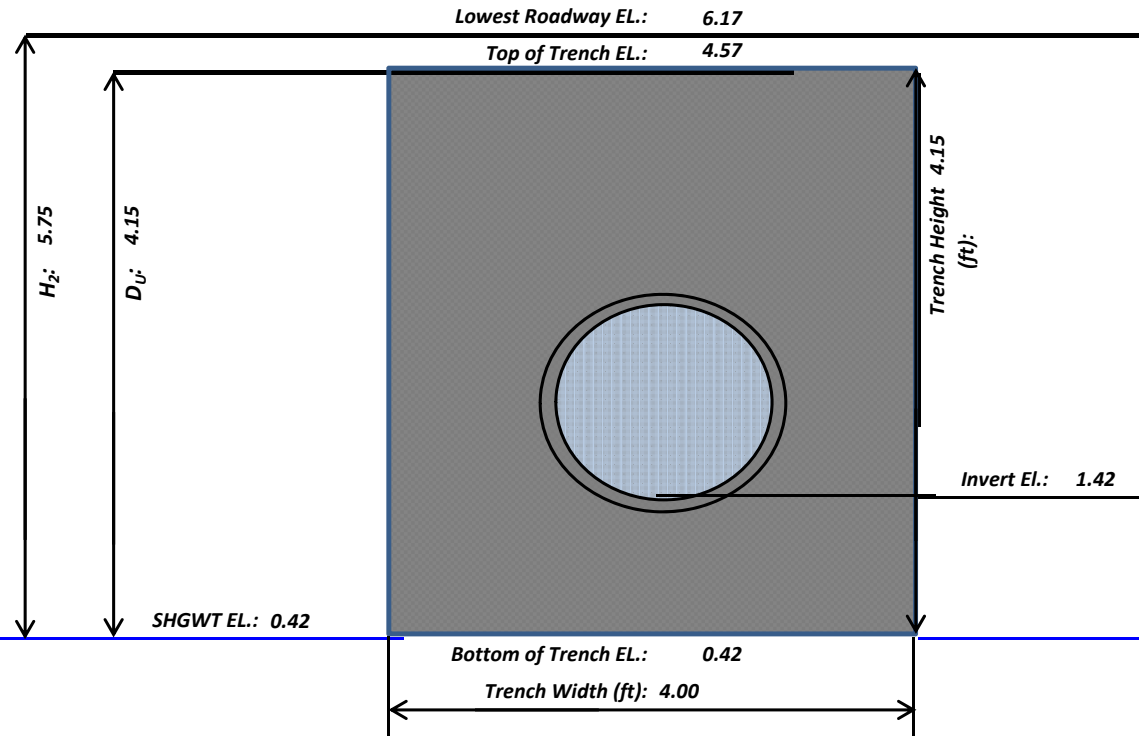
Notes:

*- Refer to State Project No. 86070-3496, SFWMD Permit No. 06-01469-S, SFWMD Application No. 901109-12

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-6

French Drain (ICPR Link Name):	ExTr #1
French Drain (ICPR Node Name):	CS-PNR_S-6
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	345
Pipe Invert EL. (ft-NAVD):	1.42
Lowest Roadway Elevation (ft):	6.17
Top of Trench EL. (ft-NAVD):	4.57
Bottom of Trench EL. (ft-NAVD):	0.42
Trench Height, H_T (ft):	4.15
Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	1.400E-04
Depth to Water Table, H_2 (ft):	5.75
Non-Saturated Trench Depth, D_U (ft):	4.15
Saturated Trench Depth, D_S (ft):	0.00
$H_2 W$:	23.00
$2H_2 D_U$:	47.73
D_U^2 :	17.22
$2H_2 D_S$:	0.00
$(1.39 \times 10^{-4}) W D_U$:	0.002307
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	3.38
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.27
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	0.28



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_S-6

French Drain (ICPR Link Name):	ExTr #1	Average Hydraulic Conductivity, K_{10}	1.400E-04
French Drain (ICPR Node Name):	CS-PNR_S-6	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	1.42
Length of French Drain, L (LF):	345.00	Top of Trench EL. (ft-NAVD):	4.57
Trench Height, H_T (ft):	4.15	Bottom of Trench EL. (ft-NAVD):	0.42
Trench Width, W (ft):	4.00	Weir EL. (ft-NAVD):	3.42

SHGWT EL. (ft-NAVD): 0.42
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_P (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	0.00	3.00	0.00126	0.435	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.57	4.15	0.00	4.15	0.00241	0.832	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	6.17	4.15	0.00	5.75	0.00427	1.473	$E = 2K_{10} [D_U (D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.67	4.15	0.00	6.25	0.00485	1.674	$E = 2K_{10} [D_U (D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

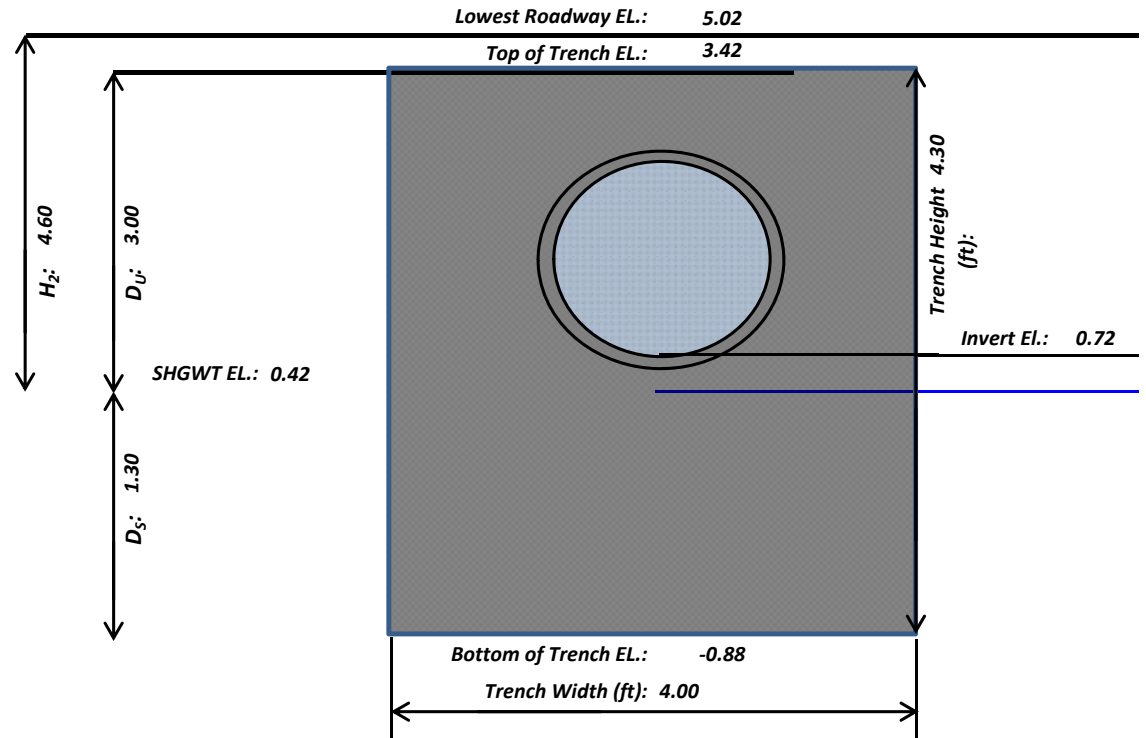
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	0.42	Area within Trench ($L \times W$)	0.0317	# of Structures	Area per Structure
Top of Trench EL.	4.57	Area within Trench ($L \times W$)	0.0317		
Lowest Roadway/Parking Lot EL.	6.17	Area within Drainage Structure(s)	0.0008	8	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-2B

French Drain (ICPR Link Name):	ExTr #2
French Drain (ICPR Node Name):	STRUCT. PNR_S-2
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	672
Pipe Invert EL. (ft-NAVD):	0.72
Lowest Roadway Elevation (ft):	5.02
Top of Trench EL. (ft-NAVD):	3.42
Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	4.30
Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	9.400E-05
Depth to Water Table, H_2 (ft):	4.60
Non-Saturated Trench Depth, D_U (ft):	3.00
Saturated Trench Depth, D_S (ft):	1.30
$H_2 W$:	18.40
$2H_2 D_U$:	27.60
D_U^2 :	9.00
$2H_2 D_S$:	11.96
$(1.39 \times 10^{-4}) W D_U$:	0.001668
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	4.21
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	3.05
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	0.35



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_S-2B

French Drain (ICPR Link Name):	ExTr #2	Average Hydraulic Conductivity, K_{10}	9.400E-05
French Drain (ICPR Node Name):	STRUCT. PNR_S-2	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.72
Length of French Drain, L (LF):	672.00	Top of Trench EL. (ft-NAVD):	3.42
Trench Height, H_T (ft):	4.30	Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Width, W (ft):	4.00	Weir EL. (ft-NAVD):	3.42

SHGWT EL. (ft-NAVD): 0.42
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_P (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	1.30	3.00	0.00158	1.061	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench / Weir EL.
0.42	5.02	3.00	1.30	4.60	0.00287	1.930	$E = 2K_{10} [D_U (D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.52	3.00	1.30	5.10	0.00328	2.202	$E = 2K_{10} [D_U (D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

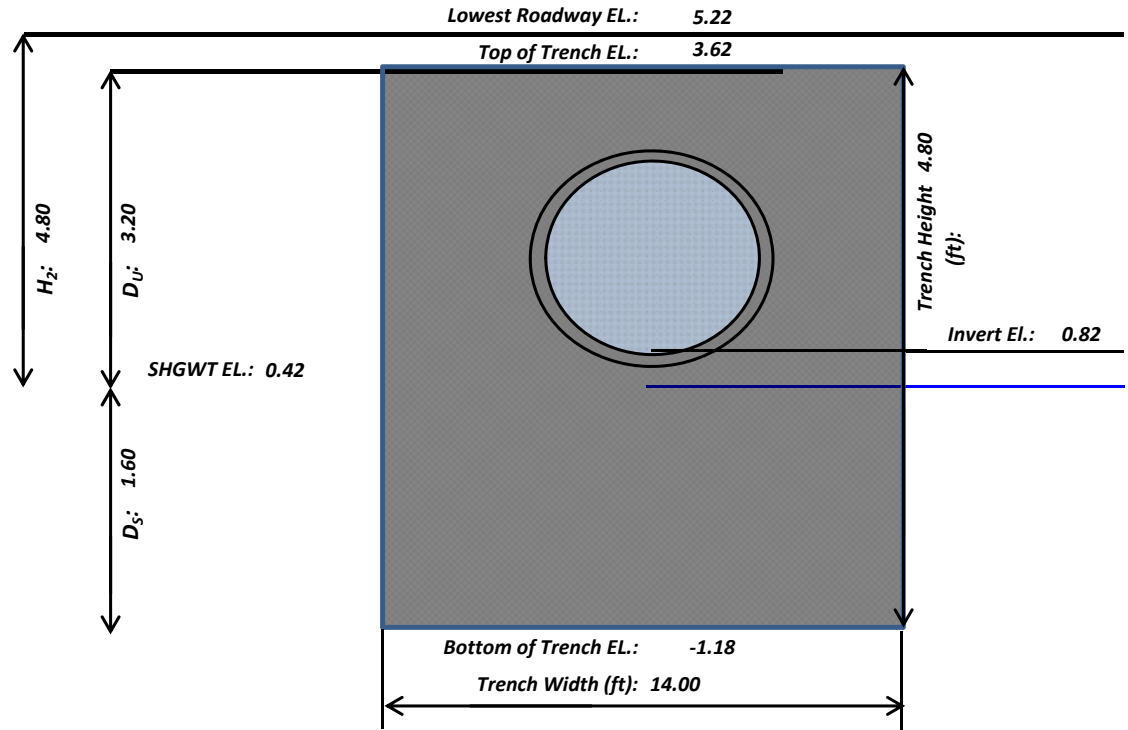
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.88	Area within Trench ($L \times W$)	0.0617	# of Structures	Area per Structure
Top of Trench EL.	3.42	Area within Trench ($L \times W$)	0.0617		
Lowest Roadway/Parking Lot EL.	5.02	Area within Drainage Structure(s)	0.0017	17	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #3
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	298
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	3.08
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.28
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.19



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #3	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	298.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50
		(*) - Weir EL. assumed.	

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.131	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.244	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.427	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.484	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

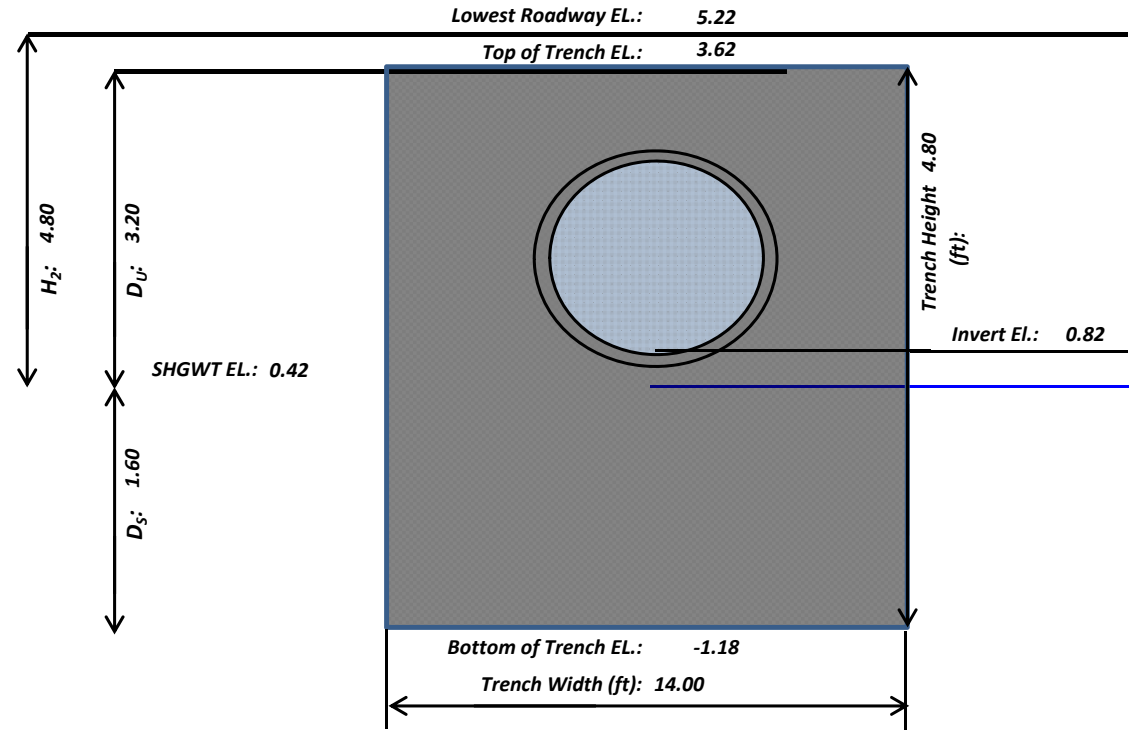
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0958	# of Structures	Area per Structure
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0958		
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0005	5	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #4
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	248
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.57
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.90
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.16



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #4	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	248.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50

(*) - Weir EL. assumed.

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.109	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.203	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.356	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.403	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0797	# of Structures	Area per Structure
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0797		
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0002	2	0.0001

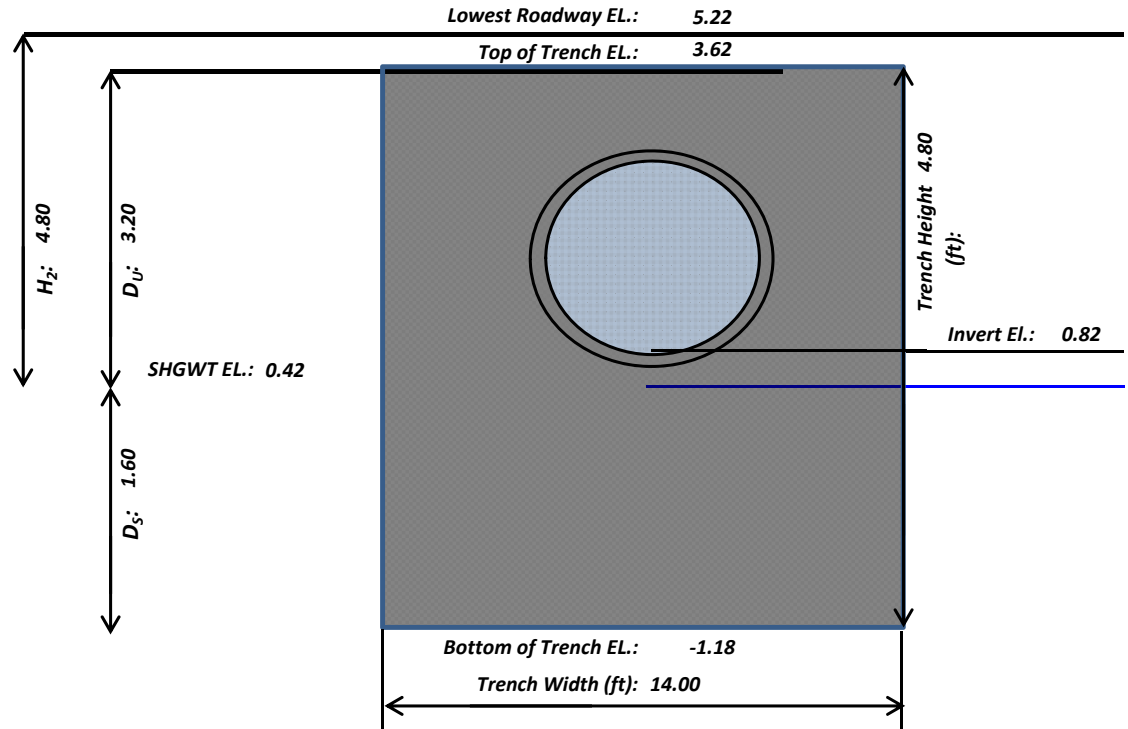
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #5
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	231
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.39
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.77
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.15



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #5	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	231.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50
		(*) - Weir EL. assumed.	

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.101	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.189	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.331	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.376	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

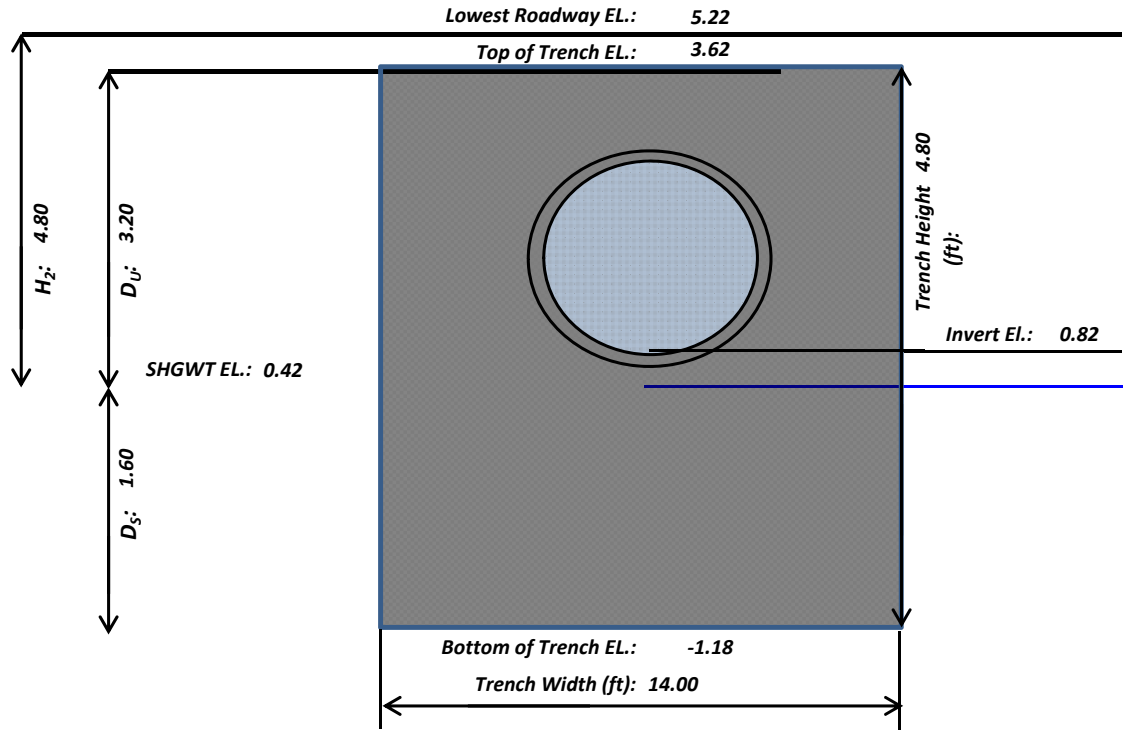
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0742	# of Structures	Area per Structure
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0742		
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0003	3	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #6
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	260
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.69
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.99
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.17



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #6	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	260.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50
		(*) - Weir EL. assumed.	

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_P (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.114	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.213	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.373	$E = 2K_{10}[D_U(D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.423	$E = 2K_{10}[D_U(D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

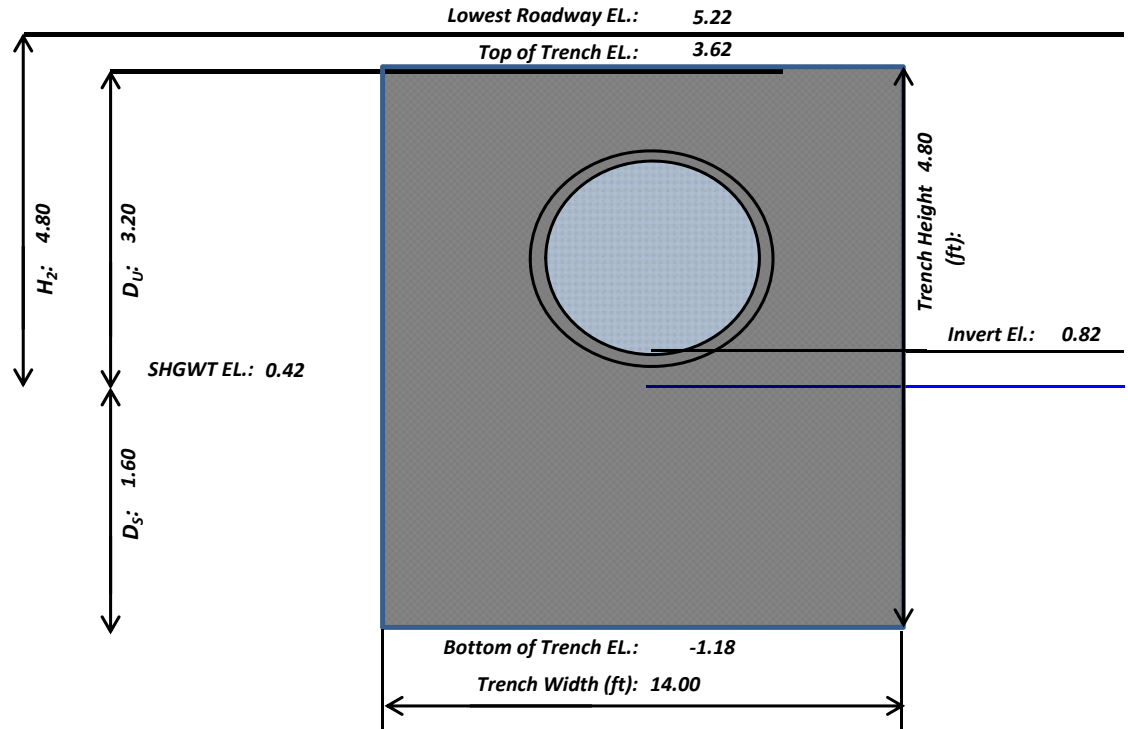
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0836	# of Structures	Area per Structure
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0836		
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0004	4	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #7
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	76
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	0.79
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	0.58
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.05



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #7	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	76.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50
		(*) - Weir EL. assumed.	

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.033	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.062	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.109	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.124	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0244	# of Structures	Area per Structure
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0244		
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0001	1	0.0001

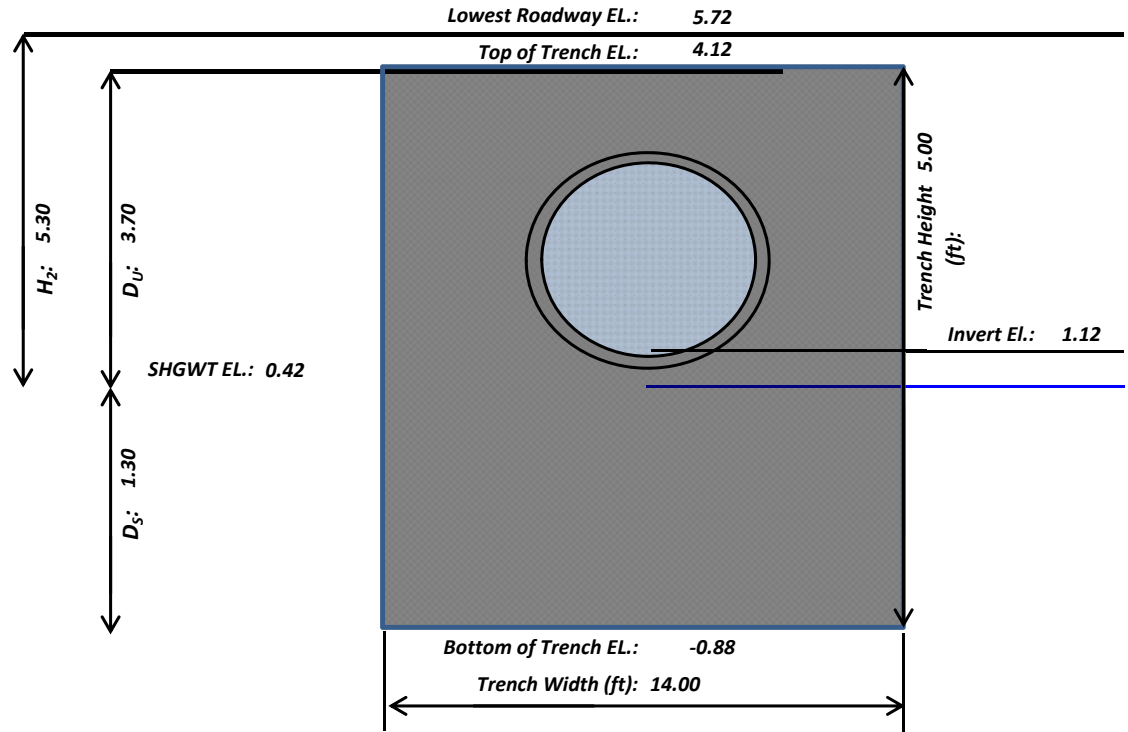
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-3

French Drain (ICPR Link Name):	ExTr #8
French Drain (ICPR Node Name):	STRUCT. PNR_N-3
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	477
Pipe Invert EL. (ft-NAVD):	1.12
Lowest Roadway Elevation (ft):	5.72
Top of Trench EL. (ft-NAVD):	4.12
Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	5.00
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	5.30
Non-Saturated Trench Depth, D_U (ft):	3.70
Saturated Trench Depth, D_S (ft):	1.30
$H_2 W$:	74.20
$2H_2 D_U$:	39.22
D_U^2 :	13.69
$2H_2 D_S$:	13.78
$(1.39 \times 10^{-4}) W D_U$:	0.007200
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	5.60
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	4.18
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.35



$$V = L[K_{10}(H_2 W + 2H_2 D_U - D_U^2 + 2H_2 D_S) + (1.39 \times 10^{-4}) W D_U]$$

$$V = L[K_{10}(2H_2 D_U - D_U^2 + 2H_2 D_S) + (1.39 \times 10^{-4}) W D_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-3

French Drain (ICPR Link Name):	ExTr #8	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	STRUCT. PNR_N-3	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	1.12
Length of French Drain, L (LF):	477.00	Top of Trench EL. (ft-NAVD):	4.12
Trench Height, H_T (ft):	5.00	Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50
		(*) - Weir EL. assumed.	

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.30	2.08	0.00039	0.186	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.12	3.70	1.30	3.70	0.00093	0.445	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.72	3.70	1.30	5.30	0.00157	0.750	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.22	3.70	1.30	5.80	0.00177	0.845	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.88	Area within Trench ($L \times W$)	0.1533	# of Structures	Area per Structure
Top of Trench EL.	4.12	Area within Trench ($L \times W$)	0.1533		
Lowest Roadway/Parking Lot EL.	5.72	Area within Drainage Structure(s)	0.0004	4	0.0001

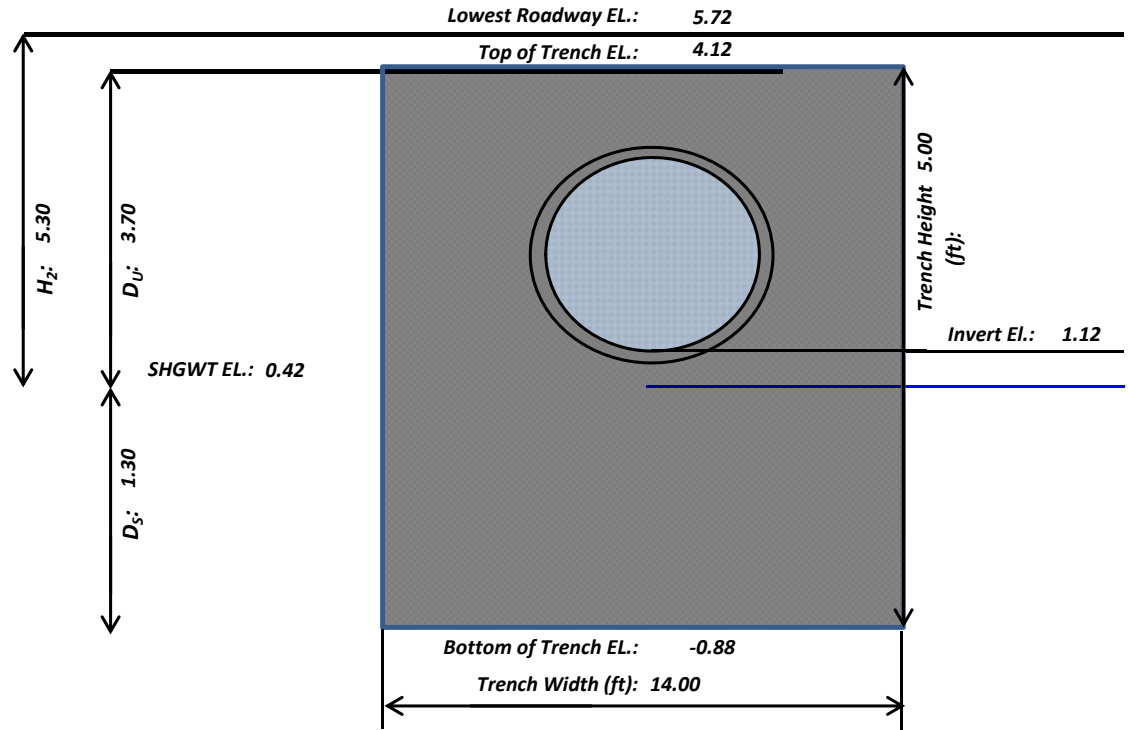
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-1

French Drain (ICPR Link Name):	ExTr #9
French Drain (ICPR Node Name):	CS PNR_N-1
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	243
Pipe Invert EL. (ft-NAVD):	1.12
Lowest Roadway Elevation (ft):	5.72
Top of Trench EL. (ft-NAVD):	4.12
Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	5.00
Weir EL. (ft-NAVD):	1.72
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	5.30
Non-Saturated Trench Depth, D_U (ft):	3.70
Saturated Trench Depth, D_S (ft):	1.30
$H_2 W$:	74.20
$2H_2 D_U$:	39.22
D_U^2 :	13.69
$2H_2 D_S$:	13.78
$(1.39 \times 10^{-4}) W D_U$:	0.007200
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.85
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.13
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.18



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-1

French Drain (ICPR Link Name):	ExTr #9	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	CS PNR_N-1	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	1.12
Length of French Drain, L (LF):	243.00	Top of Trench EL. (ft-NAVD):	4.12
Trench Height, H_T (ft):	5.00	Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Width, W (ft):	14.00	Weir EL. (ft-NAVD):	1.72

SHGWT EL. (ft-NAVD): **0.42**

Max GW EL. (ft-NAVD): **N/A**

Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	1.72	1.30	1.30	1.30	0.00020	0.049	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.12	3.70	1.30	3.70	0.00093	0.227	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.72	3.70	1.30	5.30	0.00157	0.382	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.22	3.70	1.30	5.80	0.00177	0.431	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.88	Area within Trench ($L \times W$)	0.0781	# of Structures	Area per Structure
Top of Trench EL.	4.12	Area within Trench ($L \times W$)	0.0781		
Lowest Roadway/Parking Lot EL.	5.72	Area within Drainage Structure(s)	0.0006	6	0.0001

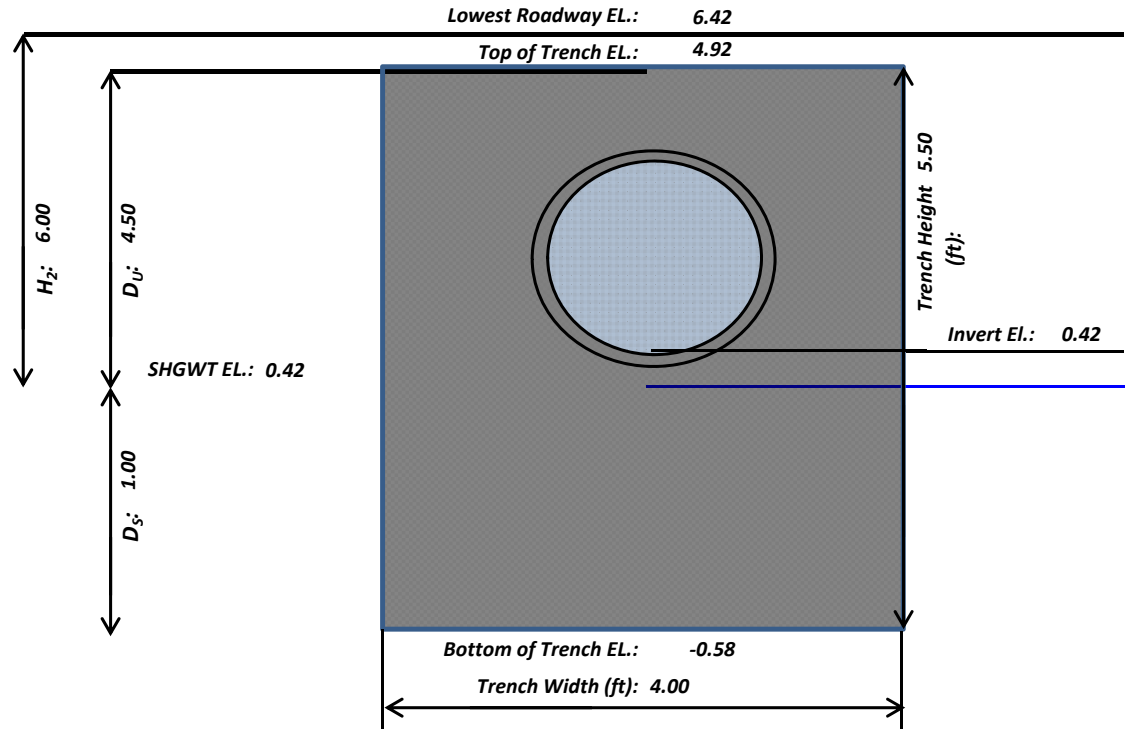
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-5

French Drain (ICPR Link Name):	ExTr #10
French Drain (ICPR Node Name):	Struct. PNR_S-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	140
Pipe Invert EL. (ft-NAVD):	0.42
Existing Ground Elevation (ft):	6.42
Top of Trench EL. (ft-NAVD):	4.92
Bottom of Trench EL. (ft-NAVD):	-0.58
Trench Height, H_T (ft):	5.50
Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	1.400E-04
Depth to Water Table, H_2 (ft):	6.00
Non-Saturated Trench Depth, D_U (ft):	4.50
Saturated Trench Depth, D_S (ft):	1.00
$H_2 W$:	24.00
$2H_2 D_U$:	54.00
D_U^2 :	20.25
$2H_2 D_S$:	12.00
$(1.39 \times 10^{-4}) W D_U$:	0.002502
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	1.72
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.25
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	0.14



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain parameters were obtained from SFWMD Permit No. 06-01469-S (Application No. 901109-12) / FDOT State Project No. 86070-3496.

Refer to Appendix H for existing permits & plans.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-5

French Drain (ICPR Link Name):	ExTr #10	Average Hydraulic Conductivity, K_{10}	1.400E-04
French Drain (ICPR Node Name):	Struct. PNR_S-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.42
Length of French Drain, L (LF):	140.00	Top of Trench EL. (ft-NAVD):	4.92
Trench Height, H_T (ft):	5.50	Bottom of Trench EL. (ft-NAVD):	-0.58
Trench Width, W (ft):	4.00	Weir EL. (ft-NAVD):	3.42

SHGWT EL. (ft-NAVD): **0.42**

Max GW EL. (ft-NAVD): **N/A**

Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	1.00	3.00	0.00210	0.294	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.92	4.50	1.00	4.50	0.00410	0.573	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	6.42	4.50	1.00	6.00	0.00641	0.897	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.92	4.50	1.00	6.50	0.00718	1.005	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.58	Area within Trench ($L \times W$)	0.0129	# of Structures	Area per Structure
Top of Trench EL.	4.92	Area within Trench ($L \times W$)	0.0129		
Lowest Roadway/Parking Lot EL.	6.42	Area within Drainage Structure(s)	0.0004	4	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
POST-DEVELOPMENT LAND-USE**

DRAINAGE SYSTEM: **Broward Blvd & Park-n-Ride**

SHGWT EL. (ft-NAVD): **0.42**

SYSTEM	BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
PARK 'N' RIDE (NORTH LOT)	PNR_N-1A	10	0.55	0.55	0.43	0.00	0.12	0.00	0.00	0.00	0.00	5.00	4.58	8.18	84.86
	PNR_N-1B	10	0.54	0.54	0.51	0.00	0.03	0.00	0.00	0.00	0.00	6.00	5.58	8.18	95.65
	PNR_N-1C	10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	5.50	5.08	8.18	100.00
	PNR_N-2	10	1.94	1.94	1.78	0.00	0.16	0.00	0.00	0.00	0.00	6.00	5.58	8.18	93.68
	PNR_N-3	10	0.81	0.81	0.62	0.00	0.19	0.00	0.00	0.00	0.00	6.00	5.58	8.18	83.90
	PNR_N-4	10	0.37	0.37	0.35	0.00	0.02	0.00	0.00	0.00	0.00	6.00	5.58	8.18	95.77
	PNR_N-5	10	4.87	4.87	3.90	0.00	0.97	0.00	0.00	0.00	0.00	6.00	5.58	8.18	85.99
	PNR_N-6	10	1.02	1.02	0.97	0.00	0.05	0.00	0.00	0.00	0.00	8.00	7.58	8.18	96.14
PNR_N-8	10	0.84	0.84	0.00	0.00	0.84	0.00	0.00	0.00	0.00	0.00	5.00	4.58	8.18	55.01
PARK 'N' RIDE NORTH LOT SYSTEM TOTALS:			11.04	11.04	8.66	0.00	2.38	0.00	0.00	0.00	0.00	--	--	--	--

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
POST-DEVELOPMENT LAND-USE**

DRAINAGE SYSTEM: **Broward Blvd & Park-n-Ride** SHGWT EL. (ft-NAVD): **0.42**

SYSTEM	BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
PARK 'N' RIDE (SOUTH LOT)	PNR_S-1A	10	0.05	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	7.00	6.58	8.18	100.00
	PNR_S-2A	10	0.34	0.34	0.14	0.00	0.20	0.00	0.00	0.00	0.00	7.00	6.58	8.18	67.51
	PNR_S-2B	10	1.83	1.83	1.55	0.00	0.28	0.00	0.00	0.00	0.00	5.00	4.58	8.18	88.88
	PNR_S-4	10	1.70	1.70	1.42	0.00	0.28	0.00	0.00	0.00	0.00	8.00	7.58	8.18	88.13
	PNR_S-5	10	2.06	2.06	1.89	0.00	0.17	0.00	0.00	0.00	0.00	6.00	5.58	8.18	93.68
	PNR_S-6	10	2.80	2.80	2.18	0.00	0.62	0.00	0.00	0.00	0.00	8.00	7.58	8.18	84.66
	PNR_S-3_Offsite	10	3.63	0.00	0.00	0.00	0.00	0.00	3.63	1.27	0.00	2.36	4.00	3.58	4.95
PNR_S-4_Offsite	10	2.38	0.00	0.00	0.00	0.00	0.00	2.38	0.83	0.00	1.55	8.00	7.58	8.18	65.29
PARK 'N' RIDE SOUTH LOT SYSTEM TOTALS:			14.79	8.78	7.23	0.00	1.55	6.01	2.10	0.00	3.91	--	--	--	--
FIRST STREET RECONSTRUCTION	PNR_S-1B	10	0.39	0.39	0.27	0.00	0.12	0.00	0.00	0.00	0.00	7.00	6.58	8.18	79.89
	PNR_S-1C	10	1.04	1.04	0.64	0.00	0.40	0.00	0.00	0.00	0.00	6.00	5.58	8.18	76.07
	PNR_S-2D	10	1.16	1.16	1.02	0.00	0.14	0.00	0.00	0.00	0.00	5.00	4.58	8.18	91.01
	PNR_S-3	10	1.09	1.09	0.56	0.10	0.43	0.00	0.00	0.00	0.00	4.00	3.58	4.95	83.66
FIRST STREET RECONSTRUCTION SYSTEM TOTALS:			3.68	3.68	2.49	0.10	1.09	0.00	0.00	0.00	0.00	--	--	--	--

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
POST-DEVELOPMENT LAND-USE**

DRAINAGE SYSTEM: **Broward Blvd & Park-n-Ride** SHGWT EL. (ft-NAVD): **0.42**

SYSTEM	BASIN	Time of Conc. t_c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
BROWARD BOULEVARD RECONSTRUCTION	PNR_BB-E1L	10	1.04	1.04	1.04	0.00	0.00	0.00	0.00	0.00	0.00	24.00	23.58	8.18	100.00
	PNR_BB-E1R	10	1.24	1.24	1.24	0.00	0.00	0.00	0.00	0.00	0.00	24.00	23.58	8.18	100.00
	PNR_BB-E2L	10	0.38	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.00	18.00	17.58	8.18	100.00
	PNR_BB-E2R	10	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	18.00	17.58	8.18	100.00
	PNR_N-7	10	0.26	0.26	0.00	0.00	0.26	0.00	0.00	0.00	0.00	4.00	3.58	4.95	66.89
	PNR_S-2C	10	0.24	0.24	0.00	0.00	0.24	0.00	0.00	0.00	0.00	3.00	2.58	1.88	84.18
BROWARD BOULEVARD RECONSTRUCTION SYSTEM TOTALS:			3.98	3.98	3.48	0.00	0.50	0.00	0.00	0.00	0.00	--	--	--	--
BROWARD BOULEVARD MILL/RESURFACE/OVERBUILD	PNR_BB-E3	10	0.17	0.17	0.17	0.00	0.00	0.00	0.00	0.00	0.00	18.00	17.58	8.18	100.00
	PNR_BB-W2	10	0.26	0.26	0.26	0.00	0.00	0.00	0.00	0.00	0.00	5.00	4.58	8.18	100.00
	NW 22ND-1	10	1.93	1.93	1.16	0.00	0.77	0.00	0.00	0.00	0.00	4.00	3.58	4.95	83.51
BROWARD BOULEVARD MILL/RESURFACE/OVERBUILD SYSTEM TOTALS:			2.36	2.36	1.59	0.00	0.77	0.00	0.00	0.00	0.00	--	--	--	--
PROJECT TOTALS:			32.17	26.16	20.96	0.00	5.20	6.01	2.10	0.00	3.91	--	--	--	--
BROWARD BOULEVARD SYSTEM OUTSIDE PROJECT LIMITS	PNR_BB-W1*	10	18.10	18.10	18.10	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	98.00

*Basin includes:

- 1) Broward Blvd from east of SW 28 Terr. to NW 22nd Avenue (approximately 3,300 ft of 100-ft R/W) = 10.50 ac. (approx.)
- 2) Riverland Road from Davie Blvd. to north of NW 1st Street (approximately 6,100 ft of 75-ft R/W) = 7.60 ac. (approx.)

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
WATER QUALITY**

Drainage System: Broward Blvd & Park-n-Ride

SYSTEM	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) <i>[POST-DEV.]</i>	ONSITE IMPERVIOUS AREA (Ac.) <i>[POST-DEV.]</i>	ONSITE PERVIOUS AREA (Ac.) <i>[POST-DEV.]</i>	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET- RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	² FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	³ TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
PARK 'N' RIDE (NORTH LOT)	0.42	11.04	8.66	2.38	0.92	1.80	1.80	0.00	0.00	0.25	1.31	1.81	0.01
PARK 'N' RIDE (SOUTH LOT)	0.42	14.79	7.23	1.55	1.23	1.51	1.51	0.00	0.00	0.28	1.27	1.83	0.32
NW 1ST STREET RECONSTRUCTION	0.42	3.68	2.49	1.19	0.31	0.52	0.52	0.00	0.00	0.00	0.57	0.57	0.06
PARK 'N' RIDE TOTAL		25.83	15.89	3.93	2.15	3.31	3.31	0.00	0.00	0.53	3.15	4.21	0.39
BROWARD BOULEVARD RECONSTRUCTION	0.42	3.98	3.48	0.50	0.33	0.73	0.73	0.45	0.00	0.00	0.20	0.80	0.08
PROJECT TOTAL		29.81	19.37	4.43	2.48	4.04	4.04	0.45	0.00	0.53	3.35	5.02	0.46

¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all existing and proposed French Drain. Park and Ride North Lot includes ExTr# 3 thru #9 and PrTr #2 and #3. Park and Ride South Lot includes ExTr #1, #2 and #10 and PrTr#1.

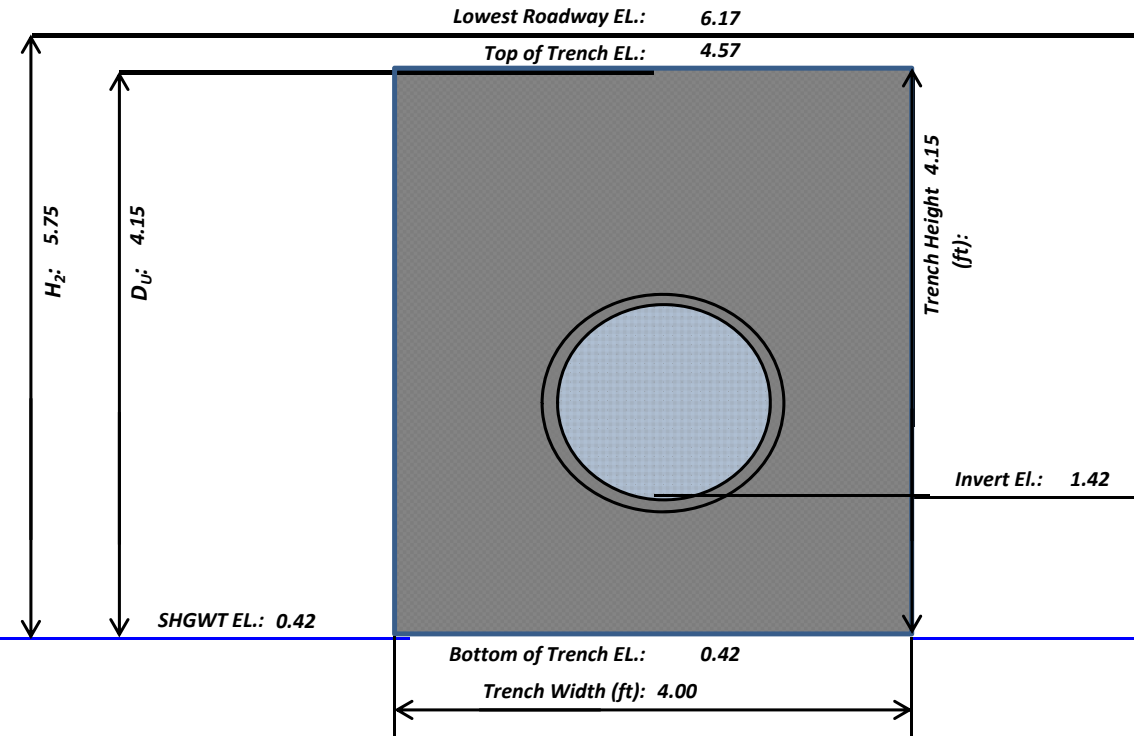
³Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-6

French Drain (ICPR Link Name):	ExTr #1
French Drain (ICPR Node Name):	CS-PNR_S-6
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	677
Pipe Invert EL. (ft-NAVD):	1.42
Lowest Roadway Elevation (ft):	6.17
Top of Trench EL. (ft-NAVD):	4.57
Bottom of Trench EL. (ft-NAVD):	0.42
Trench Height, H_T (ft):	4.15
Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	1.400E-04
Depth to Water Table, H_2 (ft):	5.75
Non-Saturated Trench Depth, D_U (ft):	4.15
Saturated Trench Depth, D_S (ft):	0.00
$H_2 W$:	23.00
$2H_2 D_U$:	47.73
D_U^2 :	17.22
$2H_2 D_S$:	0.00
$(1.39 \times 10^{-4}) W D_U$:	0.002307
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	6.63
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	4.45
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	0.55



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-6

French Drain (ICPR Link Name):	ExTr #1	Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	1.400E-04
French Drain (ICPR Node Name):	CS-PNR_S-6	Pipe Invert EL. (ft-NAVD):	1.42
Existing/Proposed:	Existing	Top of Trench EL. (ft-NAVD):	4.57
Length of French Drain, L (LF):	677.00	Bottom of Trench EL. (ft-NAVD):	0.42
Trench Height, H_T (ft):	4.15	Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00		

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	0.00	3.00	0.00126	0.853	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.57	4.15	0.00	4.15	0.00241	1.632	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	6.17	4.15	0.00	5.75	0.00427	2.891	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.67	4.15	0.00	6.25	0.00485	3.284	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

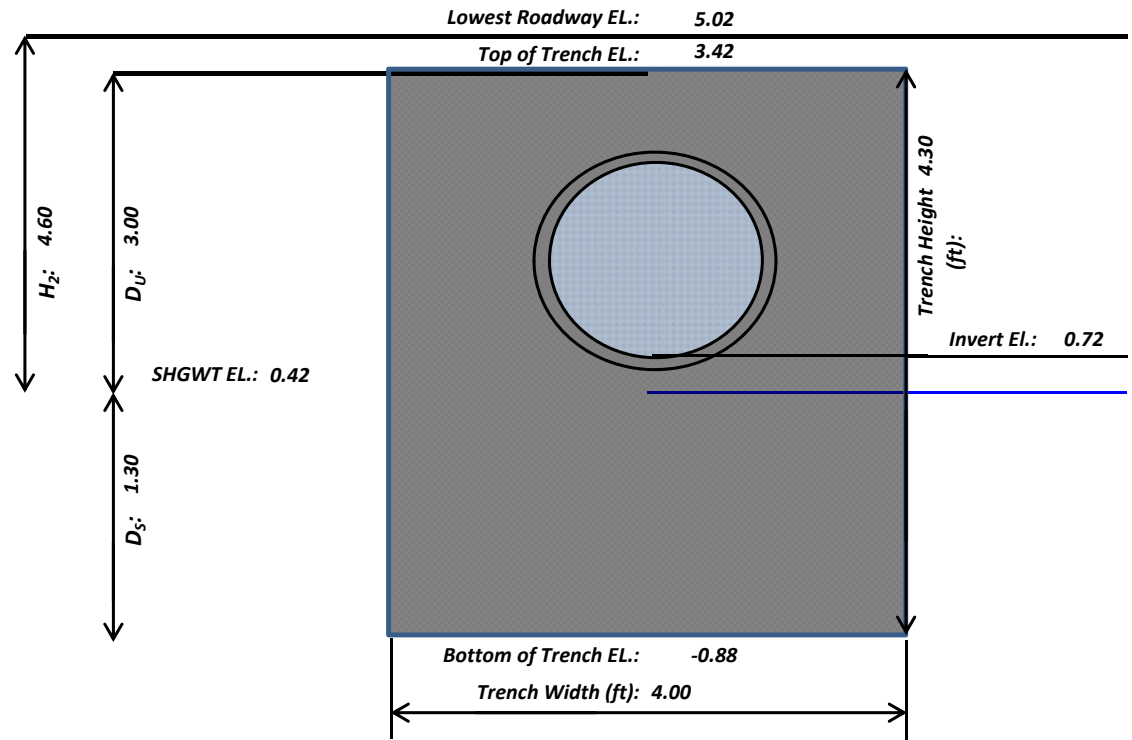
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	0.42	Area within Trench ($L \times W$)	0.0622	# of Structures	Area per Structure
Top of Trench EL.	4.57	Area within Trench ($L \times W$)	0.0622		
Lowest Roadway/Parking Lot EL.	6.17	Area within Drainage Structure(s)	0.0008	8	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-2B*

French Drain (ICPR Link Name):	ExTr #2
French Drain (ICPR Node Name):	STRUCT. PNR_S-2
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	624
Pipe Invert EL. (ft-NAVD):	0.72
Lowest Roadway Elevation (ft):	5.02
Top of Trench EL. (ft-NAVD):	3.42
Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	4.30
Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	9.400E-05
Depth to Water Table, H_2 (ft):	4.60
Non-Saturated Trench Depth, D_U (ft):	3.00
Saturated Trench Depth, D_S (ft):	1.30
$H_2 W$:	18.40
$2H_2 D_U$:	27.60
D_U^2 :	9.00
$2H_2 D_S$:	11.96
$(1.39 \times 10^{-4}) W D_U$:	0.001668
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	3.91
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.83
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	0.33



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_S-2B

French Drain (ICPR Link Name):	ExTr #2	Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	9.400E-05
French Drain (ICPR Node Name):	STRUCT. PNR_S-2	Pipe Invert EL. (ft-NAVD):	0.72
Existing/Proposed:	Existing	Top of Trench EL. (ft-NAVD):	3.42
Length of French Drain, L (LF):	624.00	Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	4.30	Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00		

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	1.30	3.00	0.00158	0.985	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench / Weir EL.
0.42	5.02	3.00	1.30	4.60	0.00287	1.793	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.52	3.00	1.30	5.10	0.00328	2.045	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

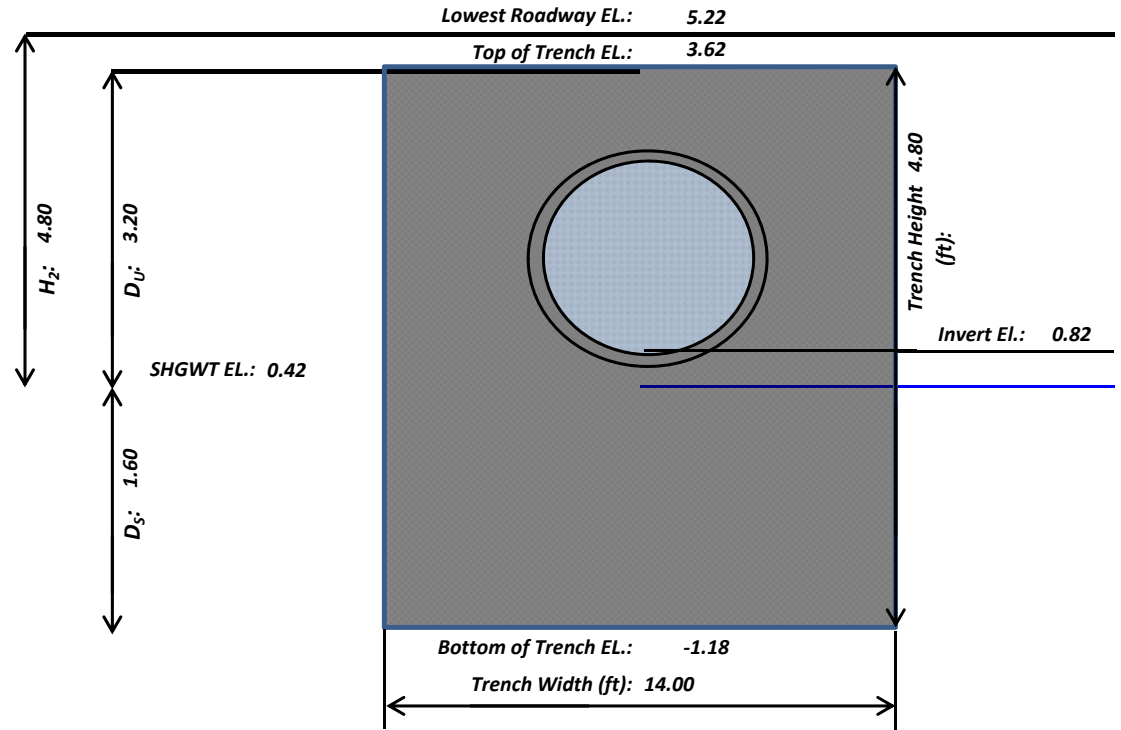
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.88	Area within Trench ($L \times W$)	0.0573	# of Structures	Area per Structure
Top of Trench EL.	3.42	Area within Trench ($L \times W$)	0.0573		
Lowest Roadway/Parking Lot EL.	5.02	Area within Drainage Structure(s)	0.0017	17	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #3
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	171
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	1.77
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.31
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.11



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #3	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	171.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50

(*) - Weir EL. assumed.

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.075	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.140	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.245	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.278	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0550	# of Structures	Area per Structure
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0550		
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0005	5	0.0001

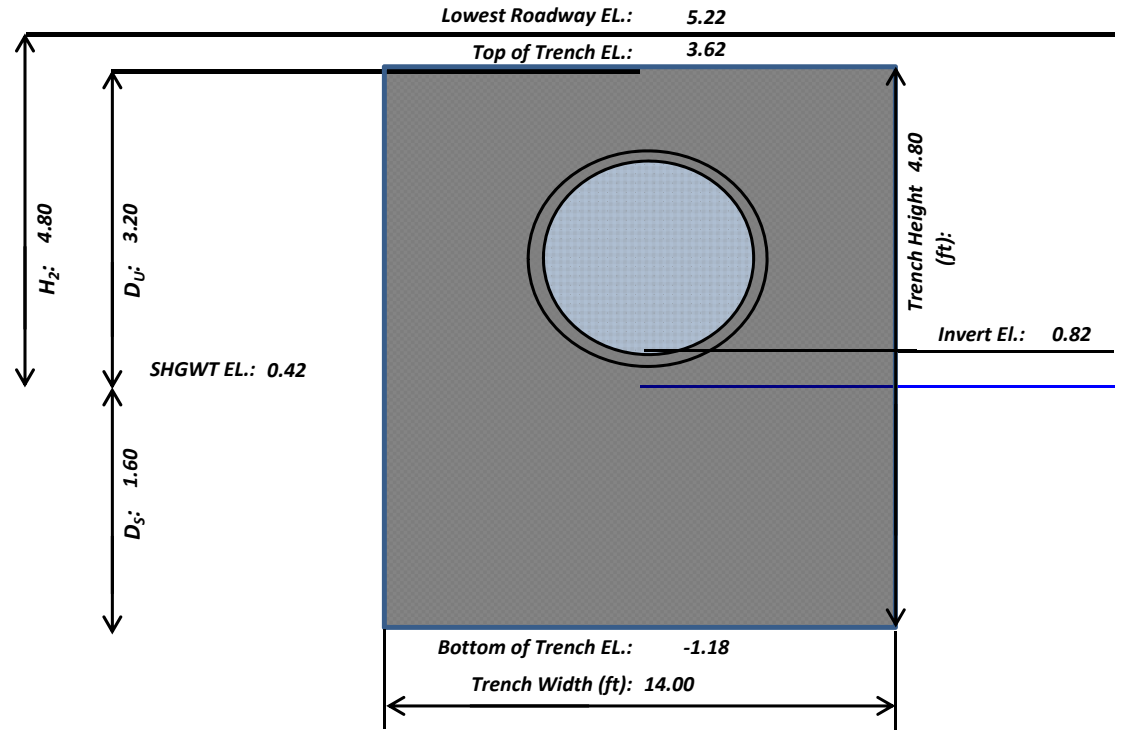
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #4
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	98
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	1.01
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	0.75
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.06



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #4	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	98.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50

(*) - Weir EL. assumed.

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.043	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.080	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.140	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.159	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

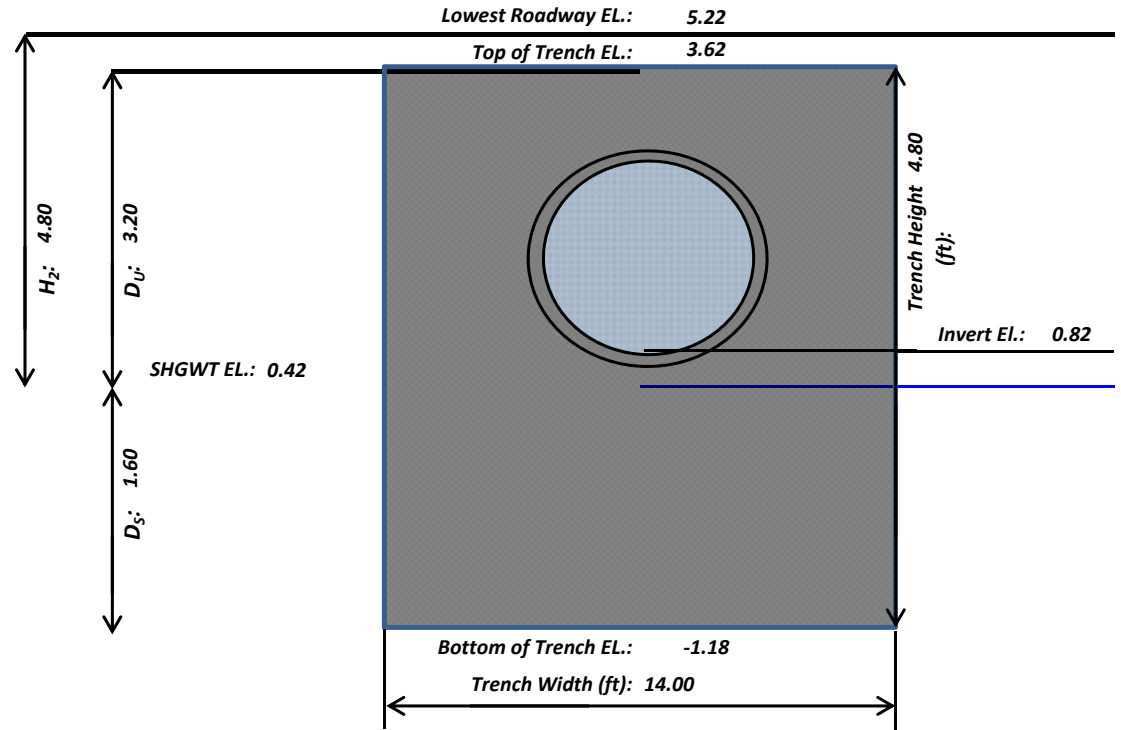
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0315	# of	Area per
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0315	Structures	Structure
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0002	2	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #5
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	187
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	1.94
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.43
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.12



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #5	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	187.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50

(*) - Weir EL. assumed.

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.082	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.153	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.268	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.304	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

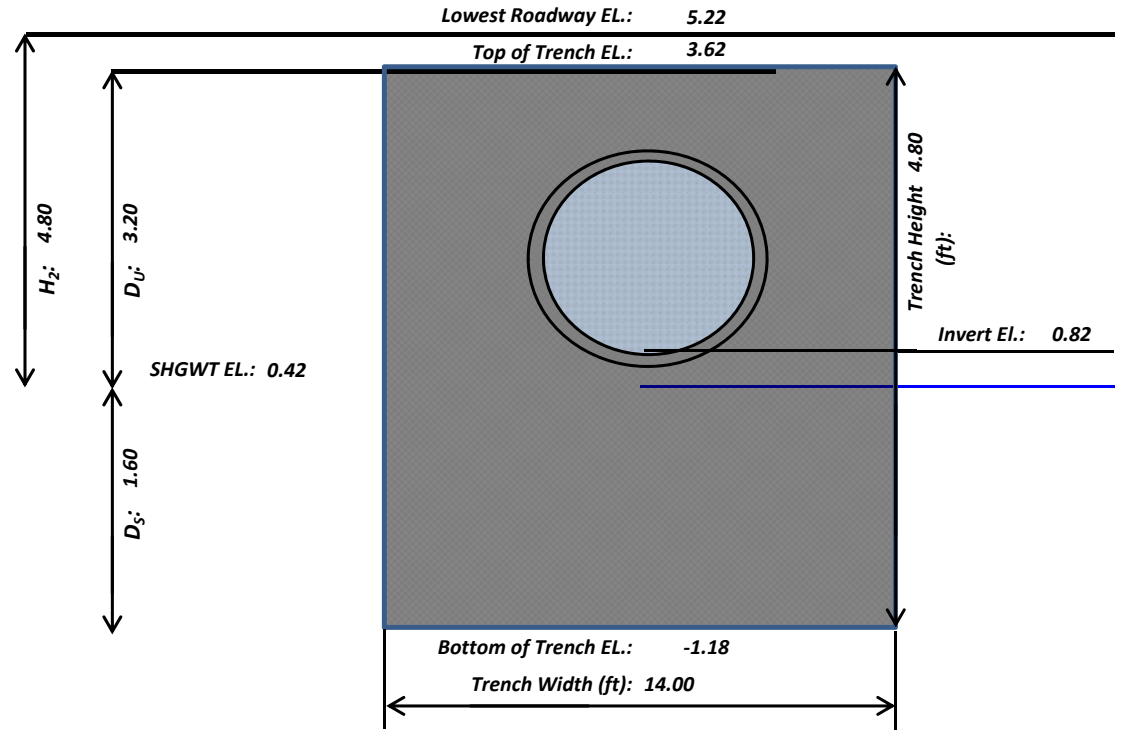
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench (L x W)	0.0601	# of	Area per
Top of Trench EL.	3.62	Area within Trench (L x W)	0.0601	Structures	Structure
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0003	3	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #6
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	163
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	1.69
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.25
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.10



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #6	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	163.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50

(*) - Weir EL. assumed.

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.072	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.134	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.234	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.265	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

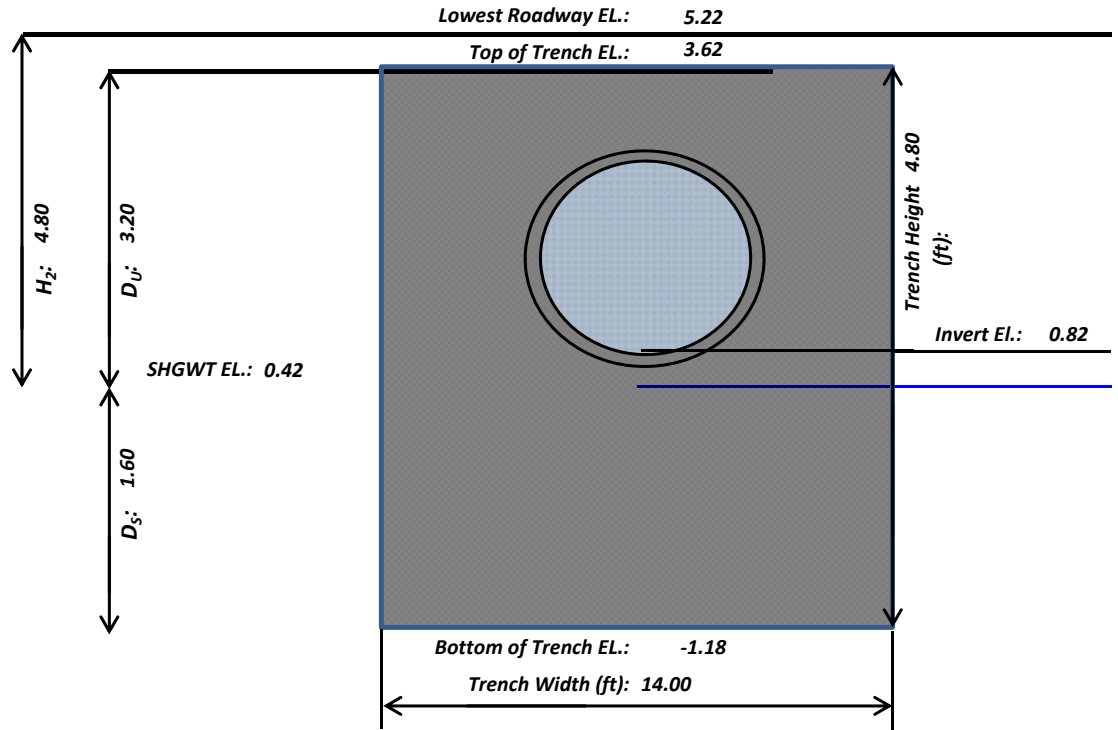
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0524	# of	Area per
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0524	Structures	Structure
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0004	4	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #7
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	73
Pipe Invert EL. (ft-NAVD):	0.82
Lowest Roadway Elevation (ft):	5.22
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Height, H_T (ft):	4.80
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	4.80
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	1.60
$H_2 W$:	67.20
$2H_2 D_U$:	30.72
D_U^2 :	10.24
$2H_2 D_S$:	15.36
$(1.39 \times 10^{-4}) W D_U$:	0.006227
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	0.76
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	0.56
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.05



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	ExTr #7	Average Hydraulic Conductivity, K_{10}	4.000E-05
French Drain (ICPR Node Name):	POND PNR_N-5	(cfs/ft ² /ft-head):	
Existing/Proposed:	Existing	Pipe Invert EL. (ft-NAVD):	0.82
Length of French Drain, L (LF):	73.00	Top of Trench EL. (ft-NAVD):	3.62
Trench Height, H_T (ft):	4.80	Bottom of Trench EL. (ft-NAVD):	-1.18
Trench Width, W (ft):	14.00	(*) Weir EL. (ft-NAVD):	2.50

(*) - Weir EL. assumed.

SHGWT EL. (ft-NAVD): **0.42**
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.60	2.08	0.00044	0.032	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	3.62	3.20	1.60	3.20	0.00082	0.060	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.22	3.20	1.60	4.80	0.00143	0.105	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.72	3.20	1.60	5.30	0.00163	0.119	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-1.18	Area within Trench ($L \times W$)	0.0235	# of	Area per
Top of Trench EL.	3.62	Area within Trench ($L \times W$)	0.0235	Structures	Structure
Lowest Roadway/Parking Lot EL.	5.22	Area within Drainage Structure(s)	0.0001	1	0.0001

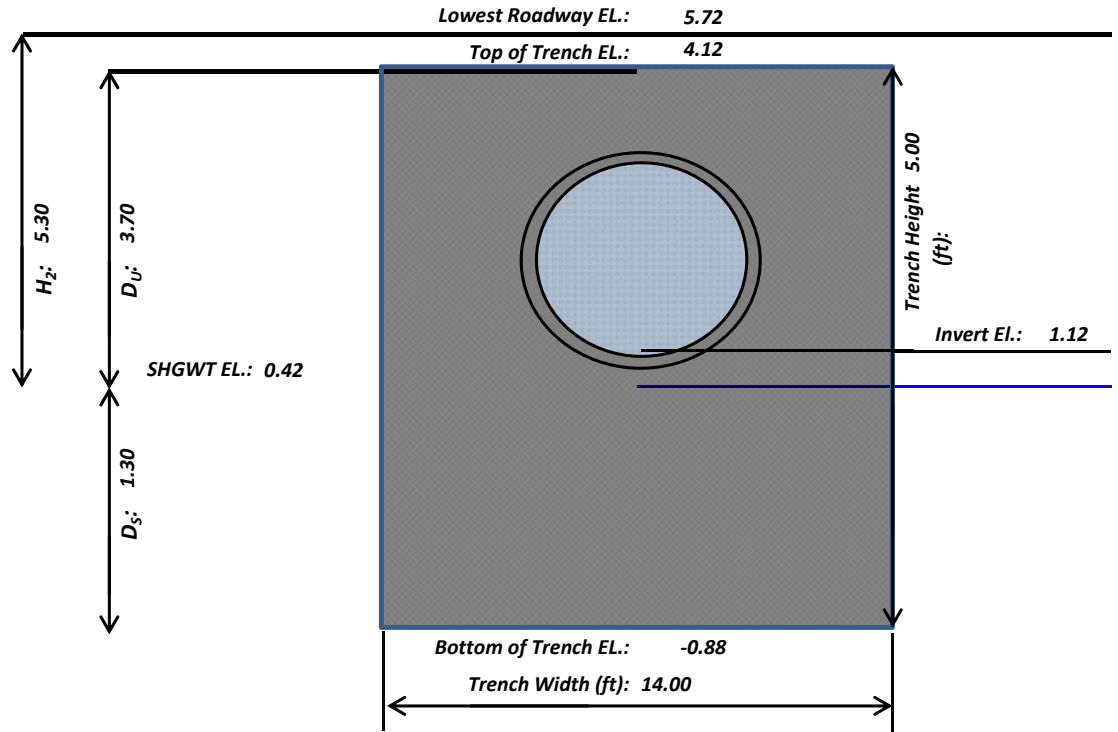
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-3

French Drain (ICPR Link Name):	ExTr #8
French Drain (ICPR Node Name):	STRUCT. PNR_N-3
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	201
Pipe Invert EL. (ft-NAVD):	1.12
Lowest Roadway Elevation (ft):	5.72
Top of Trench EL. (ft-NAVD):	4.12
Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	5.00
(*) Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	5.30
Non-Saturated Trench Depth, D_U (ft):	3.70
Saturated Trench Depth, D_S (ft):	1.30
$H_2 W$:	74.20
$2H_2 D_U$:	39.22
D_U^2 :	13.69
$2H_2 D_S$:	13.78
$(1.39 \times 10^{-4}) W D_U$:	0.007200
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.36
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	1.76
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.15



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

(*) - Weir EL. assumed. Needs verification.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-3

French Drain (ICPR Link Name): ExTr #8
French Drain (ICPR Node Name): STRUCT. PNR_N-3
Existing/Proposed: Existing
Length of French Drain, L (LF): 201.00
Trench Height, H_T (ft): 5.00
Trench Width, W (ft): 14.00

Average Hydraulic Conductivity, K₁₀ 4.000E-05
(cfs/ft²/ft-head):
Pipe Invert EL. (ft-NAVD): 1.12
Top of Trench EL. (ft-NAVD): 4.12
Bottom of Trench EL. (ft-NAVD): -0.88
(*) Weir EL. (ft-NAVD): 2.50
() - Weir EL. assumed.*

SHGWT EL. (ft-NAVD): 0.42
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D _U (ft)	D _S (ft)	Head, D _p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	1.30	2.08	0.00039	0.078	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.12	3.70	1.30	3.70	0.00093	0.187	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.72	3.70	1.30	5.30	0.00157	0.316	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.22	3.70	1.30	5.80	0.00177	0.356	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.88	Area within Trench (L x W)	0.0646	# of Structures	Area per Structure
Top of Trench EL.	4.12	Area within Trench (L x W)	0.0646		
Lowest Roadway/Parking Lot EL.	5.72	Area within Drainage Structure(s)	0.0004	4	0.0001

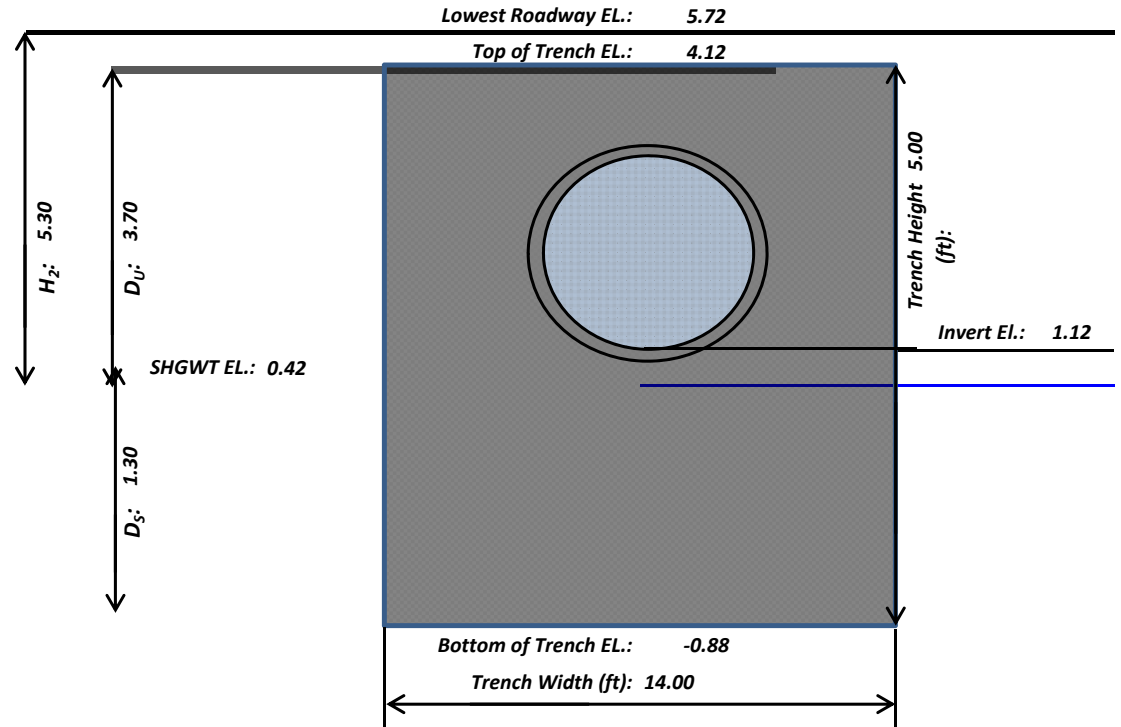
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-1

French Drain (ICPR Link Name):	ExTr #9
French Drain (ICPR Node Name):	CS PNR_N-1
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	18
Length of French Drain, L (LF):	311
Pipe Invert EL. (ft-NAVD):	1.12
Lowest Roadway Elevation (ft):	5.72
Top of Trench EL. (ft-NAVD):	4.12
Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	5.00
Weir EL. (ft-NAVD):	1.72
Trench Width, W (ft):	14.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	4.000E-05
Depth to Water Table, H_2 (ft):	5.30
Non-Saturated Trench Depth, D_U (ft):	3.70
Saturated Trench Depth, D_S (ft):	1.30
$H_2 W$:	74.20
$2H_2 D_U$:	39.22
D_U^2 :	13.69
$2H_2 D_S$:	13.78
$(1.39 \times 10^{-4}) W D_U$:	0.007200
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	3.65
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.73
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.23



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_N-1

French Drain (ICPR Link Name): ExTr #9
French Drain (ICPR Node Name): CS PNR_N-1
Existing/Proposed: Existing
Length of French Drain, L (LF): 311.00
Trench Height, H_T (ft): 5.00
Trench Width, W (ft): 14.00

Average Hydraulic Conductivity, K₁₀ 4.000E-05
(cfs/ft²/ft-head):
Pipe Invert EL. (ft-NAVD): 1.12
Top of Trench EL. (ft-NAVD): 4.12
Bottom of Trench EL. (ft-NAVD): -0.88
Weir EL. (ft-NAVD): 1.72

SHGWT EL. (ft-NAVD): 0.42

Max GW EL. (ft-NAVD): N/A

Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D _U (ft)	D _S (ft)	Head, D _p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	1.72	1.30	1.30	1.30	0.00020	0.063	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.12	3.70	1.30	3.70	0.00093	0.290	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.72	3.70	1.30	5.30	0.00157	0.489	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.22	3.70	1.30	5.80	0.00177	0.551	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

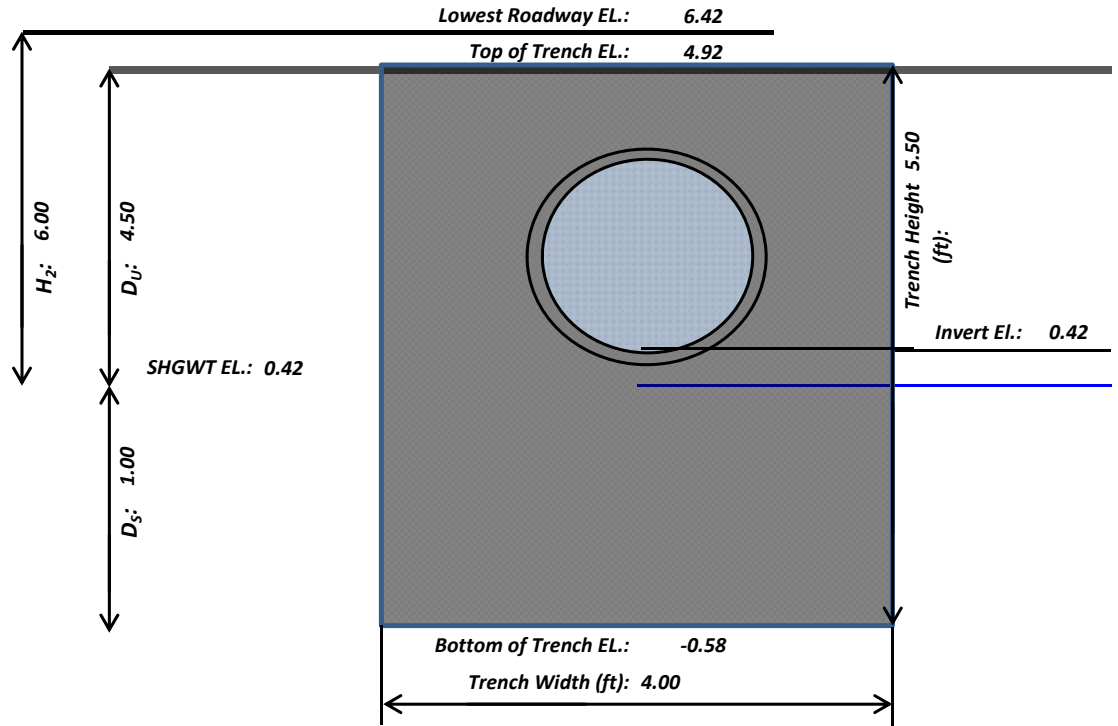
French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.88	Area within Trench (L x W)	0.1000	# of Structures	Area per Structure
Top of Trench EL.	4.12	Area within Trench (L x W)	0.1000		
Lowest Roadway/Parking Lot EL.	5.72	Area within Drainage Structure(s)	0.0006	6	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-5

French Drain (ICPR Link Name):	ExTr #10
French Drain (ICPR Node Name):	Struct. PNR_S-5
Existing/Proposed:	Existing
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, <i>L</i> (LF):	140
Pipe Invert EL. (ft-NAVD):	0.42
Existing Ground Elevation (ft):	6.42
Top of Trench EL. (ft-NAVD):	4.92
Bottom of Trench EL. (ft-NAVD):	-0.58
Trench Height, <i>H_T</i> (ft):	5.50
Weir EL. (ft-NAVD):	3.42
Trench Width, <i>W</i> (ft):	4.00
Average Hydraulic Conductivity, <i>K₁₀</i> (cfs/ft ² /ft-head):	1.400E-04
Depth to Water Table, <i>H₂</i> (ft):	6.00
Non-Saturated Trench Depth, <i>D_U</i> (ft):	4.50
Saturated Trench Depth, <i>D_S</i> (ft):	1.00
<i>H₂W</i> :	24.00
<i>2H₂D_U</i> :	54.00
<i>D_U²</i> :	20.25
<i>2H₂D_S</i> :	12.00
<i>(1.39x10⁻⁴)WD_U</i> :	0.002502
If <i>D_U > D_S</i> and <i>W < 2H_T</i> , Treatment Provided, <i>V</i> (ac-in):	1.72
If <i>D_S > D_U</i> and/or <i>W > 2H_T</i> , Treatment Provided, <i>V</i> (ac-in):	1.25
<i>D_U > D_S</i> and <i>W < 2H_T</i> (Yes/No):	Yes
Treatment Volume Provided, <i>V</i> (Ac-ft):	0.14



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

Note: All French Drain lengths were updated to match available as-built information.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-5

French Drain (ICPR Link Name): ExTr #10
French Drain (ICPR Node Name): Struct. PNR_S-5
Existing/Proposed: Existing
Length of French Drain, L (LF): 140.00
Trench Height, H_T (ft): 5.50
Trench Width, W (ft): 4.00

Average Hydraulic Conductivity, K₁₀ 1.400E-04
(cfs/ft²/ft-head):
Pipe Invert EL. (ft-NAVD): 0.42
Top of Trench EL. (ft-NAVD): 4.92
Bottom of Trench EL. (ft-NAVD): -0.58
Weir EL. (ft-NAVD): 3.42

SHGWT EL. (ft-NAVD): 0.42

Max GW EL. (ft-NAVD): N/A

Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D _U (ft)	D _S (ft)	Head, D _p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	1.00	3.00	0.00210	0.294	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.92	4.50	1.00	4.50	0.00410	0.573	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	6.42	4.50	1.00	6.00	0.00641	0.897	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.92	4.50	1.00	6.50	0.00718	1.005	$E = 2K_{10} [D_U (D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.58	Area within Trench (L x W)	0.0129	# of Structures	Area per Structure
Top of Trench EL.	4.92	Area within Trench (L x W)	0.0129		
Lowest Roadway/Parking Lot EL.	6.42	Area within Drainage Structure(s)	0.0004	4	0.0001

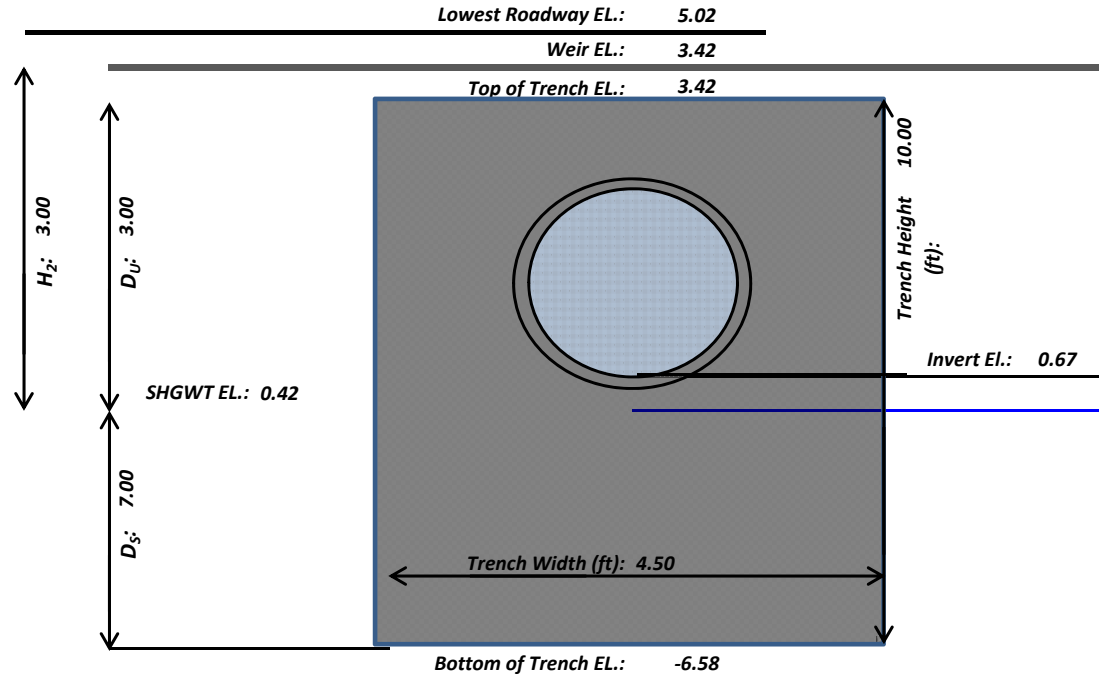
Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN DESIGN & TREATMENT VOLUMES

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_S-2B

French Drain (ICPR Link Name):	PrTr #1
French Drain (ICPR Node Name):	STRUCT. PNR_S-2
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	520
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	0.67
Top of Trench EL. (ft-NAVD):	3.42
Bottom of Trench EL. (ft-NAVD):	-6.58
Trench Height, H_T (ft):	10.00
Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	7.330E-05
Depth to Water Table, H_2 (ft):	3.00
Non-Saturated Trench Depth, D_U (ft):	3.00
Saturated Trench Depth, D_S (ft):	7.00
H_2W :	13.50
$2H_2D_U$:	18.00
D_U^2 :	9.00
$2H_2D_S$:	42.00
$(1.39 \times 10^{-4})WD_U$:	0.001877
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	3.43
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.92
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.24



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

I-95 CDC DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6. (See Sheets 3-14 through 3-20)

Drainage System: Broward Blvd & Park-n-Ride

French Drain (ICPR Link Name): PrTr #1
 French Drain (ICPR Link Name): STRUCT. PNR_S-2
 Existing/Proposed: Proposed
 Pipe Size (in): 24
 Length of French Drain, L (LF): 520.00
 Trench Height, H_T (ft): 10.00
 Trench Width, W (ft): 4.50
 Safety Factor: 2.00
 Effective Length of French Drain, L (LF): 260.00

Average Hydraulic Conductivity, K_{10} (cfs/ft²/ft-head): 7.330E-05
 Pipe Invert EL. (ft-NAVD): 0.67
 Top of Trench EL. (ft-NAVD): 3.42
 Bottom of Trench EL. (ft-NAVD): -6.58
 Weir EL. (ft-NAVD): 3.42

SHGWT EL. (ft-NAVD): 0.42
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	3.00	7.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	7.00	3.00	0.00374	0.972	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench / Weir EL.
0.42	5.02	3.00	7.00	4.60	0.00608	1.582	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.52	3.00	7.00	5.10	0.00682	1.772	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

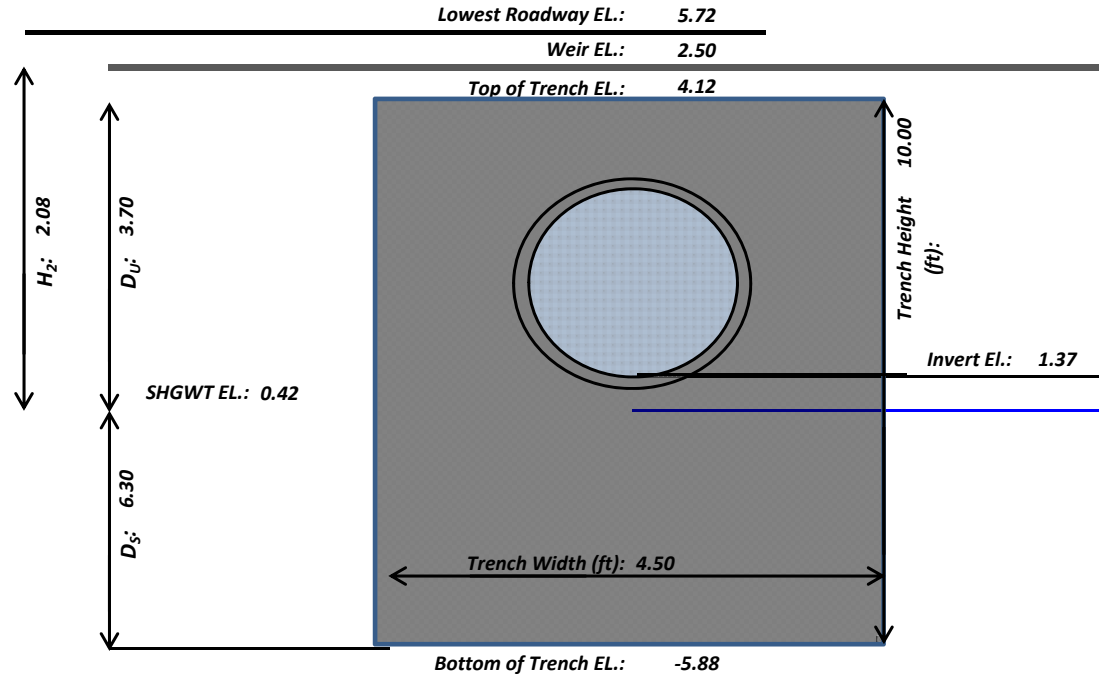
French Drain Node: Stage Area Data			
Stage (ft-NAVD)		Area (Ac.)	
Bottom of Trench EL.		-6.58	Area within Trench x 50% ($0.5 \times L \times W$)
Top of Trench EL.		3.42	Area within Trench x 50% ($0.5 \times L \times W$)

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN DESIGN & TREATMENT VOLUMES

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_N-3

French Drain (ICPR Link Name):	PrTr #2
French Drain (ICPR Node Name):	STRUCT. PNR_N-3
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	274
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	1.37
Top of Trench EL. (ft-NAVD):	4.12
Bottom of Trench EL. (ft-NAVD):	-5.88
Trench Height, H_T (ft):	10.00
Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	1.96E-04
Depth to Water Table, H_2 (ft):	2.08
Non-Saturated Trench Depth, D_U (ft):	3.70
Saturated Trench Depth, D_S (ft):	6.30
H_2W :	9.36
$2H_2D_U$:	15.39
D_U^2 :	13.69
$2H_2D_S$:	26.21
$(1.39 \times 10^{-4})WD_U$:	0.002314
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.63
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.13
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.18



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

I-95 CDC DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6. (See Sheets 3-14 through 3-20)

Drainage System: Broward Blvd & Park-n-Ride

French Drain (ICPR Link Name): PrTr #1
 French Drain (ICPR Link Name): STRUCT. PNR_N-3
 Existing/Proposed: Proposed
 Pipe Size (in): 24
 Length of French Drain, L (LF): 274.00
 Trench Height, H_T (ft): 10.00
 Trench Width, W (ft): 4.50
 Safety Factor: 2.00
 Effective Length of French Drain, L (LF): 137.00

Average Hydraulic Conductivity, K_{10} (cfs/ft²/ft-head): 1.957E-04
 Pipe Invert EL. (ft-NAVD): 1.37
 Top of Trench EL. (ft-NAVD): 4.12
 Bottom of Trench EL. (ft-NAVD): -5.88
 Weir EL. (ft-NAVD): 2.50
 (*) - Weir EL. assumed.

SHGWT EL. (ft-NAVD): 0.42
Max GW EL. (ft-NAVD): N/A
 Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	6.30	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	6.30	2.08	0.00597	0.818	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Weir/Control EL.
0.42	4.12	3.70	6.30	3.70	0.01180	1.617	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	5.72	3.70	6.30	5.30	0.01806	2.474	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	6.22	3.70	6.30	5.80	0.02002	2.742	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

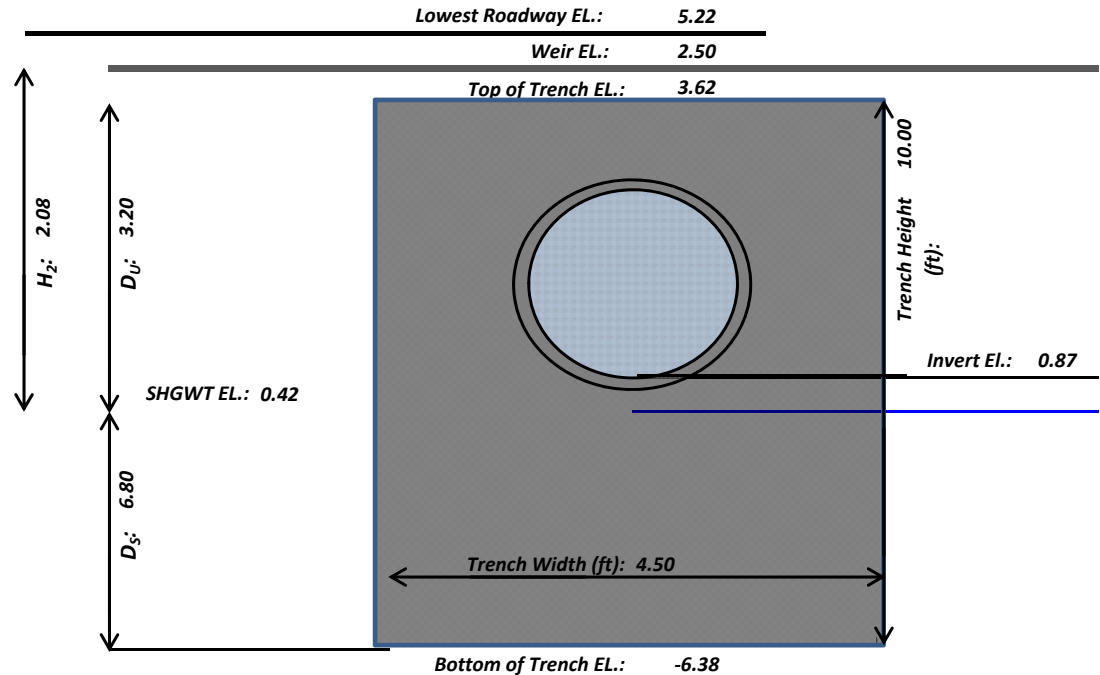
French Drain Node: Stage Area Data			
Stage (ft-NAVD)		Area (Ac.)	
Bottom of Trench EL.		-5.88	Area within Trench x 50% ($0.5 \times L \times W$) 0.0142
Top of Trench EL.		4.12	Area within Trench x 50% ($0.5 \times L \times W$) 0.0142

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS FRENCH DRAIN DESIGN & TREATMENT VOLUMES

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_N-5

French Drain (ICPR Link Name):	PrTr #3
French Drain (ICPR Node Name):	POND PNR_N-5
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	274
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	0.87
Top of Trench EL. (ft-NAVD):	3.62
Bottom of Trench EL. (ft-NAVD):	-6.38
Trench Height, H_T (ft):	10.00
Weir EL. (ft-NAVD):	2.50
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	3.750E-04
Depth to Water Table, H_2 (ft):	2.08
Non-Saturated Trench Depth, D_U (ft):	3.20
Saturated Trench Depth, D_S (ft):	6.80
H_2W :	9.36
$2H_2D_U$:	13.31
D_U^2 :	10.24
$2H_2D_S$:	28.29
$(1.39 \times 10^{-4})WD_U$:	0.002002
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	4.73
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	3.77
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.31



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

I-95 CDC DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride

French Drain (ICPR Link Name): PrTr #1
 French Drain (ICPR Link Name): POND PNR_N-5
 Existing/Proposed: Proposed
 Pipe Size (in): 24
 Length of French Drain, L (LF): 274.00
 Trench Height, H_T (ft): 10.00
 Trench Width, W (ft): 4.50
 Safety Factor: 2.00
 Effective Length of French Drain, L (LF): 137.00

Average Hydraulic Conductivity, K_{10} (cfs/ft²/ft-head): 3.750E-04
 Pipe Invert EL. (ft-NAVD): 0.87
 Top of Trench EL. (ft-NAVD): 3.62
 Bottom of Trench EL. (ft-NAVD): -6.38
 Weir EL. (ft-NAVD): 2.50

SHGWT EL. (ft-NAVD): 0.42
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	6.80	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	2.50	2.08	6.80	2.08	0.01223	1.676	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench / Weir EL.
0.42	3.62	3.20	6.80	3.20	0.02016	2.762	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Pond
0.42	5.22	3.20	6.80	4.80	0.03216	4.406	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Pond
0.42	5.72	3.20	6.80	5.30	0.03591	4.920	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Pond

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data			
Stage (ft-NAVD)		Area (Ac.)	
Bottom of Trench EL.		-6.38	Area within Trench x 50% (0.5 x L x W) 0.0142
Top of Trench EL.		3.62	Area within Trench x 50% (0.5 x L x W) 0.0142

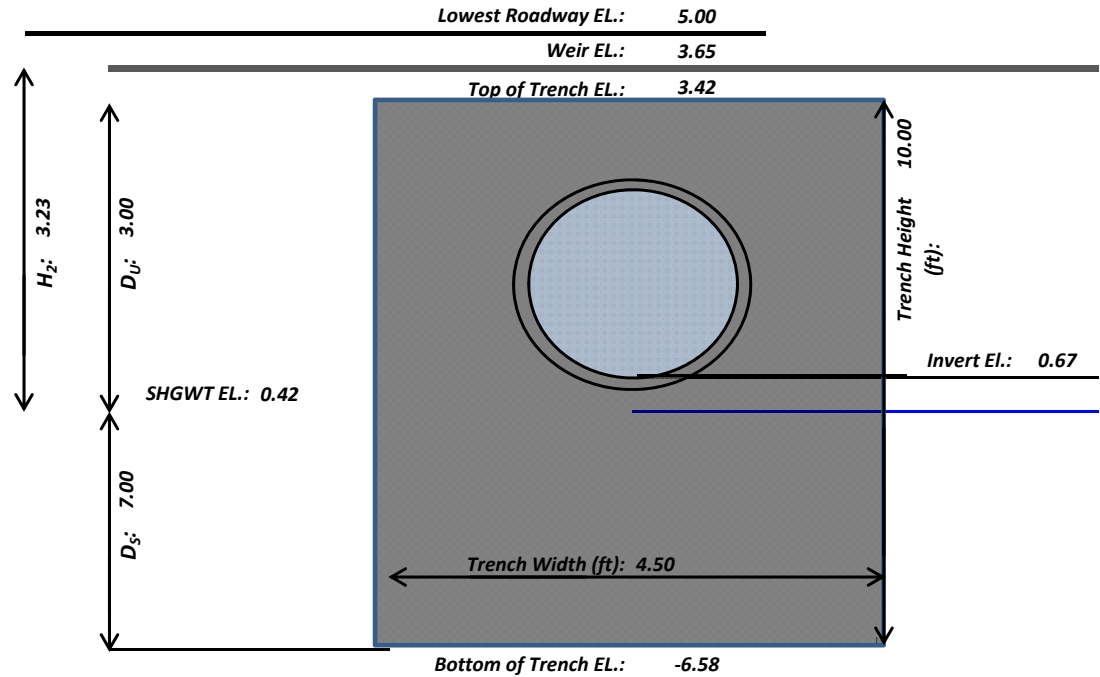
I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN DESIGN & TREATMENT VOLUMES - ALT. 2B - OPT. 1

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_N-7, PNR_BB-E1L, PNR_BB-E2L, PNR_S-2C, PNR_E1R, PNR_E2R

French Drain (ICPR Link Name):	PrTr #4
French Drain (ICPR Node Name):	POND PNR_N-7
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	406
Pipe Thickness (in):	3.00
Pipe Invert EL. (ft-NAVD):	0.67
Top of Trench EL. (ft-NAVD):	3.42
Bottom of Trench EL. (ft-NAVD):	-6.58
Trench Height, H_T (ft):	10.00
Weir EL. (ft-NAVD):	3.65
Trench Width, W (ft):	4.50
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	7.330E-05
Depth to Water Table, H_2 (ft):	3.23
Non-Saturated Trench Depth, D_U (ft):	3.00
Saturated Trench Depth, D_S (ft):	7.00
H_2W :	14.54
$2H_2D_U$:	19.38
D_U^2 :	9.00
$2H_2D_S$:	45.22
$(1.39 \times 10^{-4})WD_U$:	0.001877
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	2.85
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	2.42
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.20



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

I-95 CDC DRAINAGE CALCULATIONS FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride

French Drain (ICPR Link Name): PrTr #1
 French Drain (ICPR Link Name): POND PNR_N-7
 Existing/Proposed: Proposed
 Pipe Size (in): 24
 Length of French Drain, L (LF): 406.00
 Trench Height, H_T (ft): 10.00
 Trench Width, W (ft): 4.50
 Safety Factor: 2.00
 Effective Length of French Drain, L (LF): 203.00

Average Hydraulic Conductivity, K_{10} (cfs/ft²/ft-head): 7.330E-05
 Pipe Invert EL. (ft-NAVD): 0.67
 Top of Trench EL. (ft-NAVD): 3.42
 Bottom of Trench EL. (ft-NAVD): -6.58
 Weir EL. (ft-NAVD): 3.65

SHGWT EL. (ft-NAVD): 0.42
Max GW EL. (ft-NAVD): N/A
Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_p (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	3.00	7.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	7.00	3.00	0.00374	0.759	$E = 2K_{10}D_U(D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	3.65	3.00	7.00	3.23	0.00408	0.827	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Weir EL.
0.42	5.02	3.00	7.00	4.60	0.00608	1.235	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.52	3.00	7.00	5.10	0.00682	1.384	$E = 2K_{10}[D_U(D_p - D_U/2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

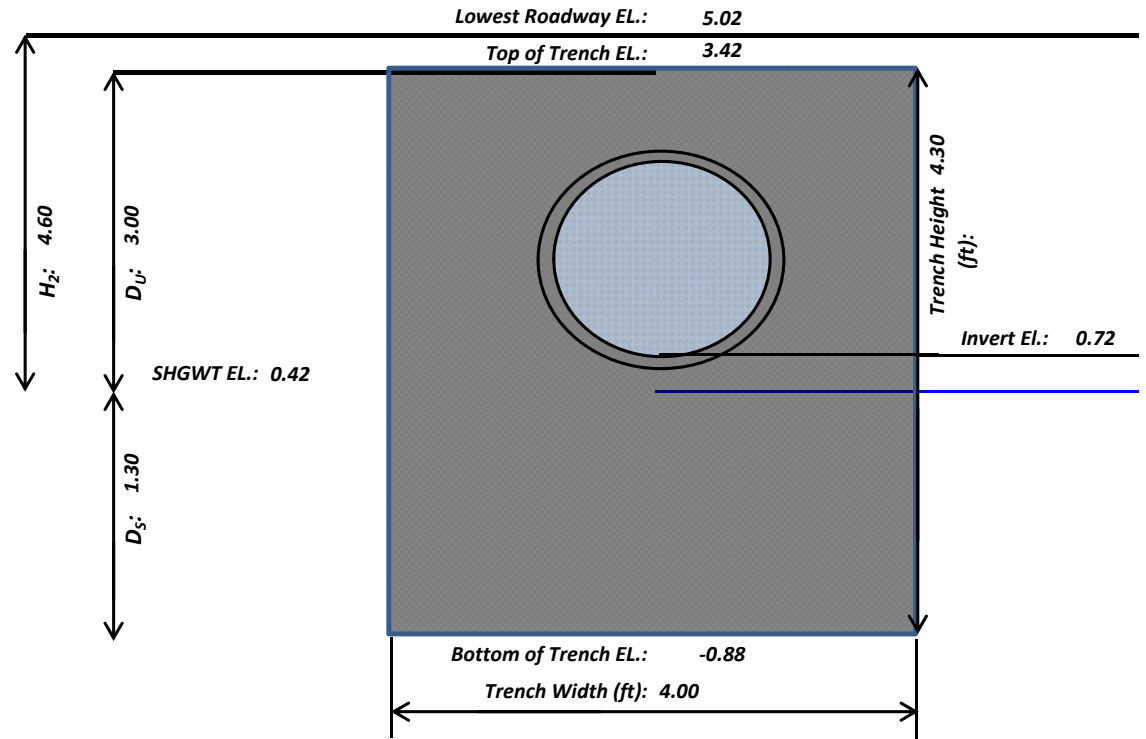
Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data			
Stage (ft-NAVD)		Area (Ac.)	
Bottom of Trench EL.		-6.58	Area within Trench x 50% ($0.5 \times L \times W$) 0.0210
Top of Trench EL.		3.42	Area within Trench x 50% ($0.5 \times L \times W$) 0.0210

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS - ALT. 2B - OPT. 1

Drainage System: Broward Blvd & Park-n-Ride
Drainage Basin: PNR_S-2D

French Drain (ICPR Link Name):	PrTr #5
French Drain (ICPR Node Name):	POND PNR_S-3
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	1100
Pipe Invert EL. (ft-NAVD):	0.72
Lowest Roadway Elevation (ft):	5.02
Top of Trench EL. (ft-NAVD):	3.42
Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Height, H_T (ft):	4.30
Weir EL. (ft-NAVD):	3.42
Trench Width, W (ft):	4.00
Average Hydraulic Conductivity, K_{10} (cfs/ft ² /ft-head):	9.400E-05
Depth to Water Table, H_2 (ft):	4.60
Non-Saturated Trench Depth, D_U (ft):	3.00
Saturated Trench Depth, D_S (ft):	1.30
$H_2 W$:	18.40
$2H_2 D_U$:	27.60
D_U^2 :	9.00
$2H_2 D_S$:	11.96
$(1.39 \times 10^{-4}) W D_U$:	0.001668
If $D_U > D_S$ and $W < 2H_T$, Treatment Provided, V (ac-in):	6.90
If $D_S > D_U$ and/or $W > 2H_T$, Treatment Provided, V (ac-in):	4.99
$D_U > D_S$ and $W < 2H_T$ (Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	0.57



$$V = L[K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

$$V = L[K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4})WD_U]$$

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

*Exfiltration equations and operating table development procedures and stage-area assumptions shown below were taken from the ICPR Applications Manual developed by ADA Engineering Inc. in March 2007 for FDOT District 6.
(See Sheets 3-14 through 3-20)*

Drainage System: Broward Blvd & Park-n-Ride

Drainage Basin: PNR_S-2D

French Drain (ICPR Link Name):	PrTr #5	Average Hydraulic Conductivity, K_{10}	9.400E-05
French Drain (ICPR Node Name):	POND PNR_S-3	(cfs/ft ² /ft-head):	
Existing/Proposed:	Proposed	Pipe Invert EL. (ft-NAVD):	0.72
Length of French Drain, L (LF):	1100.00	Top of Trench EL. (ft-NAVD):	3.42
Trench Height, H_T (ft):	4.30	Bottom of Trench EL. (ft-NAVD):	-0.88
Trench Width, W (ft):	4.00	Weir EL. (ft-NAVD):	3.42

SHGWT EL. (ft-NAVD): 0.42

Max GW EL. (ft-NAVD): N/A

Variable GW EL. required when modeling exfiltration during design storms exceeding 1hr in duration. Model GW as Time-Stage.

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	D_U (ft)	D_S (ft)	Head, D_P (ft)	Exfiltration, E (cfs/ft)	Discharge, Q (cfs)	Equations	Comments
0.42	0.42	0.00	0.00	0.00	0	0	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.42	3.00	1.30	3.00	0.00158	1.737	$E = 2K_{10} D_U (D_U/2 + D_S)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench / Weir EL.
0.42	5.02	3.00	1.30	4.60	0.00287	3.160	$E = 2K_{10} [D_U (D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Lowest Roadway EL.
0.42	5.52	3.00	1.30	5.10	0.00328	3.605	$E = 2K_{10} [D_U (D_P - D_U/2) + D_S D_P]$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Lowest Curb EL.

Tailwater-Headwater-Discharge relationship input as Operating Table from French Drain Node to Groundwater Node. Rating Curve On/Off EL. = SHGWT EL.

French Drain Node: Stage Area Data					
Stage (ft-NAVD)		Area (Ac.)			
Bottom of Trench EL.	-0.88	Area within Trench ($L \times W$)	0.1010	# of Structures	Area per Structure
Top of Trench EL.	3.42	Area within Trench ($L \times W$)	0.1010		
Lowest Roadway/Parking Lot EL.	5.02	Area within Drainage Structure(s)	0.0008	8	0.0001

Ignore ICPR Warning about Areas decreasing with Stage.

I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS

DRAINAGE SYSTEM SUMMARY TABLES

Drainage System: *Broward Blvd & Park-n-Ride*

Summary of Peak Discharges								
Receiving Waterbody:		North Fork of the New River						
PRE-DEVELOPMENT								
ICPR Node:	Outfall Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-24hr Peak Flow Velocity (fps)
NFNR	60" Pipe and 72" Pipe		130.98		180.10		230.33	
PRE-DEVELOPMENT TOTALS:		--	--	--	180.10	--	--	--
POST-DEVELOPMENT								
ICPR Link:	Pipe/Weir Description:	Flow Area (ft ²)	10yr-24hr Peak Flow Rate (cfs)	10yr-24hr Peak Flow Velocity (fps)	25yr-72hr Peak Flow Rate (cfs)	25yr-72hr Peak Flow Velocity (fps)	100yr-24hr Peak Flow Rate (cfs)	100yr-24hr Peak Flow Velocity (fps)
NFNR	60" Pipe and 72" Pipe		128.39		178.32		236.36	
POST-DEVELOPMENT TOTALS:		--	--	--	178.32	--	--	--
Pre-Post 25yr-72hr Peak Discharge Reduction (cfs):				1.78				

Summary of Peak Stages									
Pond/ Swale/ FD #	Type: [Wet/Dry, Det./Ret., FD]	Disposition [Exist./ Prop./ Modified]	Warning EL. [Min. Berm/ Rim Elev] (ft-NAVD)	PRE-DEVELOPMENT			POST-DEVELOPMENT		
				Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)	Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)
POND_PNR_N-2	Dry Retention	Existing	6.00	4.54	5.55	5.95	3.42	3.74	4.65
POND_PNR_N-5	Dry Retention/FD	Existing	6.00	3.28	3.55	4.22	3.29	3.56	4.39
POND_PNR_N-7	Dry Detention	Modified	5.00	1.59	1.78	2.73	4.15	4.23	4.34
POND_PNR_S-2C	Dry Detention	Proposed	5.50	-	-	-	4.33	4.49	4.79
POND_PNR_S-3A	Dry Retention	Modified	4.50	5.13	5.27	5.37	5.17	5.37	5.53
POND_PNR_S-3B	Dry Retention	Modified					5.15	5.31	5.41
SWALE_PNR_N-8	Dry Retention	Existing	6.50	6.50	6.52	6.51	6.50	6.52	6.51
CS_PNR_S-6_1	FD	Existing	6.17	4.55	4.71	5.00	4.51	4.68	4.98
STRUCT_PNR_S-2	FD	Exist./Modified	5.02	4.70	4.96	5.12	4.58	4.91	5.11
STRUCT_PNR_S-5	FD	Existing	6.42	5.16	5.26	5.35	5.15	5.29	5.38
CS_PNR_N-1	FD	Existing	5.72	2.16	2.29	2.33	2.16	2.28	2.32
STRUCT_PNR_N-3	FD	Exist./Modified	5.72	4.70	5.81	6.13	3.36	3.67	4.55

Control Structure Summary Table - Proposed Conditions					
Control Structure:	Disposition [Exist./ Prop./ Modified]	Weir Type/ Geometry	Weir EL. (ft-NAVD)	Bleeder Type/ Geometry	Bleeder Invert EL. (ft-NAVD)
CS_N-7	Proposed	Rectangular	3.65	Circular	0.42
W_CS_S-6	Existing	Rectangular	3.42	N/A	N/A
CS_PNC_N-5	Existing	Rectangular	2.50	N/A	N/A
CS_PNR_S-3	Existing	Rectangular	2.92	N/A	N/A
CS_PNR_N-1	Existing	Rectangular	1.72	N/A	N/A
CS_PNR_S-2	Existing	Rectangular	3.42	N/A	N/A

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 PRE-DEVELOPMENT CONDITIONS
 NODE LINK DIAGRAM

Nodes

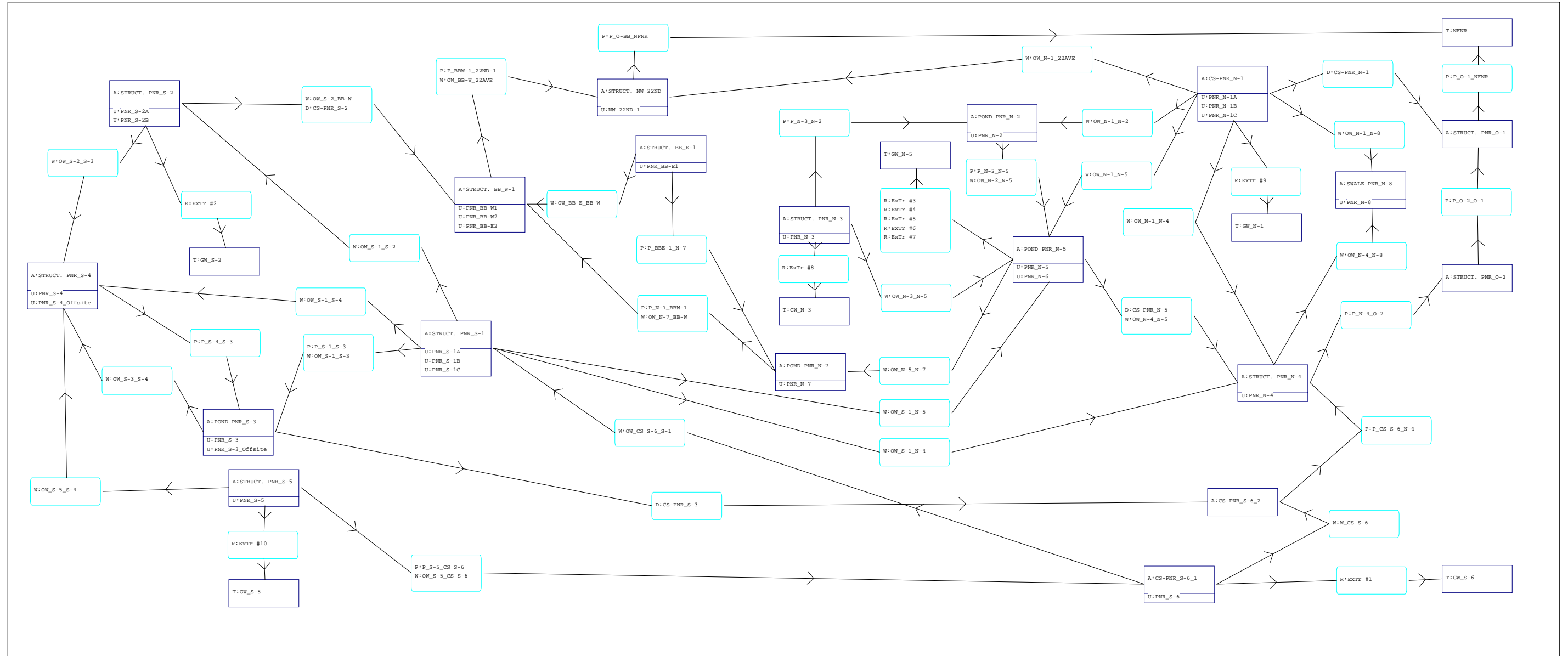
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

Basins

- O Overland Flow
- U SCS Unit CN
- S SBUH CN
- Y SCS Unit GA
- Z SBUH GA

Links

- P Pipe
- W Weir
- C Channel
- D Drop Structure
- B Bridge
- R Rating Curve
- H Breach
- E Percolation
- F Filter
- X Exfil Trench



I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CS-PNR N-1	BASE	100yr24hr	12.27	2.33	5.72	-0.0008	3402	12.25	9.40	12.27	9.18
CS-PNR S-6_1	BASE	100yr24hr	12.25	5.00	6.17	0.0032	141	12.25	23.70	12.25	23.67
CS-PNR S-6_2	BASE	100yr24hr	12.26	4.11	6.17	0.0061	169	12.25	32.01	12.25	31.90
GW N-1	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.27	0.09	0.00	0.00
GW N-3	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.53	0.83	0.00	0.00
GW N-5	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.39	1.17	0.00	0.00
GW S-2	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.40	1.99	0.00	0.00
GW S-5	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.34	0.66	0.00	0.00
GW S-6	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.25	1.00	0.00	0.00
NFNR	BASE	100yr24hr	0.00	0.42	0.42	0.0000	1350	12.37	230.33	0.00	0.00
POND PNR N-2	BASE	100yr24hr	12.49	5.95	6.00	-0.0048	20270	12.12	18.54	12.82	12.81
POND PNR N-5	BASE	100yr24hr	12.39	4.22	6.00	-0.0800	10314	12.25	58.50	12.43	46.27
POND PNR N-7	BASE	100yr24hr	12.39	2.73	5.00	0.0039	1140	12.25	15.18	12.10	16.14
POND PNR S-3	BASE	100yr24hr	12.34	5.37	4.50	0.0015	44603	12.25	39.83	12.36	35.33
STRUCT. BB E-1	BASE	100yr24hr	12.25	18.96	18.70	-0.0050	155	12.25	18.37	12.25	18.36
STRUCT. BB W-1	BASE	100yr24hr	12.39	2.57	4.50	-0.0069	237	12.40	134.13	12.40	134.18
STRUCT. NW 22ND	BASE	100yr24hr	12.38	1.74	3.00	0.0051	273	12.38	145.37	12.38	145.36
STRUCT. PNR N-3	BASE	100yr24hr	12.53	6.13	5.72	0.0175	11013	12.25	6.21	12.12	5.20
STRUCT. PNR N-4	BASE	100yr24hr	12.34	2.24	5.35	-0.0032	223	12.34	76.89	12.34	76.87
STRUCT. PNR O-1	BASE	100yr24hr	12.34	1.42	5.90	-0.0017	1482	12.34	85.52	12.34	85.48
STRUCT. PNR O-2	BASE	100yr24hr	12.34	1.88	7.00	0.0034	705	12.34	76.87	12.35	76.86
STRUCT. PNR S-1	BASE	100yr24hr	12.26	5.55	5.40	-0.0022	3094	12.25	9.37	12.25	9.29
STRUCT. PNR S-2	BASE	100yr24hr	12.40	5.12	5.02	0.0132	56612	12.25	29.07	12.51	27.32
STRUCT. PNR S-4	BASE	100yr24hr	12.34	5.34	4.50	-0.0044	34528	11.99	17.88	11.76	5.68
STRUCT. PNR S-5	BASE	100yr24hr	12.34	5.35	6.42	0.0040	14068	12.25	16.51	12.32	14.72
SWALE PNR N-8	BASE	100yr24hr	12.54	6.51	6.50	0.0010	13941	12.25	4.40	0.00	0.00
CS-PNR N-1	BASE	10yr24hr	12.27	2.16	5.72	0.0004	3402	12.25	5.95	12.27	5.77
CS-PNR S-6_1	BASE	10yr24hr	12.26	4.55	6.17	0.0013	1409	12.25	16.27	12.26	16.13
CS-PNR S-6_2	BASE	10yr24hr	12.29	3.00	6.17	0.0021	1031	12.27	26.78	12.29	26.71
GW N-1	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.27	0.08	0.00	0.00
GW N-3	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.39	0.55	0.00	0.00
GW N-5	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.36	0.78	0.00	0.00
GW S-2	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.50	1.76	0.00	0.00
GW S-5	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.30	0.62	0.00	0.00
GW S-6	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.26	0.82	0.00	0.00
NFNR	BASE	10yr24hr	0.00	0.42	0.42	0.0000	1350	12.38	130.98	0.00	0.00
POND PNR N-2	BASE	10yr24hr	12.41	4.54	6.00	0.0026	2471	12.30	12.17	12.42	9.45
POND PNR N-5	BASE	10yr24hr	12.36	3.28	6.00	-0.0800	24387	12.25	36.59	12.36	33.64
POND PNR N-7	BASE	10yr24hr	12.28	1.59	5.00	-0.0049	521	12.26	12.43	12.27	12.39
POND PNR S-3	BASE	10yr24hr	12.44	5.13	4.50	-0.0018	39220	12.25	27.26	12.47	15.87
STRUCT. BB E-1	BASE	10yr24hr	12.26	17.69	18.70	-0.0050	157	12.25	11.85	12.26	11.69
STRUCT. BB W-1	BASE	10yr24hr	12.49	0.83	4.50	-0.0064	277	12.52	60.76	12.52	60.77
STRUCT. NW 22ND	BASE	10yr24hr	12.48	0.69	3.00	0.0051	273	12.48	66.01	12.48	66.01
STRUCT. PNR N-3	BASE	10yr24hr	12.39	4.70	5.72	0.0107	123	12.25	3.81	12.31	3.35
STRUCT. PNR N-4	BASE	10yr24hr	12.36	1.61	5.35	-0.0021	1398	12.34	60.90	12.35	60.79
STRUCT. PNR O-1	BASE	10yr24hr	12.36	1.02	5.90	0.0012	1805	12.35	66.14	12.36	66.11
STRUCT. PNR O-2	BASE	10yr24hr	12.36	1.35	7.00	0.0033	962	12.35	60.79	12.36	60.77
STRUCT. PNR S-1	BASE	10yr24hr	12.34	5.33	5.40	-0.0018	114	12.25	5.73	12.25	5.65
STRUCT. PNR S-2	BASE	10yr24hr	12.50	4.70	5.02	0.0533	33524	12.25	17.20	12.67	12.06
STRUCT. PNR S-4	BASE	10yr24hr	12.43	5.13	4.50	0.0050	26328	12.16	12.67	11.89	6.97
STRUCT. PNR S-5	BASE	10yr24hr	12.30	5.16	6.42	-0.0037	10174	12.25	10.58	12.30	9.94
SWALE PNR N-8	BASE	10yr24hr	21.26	6.50	6.50	0.0010	13741	12.25	2.05	0.00	0.00
CS-PNR N-1	BASE	25yr72hr	60.05	2.29	5.72	0.0005	3402	60.00	7.27	60.06	6.92
CS-PNR S-6_1	BASE	25yr72hr	60.00	4.71	6.17	0.0019	141	60.00	19.57	60.00	19.56
CS-PNR S-6_2	BASE	25yr72hr	60.05	3.42	6.17	0.0018	424	60.00	30.00	60.01	29.54
GW N-1	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.05	0.09	0.00	0.00
GW N-3	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.14	0.77	0.00	0.00
GW N-5	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.14	0.88	0.00	0.00

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
GW_S-2	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.18	1.90	0.00	0.00
GW_S-5	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.11	0.65	0.00	0.00
GW_S-6	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.00	0.89	0.00	0.00
NFNR	BASE	25yr72hr	0.00	0.42	0.42	0.0000	1350	60.14	180.10	0.00	0.00
POND_PNR_N-2	BASE	25yr72hr	60.15	5.55	6.00	0.0030	5240	60.00	15.88	60.18	11.87
POND_PNR_N-5	BASE	25yr72hr	60.14	3.55	6.00	-0.0800	23357	60.00	47.27	60.18	40.10
POND_PNR_N-7	BASE	25yr72hr	59.99	1.78	5.00	0.0045	592	60.00	14.51	59.99	16.00
POND_PNR_S-3	BASE	25yr72hr	60.12	5.27	4.50	-0.0016	42458	59.90	32.77	60.13	26.34
STRUCT_BB_E-1	BASE	25yr72hr	60.00	18.63	18.70	-0.0050	156	60.00	14.11	60.00	14.07
STRUCT_BB_W-1	BASE	25yr72hr	60.16	1.44	4.50	-0.0067	278	60.18	93.16	60.18	93.18
STRUCT_NW_22ND	BASE	25yr72hr	60.16	1.06	3.00	0.0051	273	60.16	101.37	60.16	101.37
STRUCT_PNR_N-3	BASE	25yr72hr	60.14	5.81	5.72	0.0133	2344	60.00	4.85	60.01	4.63
STRUCT_PNR_N-4	BASE	25yr72hr	60.09	2.01	5.35	0.0027	417	60.09	69.28	60.09	69.27
STRUCT_PNR_O-1	BASE	25yr72hr	60.10	1.29	5.90	0.0009	1609	60.09	79.56	60.10	79.53
STRUCT_PNR_O-2	BASE	25yr72hr	60.10	1.70	7.00	0.0013	819	60.09	71.38	60.10	71.36
STRUCT_PNR_S-1	BASE	25yr72hr	60.04	5.53	5.40	-0.0020	2562	60.00	7.34	60.01	7.23
STRUCT_PNR_S-2	BASE	25yr72hr	60.18	4.96	5.02	0.0109	45821	60.00	23.09	60.31	19.61
STRUCT_PNR_S-4	BASE	25yr72hr	60.12	5.25	4.50	0.0050	31304	59.80	15.82	59.59	6.59
STRUCT_PNR_S-5	BASE	25yr72hr	60.11	5.26	6.42	-0.0039	12330	60.00	12.71	59.96	11.05
SWALE_PNR_N-8	BASE	25yr72hr	60.01	6.52	6.50	0.0003	14015	59.92	3.57	0.00	0.00

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS-PNR N-1	BASE	100yr24hr	12.27	9.08	-0.016	12.27	2.33	12.34	1.42
CS-PNR N-5	BASE	100yr24hr	12.43	45.12	-0.100	12.39	4.22	12.34	2.24
CS-PNR S-2	BASE	100yr24hr	12.53	21.25	0.086	12.40	5.12	12.39	2.57
CS-PNR S-3	BASE	100yr24hr	12.95	12.79	0.176	12.34	5.37	12.26	4.11
ExTr #1	BASE	100yr24hr	12.25	1.00	0.001	12.25	5.00	0.00	0.42
ExTr #10	BASE	100yr24hr	12.34	0.66	0.001	12.34	5.35	0.00	0.42
ExTr #2	BASE	100yr24hr	12.40	1.99	1.061	12.40	5.12	0.00	0.42
ExTr #3	BASE	100yr24hr	12.39	0.31	0.005	12.39	4.22	0.00	0.42
ExTr #4	BASE	100yr24hr	12.39	0.26	0.004	12.39	4.22	0.00	0.42
ExTr #5	BASE	100yr24hr	12.39	0.24	0.004	12.39	4.22	0.00	0.42
ExTr #6	BASE	100yr24hr	12.39	0.27	0.004	12.39	4.22	0.00	0.42
ExTr #7	BASE	100yr24hr	12.39	0.08	0.001	12.39	4.22	0.00	0.42
ExTr #8	BASE	100yr24hr	12.53	0.83	0.003	12.53	6.13	0.00	0.42
ExTr #9	BASE	100yr24hr	12.27	0.09	0.000	12.27	2.33	0.00	0.42
OW BB-E BB-W	BASE	100yr24hr	12.25	4.76	-0.032	12.25	18.96	12.39	2.57
OW_BB-W 22AVE	BASE	100yr24hr	0.00	0.00	0.000	12.39	2.57	12.38	1.74
OW_CS S-6 S-1	BASE	100yr24hr	0.00	0.00	0.000	12.25	5.00	12.26	5.55
OW_N-1_22AVE	BASE	100yr24hr	0.00	0.00	0.000	12.27	2.33	12.38	1.74
OW_N-1 N-2	BASE	100yr24hr	0.00	0.00	0.000	12.27	2.33	12.49	5.95
OW_N-1 N-4	BASE	100yr24hr	0.00	0.00	0.000	12.27	2.33	12.34	2.24
OW_N-1 N-5	BASE	100yr24hr	0.00	0.00	0.000	12.27	2.33	12.39	4.22
OW_N-1 N-8	BASE	100yr24hr	0.00	0.00	-0.007	12.27	2.33	12.54	6.51
OW_N-2 N-5	BASE	100yr24hr	0.00	0.00	0.000	12.49	5.95	12.39	4.22
OW_N-3 N-5	BASE	100yr24hr	0.00	0.00	0.000	12.53	6.13	12.39	4.22
OW_N-4 N-5	BASE	100yr24hr	0.00	0.00	0.000	12.39	4.22	12.34	2.24
OW_N-4 N-8	BASE	100yr24hr	0.00	0.00	-0.010	12.34	2.24	12.54	6.51
OW_N-5 N-7	BASE	100yr24hr	0.00	0.00	0.000	12.39	4.22	12.39	2.73
OW_N-7_BB-W	BASE	100yr24hr	0.00	0.00	0.000	12.39	2.73	12.39	2.57
OW_S-1 N-4	BASE	100yr24hr	0.00	0.00	0.000	12.26	5.55	12.34	2.24
OW_S-1 N-5	BASE	100yr24hr	0.00	0.00	0.000	12.26	5.55	12.39	4.22
OW_S-1 S-2	BASE	100yr24hr	0.00	0.00	0.000	12.26	5.55	12.40	5.12
OW_S-1 S-3	BASE	100yr24hr	12.26	4.51	-0.020	12.26	5.55	12.34	5.37
OW_S-1 S-4	BASE	100yr24hr	0.00	0.00	0.000	12.26	5.55	12.34	5.34
OW_S-2_BB-W	BASE	100yr24hr	12.40	60.49	0.123	12.40	5.12	12.39	2.57
OW_S-2 S-3	BASE	100yr24hr	0.00	0.00	-0.124	12.40	5.12	12.34	5.34
OW_S-3 S-4	BASE	100yr24hr	12.35	25.44	0.185	12.34	5.37	12.34	5.34
OW_S-5_CS S-6	BASE	100yr24hr	0.00	0.00	0.000	12.34	5.35	12.25	5.00
OW_S-5 S-4	BASE	100yr24hr	12.30	11.62	0.043	12.34	5.35	12.34	5.34
P_BBE-1 N-7	BASE	100yr24hr	12.25	13.59	0.016	12.25	18.96	12.25	0.89
P_BBW-1_22ND-1	BASE	100yr24hr	12.40	134.18	22.864	12.39	2.57	12.38	1.74
P_CS S-6 N-4	BASE	100yr24hr	12.25	31.90	-1.231	12.26	4.11	12.34	2.24
P_N-2 N-5	BASE	100yr24hr	12.82	12.81	0.034	12.49	5.95	12.39	4.22
P_N-3 N-2	BASE	100yr24hr	12.12	4.45	1.024	12.53	6.13	12.49	5.95
P_N-4 O-2	BASE	100yr24hr	12.34	76.87	-8.746	12.34	2.24	12.34	1.88
P_N-7_BBW-1	BASE	100yr24hr	12.10	16.14	1.629	12.39	2.73	12.39	2.57
P_O-1_NFNR	BASE	100yr24hr	12.34	85.48	3.777	12.34	1.42	0.74	0.42
P_O-2 O-1	BASE	100yr24hr	12.35	76.86	7.331	12.34	1.88	12.34	1.42
P_O-BB_NFNR	BASE	100yr24hr	12.38	145.36	12.773	12.38	1.74	0.00	0.42
P_S-1 S-3	BASE	100yr24hr	12.04	7.27	0.093	12.26	5.55	12.34	5.37
P_S-4 S-3	BASE	100yr24hr	11.76	5.68	-0.146	12.34	5.34	12.34	5.37
P_S-5_CS S-6	BASE	100yr24hr	13.01	3.75	-0.026	12.34	5.35	12.25	5.00
W_CS S-6	BASE	100yr24hr	12.25	22.67	0.066	12.25	5.00	12.26	4.11
CS-PNR N-1	BASE	10yr24hr	12.27	5.69	-0.005	12.27	2.16	12.36	1.02
CS-PNR N-5	BASE	10yr24hr	12.36	32.86	0.034	12.36	3.28	12.36	1.61
CS-PNR S-2	BASE	10yr24hr	12.50	18.61	0.459	12.50	4.70	12.49	0.83
CS-PNR S-3	BASE	10yr24hr	12.78	12.74	-0.019	12.44	5.13	12.29	3.00
ExTr #1	BASE	10yr24hr	12.26	0.82	0.001	12.26	4.55	0.00	0.42
ExTr #10	BASE	10yr24hr	12.30	0.62	0.001	12.30	5.16	0.00	0.42

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DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExTr #2	BASE	10yr24hr	12.50	1.76	1.061	12.50	4.70	0.00	0.42
ExTr #3	BASE	10yr24hr	12.36	0.21	0.005	12.36	3.28	0.00	0.42
ExTr #4	BASE	10yr24hr	12.36	0.17	0.004	12.36	3.28	0.00	0.42
ExTr #5	BASE	10yr24hr	12.36	0.16	0.004	12.36	3.28	0.00	0.42
ExTr #6	BASE	10yr24hr	12.36	0.18	0.004	12.36	3.28	0.00	0.42
ExTr #7	BASE	10yr24hr	12.36	0.05	0.001	12.36	3.28	0.00	0.42
ExTr #8	BASE	10yr24hr	12.39	0.55	0.002	12.39	4.70	0.00	0.42
ExTr #9	BASE	10yr24hr	12.27	0.08	0.000	12.27	2.16	0.00	0.42
OW_BB-E_BB-W	BASE	10yr24hr	0.00	0.00	0.000	12.26	17.69	12.49	0.83
OW_BB-W_22AVE	BASE	10yr24hr	0.00	0.00	0.000	12.49	0.83	12.48	0.69
OW_CS_S-6_S-1	BASE	10yr24hr	0.00	0.00	0.000	12.26	4.55	12.34	5.33
OW_N-1_22AVE	BASE	10yr24hr	0.00	0.00	0.000	12.27	2.16	12.48	0.69
OW_N-1_N-2	BASE	10yr24hr	0.00	0.00	0.000	12.27	2.16	12.41	4.54
OW_N-1_N-4	BASE	10yr24hr	0.00	0.00	0.000	12.27	2.16	12.36	1.61
OW_N-1_N-5	BASE	10yr24hr	0.00	0.00	0.000	12.27	2.16	12.36	3.28
OW_N-1_N-8	BASE	10yr24hr	0.00	0.00	-0.000	12.27	2.16	21.26	6.50
OW_N-2_N-5	BASE	10yr24hr	0.00	0.00	0.000	12.41	4.54	12.36	3.28
OW_N-3_N-5	BASE	10yr24hr	0.00	0.00	0.000	12.39	4.70	12.36	3.28
OW_N-4_N-5	BASE	10yr24hr	0.00	0.00	0.000	12.36	3.28	12.36	1.61
OW_N-4_N-8	BASE	10yr24hr	0.00	0.00	-0.000	12.36	1.61	21.26	6.50
OW_N-5_N-7	BASE	10yr24hr	0.00	0.00	0.000	12.36	3.28	12.28	1.59
OW_N-7_BB-W	BASE	10yr24hr	0.00	0.00	0.000	12.28	1.59	12.49	0.83
OW_S-1_N-4	BASE	10yr24hr	0.00	0.00	0.000	12.34	5.33	12.36	1.61
OW_S-1_N-5	BASE	10yr24hr	0.00	0.00	0.000	12.34	5.33	12.36	3.28
OW_S-1_S-2	BASE	10yr24hr	0.00	0.00	0.000	12.34	5.33	12.50	4.70
OW_S-1_S-3	BASE	10yr24hr	0.00	0.00	0.000	12.34	5.33	12.44	5.13
OW_S-1_S-4	BASE	10yr24hr	0.00	0.00	0.000	12.34	5.33	12.43	5.13
OW_S-2_BB-W	BASE	10yr24hr	12.50	7.17	0.024	12.50	4.70	12.49	0.83
OW_S-2_S-3	BASE	10yr24hr	0.00	0.00	-0.036	12.50	4.70	12.43	5.13
OW_S-3_S-4	BASE	10yr24hr	12.46	3.42	0.117	12.44	5.13	12.43	5.13
OW_S-5_CS_S-6	BASE	10yr24hr	0.00	0.00	0.000	12.30	5.16	12.26	4.55
OW_S-5_S-4	BASE	10yr24hr	12.29	6.23	-0.071	12.30	5.16	12.43	5.13
P_BBE-1_N-7	BASE	10yr24hr	12.26	11.69	0.016	12.26	17.69	12.26	0.79
P_BBW-1_22ND-1	BASE	10yr24hr	12.52	60.77	23.549	12.49	0.83	12.48	0.69
P_CS_S-6_N-4	BASE	10yr24hr	12.29	26.71	0.032	12.29	3.00	10.57	0.42
P_N-2_N-5	BASE	10yr24hr	12.42	9.45	0.034	12.41	4.54	12.36	3.28
P_N-3_N-2	BASE	10yr24hr	12.31	2.83	0.278	12.39	4.70	12.41	4.54
P_N-4_O-2	BASE	10yr24hr	12.35	60.79	7.528	12.36	1.61	12.36	1.35
P_N-7_BBW-1	BASE	10yr24hr	12.27	12.39	1.719	12.28	1.59	12.49	0.83
P_O-1_NFNR	BASE	10yr24hr	12.36	66.11	3.809	12.36	1.02	1.10	0.42
P_O-2_O-1	BASE	10yr24hr	12.36	60.77	7.184	12.36	1.35	12.36	1.02
P_O-BB_NFNR	BASE	10yr24hr	12.48	66.01	12.836	12.48	0.69	0.00	0.42
P_S-1_S-3	BASE	10yr24hr	12.25	5.65	-0.097	12.34	5.33	12.44	5.13
P_S-4_S-3	BASE	10yr24hr	11.89	6.97	-0.087	12.43	5.13	12.44	5.13
P_S-5_CS_S-6	BASE	10yr24hr	12.84	3.72	-0.026	12.30	5.16	12.26	4.55
W_CS_S-6	BASE	10yr24hr	12.26	15.31	0.021	12.26	4.55	12.29	3.00
CS-PNR_N-1	BASE	25yr72hr	60.05	8.35	0.010	60.05	2.29	60.10	1.29
CS-PNR_N-5	BASE	25yr72hr	60.18	39.23	-0.045	60.14	3.55	60.09	2.01
CS-PNR_S-2	BASE	25yr72hr	60.18	20.84	-0.084	60.18	4.96	60.16	1.44
CS-PNR_S-3	BASE	25yr72hr	60.71	12.80	0.133	60.12	5.27	60.05	3.42
ExTr #1	BASE	25yr72hr	60.00	0.89	0.001	60.00	4.71	0.00	0.42
ExTr #10	BASE	25yr72hr	60.11	0.65	0.001	60.11	5.26	0.00	0.42
ExTr #2	BASE	25yr72hr	60.18	1.90	1.061	60.18	4.96	0.00	0.42
ExTr #3	BASE	25yr72hr	60.14	0.24	0.005	60.14	3.55	0.00	0.42
ExTr #4	BASE	25yr72hr	60.14	0.20	0.004	60.14	3.55	0.00	0.42
ExTr #5	BASE	25yr72hr	60.14	0.18	0.004	60.14	3.55	0.00	0.42
ExTr #6	BASE	25yr72hr	60.14	0.21	0.004	60.14	3.55	0.00	0.42
ExTr #7	BASE	25yr72hr	60.14	0.06	0.001	60.14	3.55	0.00	0.42

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DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExTr #8	BASE	25yr72hr	60.14	0.77	0.003	60.14	5.81	0.00	0.42
ExTr #9	BASE	25yr72hr	60.05	0.09	0.000	60.05	2.29	0.00	0.42
OW_BB-E_BB-W	BASE	25yr72hr	60.00	0.95	-0.009	60.00	18.63	60.16	1.44
OW_BB-W_22AVE	BASE	25yr72hr	0.00	0.00	0.000	60.16	1.44	60.16	1.06
OW_CS S-6 S-1	BASE	25yr72hr	0.00	0.00	0.000	60.00	4.71	60.04	5.53
OW_N-1_22AVE	BASE	25yr72hr	0.00	0.00	0.000	60.05	2.29	60.16	1.06
OW_N-1_N-2	BASE	25yr72hr	0.00	0.00	0.000	60.05	2.29	60.15	5.55
OW_N-1_N-4	BASE	25yr72hr	0.00	0.00	0.000	60.05	2.29	60.09	2.01
OW_N-1_N-5	BASE	25yr72hr	0.00	0.00	0.000	60.05	2.29	60.14	3.55
OW_N-1_N-8	BASE	25yr72hr	0.00	0.00	-0.019	60.05	2.29	60.01	6.52
OW_N-2_N-5	BASE	25yr72hr	0.00	0.00	0.000	60.15	5.55	60.14	3.55
OW_N-3_N-5	BASE	25yr72hr	0.00	0.00	0.000	60.14	5.81	60.14	3.55
OW_N-4_N-5	BASE	25yr72hr	0.00	0.00	0.000	60.14	3.55	60.09	2.01
OW_N-4_N-8	BASE	25yr72hr	0.00	0.00	-0.027	60.09	2.01	60.01	6.52
OW_N-5_N-7	BASE	25yr72hr	0.00	0.00	0.000	60.14	3.55	59.99	1.78
OW_N-7_BB-W	BASE	25yr72hr	0.00	0.00	0.000	59.99	1.78	60.16	1.44
OW_S-1_N-4	BASE	25yr72hr	0.00	0.00	0.000	60.04	5.53	60.09	2.01
OW_S-1_N-5	BASE	25yr72hr	0.00	0.00	0.000	60.04	5.53	60.14	3.55
OW_S-1_S-2	BASE	25yr72hr	0.00	0.00	0.000	60.04	5.53	60.18	4.96
OW_S-1_S-3	BASE	25yr72hr	60.04	1.56	0.018	60.04	5.53	60.12	5.27
OW_S-1_S-4	BASE	25yr72hr	0.00	0.00	0.000	60.04	5.53	60.12	5.25
OW_S-2_BB-W	BASE	25yr72hr	60.18	32.17	0.125	60.18	4.96	60.16	1.44
OW_S-2_S-3	BASE	25yr72hr	0.00	0.00	-0.094	60.18	4.96	60.12	5.25
OW_S-3_S-4	BASE	25yr72hr	60.13	14.58	0.173	60.12	5.27	60.12	5.25
OW_S-5_CS_S-6	BASE	25yr72hr	0.00	0.00	0.000	60.11	5.26	60.00	4.71
OW_S-5_S-4	BASE	25yr72hr	59.96	7.61	-0.057	60.11	5.26	60.12	5.25
P_BBE-1_N-7	BASE	25yr72hr	60.00	13.13	0.015	60.00	18.63	60.00	0.86
P_BBW-1_22ND-1	BASE	25yr72hr	60.18	93.18	23.566	60.16	1.44	60.16	1.06
P_CS_S-6_N-4	BASE	25yr72hr	60.01	29.54	0.029	60.05	3.42	60.09	2.01
P_N-2_N-5	BASE	25yr72hr	60.18	11.87	0.036	60.15	5.55	60.14	3.55
P_N-3_N-2	BASE	25yr72hr	60.00	3.91	0.311	60.14	5.81	60.15	5.55
P_N-4_O-2	BASE	25yr72hr	60.09	71.38	2.460	60.09	2.01	60.10	1.70
P_N-7_BBW-1	BASE	25yr72hr	59.99	16.00	1.692	59.99	1.78	60.16	1.44
P_O-1_NFNR	BASE	25yr72hr	60.10	79.53	0.766	60.10	1.29	1.39	0.42
P_O-2_O-1	BASE	25yr72hr	60.10	71.36	2.965	60.10	1.70	60.10	1.29
P_O-BB_NFNR	BASE	25yr72hr	60.16	101.37	12.796	60.16	1.06	0.00	0.42
P_S-1_S-3	BASE	25yr72hr	59.90	6.63	0.195	60.04	5.53	60.12	5.27
P_S-4_S-3	BASE	25yr72hr	59.59	6.59	-0.137	60.12	5.25	60.12	5.27
P_S-5_CS_S-6	BASE	25yr72hr	60.73	3.76	-0.026	60.11	5.26	60.00	4.71
W_CS_S-6	BASE	25yr72hr	60.00	18.67	0.039	60.00	4.71	60.05	3.42

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100yr24hr	NW 22ND-1	BASE	12.27	14.78	11.385	79764
100yr24hr	PNR_BB-E1	BASE	12.27	18.38	12.992	107528
100yr24hr	PNR_BB-E2	BASE	12.27	5.83	13.495	35272
100yr24hr	PNR_BB-W1	BASE	13.00	50.22	13.249	870483
100yr24hr	PNR_BB-W2	BASE	12.27	1.86	13.495	11267
100yr24hr	PNR_N-1A	BASE	12.27	4.25	11.568	23096
100yr24hr	PNR_N-1B	BASE	12.27	4.35	12.965	25414
100yr24hr	PNR_N-1C	BASE	12.27	0.81	13.495	4899
100yr24hr	PNR_N-2	BASE	12.27	15.57	12.719	89567
100yr24hr	PNR_N-3	BASE	12.27	6.22	11.438	33632
100yr24hr	PNR_N-4	BASE	12.27	2.98	12.980	17433
100yr24hr	PNR_N-5	BASE	12.27	37.94	11.723	207665
100yr24hr	PNR_N-6	BASE	12.27	8.96	13.064	52638
100yr24hr	PNR_N-7	BASE	12.27	1.60	7.021	7900
100yr24hr	PNR_N-8	BASE	12.27	4.44	7.021	21917
100yr24hr	PNR_S-1A	BASE	12.27	0.49	13.495	2939
100yr24hr	PNR_S-1B	BASE	12.27	3.91	11.027	20814
100yr24hr	PNR_S-1C	BASE	12.27	5.00	11.468	27059
100yr24hr	PNR_S-2A	BASE	12.27	2.70	8.266	13503
100yr24hr	PNR_S-2B	BASE	12.27	26.45	10.925	140386
100yr24hr	PNR_S-3	BASE	12.27	5.98	9.574	30582
100yr24hr	PNR_S-3_Offsite	BASE	12.27	26.03	10.280	135458
100yr24hr	PNR_S-4	BASE	12.27	13.85	11.740	75859
100yr24hr	PNR_S-4_Offsite	BASE	12.27	14.96	8.710	75245
100yr24hr	PNR_S-5	BASE	12.27	16.52	12.674	94777
100yr24hr	PNR_S-6	BASE	12.27	21.51	11.536	116833
10yr24hr	NW 22ND-1	BASE	12.27	9.06	6.756	47329
10yr24hr	PNR_BB-E1	BASE	12.27	11.86	8.251	68286
10yr24hr	PNR_BB-E2	BASE	12.27	3.78	8.747	22861
10yr24hr	PNR_BB-W1	BASE	13.00	32.48	8.504	558722
10yr24hr	PNR_BB-W2	BASE	12.27	1.21	8.747	7303
10yr24hr	PNR_N-1A	BASE	12.27	2.62	6.919	13815
10yr24hr	PNR_N-1B	BASE	12.27	2.81	8.224	16121
10yr24hr	PNR_N-1C	BASE	12.27	0.52	8.747	3175
10yr24hr	PNR_N-2	BASE	12.27	9.99	7.987	56244
10yr24hr	PNR_N-3	BASE	12.27	3.82	6.803	20003
10yr24hr	PNR_N-4	BASE	12.27	1.92	8.239	11065
10yr24hr	PNR_N-5	BASE	12.27	23.58	7.059	125046
10yr24hr	PNR_N-6	BASE	12.27	5.79	8.321	33526
10yr24hr	PNR_N-7	BASE	12.29	0.75	3.308	3723
10yr24hr	PNR_N-8	BASE	12.29	2.08	3.308	10328
10yr24hr	PNR_S-1A	BASE	12.27	0.31	8.747	1905
10yr24hr	PNR_S-1B	BASE	12.27	2.36	6.440	12156
10yr24hr	PNR_S-1C	BASE	12.27	3.07	6.830	16115
10yr24hr	PNR_S-2A	BASE	12.27	1.39	4.207	6871
10yr24hr	PNR_S-2B	BASE	12.27	15.88	6.351	81613
10yr24hr	PNR_S-3	BASE	12.27	3.35	5.222	16680
10yr24hr	PNR_S-3_Offsite	BASE	12.27	15.14	5.802	76447
10yr24hr	PNR_S-4	BASE	12.27	8.61	7.075	45713
10yr24hr	PNR_S-4_Offsite	BASE	12.27	7.95	4.542	39244
10yr24hr	PNR_S-5	BASE	12.27	10.59	7.945	59408
10yr24hr	PNR_S-6	BASE	12.27	13.27	6.890	69784
25yr72hr	NW 22ND-1	BASE	60.02	11.58	11.877	83206
25yr72hr	PNR_BB-E1	BASE	60.02	14.15	13.491	111659
25yr72hr	PNR_BB-E2	BASE	60.02	4.48	13.995	36578
25yr72hr	PNR_BB-W1	BASE	60.75	37.80	13.738	902627
25yr72hr	PNR_BB-W2	BASE	60.02	1.43	13.995	11685
25yr72hr	PNR_N-1A	BASE	60.02	3.32	12.061	24080
25yr72hr	PNR_N-1B	BASE	60.02	3.35	13.464	26392

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 PRE-DEVELOPMENT CONDITIONS
 BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
25yr72hr	PNR_N-1C	BASE	60.02	0.62	13.995	5080
25yr72hr	PNR_N-2	BASE	60.02	12.00	13.217	93078
25yr72hr	PNR_N-3	BASE	60.02	4.87	11.930	35078
25yr72hr	PNR_N-4	BASE	60.02	2.30	13.479	18103
25yr72hr	PNR_N-5	BASE	60.02	29.58	12.217	216413
25yr72hr	PNR_N-6	BASE	60.02	6.89	13.563	54650
25yr72hr	PNR_N-7	BASE	60.02	1.40	7.439	8371
25yr72hr	PNR_N-8	BASE	60.02	3.87	7.439	23224
25yr72hr	PNR_S-1A	BASE	60.02	0.37	13.995	3048
25yr72hr	PNR_S-1B	BASE	60.02	3.08	11.515	21736
25yr72hr	PNR_S-1C	BASE	60.02	3.91	11.960	28220
25yr72hr	PNR_S-2A	BASE	60.02	2.27	8.713	14233
25yr72hr	PNR_S-2B	BASE	60.02	20.89	11.412	146648
25yr72hr	PNR_S-3	BASE	60.02	4.86	10.044	32086
25yr72hr	PNR_S-3_Offsite	BASE	60.02	20.83	10.760	141787
25yr72hr	PNR_S-4	BASE	60.02	10.80	12.234	79051
25yr72hr	PNR_S-4_Offsite	BASE	60.02	12.43	9.166	79185
25yr72hr	PNR_S-5	BASE	60.02	12.74	13.173	98504
25yr72hr	PNR_S-6	BASE	60.02	16.82	12.029	121821

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 Basins

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Name: NW 22ND-1	Node: STRUCT. NW 22ND	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.930	Time Shift(hrs): 0.00	
Curve Number: 83.51	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR BB-E1	Node: STRUCT. BB E-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.280	Time Shift(hrs): 0.00	
Curve Number: 95.87	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR BB-E2	Node: STRUCT. BB W-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.720	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR BB-W1	Node: STRUCT. BB W-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 80.00	
Area(ac): 18.100	Time Shift(hrs): 0.00	
Curve Number: 98.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Basin includes:

- 1) Broward Blvd from east of SW 28 Terr. to NW 22nd Avenue (approximately 3,300 ft of 100-ft R/W)
- 2) Riverland Road from Davie Blvd. to north of NW 1st Street (approximately 6,100 ft of 75-ft R/W)

Name: PNR BB-W2	Node: STRUCT. BB W-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.230	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR N-1A	Node: CS-PNR N-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.550	Time Shift(hrs): 0.00	
Curve Number: 84.86	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Name: PNR_N-1B	Node: CS-PNR_N-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.540	Time Shift(hrs): 0.00	
Curve Number: 95.65	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_N-1C	Node: CS-PNR_N-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.100	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_N-2	Node: POND_PNR_N-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.940	Time Shift(hrs): 0.00	
Curve Number: 93.68	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_N-3	Node: STRUCT_PNR_N-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.810	Time Shift(hrs): 0.00	
Curve Number: 83.90	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_N-4	Node: STRUCT_PNR_N-4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.370	Time Shift(hrs): 0.00	
Curve Number: 95.77	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_N-5	Node: POND_PNR_N-5	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 4.880	Time Shift(hrs): 0.00	
Curve Number: 86.01	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_N-6	Node: POND_PNR_N-5	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.110	Time Shift(hrs): 0.00	

Curve Number: 96.45 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR N-7 Node: POND_PNR_N-7 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.310 Time Shift(hrs): 0.00
Curve Number: 55.01 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR N-8 Node: SWALE_PNR_N-8 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.860 Time Shift(hrs): 0.00
Curve Number: 55.01 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR S-1A Node: STRUCT_PNR_S-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.060 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR S-1B Node: STRUCT_PNR_S-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.520 Time Shift(hrs): 0.00
Curve Number: 80.91 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR S-1C Node: STRUCT_PNR_S-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.650 Time Shift(hrs): 0.00
Curve Number: 84.12 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR S-2A Node: STRUCT_PNR_S-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.450 Time Shift(hrs): 0.00
Curve Number: 62.51 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR_S-2B Node: STRUCT_PNR_S-2 Status: Onsite

Group: BASE	Type: SCS Unit Hydrograph CN
Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 3.540	Time Shift(hrs): 0.00
Curve Number: 80.18	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: PNR_S-3	Node: POND PNR_S-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.880	Time Shift(hrs): 0.00	
Curve Number: 70.89	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-3_Offsite	Node: POND PNR_S-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 3.630	Time Shift(hrs): 0.00	
Curve Number: 75.66	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-4	Node: STRUCT. PNR_S-4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.780	Time Shift(hrs): 0.00	
Curve Number: 86.14	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-4_Offsite	Node: STRUCT. PNR_S-4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.380	Time Shift(hrs): 0.00	
Curve Number: 65.29	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-5	Node: STRUCT. PNR_S-5	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.060	Time Shift(hrs): 0.00	
Curve Number: 93.33	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-6	Node: CS-PNR_S-6_1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.790	Time Shift(hrs): 0.00	
Curve Number: 84.62	Max Allowable Q(cfs): 999999.000	

DCIA(%): 0.00

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 Nodes =====
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Name: CS-PNR_N-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.720
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-66
 PARKING LOT SURFACE STAGE-AREA RELATIONSHIP BASED ON DTM CONTOURS
 (PNR_N-1A, PNR_N-1B, & PNR_N-1C)

Stage(ft)	Area(ac)
-1.380	0.0006
-0.890	0.0006
-0.880	0.0781
4.000	0.0781
4.120	0.0781
4.130	0.0781
5.720	0.0006
6.000	0.6500
7.000	1.1200

Name: CS-PNR_S-6_1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.170
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-17 (UPSTREAM OF WEIR)

Stage(ft)	Area(ac)
0.420	0.0317
0.510	0.0317
0.520	0.0317
4.570	0.0317
4.580	0.0008
6.170	0.0008
7.000	0.1300
7.500	0.3200
8.000	1.1300

Name: CS-PNR_S-6_2 Base Flow(cfs): 0.000 Init Stage(ft): 0.520
 Group: BASE Warn Stage(ft): 6.170
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-17 (DOWNSTREAM OF WEIR)

Stage(ft)	Area(ac)
0.520	0.0001
6.170	0.0001

Name: GW_N-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

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2.000	0.0156
2.500	0.0247
3.000	0.0320
3.500	0.0398
4.000	0.0476
4.500	0.0557
5.000	0.0645
5.500	0.0749
6.000	0.5100
7.000	1.9400

Name: POND_PNR_N-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.000
 Type: Stage/Area

WARNING STAGE = TOP OF BANK
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496

Stage(ft)	Area(ac)
0.500	0.3626
1.000	0.4505
1.500	0.4895
2.000	0.5110
2.500	0.5312
3.000	0.5497
3.500	0.5679
4.000	0.2284
4.500	0.2473
5.000	0.2670
5.500	0.2904
6.000	2.3100
7.000	3.8900

Name: POND_PNR_N-7 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

WARNING STAGE = TOP OF BANK
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12

Stage(ft)	Area(ac)
0.000	0.0001
2.490	0.0001
2.500	0.0097
3.000	0.0315
3.500	0.0588
4.000	0.0937
4.500	0.1131
5.000	0.1397
6.000	0.1918
7.000	0.2422

Name: POND_PNR_S-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 4.500
 Type: Stage/Area

WARNING STAGE = TOP OF BANK
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496

Stage(ft)	Area(ac)
0.000	0.0928
0.500	0.1063
1.000	0.1187
1.500	0.1338
2.000	0.1498
2.500	0.1679
3.000	0.1896
3.500	0.2164
4.000	0.2516
4.500	0.3193
5.000	0.8300
6.000	1.3600
7.000	1.3800
8.000	1.3900

Name: STRUCT_BB_E-1 Base Flow(cfs): 0.000 Init Stage(ft): 13.270

Group: BASE
Type: Stage/Area

Warn Stage(ft): 18.700

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE

STATE PROJ. NO. 86070-3493
S-5

Stage(ft)	Area(ac)
13.270	0.0001
18.270	0.0001

Name: STRUCT. BB_W-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 4.500
Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE

STATE PROJ. NO. 86070-3496
S-70

Stage(ft)	Area(ac)
-5.360	0.0001
4.500	0.0001

Name: STRUCT. NW 22ND Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 3.000
Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE OF LOWEST INLET

Stage(ft)	Area(ac)
-5.360	0.0001
3.000	0.0001
3.500	0.2500
4.000	0.7500
4.500	1.5200
5.000	1.7800
6.000	1.8500
7.000	1.8800

Name: STRUCT. PNR_N-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 5.720
Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
(PER PERMIT CALCULATIONS)
SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
STATE PROJ. NO. 86070-3496
S-55

Stage(ft)	Area(ac)
-0.880	0.0646
2.010	0.0646
2.020	0.0650
4.120	0.0650
4.130	0.0004
5.720	0.0004
6.000	0.1700
7.000	0.8100

Name: STRUCT. PNR_N-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 5.350
Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE

SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
STATE PROJ. NO. 86070-3496
S-54

Stage(ft)	Area(ac)
-2.780	0.0001
5.350	0.0001
6.000	0.1600

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7.000 0.3700

Name: STRUCT. PNR_O-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 5.900
Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE
SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
STATE PROJ. NO. 86070-3496
S-66

Stage(ft)	Area(ac)
-3.080	0.0001
5.900	0.0001

Name: STRUCT. PNR_O-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 7.000
Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = ASSUMED (NO DTM COVERAGE)
SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
STATE PROJ. NO. 86070-3496
S-54A

Stage(ft)	Area(ac)
-3.080	0.0001
7.000	0.0001

Name: STRUCT. PNR_S-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.500
Group: BASE Warn Stage(ft): 5.400
Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE
SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
STATE PROJ. NO. 86070-3496
S-1B

Stage(ft)	Area(ac)
0.500	0.0001
5.400	0.0001
6.000	0.2800
7.000	0.6400
8.000	0.8100

Name: STRUCT. PNR_S-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 5.020
Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
(PER PERMIT CALCULATIONS)
SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
STATE PROJ. NO. 86070-3496

Stage(ft)	Area(ac)
-0.880	0.0617
0.490	0.0617
0.500	0.0617
3.420	0.0617
3.430	0.0017
4.000	0.0055
5.000	1.1000
5.020	1.1000
6.000	2.9700
7.000	3.0600

Name: STRUCT. PNR_S-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.500
Group: BASE Warn Stage(ft): 4.500
Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE
ON SW 21ST TERRACE
SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12

STATE PROJ. NO. 86070-3496
 S-22

Stage(ft)	Area(ac)
0.500	0.0001
4.490	0.0001
4.500	0.0400
5.000	0.4900

Name: STRUCT. PNR_S-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.420
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION (WITHIN PARKING LOT)
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-14

Stage(ft)	Area(ac)
-0.580	0.0129
2.410	0.0129
2.420	0.0129
4.920	0.0129
4.930	0.0004
5.000	0.1600
6.000	0.6300
6.420	0.7816
6.430	0.7848
7.000	0.9900
8.000	1.5400

Name: SWALE PNR_N-8 Base Flow(cfs): 0.000 Init Stage(ft): 5.000
 Group: BASE Warn Stage(ft): 6.500
 Type: Stage/Area

WARNING STAGE = TOP OF BERM BETWEEN SWALE & PARK N RIDE PARKING LOT
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12

Stage(ft)	Area(ac)
5.000	0.0800
6.000	0.1300
7.000	0.5000

==== Cross Sections =====

Name: OW_BB-E_BB-W Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	18.270	0.020000
7.000	19.000	0.020000
15.000	19.000	0.020000
31.000	19.500	0.020000
54.000	20.000	0.020000

Name: OW_CS S-6_S-1 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
-106.000	8.000	0.020000
-97.000	7.500	0.020000
-74.000	7.000	0.020000
-58.000	7.000	0.020000
-26.000	6.500	0.020000
-17.000	6.000	0.020000
0.000	6.000	0.020000
6.000	6.000	0.020000
26.000	6.500	0.020000
31.000	6.500	0.020000
33.000	7.000	0.020000

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50.000 7.500 0.020000
 75.000 8.000 0.020000

Name: OW_N-1_22AVE Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.000	0.020000
98.000	4.000	0.020000
209.000	4.500	0.020000
373.000	5.000	0.020000
402.000	5.500	0.020000
426.000	6.000	0.020000
449.000	6.500	0.020000
470.000	7.000	0.020000

Name: OW_N-4_N-5 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	6.250	0.020000
12.000	6.500	0.020000
122.000	6.500	0.020000
134.000	6.000	0.020000
148.000	6.000	0.020000
149.000	6.500	0.020000
270.000	6.500	0.020000
307.000	7.000	0.020000
334.000	7.000	0.020000

Name: OW_N-6_N-5 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	6.500	0.020000
215.000	6.500	0.020000
234.000	6.000	0.020000
254.000	6.500	0.020000
447.000	6.500	0.020000
448.000	7.000	0.020000
684.000	7.000	0.020000

Name: OW_N-6_N-7 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	7.000	0.020000
157.000	7.000	0.020000
158.000	6.500	0.020000
197.000	6.500	0.020000

Name: OW_N-7_BB-W Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	5.000	0.020000
75.000	5.500	0.020000
103.000	6.000	0.020000
126.000	6.500	0.020000
136.000	7.000	0.020000

Name: OW_S-1_S-2 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	8.500	0.020000
11.000	8.500	0.020000
17.000	8.000	0.020000
19.000	7.500	0.020000
24.000	7.000	0.020000
27.000	6.500	0.020000
68.000	6.000	0.020000
97.000	6.000	0.020000

Name: OW_S-1_S-3 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	5.500	0.020000
120.000	5.500	0.020000
121.000	6.000	0.020000
161.000	6.000	0.020000
162.000	6.500	0.020000
198.000	7.000	0.020000
217.000	7.500	0.020000
232.000	8.000	0.020000

Name: OW_S-1_S-4 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	7.500	0.020000
2.000	7.500	0.020000
15.000	8.000	0.020000
29.000	8.500	0.020000
33.000	9.000	0.020000
37.000	9.500	0.020000
48.000	9.500	0.020000
58.000	10.000	0.020000

Name: OW_S-2_BB-W Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.500	0.020000
10.000	4.500	0.020000
15.000	4.000	0.020000
35.000	4.000	0.020000
65.000	4.500	0.020000
101.000	5.000	0.020000
132.000	5.500	0.020000
150.000	6.000	0.020000
160.000	6.000	0.020000

Name: OW_S-2_S-3 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.500	0.020000
5.000	4.500	0.020000
9.000	5.000	0.020000
12.000	5.500	0.020000
57.000	5.500	0.020000
60.000	6.000	0.020000
70.000	6.000	0.020000
74.000	5.500	0.020000
184.000	5.000	0.020000
223.000	5.000	0.020000
239.000	5.500	0.020000
510.000	5.500	0.020000

 Name: OW_S-5_CS S-6 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	7.500	0.020000
16.000	7.500	0.020000
24.000	8.000	0.020000
43.000	8.000	0.020000
68.000	7.500	0.020000
77.000	7.000	0.020000
78.000	7.000	0.020000
80.000	8.000	0.020000
348.000	7.500	0.020000
362.000	8.000	0.020000
369.000	8.500	0.020000
650.000	8.500	0.020000
785.000	8.000	0.020000
859.000	7.500	0.020000
914.000	7.000	0.020000
945.000	6.500	0.020000
958.000	6.500	0.020000
962.000	7.000	0.020000
969.000	7.500	0.020000
982.000	7.500	0.020000
994.000	8.000	0.020000
1008.000	8.500	0.020000
1031.000	8.500	0.020000

 Name: OW_S-5_S-4 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.500	0.020000
6.000	5.000	0.020000
37.000	5.500	0.020000
55.000	5.000	0.020000

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 === Operating Tables ===
 =====

Name: ExTr #1 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge (cfs)
0.420	0.42	0.00
0.420	3.42	0.44
0.420	4.57	0.83
0.420	6.17	1.47
0.420	6.67	1.67

Name: ExTr #10 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge (cfs)
0.420	0.42	0.00
0.420	3.42	0.29
0.420	4.92	0.57
0.420	6.42	0.90
0.420	6.92	1.00

Name: ExTr #2 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.000	0.42	0.00
0.420	3.42	1.06
0.420	5.02	1.93
0.420	5.52	2.20

Name: ExTr #3 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.13
0.420	3.62	0.24
0.420	5.22	0.43
0.420	5.72	0.48

Name: ExTr #4 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.11
0.420	3.62	0.20
0.420	5.22	0.36
0.420	5.72	0.40

Name: ExTr #5 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.10
0.420	3.62	0.19
0.420	5.22	0.33
0.420	5.72	0.38

Name: ExTr #6 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.11
0.420	3.62	0.21
0.420	5.22	0.37
0.420	5.72	0.42

Name: ExTr #7 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.03
0.420	3.62	0.06
0.420	5.22	0.11
0.420	5.72	0.12

Name: ExTr #8 Group: BASE

Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.19
0.420	4.12	0.45
0.420	5.72	0.75
0.420	6.22	0.84

Name: ExTr #9 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	1.72	0.05
0.420	4.12	0.23
0.420	5.72	0.38
0.420	6.22	0.43

Name: ExTr_RvrBnd Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

EXFILTRATION TRENCH INFORMATION OBTAINED FROM:
 BRIDGE RIVERBEND PROJECT - DRAINAGE CALCULATIONS
 PREPARED BY FLYNN ENGINEERING
 SFWMD PERMIT PENDING

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.75	1.47
0.420	3.00	1.72
0.420	4.00	2.70
0.420	4.50	3.19
0.420	6.50	5.16

==== Pipes =====

Name: P_BBE-1_N-7	From Node: STRUCT. BB E-1	Length(ft): 255.00
Group: BASE	To Node: POND PNR_N-7	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 15.00	15.00	Exit Loss Coef: 0.50
Rise(in): 15.00	15.00	Bend Loss Coef: 0.00
Invert(ft): 13.270	0.000	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_BBW-1_22ND-1	From Node: STRUCT. BB W-1	Length(ft): 365.00
Group: BASE	To Node: STRUCT. NW 22ND	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 72.00	72.00	Exit Loss Coef: 0.50
Rise(in): 72.00	72.00	Bend Loss Coef: 0.00
Invert(ft): -5.360	-5.360	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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Name: P_CS S-6_N-4      From Node: CS-PNR_S-6_2      Length(ft): 750.00
Group: BASE             To Node: STRUCT. PNR_N-4      Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 36.00         36.00
Rise(in): 36.00         36.00
Invert(ft): 0.520      -2.780
Manning's N: 0.012000   0.012000
Top Clip(in): 0.000     0.000
Bot Clip(in): 0.000     0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
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Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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Name: P_N-2_N-5        From Node: POND PNR_N-2      Length(ft): 88.00
Group: BASE            To Node: POND PNR_N-5      Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 18.00         18.00
Rise(in): 18.00         18.00
Invert(ft): 0.500      0.500
Manning's N: 0.012000   0.012000
Top Clip(in): 0.000     0.000
Bot Clip(in): 0.000     0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_N-3_N-2        From Node: STRUCT. PNR_N-3      Length(ft): 276.00
Group: BASE            To Node: POND PNR_N-2      Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 18.00         18.00
Rise(in): 18.00         18.00
Invert(ft): 2.020      1.500
Manning's N: 0.012000   0.012000
Top Clip(in): 0.000     0.000
Bot Clip(in): 0.000     0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_N-4_O-2        From Node: STRUCT. PNR_N-4      Length(ft): 133.00
Group: BASE            To Node: STRUCT. PNR_O-2      Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
UPSTREAM                DOWNSTREAM
  
```

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 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Geometry: Circular	Circular	Flow: Both
Span(in): 60.00	60.00	Entrance Loss Coef: 0.50
Rise(in): 60.00	60.00	Exit Loss Coef: 0.50
Invert(ft): -2.780	-2.780	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_N-7_BBW-1	From Node: POND_PNR_N-7	Length(ft): 255.00
Group: BASE	To Node: STRUCT_BB_W-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 36.00	36.00	Exit Loss Coef: 0.50
Rise(in): 36.00	36.00	Bend Loss Coef: 0.00
Invert(ft): 0.000	-5.360	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_O-1_NFNR	From Node: STRUCT_PNR_O-1	Length(ft): 600.00
Group: BASE	To Node: NFNR	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 60.00	60.00	Exit Loss Coef: 1.00
Rise(in): 60.00	60.00	Bend Loss Coef: 0.00
Invert(ft): -3.080	-3.980	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_O-2_O-1	From Node: STRUCT_PNR_O-2	Length(ft): 300.00
Group: BASE	To Node: STRUCT_PNR_O-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 60.00	60.00	Exit Loss Coef: 0.50
Rise(in): 60.00	60.00	Bend Loss Coef: 0.00
Invert(ft): -2.570	-3.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_O-BB_NFNR      From Node: STRUCT. NW 22ND   Length(ft): 700.00
Group: BASE            To Node: NFNR                  Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 72.00       72.00
Rise(in): 72.00       72.00
Invert(ft): -5.360    -6.000
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 1.00
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_S-1_S-3      From Node: STRUCT. PNR_S-1   Length(ft): 24.00
Group: BASE          To Node: POND PNR_S-3       Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 18.00       18.00
Rise(in): 18.00       18.00
Invert(ft): 0.500     0.000
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_S-4_S-3      From Node: STRUCT. PNR_S-4   Length(ft): 80.00
Group: BASE          To Node: POND PNR_S-3       Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 18.00       18.00
Rise(in): 18.00       18.00
Invert(ft): 0.500     0.000
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_S-5_CS S-6   From Node: STRUCT. PNR_S-5   Length(ft): 750.00
Group: BASE          To Node: CS-PNR_S-6_1       Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 18.00       18.00
Rise(in): 18.00       18.00
Invert(ft): 2.420     1.420
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

=====
 Drop Structures
 =====

Name: CS-PNR_N-1	From Node: CS-PNR_N-1	Length(ft): 140.00
Group: BASE	To Node: STRUCT. PNR_O-1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 42.00	42.00	Flow: Both
Rise(in): 42.00	42.00	Entrance Loss Coef: 0.500
Invert(ft): -1.380	-3.080	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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 S-65

*** Weir 1 of 1 for Drop Structure CS-PNR_N-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 72.00	Invert(ft): 1.720	
Rise(in): 14.64	Control Elev(ft): 1.720	

Name: CS-PNR_N-5	From Node: POND PNR_N-5	Length(ft): 155.00
Group: BASE	To Node: STRUCT. PNR_N-4	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.500
Invert(ft): -2.780	-2.780	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

STATE PROJ. NO. 86070-3496
 S-53 (NOT CONSTRUCTED PER PLAN - NEED SURVEY TO VERIFY STRUCTURE ELEVATIONS)
 ASSUMED GRATE / CONTROL ELEVATION BY VISUAL INSPECTION (GOOGLE EARTH & EXISTING CONTOURS)

*** Weir 1 of 1 for Drop Structure CS-PNR_N-5 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 2.500	
Rise(in): 36.00	Control Elev(ft): 2.500	

Name: CS-PNR_S-2	From Node: STRUCT. PNR_S-2	Length(ft): 85.00
Group: BASE	To Node: STRUCT. BB_W-1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive

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Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft): 0.780	0.000	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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 S-74
 DOWNSTREAM INVERT ASSUMED

*** Weir 1 of 1 for Drop Structure CS-PNR_S-2 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 60.00	Invert(ft): 3.420	
Rise(in): 10.00	Control Elev(ft): 3.420	

Name: CS-PNR_S-3	From Node: POND_PNR_S-3	Length(ft): 77.00
Group: BASE	To Node: CS-PNR_S-6_2	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.500
Invert(ft): 0.720	0.520	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

STATE PROJ. NO. 86070-3496
 S-1

*** Weir 1 of 2 for Drop Structure CS-PNR_S-3 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 5.020	
Rise(in): 36.00	Control Elev(ft): 5.020	

*** Weir 2 of 2 for Drop Structure CS-PNR_S-3 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 36.00	Invert(ft): 2.920	
Rise(in): 25.20	Control Elev(ft): 2.920	

==== Weirs =====

Name: OW_BB-E_BB-W	From Node: STRUCT_BB_E-1
Group: BASE	To Node: STRUCT_BB_W-1
Flow: Both	Count: 1
Type: Vertical: Paved	Geometry: Irregular
XSec: OW_BB-E_BB-W	
Invert(ft): 18.270	
Control Elevation(ft): 18.270	
Struct Opening Dim(ft): 9999.00	

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_BB-W_22AVE From Node: STRUCT. BB_W-1
Group: BASE To Node: STRUCT. NW 22ND
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in): 540.00
Rise(in): 9999.00
Invert(ft): 5.000
Control Elevation(ft): 5.000

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_CS S-6_S-1 From Node: CS-PNR_S-6_1
Group: BASE To Node: STRUCT. PNR_S-1
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

XSec: OW_CS S-6_S-1
Invert(ft): 6.000
Control Elevation(ft): 6.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-1_22AVE From Node: CS-PNR_N-1
Group: BASE To Node: STRUCT. NW 22ND
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

XSec: OW_N-1_22AVE
Invert(ft): 4.000
Control Elevation(ft): 4.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-1_N-2 From Node: CS-PNR_N-1
Group: BASE To Node: POND PNR_N-2
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in): 2556.00
Rise(in): 9999.00
Invert(ft): 6.500
Control Elevation(ft): 6.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-1_N-4 From Node: CS-PNR_N-1
Group: BASE To Node: STRUCT. PNR_N-4
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in) : 768.00
Rise(in) : 9999.00
Invert(ft) : 6.250
Control Elevation(ft) : 6.250

TABLE

Bottom Clip(in) : 0.000
Top Clip(in) : 0.000
Weir Discharge Coef : 3.200
Orifice Discharge Coef : 0.600

Name: OW N-1_N-5 From Node: CS-PNR N-1
Group: BASE To Node: POND PNR_N-5
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in) : 504.00
Rise(in) : 9999.00
Invert(ft) : 6.000
Control Elevation(ft) : 6.000

TABLE

Bottom Clip(in) : 0.000
Top Clip(in) : 0.000
Weir Discharge Coef : 3.200
Orifice Discharge Coef : 0.600

Name: OW N-1_N-8 From Node: CS-PNR N-1
Group: BASE To Node: SWALE_PNR_N-8
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in) : 2364.00
Rise(in) : 9999.00
Invert(ft) : 6.500
Control Elevation(ft) : 6.500

TABLE

Bottom Clip(in) : 0.000
Top Clip(in) : 0.000
Weir Discharge Coef : 3.200
Orifice Discharge Coef : 0.600

Name: OW N-2_N-5 From Node: POND PNR_N-2
Group: BASE To Node: POND PNR_N-5
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in) : 3240.00
Rise(in) : 9999.00
Invert(ft) : 6.000
Control Elevation(ft) : 6.000

TABLE

Bottom Clip(in) : 0.000
Top Clip(in) : 0.000
Weir Discharge Coef : 3.200
Orifice Discharge Coef : 0.600

Name: OW N-3_N-5 From Node: STRUCT. PNR N-3
Group: BASE To Node: POND PNR_N-5
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in) : 3540.00
Rise(in) : 9999.00
Invert(ft) : 6.500
Control Elevation(ft) : 6.500

TABLE

Bottom Clip(in) : 0.000
Top Clip(in) : 0.000
Weir Discharge Coef : 3.200
Orifice Discharge Coef : 0.600

Name: OW_N-4_N-5 From Node: POND_PNR_N-5
 Group: BASE To Node: STRUCT_PNR_N-4
 Flow: Both Count: 1
 Type: Vertical: Paved Geometry: Irregular

 XSec: OW_N-4_N-5
 Invert(ft): 6.000
 Control Elevation(ft): 6.000
 Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_N-4_N-8 From Node: STRUCT_PNR_N-4
 Group: BASE To Node: SWALE_PNR_N-8
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Rectangular

 Span(in): 3432.00
 Rise(in): 9999.00
 Invert(ft): 6.500
 Control Elevation(ft): 6.500

TABLE

 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_N-5_N-7 From Node: POND_PNR_N-5
 Group: BASE To Node: POND_PNR_N-7
 Flow: Both Count: 1
 Type: Vertical: Paved Geometry: Irregular

 XSec: OW_N-6_N-7
 Invert(ft): 6.500
 Control Elevation(ft): 6.500
 Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_N-7_BB-W From Node: POND_PNR_N-7
 Group: BASE To Node: STRUCT_BB-W-1
 Flow: Both Count: 1
 Type: Vertical: Paved Geometry: Irregular

 XSec: OW_N-7_BB-W
 Invert(ft): 5.000
 Control Elevation(ft): 5.000
 Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-1_N-4 From Node: STRUCT_PNR_S-1
 Group: BASE To Node: STRUCT_PNR_N-4
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Rectangular

 Span(in): 840.00
 Rise(in): 9999.00
 Invert(ft): 7.000
 Control Elevation(ft): 7.000

TABLE

 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200

Orifice Discharge Coef: 0.600

Name: OW_S-1_N-5 From Node: STRUCT. PNR_S-1
Group: BASE To Node: POND_PNR_N-5
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

 Span(in): 720.00
 Rise(in): 9999.00
 Invert(ft): 7.000
Control Elevation(ft): 7.000

 TABLE
 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-1_S-2 From Node: STRUCT. PNR_S-1
Group: BASE To Node: STRUCT. PNR_S-2
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-1_S-2
 Invert(ft): 6.000
Control Elevation(ft): 6.000
Struct Opening Dim(ft): 9999.00

 TABLE
 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-1_S-3 From Node: STRUCT. PNR_S-1
Group: BASE To Node: POND_PNR_S-3
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-1_S-3
 Invert(ft): 5.500
Control Elevation(ft): 5.500
Struct Opening Dim(ft): 9999.00

 TABLE
 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-1_S-4 From Node: STRUCT. PNR_S-1
Group: BASE To Node: STRUCT. PNR_S-4
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-1_S-4
 Invert(ft): 7.500
Control Elevation(ft): 7.500
Struct Opening Dim(ft): 9999.00

 TABLE
 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-2_BB-W From Node: STRUCT. PNR_S-2
Group: BASE To Node: STRUCT. BB_W-1
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Irregular

 XSec: OW_S-2_BB-W
 Invert(ft): 4.500
Control Elevation(ft): 4.500

Struct Opening Dim(ft): 9999.00
TABLE
Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-2_S-3 From Node: STRUCT. PNR_S-2
Group: BASE To Node: STRUCT. PNR_S-4
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-2_S-3
 Invert(ft): 4.500
Control Elevation(ft): 4.500
Struct Opening Dim(ft): 9999.00
TABLE
Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-3_S-4 From Node: POND PNR_S-3
Group: BASE To Node: STRUCT. PNR_S-4
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

 Span(in): 756.00
 Rise(in): 9999.00
 Invert(ft): 5.000
Control Elevation(ft): 5.000
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-5_CS_S-6 From Node: STRUCT. PNR_S-5
Group: BASE To Node: CS-PNR_S-6_1
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-5_CS_S-6
 Invert(ft): 6.500
Control Elevation(ft): 6.500
Struct Opening Dim(ft): 9999.00
TABLE
Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_S-5_S-4 From Node: STRUCT. PNR_S-5
Group: BASE To Node: STRUCT. PNR_S-4
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-5_S-4
 Invert(ft): 4.500
Control Elevation(ft): 4.500
Struct Opening Dim(ft): 9999.00
TABLE
Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: W_CS_S-6 From Node: CS-PNR_S-6_1
Group: BASE To Node: CS-PNR_S-6_2
Flow: Both Count: 1

Type: Vertical: Mavis Geometry: Rectangular

Span(in): 48.00
 Rise(in): 18.00
 Invert(ft): 3.420
 Control Elevation(ft): 3.420

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

STATE PROJ. NO. 86070-3496

S-17

RISE = 5.50-3.42-6" (TOP SLAB) = (APPROX.) 18"

SPAN = ASSUMED WIDTH OF BOX (4')

=====
 Rating Curves
 =====

Name: ExTr #1 From Node: CS-PNR_S-6_1 Count: 1
 Group: BASE To Node: GW_S-6 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #1	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #10 From Node: STRUCT. PNR_S-5 Count: 1
 Group: BASE To Node: GW_S-5 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #10	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #2 From Node: STRUCT. PNR_S-2 Count: 1
 Group: BASE To Node: GW_S-2 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #2	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #3 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #3	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #4 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #4	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #5 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #5	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #6 From Node: POND_PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #6	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #7 From Node: POND_PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #7	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #8 From Node: STRUCT_PNR_N-3 Count: 1
 Group: BASE To Node: GW_N-3 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #8	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

Name: ExTr #9 From Node: CS-PNR_N-1 Count: 1
 Group: BASE To Node: GW_N-1 Flow: Both

	TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1:	ExTr #9	0.430	0.420
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

==== Hydrology Simulations =====

Name: 100yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\Broward Blvd Park-n-Ride\100yr24hr.R32

Override Defaults: Yes
 Storm Duration (hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount (in): 13.50

Time (hrs) Print Inc (min)

 30.000 5.00

Name: 10yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\Broward Blvd Park-n-Ride\10yr24hr.R32

Override Defaults: Yes
 Storm Duration (hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount (in): 8.75

Time (hrs) Print Inc (min)

 30.000 5.00

 Name: 25yr72hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\Broward Blvd Park-n-Ride\25yr72hr.R32

Override Defaults: Yes
 Storm Duration (hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount (in): 14.00

Time (hrs)	Print Inc (min)
48.000	15.00
72.000	5.00
84.000	15.00

==== Routing Simulations =====

Name: 100yr24hr Hydrology Sim: 100yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\Broward Blvd Park-n-Ride\100yr24hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time (hrs): 0.000 End Time (hrs): 30.00
 Min Calc Time (sec): 0.50000 Max Calc Time (sec): 60.0000
 Boundary Stages: Boundary Flows:

Time (hrs)	Print Inc (min)
30.000	5.000

Group	Run
BASE	Yes

 Name: 10yr24hr Hydrology Sim: 10yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\Broward Blvd Park-n-Ride\10yr24hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time (hrs): 0.000 End Time (hrs): 30.00
 Min Calc Time (sec): 0.50000 Max Calc Time (sec): 60.0000
 Boundary Stages: Boundary Flows:

Time (hrs)	Print Inc (min)
30.000	5.000

Group	Run
BASE	Yes

 Name: 25yr72hr Hydrology Sim: 25yr72hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Pre-Development\Broward Blvd Park-n-Ride\25yr72hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time (hrs): 0.000 End Time (hrs): 84.00
 Min Calc Time (sec): 0.50000 Max Calc Time (sec): 60.0000
 Boundary Stages: Boundary Flows:

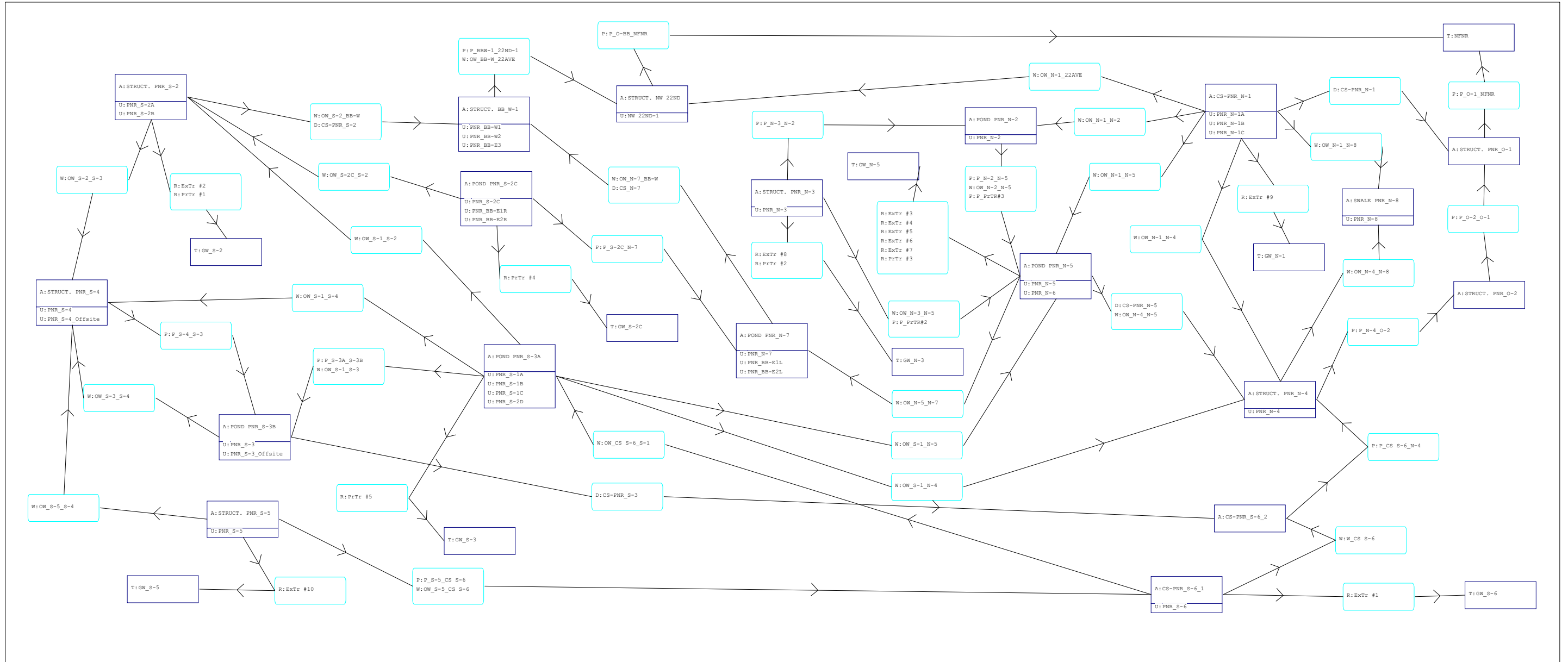
Time (hrs)	Print Inc (min)
48.000	15.000
72.000	5.000

I-95 AT BROWARD BOULEVARD PD&E STUDY
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84.000	15.000
Group	Run
-----	-----
BASE	Yes

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 POST-DEVELOPMENT CONDITIONS
 NODE-LINK DIAGRAM

- Nodes**
 A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole
- Basins**
 O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA
- Links**
 P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



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DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CS-PNR N-1	BASE	100yr24hr	12.28	2.32	5.72	0.0007	4356	12.25	9.40	12.28	9.09
CS-PNR S-6_1	BASE	100yr24hr	12.25	4.98	6.17	0.0049	141	12.25	23.98	12.25	23.94
CS-PNR S-6_2	BASE	100yr24hr	12.26	4.11	6.17	0.0065	169	12.25	31.60	12.25	31.48
GW N-1	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.28	0.12	0.00	0.00
GW N-3	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.37	2.07	0.00	0.00
GW N-5	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.39	4.33	0.00	0.00
GW S-2	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.39	3.46	0.00	0.00
GW S-2C	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.33	1.17	0.00	0.00
GW S-3	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.31	3.61	0.00	0.00
GW S-5	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.32	0.67	0.00	0.00
GW S-6	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.25	1.95	0.00	0.00
NFNR	BASE	100yr24hr	0.00	0.42	0.42	0.0000	1350	12.37	236.36	0.00	0.00
POND PNR N-2	BASE	100yr24hr	12.38	4.65	6.00	-0.0031	2573	12.27	13.81	12.17	10.54
POND PNR N-5	BASE	100yr24hr	12.39	4.39	6.00	0.0030	10694	12.27	60.26	12.42	50.68
POND PNR N-7	BASE	100yr24hr	12.31	4.34	5.00	-0.0039	6566	12.25	27.95	12.30	27.67
POND PNR S-2C	BASE	100yr24hr	12.33	4.79	5.50	0.0039	6853	12.25	18.50	12.34	16.68
POND PNR S-3A	BASE	100yr24hr	12.31	5.53	5.00	0.0035	10294	12.25	19.99	12.31	18.59
POND PNR S-3B	BASE	100yr24hr	12.31	5.41	5.00	0.0035	9608	12.28	45.85	12.30	45.28
STRUCT. BB W-1	BASE	100yr24hr	12.39	2.73	4.50	-0.0071	168	12.39	138.88	12.39	138.91
STRUCT. NW 22ND	BASE	100yr24hr	12.38	1.83	3.00	0.0044	273	12.38	150.24	12.38	150.23
STRUCT. PNR N-3	BASE	100yr24hr	12.37	4.55	5.72	0.0142	138	12.25	6.21	12.64	6.80
STRUCT. PNR N-4	BASE	100yr24hr	12.34	2.28	5.35	0.0044	221	12.34	78.08	12.34	78.07
STRUCT. PNR O-1	BASE	100yr24hr	12.34	1.45	5.90	0.0020	1450	12.33	86.75	12.34	86.73
STRUCT. PNR O-2	BASE	100yr24hr	12.34	1.93	7.00	0.0056	682	12.34	78.07	12.34	78.06
STRUCT. PNR S-2	BASE	100yr24hr	12.39	5.11	5.02	0.0127	52657	12.25	16.62	12.52	21.30
STRUCT. PNR S-4	BASE	100yr24hr	12.32	5.37	4.50	0.0050	35859	12.12	21.52	11.84	9.03
STRUCT. PNR S-5	BASE	100yr24hr	12.32	5.38	6.42	0.0038	14729	12.25	16.52	12.34	15.19
SWALE PNR N-8	BASE	100yr24hr	12.56	6.51	6.50	0.0014	13931	12.25	4.30	0.00	0.00
CS-PNR N-1	BASE	10yr24hr	12.28	2.16	5.72	0.0004	4356	12.25	5.95	12.28	5.70
CS-PNR S-6_1	BASE	10yr24hr	12.27	4.51	6.17	0.0010	2738	12.25	16.42	12.27	16.13
CS-PNR S-6_2	BASE	10yr24hr	12.34	2.98	6.17	-0.0022	1044	12.32	26.32	12.33	26.29
GW N-1	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.28	0.10	0.00	0.00
GW N-3	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.35	1.38	0.00	0.00
GW N-5	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.34	2.93	0.00	0.00
GW S-2	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.55	2.99	0.00	0.00
GW S-2C	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.33	1.03	0.00	0.00
GW S-3	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.43	3.29	0.00	0.00
GW S-5	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.30	0.62	0.00	0.00
GW S-6	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.27	1.59	0.00	0.00
NFNR	BASE	10yr24hr	0.00	0.42	0.42	0.0000	1350	12.36	128.39	0.00	0.00
POND PNR N-2	BASE	10yr24hr	12.33	3.42	6.00	0.0017	1738	12.25	8.17	12.27	7.58
POND PNR N-5	BASE	10yr24hr	12.34	3.29	6.00	0.0015	19237	12.25	39.19	12.34	36.32
POND PNR N-7	BASE	10yr24hr	12.32	4.15	5.00	-0.0039	6328	12.27	17.63	12.32	17.43
POND PNR S-2C	BASE	10yr24hr	12.33	4.33	5.50	0.0039	6293	12.25	11.93	12.33	10.82
POND PNR S-3A	BASE	10yr24hr	12.43	5.17	5.00	0.0028	9814	12.25	12.21	12.45	8.35
POND PNR S-3B	BASE	10yr24hr	12.43	5.15	5.00	0.0028	9323	12.23	22.46	12.41	18.25
STRUCT. BB W-1	BASE	10yr24hr	12.53	0.79	4.50	-0.0071	168	12.55	58.25	12.56	58.26
STRUCT. NW 22ND	BASE	10yr24hr	12.52	0.67	3.00	0.0047	273	12.52	63.05	12.52	63.49
STRUCT. PNR N-3	BASE	10yr24hr	12.35	3.36	5.72	0.0027	3608	12.25	3.81	12.42	3.65
STRUCT. PNR N-4	BASE	10yr24hr	12.35	1.62	5.35	0.0042	1397	12.33	61.39	12.35	61.22
STRUCT. PNR O-1	BASE	10yr24hr	12.36	1.03	5.90	0.0020	1800	12.35	66.58	12.36	66.53
STRUCT. PNR O-2	BASE	10yr24hr	12.35	1.36	7.00	0.0056	959	12.35	61.22	12.35	61.18
STRUCT. PNR S-2	BASE	10yr24hr	12.55	4.58	5.02	0.0308	26063	12.25	10.27	12.77	10.66
STRUCT. PNR S-4	BASE	10yr24hr	12.43	5.14	4.50	0.0050	26912	12.17	14.50	11.94	9.98
STRUCT. PNR S-5	BASE	10yr24hr	12.30	5.15	6.42	-0.0031	10116	12.25	10.60	12.30	9.94
SWALE PNR N-8	BASE	10yr24hr	21.27	6.50	6.50	0.0008	13741	12.25	2.00	0.00	0.00
CS-PNR N-1	BASE	25yr72hr	60.07	2.28	5.72	-0.0008	4356	60.00	7.27	60.08	6.77
CS-PNR S-6_1	BASE	25yr72hr	60.00	4.68	6.17	0.0044	141	60.00	19.73	60.00	19.71

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CS-PNR_S-6_2	BASE	25yr72hr	60.05	3.40	6.17	-0.0030	460	60.00	29.66	60.01	29.22
GW_N-1	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.07	0.12	0.00	0.00
GW_N-3	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.12	1.55	0.00	0.00
GW_N-5	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.12	3.25	0.00	0.00
GW_S-2	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.19	3.28	0.00	0.00
GW_S-2C	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.08	1.08	0.00	0.00
GW_S-3	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.11	3.47	0.00	0.00
GW_S-5	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.11	0.65	0.00	0.00
GW_S-6	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.00	1.71	0.00	0.00
NFNR	BASE	25yr72hr	0.00	0.42	0.42	0.0000	1350	60.16	178.32	0.00	0.00
POND_PNR_N-2	BASE	25yr72hr	60.10	3.74	6.00	-0.0022	1928	60.00	9.97	60.02	9.06
POND_PNR_N-5	BASE	25yr72hr	60.12	3.56	6.00	-0.0018	19585	60.00	48.48	60.14	42.38
POND_PNR_N-7	BASE	25yr72hr	60.07	4.23	5.00	-0.0037	6423	60.02	21.53	60.07	21.37
POND_PNR_S-2C	BASE	25yr72hr	60.08	4.49	5.50	0.0037	6491	60.00	14.22	60.09	13.01
POND_PNR_S-3A	BASE	25yr72hr	60.11	5.37	5.00	0.0029	10084	60.00	15.68	60.12	13.45
POND_PNR_S-3B	BASE	25yr72hr	60.10	5.31	5.00	0.0029	9494	60.06	33.32	60.09	32.55
STRUCT. BB W-1	BASE	25yr72hr	60.19	1.42	4.50	-0.0071	168	60.19	92.77	60.20	92.79
STRUCT. NW 22ND	BASE	25yr72hr	60.19	1.05	3.00	0.0047	273	60.19	100.53	60.19	100.77
STRUCT. PNR_N-3	BASE	25yr72hr	60.12	3.67	5.72	-0.0021	3475	60.00	4.85	60.25	4.60
STRUCT. PNR_N-4	BASE	25yr72hr	60.09	2.02	5.35	0.0037	424	60.08	69.52	60.09	69.50
STRUCT. PNR_O-1	BASE	25yr72hr	60.09	1.29	5.90	-0.0024	1608	60.09	79.63	60.09	79.60
STRUCT. PNR_O-2	BASE	25yr72hr	60.09	1.70	7.00	0.0052	818	60.08	71.58	60.09	71.56
STRUCT. PNR_S-2	BASE	25yr72hr	60.19	4.91	5.02	0.0336	40608	60.00	12.98	60.34	14.96
STRUCT. PNR_S-4	BASE	25yr72hr	60.11	5.28	4.50	0.0050	32351	59.83	17.85	59.64	9.97
STRUCT. PNR_S-5	BASE	25yr72hr	60.11	5.29	6.42	0.0039	12857	60.00	12.71	59.96	11.10
SWALE_PNR_N-8	BASE	25yr72hr	60.02	6.52	6.50	0.0004	14010	59.94	3.55	0.00	0.00

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DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CS-PNR N-1	BASE	100yr24hr	12.28	2.32	5.72	0.0007	4356	12.25	9.40	12.28	9.09
CS-PNR S-6_1	BASE	100yr24hr	12.25	4.98	6.17	0.0049	141	12.25	23.98	12.25	23.94
CS-PNR S-6_2	BASE	100yr24hr	12.26	4.11	6.17	0.0065	169	12.25	31.60	12.25	31.48
GW N-1	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.28	0.12	0.00	0.00
GW N-3	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.37	2.07	0.00	0.00
GW N-5	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.39	4.33	0.00	0.00
GW S-2	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.39	3.46	0.00	0.00
GW S-2C	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.33	1.17	0.00	0.00
GW S-3	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.31	3.61	0.00	0.00
GW S-5	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.32	0.67	0.00	0.00
GW S-6	BASE	100yr24hr	0.00	0.42	0.42	0.0000	0	12.25	1.95	0.00	0.00
NFNR	BASE	100yr24hr	0.00	0.42	0.42	0.0000	1350	12.37	236.36	0.00	0.00
POND PNR N-2	BASE	100yr24hr	12.38	4.65	6.00	-0.0031	2573	12.27	13.81	12.17	10.54
POND PNR N-5	BASE	100yr24hr	12.39	4.39	6.00	0.0030	10694	12.27	60.26	12.42	50.68
POND PNR N-7	BASE	100yr24hr	12.31	4.34	5.00	-0.0039	6566	12.25	27.95	12.30	27.67
POND PNR S-2C	BASE	100yr24hr	12.33	4.79	5.50	0.0039	6853	12.25	18.50	12.34	16.68
POND PNR S-3A	BASE	100yr24hr	12.31	5.53	5.00	0.0035	10294	12.25	19.99	12.31	18.59
POND PNR S-3B	BASE	100yr24hr	12.31	5.41	5.00	0.0035	9608	12.28	45.85	12.30	45.28
STRUCT. BB W-1	BASE	100yr24hr	12.39	2.73	4.50	-0.0071	168	12.39	138.88	12.39	138.91
STRUCT. NW 22ND	BASE	100yr24hr	12.38	1.83	3.00	0.0044	273	12.38	150.24	12.38	150.23
STRUCT. PNR N-3	BASE	100yr24hr	12.37	4.55	5.72	0.0142	138	12.25	6.21	12.64	6.80
STRUCT. PNR N-4	BASE	100yr24hr	12.34	2.28	5.35	0.0044	221	12.34	78.08	12.34	78.07
STRUCT. PNR O-1	BASE	100yr24hr	12.34	1.45	5.90	0.0020	1450	12.33	86.75	12.34	86.73
STRUCT. PNR O-2	BASE	100yr24hr	12.34	1.93	7.00	0.0056	682	12.34	78.07	12.34	78.06
STRUCT. PNR S-2	BASE	100yr24hr	12.39	5.11	5.02	0.0127	52657	12.25	16.62	12.52	21.30
STRUCT. PNR S-4	BASE	100yr24hr	12.32	5.37	4.50	0.0050	35859	12.12	21.52	11.84	9.03
STRUCT. PNR S-5	BASE	100yr24hr	12.32	5.38	6.42	0.0038	14729	12.25	16.52	12.34	15.19
SWALE PNR N-8	BASE	100yr24hr	12.56	6.51	6.50	0.0014	13931	12.25	4.30	0.00	0.00
CS-PNR N-1	BASE	10yr24hr	12.28	2.16	5.72	0.0004	4356	12.25	5.95	12.28	5.70
CS-PNR S-6_1	BASE	10yr24hr	12.27	4.51	6.17	0.0010	2738	12.25	16.42	12.27	16.13
CS-PNR S-6_2	BASE	10yr24hr	12.34	2.98	6.17	-0.0022	1044	12.32	26.32	12.33	26.29
GW N-1	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.28	0.10	0.00	0.00
GW N-3	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.35	1.38	0.00	0.00
GW N-5	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.34	2.93	0.00	0.00
GW S-2	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.55	2.99	0.00	0.00
GW S-2C	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.33	1.03	0.00	0.00
GW S-3	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.43	3.29	0.00	0.00
GW S-5	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.30	0.62	0.00	0.00
GW S-6	BASE	10yr24hr	0.00	0.42	0.42	0.0000	0	12.27	1.59	0.00	0.00
NFNR	BASE	10yr24hr	0.00	0.42	0.42	0.0000	1350	12.36	128.39	0.00	0.00
POND PNR N-2	BASE	10yr24hr	12.33	3.42	6.00	0.0017	1738	12.25	8.17	12.27	7.58
POND PNR N-5	BASE	10yr24hr	12.34	3.29	6.00	0.0015	19237	12.25	39.19	12.34	36.32
POND PNR N-7	BASE	10yr24hr	12.32	4.15	5.00	-0.0039	6328	12.27	17.63	12.32	17.43
POND PNR S-2C	BASE	10yr24hr	12.33	4.33	5.50	0.0039	6293	12.25	11.93	12.33	10.82
POND PNR S-3A	BASE	10yr24hr	12.43	5.17	5.00	0.0028	9814	12.25	12.21	12.45	8.35
POND PNR S-3B	BASE	10yr24hr	12.43	5.15	5.00	0.0028	9323	12.23	22.46	12.41	18.25
STRUCT. BB W-1	BASE	10yr24hr	12.53	0.79	4.50	-0.0071	168	12.55	58.25	12.56	58.26
STRUCT. NW 22ND	BASE	10yr24hr	12.52	0.67	3.00	0.0047	273	12.52	63.05	12.52	63.49
STRUCT. PNR N-3	BASE	10yr24hr	12.35	3.36	5.72	0.0027	3608	12.25	3.81	12.42	3.65
STRUCT. PNR N-4	BASE	10yr24hr	12.35	1.62	5.35	0.0042	1397	12.33	61.39	12.35	61.22
STRUCT. PNR O-1	BASE	10yr24hr	12.36	1.03	5.90	0.0020	1800	12.35	66.58	12.36	66.53
STRUCT. PNR O-2	BASE	10yr24hr	12.35	1.36	7.00	0.0056	959	12.35	61.22	12.35	61.18
STRUCT. PNR S-2	BASE	10yr24hr	12.55	4.58	5.02	0.0308	26063	12.25	10.27	12.77	10.66
STRUCT. PNR S-4	BASE	10yr24hr	12.43	5.14	4.50	0.0050	26912	12.17	14.50	11.94	9.98
STRUCT. PNR S-5	BASE	10yr24hr	12.30	5.15	6.42	-0.0031	10116	12.25	10.60	12.30	9.94
SWALE PNR N-8	BASE	10yr24hr	21.27	6.50	6.50	0.0008	13741	12.25	2.00	0.00	0.00
CS-PNR N-1	BASE	25yr72hr	60.07	2.28	5.72	-0.0008	4356	60.00	7.27	60.08	6.77
CS-PNR S-6_1	BASE	25yr72hr	60.00	4.68	6.17	0.0044	141	60.00	19.73	60.00	19.71

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CS-PNR_S-6_2	BASE	25yr72hr	60.05	3.40	6.17	-0.0030	460	60.00	29.66	60.01	29.22
GW_N-1	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.07	0.12	0.00	0.00
GW_N-3	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.12	1.55	0.00	0.00
GW_N-5	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.12	3.25	0.00	0.00
GW_S-2	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.19	3.28	0.00	0.00
GW_S-2C	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.08	1.08	0.00	0.00
GW_S-3	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.11	3.47	0.00	0.00
GW_S-5	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.11	0.65	0.00	0.00
GW_S-6	BASE	25yr72hr	0.00	0.42	0.42	0.0000	0	60.00	1.71	0.00	0.00
NFNR	BASE	25yr72hr	0.00	0.42	0.42	0.0000	1350	60.16	178.32	0.00	0.00
POND_PNR_N-2	BASE	25yr72hr	60.10	3.74	6.00	-0.0022	1928	60.00	9.97	60.02	9.06
POND_PNR_N-5	BASE	25yr72hr	60.12	3.56	6.00	-0.0018	19585	60.00	48.48	60.14	42.38
POND_PNR_N-7	BASE	25yr72hr	60.07	4.23	5.00	-0.0037	6423	60.02	21.53	60.07	21.37
POND_PNR_S-2C	BASE	25yr72hr	60.08	4.49	5.50	0.0037	6491	60.00	14.22	60.09	13.01
POND_PNR_S-3A	BASE	25yr72hr	60.11	5.37	5.00	0.0029	10084	60.00	15.68	60.12	13.45
POND_PNR_S-3B	BASE	25yr72hr	60.10	5.31	5.00	0.0029	9494	60.06	33.32	60.09	32.55
STRUCT. BB W-1	BASE	25yr72hr	60.19	1.42	4.50	-0.0071	168	60.19	92.77	60.20	92.79
STRUCT. NW 22ND	BASE	25yr72hr	60.19	1.05	3.00	0.0047	273	60.19	100.53	60.19	100.77
STRUCT. PNR_N-3	BASE	25yr72hr	60.12	3.67	5.72	-0.0021	3475	60.00	4.85	60.25	4.60
STRUCT. PNR_N-4	BASE	25yr72hr	60.09	2.02	5.35	0.0037	424	60.08	69.52	60.09	69.50
STRUCT. PNR_O-1	BASE	25yr72hr	60.09	1.29	5.90	-0.0024	1608	60.09	79.63	60.09	79.60
STRUCT. PNR_O-2	BASE	25yr72hr	60.09	1.70	7.00	0.0052	818	60.08	71.58	60.09	71.56
STRUCT. PNR_S-2	BASE	25yr72hr	60.19	4.91	5.02	0.0336	40608	60.00	12.98	60.34	14.96
STRUCT. PNR_S-4	BASE	25yr72hr	60.11	5.28	4.50	0.0050	32351	59.83	17.85	59.64	9.97
STRUCT. PNR_S-5	BASE	25yr72hr	60.11	5.29	6.42	0.0039	12857	60.00	12.71	59.96	11.10
SWALE_PNR_N-8	BASE	25yr72hr	60.02	6.52	6.50	0.0004	14010	59.94	3.55	0.00	0.00

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100yr24hr	NW 22ND-1	BASE	12.27	14.78	11.385	79764
100yr24hr	PNR_BB-E1L	BASE	12.27	8.42	13.495	50948
100yr24hr	PNR_BB-E1R	BASE	12.27	10.03	13.495	60746
100yr24hr	PNR_BB-E2L	BASE	12.27	3.08	13.495	18616
100yr24hr	PNR_BB-E2R	BASE	12.27	6.64	13.495	40171
100yr24hr	PNR_BB-E3	BASE	12.27	1.38	13.495	8328
100yr24hr	PNR_BB-W1	BASE	13.00	50.22	13.249	870483
100yr24hr	PNR_BB-W2	BASE	12.27	2.10	13.495	12737
100yr24hr	PNR_N-1A	BASE	12.27	4.25	11.568	23096
100yr24hr	PNR_N-1B	BASE	12.27	4.35	12.965	25414
100yr24hr	PNR_N-1C	BASE	12.27	0.81	13.495	4899
100yr24hr	PNR_N-2	BASE	12.27	15.57	12.719	89567
100yr24hr	PNR_N-3	BASE	12.27	6.22	11.438	33632
100yr24hr	PNR_N-4	BASE	12.27	2.98	12.980	17433
100yr24hr	PNR_N-5	BASE	12.27	37.86	11.720	207192
100yr24hr	PNR_N-6	BASE	12.27	8.23	13.025	48228
100yr24hr	PNR_N-7	BASE	12.27	1.67	8.960	8457
100yr24hr	PNR_N-8	BASE	12.27	4.33	7.021	21407
100yr24hr	PNR_S-1A	BASE	12.27	0.40	13.495	2449
100yr24hr	PNR_S-1B	BASE	12.27	2.91	10.884	15409
100yr24hr	PNR_S-1C	BASE	12.27	7.49	10.339	39033
100yr24hr	PNR_S-2A	BASE	12.27	2.21	9.057	11178
100yr24hr	PNR_S-2B	BASE	12.27	14.44	12.103	80396
100yr24hr	PNR_S-2C	BASE	12.27	1.85	11.476	9998
100yr24hr	PNR_S-2D	BASE	12.27	9.23	12.379	52124
100yr24hr	PNR_S-3	BASE	12.27	8.35	11.406	45129
100yr24hr	PNR_S-3_Offsite	BASE	12.27	26.03	10.280	135458
100yr24hr	PNR_S-4	BASE	12.27	13.36	12.004	74078
100yr24hr	PNR_S-4_Offsite	BASE	12.27	14.96	8.710	75245
100yr24hr	PNR_S-5	BASE	12.27	16.53	12.719	95107
100yr24hr	PNR_S-6	BASE	12.27	21.60	11.541	117307
10yr24hr	NW 22ND-1	BASE	12.27	9.06	6.756	47329
10yr24hr	PNR_BB-E1L	BASE	12.27	5.45	8.747	33022
10yr24hr	PNR_BB-E1R	BASE	12.27	6.50	8.747	39372
10yr24hr	PNR_BB-E2L	BASE	12.27	1.99	8.747	12066
10yr24hr	PNR_BB-E2R	BASE	12.27	4.30	8.747	26037
10yr24hr	PNR_BB-E3	BASE	12.27	0.89	8.747	5398
10yr24hr	PNR_BB-W1	BASE	13.00	32.48	8.504	558722
10yr24hr	PNR_BB-W2	BASE	12.27	1.36	8.747	8255
10yr24hr	PNR_N-1A	BASE	12.27	2.62	6.919	13815
10yr24hr	PNR_N-1B	BASE	12.27	2.81	8.224	16121
10yr24hr	PNR_N-1C	BASE	12.27	0.52	8.747	3175
10yr24hr	PNR_N-2	BASE	12.27	9.99	7.987	56244
10yr24hr	PNR_N-3	BASE	12.27	3.82	6.803	20003
10yr24hr	PNR_N-4	BASE	12.27	1.92	8.239	11065
10yr24hr	PNR_N-5	BASE	12.27	23.53	7.057	124746
10yr24hr	PNR_N-6	BASE	12.27	5.31	8.283	30669
10yr24hr	PNR_N-7	BASE	12.27	0.90	4.736	4470
10yr24hr	PNR_N-8	BASE	12.29	2.03	3.308	10088
10yr24hr	PNR_S-1A	BASE	12.27	0.26	8.747	1588
10yr24hr	PNR_S-1B	BASE	12.27	1.74	6.316	8941
10yr24hr	PNR_S-1C	BASE	12.27	4.37	5.851	22090
10yr24hr	PNR_S-2A	BASE	12.27	1.20	4.811	5938
10yr24hr	PNR_S-2B	BASE	12.27	9.10	7.407	49202
10yr24hr	PNR_S-2C	BASE	12.27	1.14	6.837	5956
10yr24hr	PNR_S-2D	BASE	12.27	5.87	7.664	32273
10yr24hr	PNR_S-3	BASE	12.27	5.13	6.774	26802
10yr24hr	PNR_S-3_Offsite	BASE	12.27	15.14	5.802	76447
10yr24hr	PNR_S-4	BASE	12.27	8.39	7.316	45146

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BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
10yr24hr	PNR_S-4_Offsite	BASE	12.27	7.95	4.542	39244
10yr24hr	PNR_S-5	BASE	12.27	10.61	7.987	59723
10yr24hr	PNR_S-6	BASE	12.27	13.33	6.895	70083
25yr72hr	NW 22ND-1	BASE	60.02	11.58	11.877	83206
25yr72hr	PNR_BB-E1L	BASE	60.02	6.47	13.995	52834
25yr72hr	PNR_BB-E1R	BASE	60.02	7.71	13.995	62995
25yr72hr	PNR_BB-E2L	BASE	60.02	2.36	13.995	19305
25yr72hr	PNR_BB-E2R	BASE	60.02	5.10	13.995	41658
25yr72hr	PNR_BB-E3	BASE	60.02	1.06	13.995	8636
25yr72hr	PNR_BB-W1	BASE	60.75	37.80	13.738	902627
25yr72hr	PNR_BB-W2	BASE	60.02	1.62	13.995	13209
25yr72hr	PNR_N-1A	BASE	60.02	3.32	12.061	24080
25yr72hr	PNR_N-1B	BASE	60.02	3.35	13.464	26392
25yr72hr	PNR_N-1C	BASE	60.02	0.62	13.995	5080
25yr72hr	PNR_N-2	BASE	60.02	12.00	13.217	93078
25yr72hr	PNR_N-3	BASE	60.02	4.87	11.930	35078
25yr72hr	PNR_N-4	BASE	60.02	2.30	13.479	18103
25yr72hr	PNR_N-5	BASE	60.02	29.52	12.214	215922
25yr72hr	PNR_N-6	BASE	60.02	6.33	13.525	50077
25yr72hr	PNR_N-7	BASE	60.02	1.38	9.421	8892
25yr72hr	PNR_N-8	BASE	60.02	3.78	7.439	22684
25yr72hr	PNR_S-1A	BASE	60.02	0.31	13.995	2540
25yr72hr	PNR_S-1B	BASE	60.02	2.30	11.371	16098
25yr72hr	PNR_S-1C	BASE	60.02	5.98	10.820	40849
25yr72hr	PNR_S-2A	BASE	60.02	1.82	9.519	11748
25yr72hr	PNR_S-2B	BASE	60.02	11.20	12.599	83691
25yr72hr	PNR_S-2C	BASE	60.02	1.44	11.968	10427
25yr72hr	PNR_S-2D	BASE	60.02	7.14	12.876	54219
25yr72hr	PNR_S-3	BASE	60.02	6.55	11.897	47074
25yr72hr	PNR_S-3_Offsite	BASE	60.02	20.83	10.760	141787
25yr72hr	PNR_S-4	BASE	60.02	10.38	12.500	77136
25yr72hr	PNR_S-4_Offsite	BASE	60.02	12.43	9.166	79185
25yr72hr	PNR_S-5	BASE	60.02	12.74	13.217	98835
25yr72hr	PNR_S-6	BASE	60.02	16.89	12.034	122313

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 Basins =====
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Name: NW 22ND-1 Node: STRUCT. NW 22ND Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 1.930 Time Shift(hrs): 0.00
 Curve Number: 83.51 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR BB-E1L Node: POND PNR_N-7 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 1.040 Time Shift(hrs): 0.00
 Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR BB-E1R Node: POND PNR_S-2C Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 1.240 Time Shift(hrs): 0.00
 Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR BB-E2L Node: POND PNR_N-7 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 0.380 Time Shift(hrs): 0.00
 Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR BB-E2R Node: POND PNR_S-2C Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 0.820 Time Shift(hrs): 0.00
 Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR BB-E3 Node: STRUCT. BB_W-1 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 0.170 Time Shift(hrs): 0.00
 Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR BB-W1 Node: STRUCT. BB_W-1 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

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 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 80.00
Area(ac): 18.100	Time Shift(hrs): 0.00
Curve Number: 98.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Basin includes:

- 1) Broward Blvd from east of SW 28 Terr. to NW 22nd Avenue (approximately 3,300 ft of 100-ft R/W)
- 2) Riverland Road from Davie Blvd. to north of NW 1st Street (approximately 6,100 ft of 75-ft R/W)

Name: PNR_BB-W2	Node: STRUCT. BB W-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.260	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: PNR N-1A	Node: CS-PNR N-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.550	Time Shift(hrs): 0.00
Curve Number: 84.86	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: PNR N-1B	Node: CS-PNR N-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.540	Time Shift(hrs): 0.00
Curve Number: 95.65	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: PNR N-1C	Node: CS-PNR N-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.100	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: PNR N-2	Node: POND PNR N-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.940	Time Shift(hrs): 0.00
Curve Number: 93.68	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: PNR N-3	Node: STRUCT. PNR N-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.810	Time Shift(hrs): 0.00

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Curve Number: 83.90 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR N-4 Node: STRUCT. PNR N-4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.370 Time Shift(hrs): 0.00
Curve Number: 95.77 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR N-5 Node: POND PNR N-5 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 4.870 Time Shift(hrs): 0.00
Curve Number: 85.99 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR N-6 Node: POND PNR N-5 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.020 Time Shift(hrs): 0.00
Curve Number: 96.14 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR N-7 Node: POND PNR N-7 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.260 Time Shift(hrs): 0.00
Curve Number: 66.89 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR N-8 Node: SWALE PNR N-8 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.840 Time Shift(hrs): 0.00
Curve Number: 55.01 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR S-1A Node: POND PNR S-3A Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.050 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: PNR S-1B Node: POND PNR S-3A Status: Onsite

Group: BASE	Type: SCS Unit Hydrograph CN
Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.390	Time Shift(hrs): 0.00
Curve Number: 79.89	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: PNR_S-1C	Node: POND PNR_S-3A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.040	Time Shift(hrs): 0.00	
Curve Number: 76.07	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-2A	Node: STRUCT. PNR_S-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.340	Time Shift(hrs): 0.00	
Curve Number: 67.51	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-2B	Node: STRUCT. PNR_S-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.830	Time Shift(hrs): 0.00	
Curve Number: 88.88	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-2C	Node: POND PNR_S-2C	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.240	Time Shift(hrs): 0.00	
Curve Number: 84.18	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-2D	Node: POND PNR_S-3A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.160	Time Shift(hrs): 0.00	
Curve Number: 91.01	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: PNR_S-3	Node: POND PNR_S-3B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.090	Time Shift(hrs): 0.00	
Curve Number: 83.66	Max Allowable Q(cfs): 999999.000	

DCIA(%): 0.00

Name: PNR_S-3_Offsite Node: POND_PNR_S-3B Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 3.630 Time Shift(hrs): 0.00
 Curve Number: 75.66 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR_S-4 Node: STRUCT_PNR_S-4 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 1.700 Time Shift(hrs): 0.00
 Curve Number: 88.13 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR_S-4_Offsite Node: STRUCT_PNR_S-4 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 2.380 Time Shift(hrs): 0.00
 Curve Number: 65.29 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR_S-5 Node: STRUCT_PNR_S-5 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 2.060 Time Shift(hrs): 0.00
 Curve Number: 93.68 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

Name: PNR_S-6 Node: CS-PNR_S-6_1 Status: Onsite
 Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
 Rainfall File: Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
 Area(ac): 2.800 Time Shift(hrs): 0.00
 Curve Number: 84.66 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

==== Nodes =====

Name: CS-PNR_N-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.720
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-66
 PARKING LOT SURFACE STAGE-AREA RELATIONSHIP BASED ON DTM CONTOURS
 (PNR_N-1A, PNR_N-1B, & PNR_N-1C)

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Stage(ft)	Area(ac)
-1.380	0.0006
-0.890	0.0006
-0.880	0.1000
4.000	0.1000
4.120	0.1000
4.130	0.1000
5.720	0.0006
6.000	0.6500
7.000	1.1200

Name: CS-PNR_S-6_1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.170
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-17 (UPSTREAM OF WEIR)

Stage(ft)	Area(ac)
0.420	0.0622
0.510	0.0622
0.520	0.0622
4.570	0.0622
4.580	0.0008
6.170	0.0008
7.000	0.1300
7.500	0.3200
8.000	1.1300

Name: CS-PNR_S-6_2 Base Flow(cfs): 0.000 Init Stage(ft): 0.520
 Group: BASE Warn Stage(ft): 6.170
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-17 (DOWNSTREAM OF WEIR)

Stage(ft)	Area(ac)
0.520	0.0001
6.170	0.0001

Name: GW N-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

Name: GW N-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

Name: GW N-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

0.00 0.420
 100.00 0.420

 Name: GW_S-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs) Stage(ft)

 0.00 0.420
 100.00 0.420

 Name: GW_S-2C Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs) Stage(ft)

 0.00 0.420
 100.00 0.420

 Name: GW_S-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs) Stage(ft)

 0.00 0.420
 100.00 0.420

 Name: GW_S-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs) Stage(ft)

 0.00 0.420
 100.00 0.420

 Name: GW_S-6 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs) Stage(ft)

 0.00 0.420
 100.00 0.420

 Name: NFNR Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.420
 Type: Time/Stage

Time(hrs) Stage(ft)

 0.00 0.420
 100.00 0.420

 Name: POND_PNR_N-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.500
 Group: BASE Warn Stage(ft): 6.000
 Type: Stage/Area

WARNING STAGE = TOP OF BANK
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496

Stage (ft) Area(ac)

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

0.500	0.0001
1.000	0.0012
1.500	0.0089
2.000	0.0156
2.500	0.0247
3.000	0.0320
3.500	0.0398
4.000	0.0476
4.500	0.0557
5.000	0.0645
5.500	0.0749
6.000	0.5100
7.000	1.9400

Name: POND_PNR_N-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.000
 Type: Stage/Area

WARNING STAGE = TOP OF BANK
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 Existing and Proposed French Drain area included in stage-area

Stage(ft)	Area(ac)
-6.380	0.0142
-1.190	0.0142
-1.180	0.2366
0.490	0.2366
0.500	0.2415
1.000	0.3294
1.500	0.3684
2.000	0.3899
2.500	0.4101
3.000	0.4286
3.500	0.4468
3.620	0.4512
3.630	0.2164
4.000	0.2299
4.500	0.2488
5.000	0.2685
5.220	0.2788
5.500	0.2904
6.000	2.3100
7.000	3.8900

Name: POND_PNR_N-7 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

WARNING STAGE = TOP OF BANK
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 MODIFIED

Stage(ft)	Area(ac)
-2.500	0.0001
1.410	0.0001
1.420	0.0854
2.000	0.0965
3.000	0.1172
4.000	0.1406
5.000	0.1698
5.500	0.1891

Name: POND_PNR_S-2C Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.500
 Type: Stage/Area

WARNING STAGE = TOP OF BANK

Stage(ft)	Area(ac)
-2.500	0.0001
1.410	0.0001
1.420	0.0623
2.000	0.0786
3.000	0.1068
4.000	0.1349
5.000	0.1630
5.500	0.1771

```
-----
Name: POND_PNR_S-3A      Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 5.000
Type: Stage/Area
```

WARNING STAGE = TOP OF BANK

MODIFIED POND_PNR_S-3

Stage(ft)	Area(ac)
-2.880	0.0003
1.410	0.0003
1.420	0.1100
2.000	0.1278
2.500	0.1400
3.000	0.1585
3.500	0.1739
4.000	0.1893
4.500	0.2046
5.000	0.2200

```
-----
Name: POND_PNR_S-3B      Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 5.000
Type: Stage/Area
```

WARNING STAGE = TOP OF BANK

MODIFIED POND_PNR_S-3

Stage(ft)	Area(ac)
-2.880	0.0003
-0.890	0.0003
-0.880	0.1174
1.410	0.1174
1.420	0.1200
2.000	0.1346
2.500	0.1500
3.000	0.1597
3.500	0.1723
4.000	0.1849
4.500	0.1974
5.000	0.2100

```
-----
Name: STRUCT_BB_W-1      Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 4.500
Type: Stage/Area
```

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE

STATE PROJ. NO. 86070-3496
 S-70

Stage(ft)	Area(ac)
-5.360	0.0001
4.500	0.0001

```
-----
Name: STRUCT_NW_22ND     Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 3.000
Type: Stage/Area
```

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE OF LOWEST INLET

Stage(ft)	Area(ac)
-5.360	0.0001
3.000	0.0001
3.500	0.2500
4.000	0.7500
4.500	1.5200
5.000	1.7800
6.000	1.8500
7.000	1.8800

```
-----
Name: STRUCT_PNR_N-3     Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 5.720
```


Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-55

Stage(ft)	Area(ac)
-5.880	0.0142
-0.890	0.0142
-0.880	0.0788
2.010	0.0788
2.020	0.0792
4.120	0.0792
4.130	0.0004
5.720	0.0004
6.000	0.1700
7.000	0.8100

Name: STRUCT. PNR_N-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.350
 Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-54

Stage(ft)	Area(ac)
-2.780	0.0001
5.350	0.0001
6.000	0.1600
7.000	0.3700

Name: STRUCT. PNR_O-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.900
 Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-66

Stage(ft)	Area(ac)
-3.080	0.0001
5.900	0.0001

Name: STRUCT. PNR_O-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.000
 Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = ASSUMED (NO DTM COVERAGE)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-54A

Stage(ft)	Area(ac)
-3.080	0.0001
7.000	0.0001

Name: STRUCT. PNR_S-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.020
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496

Stage(ft)	Area(ac)
-6.580	0.0269

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-0.890	0.0269
-0.880	0.0573
0.490	0.0573
0.500	0.0573
3.420	0.0573
3.430	0.0017
4.000	0.0072
5.000	1.0217
5.020	1.0217
6.000	2.9900
7.000	2.9900

Name: STRUCT. PNR_S-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.500
 Group: BASE Warn Stage(ft): 4.500
 Type: Stage/Area

WARNING STAGE (BASED ON DTM ELEVATION) = RIM / GRATE / TOP OF STRUCTURE
 ON SW 21ST TERRACE
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-22

Stage(ft)	Area(ac)
0.500	0.0001
4.490	0.0001
4.500	0.0400
5.000	0.4900

Name: STRUCT. PNR_S-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.420
 Type: Stage/Area

WARNING STAGE = LOWEST ROADWAY / PARKING LOT ELEVATION (WITHIN PARKING LOT)
 (PER PERMIT CALCULATIONS)
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12
 STATE PROJ. NO. 86070-3496
 S-14

Stage(ft)	Area(ac)
-0.580	0.0129
2.410	0.0129
2.420	0.0133
4.920	0.0133
4.930	0.0004
5.000	0.1604
6.000	0.6304
6.420	0.7816
6.430	0.7848
7.000	0.9900
8.000	1.5400

Name: SWALE PNR_N-8 Base Flow(cfs): 0.000 Init Stage(ft): 5.000
 Group: BASE Warn Stage(ft): 6.500
 Type: Stage/Area

WARNING STAGE = TOP OF BERM BETWEEN SWALE & PARK N RIDE PARKING LOT
 SFWMD PERMIT NO. 06-01469-S, APPLICATION NO. 901109-12

Stage(ft)	Area(ac)
5.000	0.0800
6.000	0.1300
7.000	0.5000

=====
 === Cross Sections ===
 =====

Name: OW_BB-E_BB-W Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	18.270	0.020000
7.000	19.000	0.020000
15.000	19.000	0.020000
31.000	19.500	0.020000
54.000	20.000	0.020000

 Name: OW_CS S-6_S-1 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
-106.000	8.000	0.020000
-97.000	7.500	0.020000
-74.000	7.000	0.020000
-58.000	7.000	0.020000
-26.000	6.500	0.020000
-17.000	6.000	0.020000
0.000	6.000	0.020000
6.000	6.000	0.020000
26.000	6.500	0.020000
31.000	6.500	0.020000
33.000	7.000	0.020000
50.000	7.500	0.020000
75.000	8.000	0.020000

 Name: OW_N-1_22AVE Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.000	0.020000
98.000	4.000	0.020000
209.000	4.500	0.020000
373.000	5.000	0.020000
402.000	5.500	0.020000
426.000	6.000	0.020000
449.000	6.500	0.020000
470.000	7.000	0.020000

 Name: OW_N-4_N-5 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	6.250	0.020000
12.000	6.500	0.020000
122.000	6.500	0.020000
134.000	6.000	0.020000
148.000	6.000	0.020000
149.000	6.500	0.020000
270.000	6.500	0.020000
307.000	7.000	0.020000
334.000	7.000	0.020000

 Name: OW_N-6_N-5 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	6.500	0.020000
215.000	6.500	0.020000
234.000	6.000	0.020000
254.000	6.500	0.020000
447.000	6.500	0.020000
448.000	7.000	0.020000
684.000	7.000	0.020000

 Name: OW_N-6_N-7 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	7.000	0.020000
157.000	7.000	0.020000
158.000	6.500	0.020000

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197.000 6.500 0.020000

Name: OW_N-7_BB-W Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	5.000	0.020000
75.000	5.500	0.020000
103.000	6.000	0.020000
126.000	6.500	0.020000
136.000	7.000	0.020000

Name: OW_S-1_S-2 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	8.500	0.020000
11.000	8.500	0.020000
17.000	8.000	0.020000
19.000	7.500	0.020000
24.000	7.000	0.020000
27.000	6.500	0.020000
68.000	6.000	0.020000
97.000	6.000	0.020000

Name: OW_S-1_S-3 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	5.500	0.020000
120.000	5.500	0.020000
121.000	6.000	0.020000
161.000	6.000	0.020000
162.000	6.500	0.020000
198.000	7.000	0.020000
217.000	7.500	0.020000
232.000	8.000	0.020000

Name: OW_S-1_S-4 Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	7.500	0.020000
2.000	7.500	0.020000
15.000	8.000	0.020000
29.000	8.500	0.020000
33.000	9.000	0.020000
37.000	9.500	0.020000
48.000	9.500	0.020000
58.000	10.000	0.020000

Name: OW_S-2_BB-W Group: BASE
 Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.500	0.020000
10.000	4.500	0.020000
15.000	4.000	0.020000
35.000	4.000	0.020000
65.000	4.500	0.020000
101.000	5.000	0.020000
132.000	5.500	0.020000
150.000	6.000	0.020000
160.000	6.000	0.020000

Name: OW_S-2_S-3 Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.500	0.020000
5.000	4.500	0.020000
9.000	5.000	0.020000
12.000	5.500	0.020000
57.000	5.500	0.020000
60.000	6.000	0.020000
70.000	6.000	0.020000
74.000	5.500	0.020000
184.000	5.000	0.020000
223.000	5.000	0.020000
239.000	5.500	0.020000
510.000	5.500	0.020000

Name: OW_S-5_CS S-6 Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	7.500	0.020000
16.000	7.500	0.020000
24.000	8.000	0.020000
43.000	8.000	0.020000
68.000	7.500	0.020000
77.000	7.000	0.020000
78.000	7.000	0.020000
80.000	8.000	0.020000
348.000	7.500	0.020000
362.000	8.000	0.020000
369.000	8.500	0.020000
650.000	8.500	0.020000
785.000	8.000	0.020000
859.000	7.500	0.020000
914.000	7.000	0.020000
945.000	6.500	0.020000
958.000	6.500	0.020000
962.000	7.000	0.020000
969.000	7.500	0.020000
982.000	7.500	0.020000
994.000	8.000	0.020000
1008.000	8.500	0.020000
1031.000	8.500	0.020000

Name: OW_S-5_S-4 Group: BASE
Encroachment: No

Station(ft)	Elevation(ft)	Manning's N
0.000	4.500	0.020000
6.000	5.000	0.020000
37.000	5.500	0.020000
55.000	5.000	0.020000

=====
==== Operating Tables =====
=====

Name: ExTr #1 Group: BASE
Type: Rating Curve
Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.42	0.85
0.420	4.57	1.63
0.420	6.17	2.89
0.420	6.67	3.28

Name: ExTr #10 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.42	0.29
0.420	4.92	0.57
0.420	6.42	0.90
0.420	6.92	1.00

Name: ExTr #2 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.42	0.98
0.420	5.02	1.79
0.420	5.52	2.04

Name: ExTr #3 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.07
0.420	3.62	0.14
0.420	5.22	0.25
0.420	5.72	0.28

Name: ExTr #4 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.04
0.420	3.62	0.08
0.420	5.22	0.14
0.420	5.72	0.16

Name: ExTr #5 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.08
0.420	3.62	0.15
0.420	5.22	0.27
0.420	5.72	0.30

Name: ExTr #6 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.07
0.420	3.62	0.13

0.420	5.22	0.23
0.420	5.72	0.27

Name: ExTr #7 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.03
0.420	3.62	0.06
0.420	5.22	0.11
0.420	5.72	0.12

Name: ExTr #8 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.08
0.420	4.12	0.19
0.420	5.72	0.32
0.420	6.22	0.36

Name: ExTr #9 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	1.72	0.06
0.420	4.12	0.29
0.420	5.72	0.49
0.420	6.22	0.55

Name: ExTr_RvrBnd Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

EXFILTRAITION TRENCH INFORMATION OBTAINED FROM:
 BRIDGE RIVERBEND PROJECT - DRAINAGE CALCULATIONS
 PREPARED BY FLYNN ENGINEERING
 SFWMD PERMIT PENDING

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.75	1.47
0.420	3.00	1.72
0.420	4.00	2.70
0.420	4.50	3.19
0.420	6.50	5.16

Name: PrTr #1 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.42	0.97
0.420	5.02	1.58
0.420	5.52	1.77

Name: PrTr #2 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	0.82
0.420	4.12	1.62
0.420	5.72	2.47
0.420	6.22	2.74

Name: PrTr #3 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	2.50	1.68
0.420	3.62	2.76
0.420	5.22	4.41
0.420	5.72	4.92

Name: PrTr #4 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.42	0.76
0.420	3.65	0.83
0.420	5.02	1.24
0.420	5.52	1.38

Name: PrTr #5 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.42	1.74
0.420	5.02	3.16
0.420	5.52	3.61

==== Pipes =====

Name: P_BBW-1_22ND-1	From Node: STRUCT. BB_W-1	Length(ft): 365.00
Group: BASE	To Node: STRUCT. NW_22ND	Count: 1
	Friction Equation: Automatic	
	Solution Algorithm: Most Restrictive	
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 72.00	72.00	Exit Loss Coef: 0.50
Rise(in): 72.00	72.00	Bend Loss Coef: 0.00
Invert(ft): -5.360	-5.360	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.012000	0.012000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_CS S-6_N-4	From Node: CS-PNR_S-6_2	Length(ft): 750.00
Group: BASE	To Node: STRUCT. PNR_N-4	Count: 1
	Friction Equation: Automatic	

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UPSTREAM	DOWNSTREAM	Solution Algorithm:	Most Restrictive
Geometry: Circular	Circular	Flow:	Both
Span(in): 36.00	36.00	Entrance Loss Coef:	0.50
Rise(in): 36.00	36.00	Exit Loss Coef:	0.50
Invert(ft): 0.520	-2.780	Bend Loss Coef:	0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec:	Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec:	Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_N-2_N-5	From Node: POND_PNR_N-2	Length(ft): 88.00
Group: BASE	To Node: POND_PNR_N-5	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.50
Invert(ft): 0.500	0.500	Exit Loss Coef: 0.50
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_N-3_N-2	From Node: STRUCT_PNR_N-3	Length(ft): 276.00
Group: BASE	To Node: POND_PNR_N-2	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.50
Invert(ft): 2.020	1.500	Exit Loss Coef: 0.50
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: P_N-4_O-2	From Node: STRUCT_PNR_N-4	Length(ft): 133.00
Group: BASE	To Node: STRUCT_PNR_O-2	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 60.00	60.00	Flow: Both
Rise(in): 60.00	60.00	Entrance Loss Coef: 0.50
Invert(ft): -2.780	-2.780	Exit Loss Coef: 0.50
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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-----
Name: P_O-1_NFNR      From Node: STRUCT. PNR_O-1  Length(ft): 600.00
Group: BASE          To Node: NFNR                Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
UPSTREAM      DOWNSTREAM
Geometry: Circular      Circular
Span(in): 60.00        60.00
Rise(in): 60.00        60.00
Invert(ft): -3.080     -3.980
Manning's N: 0.012000  0.012000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
                                     Entrance Loss Coef: 0.50
                                     Exit Loss Coef: 1.00
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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-----
Name: P_O-2_O-1      From Node: STRUCT. PNR_O-2  Length(ft): 300.00
Group: BASE          To Node: STRUCT. PNR_O-1  Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
UPSTREAM      DOWNSTREAM
Geometry: Circular      Circular
Span(in): 60.00        60.00
Rise(in): 60.00        60.00
Invert(ft): -2.570     -3.080
Manning's N: 0.012000  0.012000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
                                     Entrance Loss Coef: 0.50
                                     Exit Loss Coef: 0.50
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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-----
Name: P_O-BB_NFNR    From Node: STRUCT. NW 22ND  Length(ft): 700.00
Group: BASE          To Node: NFNR                Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
UPSTREAM      DOWNSTREAM
Geometry: Circular      Circular
Span(in): 72.00        72.00
Rise(in): 72.00        72.00
Invert(ft): -5.360     -6.000
Manning's N: 0.012000  0.012000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
                                     Entrance Loss Coef: 0.50
                                     Exit Loss Coef: 1.00
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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-----
Name: P_PrTR#2       From Node: STRUCT. PNR N-3  Length(ft): 290.00
Group: BASE          To Node: POND PNR_N-5      Count: 1
                                     Friction Equation: Automatic
                                     Solution Algorithm: Most Restrictive
                                     Flow: Both
UPSTREAM      DOWNSTREAM
Geometry: Circular      Circular
Span(in): 24.00        24.00
Rise(in): 24.00        24.00
Invert(ft): 1.370      1.370
Manning's N: 0.012000  0.012000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
                                     Entrance Loss Coef: 0.50
                                     Exit Loss Coef: 0.50
                                     Bend Loss Coef: 0.00
                                     Outlet Ctrl Spec: Use dc or tw
                                     Inlet Ctrl Spec: Use dc
                                     Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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-----
Name: P_PrTR#3          From Node: POND_PNR_N-2      Length(ft): 290.00
Group: BASE            To Node: POND_PNR_N-5      Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 24.00       24.00
Rise(in): 24.00       24.00
Invert(ft): 0.870     0.870
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

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-----
Name: P_S-2C_N-7       From Node: POND_PNR_S-2C    Length(ft): 180.00
Group: BASE            To Node: POND_PNR_N-7      Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 30.00       30.00
Rise(in): 30.00       30.00
Invert(ft): -2.500    -2.500
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

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Name: P_S-3A_S-3B     From Node: POND_PNR_S-3A    Length(ft): 85.00
Group: BASE            To Node: POND_PNR_S-3B    Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 36.00       36.00
Rise(in): 36.00       36.00
Invert(ft): -2.880    -2.880
Manning's N: 0.012000 0.012000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
                        Entrance Loss Coef: 0.50
                        Exit Loss Coef: 0.50
                        Bend Loss Coef: 0.00
                        Outlet Ctrl Spec: Use dc or tw
                        Inlet Ctrl Spec: Use dc
                        Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: P_S-4_S-3       From Node: STRUCT_PNR_S-4   Length(ft): 80.00
Group: BASE            To Node: POND_PNR_S-3B    Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
  
```

I-95 AT BROWARD BOULEVARD PD&E STUDY
DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Span(in): 18.00	18.00	Entrance Loss Coef: 0.50
Rise(in): 18.00	18.00	Exit Loss Coef: 0.50
Invert(ft): 0.500	0.000	Bend Loss Coef: 0.00
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: P_S-5_CS S-6	From Node: STRUCT. PNR_S-5	Length(ft): 750.00
Group: BASE	To Node: CS-PNR_S-6_1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.50
Invert(ft): 2.420	1.420	Exit Loss Coef: 0.50
Manning's N: 0.012000	0.012000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==== Drop Structures =====

Name: CS-PNR_N-1	From Node: CS-PNR_N-1	Length(ft): 140.00
Group: BASE	To Node: STRUCT. PNR_O-1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 42.00	42.00	Flow: Both
Rise(in): 42.00	42.00	Entrance Loss Coef: 0.500
Invert(ft): -1.380	-3.080	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

STATE PROJ. NO. 86070-3496
S-65

*** Weir 1 of 1 for Drop Structure CS-PNR_N-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 72.00	Invert(ft): 1.720	
Rise(in): 14.64	Control Elev(ft): 1.720	

Name: CS-PNR_N-5	From Node: POND PNR_N-5	Length(ft): 155.00
Group: BASE	To Node: STRUCT. PNR_N-4	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.500
Invert(ft): -2.780	-2.780	Exit Loss Coef: 0.500

I-95 AT BROWARD BOULEVARD PD&E STUDY
 DRAINAGE SYSTEM BROWARD BLVD & PARK-N-RIDE
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Manning's N: 0.012000 0.012000 Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

STATE PROJ. NO. 86070-3496
 S-53 (NOT CONSTRUCTED PER PLAN - NEED SURVEY TO VERIFY STRUCTURE ELEVATIONS)
 ASSUMED GRATE / CONTROL ELEVATION BY VISUAL INSPECTION (GOOGLE EARTH & EXISTING CONTOURS)

*** Weir 1 of 1 for Drop Structure CS-PNR_N-5 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Horizontal Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600
 Span(in): 54.00 Invert(ft): 2.500
 Rise(in): 36.00 Control Elev(ft): 2.500

Name: CS-PNR_S-2 From Node: STRUCT. PNR_S-2 Length(ft): 85.00
 Group: BASE To Node: STRUCT. BB_W-1 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft): 0.780	0.000	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

STATE PROJ. NO. 86070-3496
 S-74
 DOWNSTREAM INVERT ASSUMED

*** Weir 1 of 1 for Drop Structure CS-PNR_S-2 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600
 Span(in): 60.00 Invert(ft): 3.420
 Rise(in): 10.00 Control Elev(ft): 3.420

Name: CS-PNR_S-3 From Node: POND PNR_S-3B Length(ft): 77.00
 Group: BASE To Node: CS-PNR_S-6_2 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.500
Invert(ft): 0.720	0.520	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure CS-PNR_S-3 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Horizontal Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200

Geometry: Rectangular Orifice Disc Coef: 0.600
 Span(in): 36.00 Invert(ft): 2.500
 Rise(in): 54.00 Control Elev(ft): 2.500

Name: CS N-7 From Node: POND_PNR_N-7 Length(ft): 255.00
 Group: BASE To Node: STRUCT_BB_W-1 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.500
Invert(ft): -0.650	-5.360	Exit Loss Coef: 0.500
Manning's N: 0.012000	0.012000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure CS_N-7 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 3.650	
Rise(in): 36.00	Control Elev(ft): 3.650	

*** Weir 2 of 2 for Drop Structure CS_N-7 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 3.00	Invert(ft): 0.420	
Rise(in): 3.00	Control Elev(ft): 0.420	

==== Weirs =====

Name: OW_BB-W_22AVE From Node: STRUCT_BB_W-1
 Group: BASE To Node: STRUCT_NW_22ND
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Rectangular

Span(in): 540.00
 Rise(in): 9999.00
 Invert(ft): 5.000
 Control Elevation(ft): 5.000

Bottom Clip(in): 0.000	TABLE
Top Clip(in): 0.000	
Weir Discharge Coef: 3.200	
Orifice Discharge Coef: 0.600	

Name: OW_CS S-6_S-1 From Node: CS-PNR S-6_1
 Group: BASE To Node: POND_PNR_S-3A
 Flow: Both Count: 1
 Type: Vertical: Paved Geometry: Irregular

XSec: OW_CS S-6_S-1
 Invert(ft): 6.000
 Control Elevation(ft): 6.000
 Struct Opening Dim(ft): 9999.00

Bottom Clip(ft): 0.000	TABLE
Top Clip(ft): 0.000	
Weir Discharge Coef: 3.200	
Orifice Discharge Coef: 0.600	

Name: OW N-1_22AVE From Node: CS-PNR N-1
Group: BASE To Node: STRUCT_ NW 22ND
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW N-1_22AVE
 Invert(ft): 4.000
Control Elevation(ft): 4.000
Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW N-1_N-2 From Node: CS-PNR N-1
Group: BASE To Node: POND_PNR_N-2
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

 Span(in): 2556.00
 Rise(in): 9999.00
 Invert(ft): 6.500
Control Elevation(ft): 6.500

TABLE

 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW N-1_N-4 From Node: CS-PNR N-1
Group: BASE To Node: STRUCT_ PNR_N-4
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

 Span(in): 768.00
 Rise(in): 9999.00
 Invert(ft): 6.250
Control Elevation(ft): 6.250

TABLE

 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW N-1_N-5 From Node: CS-PNR N-1
Group: BASE To Node: POND_PNR_N-5
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

 Span(in): 504.00
 Rise(in): 9999.00
 Invert(ft): 6.000
Control Elevation(ft): 6.000

TABLE

 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW N-1_N-8 From Node: CS-PNR N-1
Group: BASE To Node: SWALE_PNR_N-8
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

 Span(in): 2364.00
 Rise(in): 9999.00
 Invert(ft): 6.500
Control Elevation(ft): 6.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-2_N-5 From Node: POND_PNR_N-2
Group: BASE To Node: POND_PNR_N-5
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in): 3240.00
Rise(in): 9999.00
Invert(ft): 6.000
Control Elevation(ft): 6.000

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-3_N-5 From Node: STRUCT_PNR_N-3
Group: BASE To Node: POND_PNR_N-5
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in): 3540.00
Rise(in): 9999.00
Invert(ft): 6.500
Control Elevation(ft): 6.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-4_N-5 From Node: POND_PNR_N-5
Group: BASE To Node: STRUCT_PNR_N-4
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

XSec: OW_N-4_N-5
Invert(ft): 6.000
Control Elevation(ft): 6.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-4_N-8 From Node: STRUCT_PNR_N-4
Group: BASE To Node: SWALE_PNR_N-8
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

Span(in): 3432.00
Rise(in): 9999.00
Invert(ft): 6.500
Control Elevation(ft): 6.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: OW_N-5_N-7 From Node: POND_PNR_N-5
Group: BASE To Node: POND_PNR_N-7
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

XSec: OW_N-6_N-7
 Invert(ft): 6.500
 Control Elevation(ft): 6.500
 Struct Opening Dim(ft): 9999.00
 TABLE
 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_N-7_BB-W From Node: POND_PNR_N-7
 Group: BASE To Node: STRUCT_BB_W-1
 Flow: Both Count: 1
 Type: Vertical: Paved Geometry: Irregular

XSec: OW_N-7_BB-W
 Invert(ft): 5.000
 Control Elevation(ft): 5.000
 Struct Opening Dim(ft): 9999.00
 TABLE
 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-1_N-4 From Node: POND_PNR_S-3A
 Group: BASE To Node: STRUCT_PNR_N-4
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Rectangular

Span(in): 840.00
 Rise(in): 9999.00
 Invert(ft): 7.000
 Control Elevation(ft): 7.000
 TABLE
 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-1_N-5 From Node: POND_PNR_S-3A
 Group: BASE To Node: POND_PNR_N-5
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Rectangular

Span(in): 720.00
 Rise(in): 9999.00
 Invert(ft): 7.000
 Control Elevation(ft): 7.000
 TABLE
 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-1_S-2 From Node: POND_PNR_S-3A
 Group: BASE To Node: STRUCT_PNR_S-2
 Flow: Both Count: 1
 Type: Vertical: Paved Geometry: Irregular

XSec: OW_S-1_S-2
 Invert(ft): 6.000
 Control Elevation(ft): 6.000
 Struct Opening Dim(ft): 9999.00
 TABLE
 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-1_S-3 From Node: POND_PNR_S-3A
Group: BASE To Node: POND_PNR_S-3B
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-1_S-3
 Invert(ft): 5.500
Control Elevation(ft): 5.500
Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-1_S-4 From Node: POND_PNR_S-3A
Group: BASE To Node: STRUCT_PNR_S-4
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-1_S-4
 Invert(ft): 7.500
Control Elevation(ft): 7.500
Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-2_BB-W From Node: STRUCT_PNR_S-2
Group: BASE To Node: STRUCT_BB_W-1
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Irregular

 XSec: OW_S-2_BB-W
 Invert(ft): 4.500
Control Elevation(ft): 4.500
Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-2_S-3 From Node: STRUCT_PNR_S-2
Group: BASE To Node: STRUCT_PNR_S-4
Flow: Both Count: 1
Type: Vertical: Paved Geometry: Irregular

 XSec: OW_S-2_S-3
 Invert(ft): 4.500
Control Elevation(ft): 4.500
Struct Opening Dim(ft): 9999.00

TABLE

 Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: OW_S-2C_S-2 From Node: POND_PNR_S-2C
Group: BASE To Node: STRUCT_PNR_S-2
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Rectangular

 Span(in): 5760.00
 Rise(in): 9999.00
 Invert(ft): 5.500
Control Elevation(ft): 5.500

TABLE

 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200

Orifice Discharge Coef: 0.600

```

-----
Name: OW_S-3_S-4          From Node: POND_PNR_S-3B
Group: BASE              To Node: STRUCT_PNR_S-4
Flow: Both               Count: 1
Type: Vertical: Fread    Geometry: Rectangular

      Span(in): 756.00
      Rise(in): 9999.00
      Invert(ft): 5.000
Control Elevation(ft): 5.000

                                TABLE

      Bottom Clip(in): 0.000
      Top Clip(in): 0.000
      Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600
  
```

```

-----
Name: OW_S-5_CS_S-6      From Node: STRUCT_PNR_S-5
Group: BASE              To Node: CS-PNR_S-6_1
Flow: Both               Count: 1
Type: Vertical: Paved    Geometry: Irregular

      XSec: OW_S-5_CS_S-6
      Invert(ft): 6.500
Control Elevation(ft): 6.500
Struct Opening Dim(ft): 9999.00

                                TABLE

      Bottom Clip(ft): 0.000
      Top Clip(ft): 0.000
      Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600
  
```

```

-----
Name: OW_S-5_S-4          From Node: STRUCT_PNR_S-5
Group: BASE              To Node: STRUCT_PNR_S-4
Flow: Both               Count: 1
Type: Vertical: Paved    Geometry: Irregular

      XSec: OW_S-5_S-4
      Invert(ft): 4.500
Control Elevation(ft): 4.500
Struct Opening Dim(ft): 9999.00

                                TABLE

      Bottom Clip(ft): 0.000
      Top Clip(ft): 0.000
      Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600
  
```

```

-----
Name: W_CS_S-6           From Node: CS-PNR_S-6_1
Group: BASE              To Node: CS-PNR_S-6_2
Flow: Both               Count: 1
Type: Vertical: Mavis    Geometry: Rectangular

      Span(in): 48.00
      Rise(in): 18.00
      Invert(ft): 3.420
Control Elevation(ft): 3.420

                                TABLE

      Bottom Clip(in): 0.000
      Top Clip(in): 0.000
      Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600
  
```

STATE PROJ. NO. 86070-3496
 S-17
 RISE = 5.50-3.42-6" (TOP SLAB) = (APPROX.) 18"
 SPAN = ASSUMED WIDTH OF BOX (4')

=====
 Rating Curves =====
 =====

Name: ExTr #1 From Node: CS-PNR_S-6_1 Count: 1

Group: BASE To Node: GW_S-6 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: ExTr #1	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #10 From Node: STRUCT. PNR_S-5 Count: 1
 Group: BASE To Node: GW_S-5 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: ExTr #10	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #2 From Node: STRUCT. PNR_S-2 Count: 1
 Group: BASE To Node: GW_S-2 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: ExTr #2	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #3 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: ExTr #3	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #4 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: ExTr #4	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #5 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: ExTr #5	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #6 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: ExTr #6	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #7 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: ExTr #7	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #8 From Node: STRUCT. PNR_N-3 Count: 1
 Group: BASE To Node: GW_N-3 Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: ExTr #8	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: ExTr #9 From Node: CS-PNR_N-1 Count: 1
 Group: BASE To Node: GW_N-1 Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: ExTr #9	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: PrTr #1 From Node: STRUCT. PNR_S-2 Count: 1
 Group: BASE To Node: GW_S-2 Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: PrTr #1	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: PrTr #2 From Node: STRUCT. PNR_N-3 Count: 1
 Group: BASE To Node: GW_N-3 Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: PrTr #2	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: PrTr #3 From Node: POND PNR_N-5 Count: 1
 Group: BASE To Node: GW_N-5 Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: PrTr #3	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: PrTr #4 From Node: POND PNR_S-2C Count: 1
 Group: BASE To Node: GW_S-2C Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: PrTr #4	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: PrTr #5 From Node: POND PNR_S-3A Count: 1
 Group: BASE To Node: GW_S-3 Flow: Both

TABLE	ELEV ON (ft)	ELEV OFF (ft)
#1: PrTr #5	0.430	0.420
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

==== Hydrology Simulations =====

Name: 100yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\Broward Blvd Park-n-Ride\100yr24hr.R32

Override Defaults: Yes
 Storm Duration (hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount (in): 13.50

Time (hrs)	Print Inc (min)
30.000	5.00

Name: 10yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\Broward Blvd Park-n-Ride\10yr24hr.R32

Override Defaults: Yes
 Storm Duration (hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount (in): 8.75

Time (hrs)	Print Inc (min)
30.000	5.00

Name: 25yr72hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\Broward Blvd Park-n-Ride\25yr72hr.R32

Override Defaults: Yes
 Storm Duration (hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount (in): 14.00

Time (hrs)	Print Inc (min)
48.000	15.00
72.000	5.00
84.000	15.00

==== Routing Simulations =====

Name: 100yr24hr Hydrology Sim: 100yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\Broward Blvd Park-n-Ride\100yr24hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z (ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time (hrs): 0.000 End Time (hrs): 30.00
 Min Calc Time (sec): 0.5000 Max Calc Time (sec): 60.0000
 Boundary Stages: Boundary Flows:

Time (hrs)	Print Inc (min)
30.000	5.000

Group	Run
BASE	Yes

Name: 10yr24hr Hydrology Sim: 10yr24hr
 Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\Broward Blvd Park-n-Ride\10yr24hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 30.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
30.000	5.000

Group	Run
BASE	Yes

Name: 25yr72hr Hydrology Sim: 25yr72hr
Filename: X:\P\43551312202_BrowardBlvd_PDE\drainage\ICPR\Post-Development\Broward Blvd Park-n-Ride\25yr72hr.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 84.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
72.000	5.000
84.000	15.000

Group	Run
BASE	Yes



Appendix H
Existing Permits
&
As-Built Plans



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 ENVIRONMENTAL RESOURCE
 PERMIT MODIFICATION NO. 06-01465-S
 DATE ISSUED: OCTOBER 21, 2016**

FORM #0157
 Rev. 07/09

FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 4
PERMITTEE: (SR 9 (1-95) PHASE 3A-1 (SEGMENT 1-1))
 3400 WEST COMMERCIAL BOULEVARD
 FORT LAUDERALE, FL 33309

ORIGINAL PERMIT ISSUED: NOVEMBER 15, 1990

ORIGINAL PROJECT DESCRIPTION: ORIGINAL PERMIT ISSUED AS A GENERAL PERMIT.

APPROVED MODIFICATION: CONSTRUCTION AND OPERATION OF A 175 ACRE HIGHWAY WIDENING AND IMPROVEMENT PROJECT KNOWN AS SR 9 (I-95) PHASE 3A-1 (SEGMENT 1-1).

PROJECT LOCATION: BROWARD COUNTY , SECTION 15,21,22,28,33 TWP 49S RGE 42E
 SECTION 4,9,16,17 TWP 50S RGE 42E

PERMIT DURATION: See Special Condition No:1.

This is to notify you of the District's agency action concerning Permit Application No. 160919-13, dated September 19, 2016. This action is taken pursuant to the provisions of Chapter 373, Part IV, Florida Statutes (F.S.).

Based on the information provided, District rules have been adhered to and an Environmental Resource Permit Modification is in effect for this project subject to:

1. Not receiving a filed request for an administrative hearing pursuant to Section 120.57 and Section 120.569, or request a judicial review pursuant Section 120.68, Florida Statutes.
2. The attached 18 General Conditions.
3. The attached 8 Special Conditions.
4. The attached 4 Exhibits.

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Should you wish to object to the proposed agency action or file a petition, please provide written objections, petitions and/or waivers to:

Office of the District Clerk
 South Florida Water Management District
 Post Office Box 24680
 West Palm Beach, FL 33416-4680
 e-mail: clerk@sfwmd.gov

Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

CERTIFICATION OF SERVICE

I HEREBY CERTIFY THAT this written notice has been mailed or electronically submitted to the Permittee (and the persons listed on the attached distribution list) this 21st day of October, 2016, in accordance with Section 120.60(3), F.S. Notice was also electronically posted on this date through a link on the home page of the District's website (my.sfwmd.gov/ePermitting).

By 
 DEPUTY CLERK

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Attachments

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on October 21, 2021.
2. Operation and maintenance of the stormwater management system shall be the responsibility of the FLORIDA DEPARTMENT OF TRANSPORTATION.
3. Discharge Facilities: See Exhibit 2c.
4. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
5. Manatee exclusion devices (such as grating or valves) shall be installed and maintained over any existing or proposed pipes or culverts greater than 8 inches, but smaller than 8 feet in diameter that are submerged or partially submerged and reasonably accessible to manatees, in accordance with Exhibit No. 2a, page 86. If horizontal or vertical bars are used, no more than 8 inch gaps on center shall be allowed. Grates or valves shall be in place at the accessible end(s) during all phases of the construction process and as a final design element to restrict manatee access.
6. The permittee shall comply with the following conditions intended to protect manatees and marine turtles from direct project effects:
 - a. All personnel associated with the project shall be instructed about the presence of marine turtles, manatees and manatee speed zones, and the need to avoid collisions with and injuries to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
 - b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
 - c. Siltation or turbidity barriers shall be made of material in which manatees and marine turtles cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee and marine turtle entanglement or entrapment. Barriers must not impede manatee movement.
 - d. All on-site project personnel are responsible for observing water-related activities for the presence of marine turtles and manatee(s). All in-water operations, including vessels, must be shutdown if a marine turtle or manatee(s) comes within 50 feet of the operation. Activities will not resume until the animal(s) have moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the animal(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
 - e. Any collision with or injury to a marine turtle or manatee shall be reported immediately to the FWC Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com.
 - f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads Caution: Manatee Area must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to FWC at ImperiledSpecies@myFWC.com.

7. The permittee shall comply with the following protected species construction conditions:
 - a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
 - b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
 - c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
 - d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
 - e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
 - f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
8. The following are exhibits to this permit. Exhibits noted as incorporated by reference are available on the District's ePermitting website (<http://my.sfwmd.gov/ePermitting>) under this application number.
 - Exhibit No. 1 Location Map, 1 page
 - Exhibit No. 2a Drainage and Roadway Plans, Pages 1 - 234
 - Exhibit No. 2b Stormwater Pollution Prevention Plans, Pages 1 - 14
 - Exhibit No. 2c Outfall Inventory, Pages 1-2
 - Exhibit No. 3 Wetland Location Map, 1 page
 - Exhibit No. 4 Endangered Species Construction Conditions, Pages 1-3

GENERAL CONDITIONS

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.
2. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.
3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the "State of Florida Erosion and Sediment Control Designer and Reviewer Manual" (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the "Florida Stormwater Erosion and Sedimentation Control Inspector's Manual" (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.
4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice" indicating the expected start and completion dates. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.
5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.
6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
 - a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex- "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit"[Form 62-330.310(3)]; or
 - b. For all other activities- "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
 - c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.
7. If the final operation and maintenance entity is a third party:
 - a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as-built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Applicant's Handbook Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.
 - b. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.
8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.
9. This permit does not:
 - a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified

herein or in Chapter 62-330, F.A.C.;

b. Convey to the permittee or create in the permittee any interest in real property;

c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or

d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.
11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.
12. The permittee shall notify the Agency in writing:
 - a. Immediately if any previously submitted information is discovered to be inaccurate; and
 - b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.
13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.
14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.
15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.
16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.
17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.
18. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

NOTICE OF RIGHTS

As required by Sections 120.569 and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all of the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which affects or may affect their substantial interests shall file a petition for hearing with the Office of the District Clerk of the SFWMD, in accordance with the filing instructions set forth herein, within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action which materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional Rule 28-106.111, Fla. Admin. Code, point of entry.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Fla. Stat., shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk of the SFWMD. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at SFWMD headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.

- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the SFWMD's security desk does not constitute filing. It will be necessary to request that the SFWMD's security officer contact the Office of the District Clerk. An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Fla. Stat., and Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Fla. Stat., and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal with the Office of the District Clerk of the SFWMD in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the clerk of the appropriate district court of appeal.

Last Date For Agency Action: December 11, 2016

INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT STAFF REPORT

Project Name: S R 9 (I-95) Phase 3A-1 (Segment 1-1)

Permit No.: 06-01465-S

Application No.: 160919-13

Application Type: Environmental Resource (Conceptual Approval Modification and New Construction/Operation)

Location: Broward County, S4,9,16,17 /T50S/R42E
S15,21,22,28,33 /T49S/R42E

Permittee : Florida Department of Transportation

Operating Entity : Florida Department of Transportation

Project Area: 175.06 acres

Permit Area: 175.06 acres

Project Land Use: Highway

Drainage Basin: C-12

Receiving Body: South Fork of the New River and North Fork of the New River **Class:** CLASS III

Special Drainage District: NA

Conservation Easement To District : No

Sovereign Submerged Lands: No

PROJECT SUMMARY:

This Environmental Resource Permit authorizes construction and operation of a stormwater management system serving a 175 acre highway widening and improvement project known as SR 9 (I-95) Phase 3A-1 (Segment 1-1).

This project is to convert the existing high occupancy vehicle (HOV) lanes (one in each direction) to express lanes, widening of the existing highway to allow for a second express lane in each direction, construction of new auxiliary lanes, intersection improvements and stormwater management facilities.

The stormwater management system includes dry and wet detention and retention ponds within the existing interchanges, dry detention swales and exfiltration trench. Discharge is to the South Fork of the New River and the North Fork of the New River.

Issuance of this permit constitutes certification of compliance with state water quality standards in accordance with Rule 62-330.062 Florida Administrative Code (F.A.C.).

PROJECT EVALUATION:**PROJECT SITE DESCRIPTION:**

The project extends from South of Davie Boulevard to Sunrise Boulevard in Broward County. Refer to Exhibit 1 for a location map.

This section of Interstate 95 consists of a multiple lane divided highway with associated on and off ramps, shoulders, bridges and drainage facilities.

The site received conceptual approval under Application No. 140516-1.

For information on the wetlands and surface waters within the project, please refer to the Wetlands and Surface Waters section of this staff report.

LAND USE:**Construction****Project:****Total Project**

Impervious	116.81	acres
Pervious	57.79	acres
Wet Retention	.46	acres
Total:	175.06	

WATER QUANTITY :**Discharge Rate :**

Discharge is to the South Fork of the New River and the North Fork of the New River via existing and proposed outfall structures. Refer to Exhibit 2c for a summary of outfall structures.

Calculations were submitted demonstrating that the post-development discharge for the 25-year, 3-day design storm event does not exceed existing conditions.

Control Elevation :

Basin	Area (Acres)	Ctrl Elev (ft, NAVD 88)	WSWT Ctrl Elev (ft, NAVD 88)	Method Of Determination
Project	175.06	.42	.42	Previously Permitted

WATER QUALITY :

Water quality treatment will be provided in dry and wet detention and retention areas and exfiltration trench. The project provides 14.01 acre-feet of water quality treatment volume based on existing water quality treatment volume plus 2.5 inches over the additional impervious area, and includes the applicable 25% and 50% reduction for those areas draining to dry detention and dry/wet retention systems, respectively.

The project also includes implementation of a Construction Pollution Prevention Plan / Turbidity and Erosion Control Plan (Exhibit 2b) as additional reasonable assurance of compliance with water quality criteria during construction and operation.

WETLANDS:

Wetlands And Other Surface Waters:

The project area contains 0.050 acres of mangrove shoreline wetlands within the North Fork New River. Wetland impacts were authorized under application number 140516-1. The permit authorized 0.050 acres of direct impacts to mangrove shorelines. The location of these wetlands is shown in Exhibit 3 and further description can be located in the Permit staff report for Application No. 140516-1.

The applicant had proposed to offset the mangrove wetland impacts with offsite mitigation within West Lake Park, for which Application No. 141028-5 authorized the modification of Permit No. 06-05891-P to deduct 0.098 functional units proposed as wetland mitigation.

With this application, the applicant also proposes the filling of a drainage ditch which is connected to the North Fork New River. District staff conducted a site inspection on September 29, 2016 and confirmed that mangrove areas were located outside of the proposed filled area. The drainage ditch was constructed in uplands, is less than 1 acre in area and does not provide significant habitat for endangered or threatened species. Therefore, mitigation will not be required in accordance with Section 10.2.2.2 of the Environmental Resource Permit Applicant's Handbook Volume I.

Fish And Wildlife Issues:

The wetlands or surface waters to be impacted provide habitat for wetland-dependent species including the West Indian manatee (*Trichechus manatus*). Therefore, the Standard Manatee Conditions will be followed with respect to any in-water construction activities. Drainage detail sheets, which can be found in the permit file, contain specifications of manatee exclusion devices for all existing and proposed outfall pipes located in areas accessible to manatees. There is also the potential for the presence of the smalltooth sawfish (*Pristis pectinata*) in these areas. Because of the small size and degraded nature of the mangrove areas affected by the project, the value provided to the smalltooth sawfish is limited. However, given the potential for smalltooth sawfish access, the Smalltooth Sawfish Construction Conditions will be followed with respect to any in-water construction activities.

CERTIFICATION, OPERATION, AND MAINTENANCE:

Pursuant to Chapter 62-330.310 Florida Administrative Code (F.A.C.), Individual Permits will not be converted from the construction phase to the operation phase until construction completion certification of the project is submitted to and accepted by the District. This includes compliance with all permit conditions, except for any long term maintenance and monitoring requirements. It is suggested that the permittee retain the services of an appropriate professional registered in the State of Florida for periodic observation of construction of the project.

For projects permitted with an operating entity that is different from the permittee, it should be noted that until the construction completion certification is accepted by the District and the permit is transferred to an acceptable operating entity pursuant to Sections 12.1-12.3 of the Applicant's Handbook Volume I and Section 62-330.310, F.A.C., the permittee is liable for operation and maintenance in compliance with the terms and conditions of this permit.

In accordance with Section 373.416(2), F.S., unless revoked or abandoned, all stormwater management systems and works permitted under Part IV of Chapter 373, F.S., must be operated and maintained in perpetuity.

The efficiency of stormwater management systems, dams, impoundments, and most other project components will decrease over time without periodic maintenance. The operation and maintenance entity must perform periodic inspections to identify if there are any deficiencies in structural integrity, degradation due to insufficient maintenance, or improper operation of projects that may endanger public health, safety, or welfare, or the water resources. If deficiencies are found, the operation and maintenance entity will be responsible for correcting the deficiencies in a timely manner to prevent compromises to flood protection and water quality. See Section 12.4 of Applicant's Handbook Volume I for Minimum Operation and Maintenance Standards.

RELATED CONCERNS:**Water Use Permit Status:**

The applicant has indicated that dewatering is not required for construction of this project. This permit does not release the permittee from obtaining all necessary Water Use authorization(s) prior to the commencement of activities which will require such authorization, including construction dewatering and irrigation.

CERP:

The proposed project is not located within or adjacent to a Comprehensive Everglades Restoration Project component.

Right-Of-Way Permit Status:

A District Right-of-Way Permit is not required for this project.

Historical/Archeological Resources:

On September 27, 2016, the District has received correspondence from the Florida Department of State, Division of Historical Resources (DHR), indicating that the historic North Woodlawn Cemetery is located adjacent to the project area and that there is a high probability of unmarked burials within the right of way. However, the Cemetery is not located near wetlands or other surface waters. DHR consulted with FDOT and the Federal Highway Administration (FHWA) to avoid impacts to the Cemetery and any unmarked burials. The letter states that the following conditions have to be met to avoid impacts to the historic property: no utility relocation in the area of the Cemetery, no staging in the shoulder adjacent to the Cemetery, and archaeological monitoring will occur during all subsurface activities conducted within 250 feet of the Cemetery.

This permit does not release the permittee from compliance with any other agencies' requirements in the event that historical and/or archaeological resources are found on the site.

DEO/CZM Consistency Review:

The issuance of this permit constitutes a finding of consistency with the Florida Coastal Management Program.

Third Party Interest:

No third party has contacted the District with concerns about this application.

Enforcement:

There has been no enforcement activity associated with this application.

STAFF RECOMMENDATION TO EXECUTIVE DIRECTOR:

The Staff recommends that the following be issued :

Construction and operation of a 175 acre highway widening and improvement project known as SR 9 (I-95) Phase 3A-1 (Segment 1-1).

Based on the information provided, District rules have been adhered to.

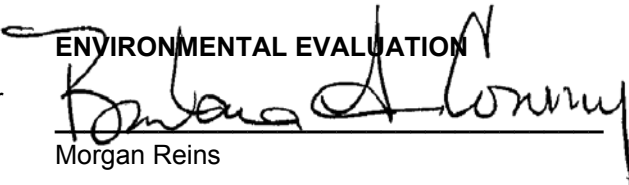
Staff recommendation is for approval subject to the attached General and Special Conditions.

STAFF REVIEW:

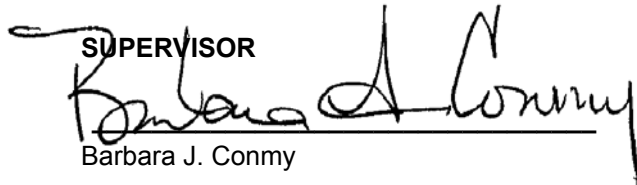
NATURAL RESOURCE MANAGEMENT APPROVAL

ENVIRONMENTAL EVALUATION

for

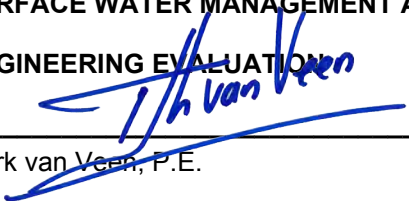

Morgan Reins

SUPERVISOR



Barbara J. Conmy

SURFACE WATER MANAGEMENT APPROVAL


ENGINEERING EVALUATION


Tjerk van Veen, P.E.

SUPERVISOR

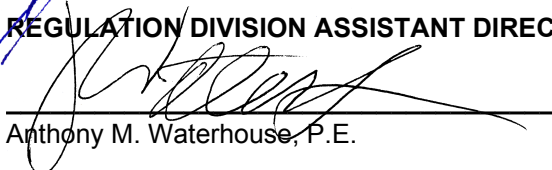

Carlos A. de Rojas, P.E.

ENVIRONMENTAL RESOURCE COMPLIANCE BUREAU CHIEF :


Ricardo A. Valera, P.E.

DATE: October 20, 2016

REGULATION DIVISION ASSISTANT DIRECTOR :


Anthony M. Waterhouse, P.E.

DATE: 10/21/16

GENERAL CONDITIONS

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.
2. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.
3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the "State of Florida Erosion and Sediment Control Designer and Reviewer Manual" (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the "Florida Stormwater Erosion and Sedimentation Control Inspector's Manual" (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.
4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice" indicating the expected start and completion dates. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.
5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.
6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
 - a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex- "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit"[Form 62-330.310(3)]; or
 - b. For all other activities- "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
 - c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.
7. If the final operation and maintenance entity is a third party:
 - a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Applicant's Handbook Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.
 - b. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

GENERAL CONDITIONS

8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.
9. This permit does not:
 - a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
 - b. Convey to the permittee or create in the permittee any interest in real property;
 - c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
 - d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.
10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.
11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.
12. The permittee shall notify the Agency in writing:
 - a. Immediately if any previously submitted information is discovered to be inaccurate; and
 - b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.
13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.
14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.
15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

GENERAL CONDITIONS

16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.
17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.
18. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

SPECIAL CONDITIONS

1. The construction phase of this permit shall expire on October 21, 2021.
2. Operation and maintenance of the stormwater management system shall be the responsibility of the FLORIDA DEPARTMENT OF TRANSPORTATION.
3. Discharge Facilities: See Exhibit 2c.
4. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.
5. Manatee exclusion devices (such as grating or valves) shall be installed and maintained over any existing or proposed pipes or culverts greater than 8 inches, but smaller than 8 feet in diameter that are submerged or partially submerged and reasonably accessible to manatees, in accordance with Exhibit No. 2a, page 86. If horizontal or vertical bars are used, no more than 8 inch gaps on center shall be allowed. Grates or valves shall be in place at the accessible end(s) during all phases of the construction process and as a final design element to restrict manatee access.
6. The permittee shall comply with the following conditions intended to protect manatees and marine turtles from direct project effects:
 - a. All personnel associated with the project shall be instructed about the presence of marine turtles, manatees and manatee speed zones, and the need to avoid collisions with and injuries to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
 - b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
 - c. Siltation or turbidity barriers shall be made of material in which manatees and marine turtles cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee and marine turtle entanglement or entrapment. Barriers must not impede manatee movement.
 - d. All on-site project personnel are responsible for observing water-related activities for the presence of marine turtles and manatee(s). All in-water operations, including vessels, must be shutdown if a marine turtle or manatee(s) comes within 50 feet of the operation. Activities will not resume until the animal(s) have moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the animal(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
 - e. Any collision with or injury to a marine turtle or manatee shall be reported immediately to the FWC Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com.
 - f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads Caution: Manatee Area must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a

SPECIAL CONDITIONS

location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to FWC at ImperiledSpecies@myFWC.com.

7. The permittee shall comply with the following protected species construction conditions:
 - a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
 - b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
 - c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
 - d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
 - e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
 - f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/ rescue organization.
8. The following are exhibits to this permit. Exhibits noted as incorporated by reference are available on the District's ePermitting website (<http://my.sfwmd.gov/ePermitting>) under this application number.
 - Exhibit No. 1 Location Map, 1 page
 - Exhibit No. 2a Drainage and Roadway Plans, Pages 1 - 234
 - Exhibit No. 2b Stormwater Pollution Prevention Plans, Pages 1 - 14
 - Exhibit No. 2c Outfall Inventory, Pages 1-2
 - Exhibit No. 3 Wetland Location Map, 1 page
 - Exhibit No. 4 Endangered Species Construction Conditions, Pages 1-3

STAFF REPORT DISTRIBUTION LIST

S R 9 (I-95) PHASE 3A-1(SEGMENT 1-1)

Application No: 160919-13

Permit No: 06-01465-S

INTERNAL DISTRIBUTION

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- X Carlos A. de Rojas, P.E.
- X Barbara J. Conmy
- X A. Waterhouse, P.E.
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EXTERNAL DISTRIBUTION

- X Permittee - Florida Department of
Transportation District 4
- X Agent - BCC Engineering

GOVERNMENT AGENCIES

- X Broward County - Director, Water Mgmt Div
- X Div of Recreation and Park - District 5 - Miranda
Cunningham, FDEP

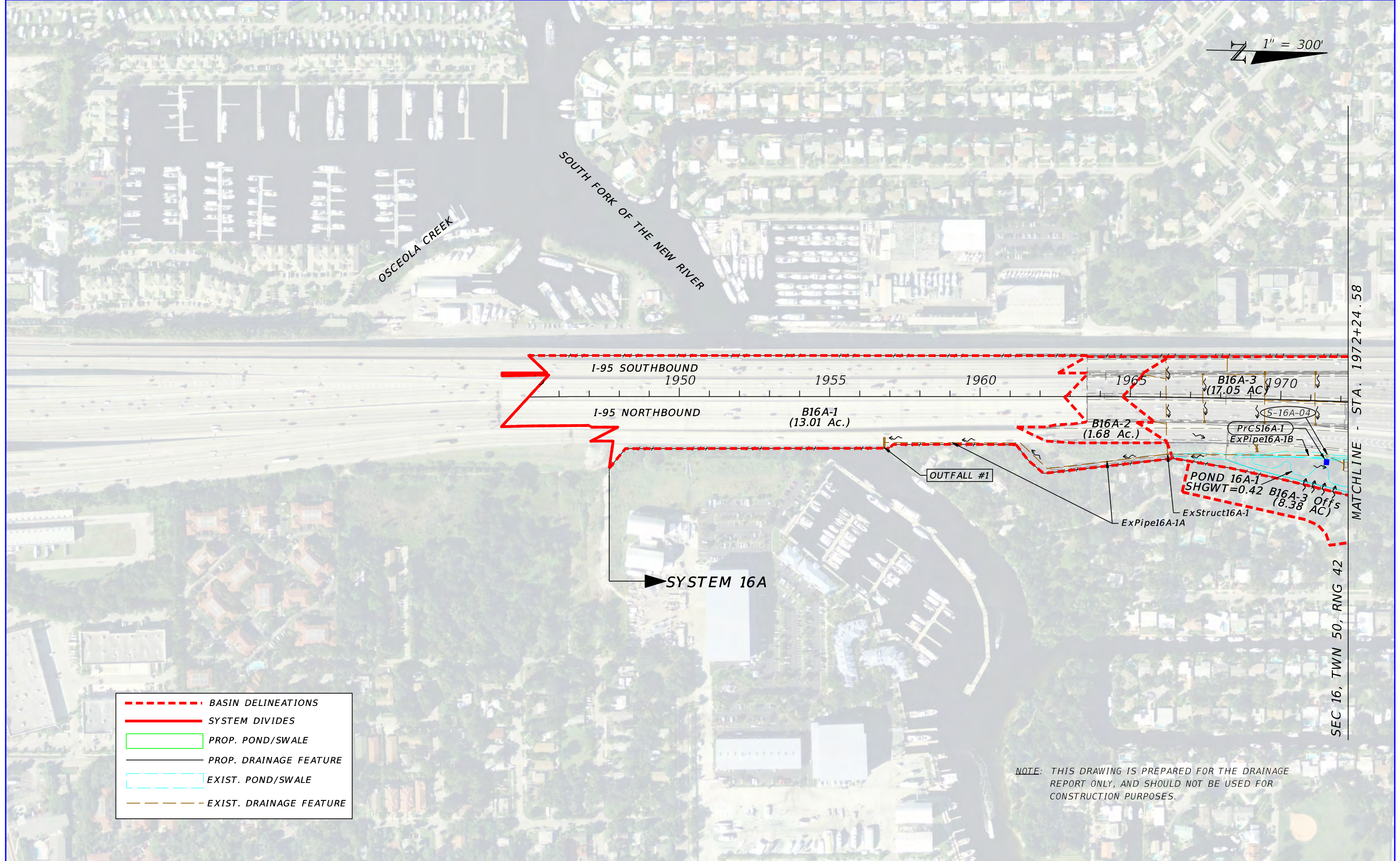
OTHER INTERESTED PARTIES

- X Audubon of Florida - Charles Lee

Appendix E

Post-Development Drainage Maps

1" = 300'



NOTE: THIS DRAWING IS PREPARED FOR THE DRAINAGE REPORT ONLY, AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

REVISIONS		BCC ENGINEERING, INC. RODOLFO GARCIA, P.E. No. 73807 6401 SW 87th Ave, Suite 200, Miami, Florida 33173. P: (305) 670-2350 F: (305) 670-2351 Certificate of Authorization No. 7184		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY		
				9	BROWARD	433108-4-52-01	

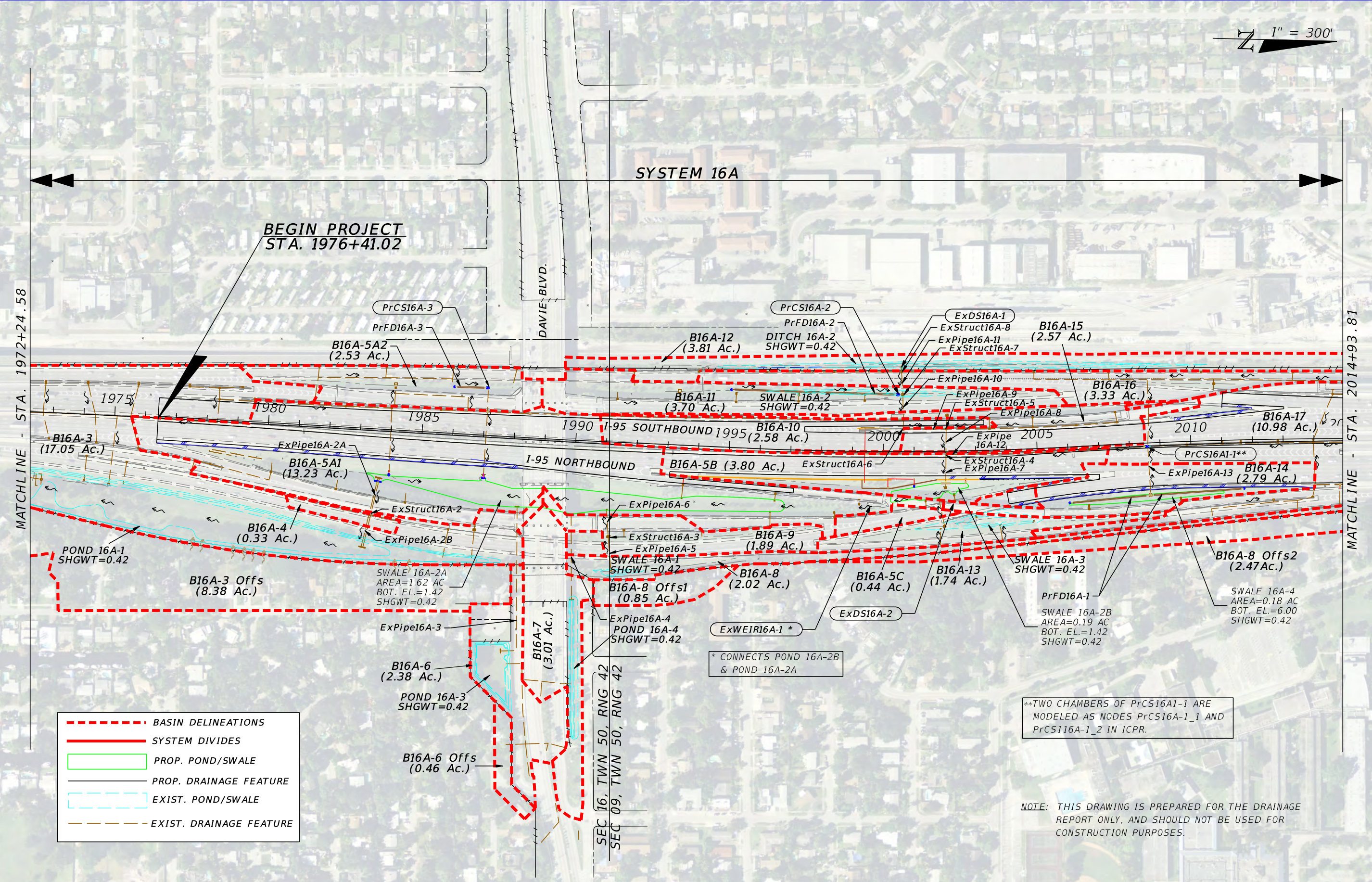
1" = 300'

SYSTEM 16A

BEGIN PROJECT
STA. 1976+41.02

MATCHLINE - STA. 1972+24.58

MATCHLINE - STA. 2014+93.81



	BASIN DELINEATIONS
	SYSTEM DIVIDES
	PROP. POND/SWALE
	PROP. DRAINAGE FEATURE
	EXIST. POND/SWALE
	EXIST. DRAINAGE FEATURE

* CONNECTS POND 16A-2B & POND 16A-2A

**TWO CHAMBERS OF PrCS16A1-1 ARE MODELED AS NODES PrCS16A-1_1 AND PrCS116A-1_2 IN ICPR.

NOTE: THIS DRAWING IS PREPARED FOR THE DRAINAGE REPORT ONLY, AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

<table border="1"> <thead> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>				REVISIONS		DATE	DESCRIPTION			BCC ENGINEERING, INC. RODOLFO GARCIA, P.E. No. 73807 6401 SW 87th Ave, Suite 200, Miami, Florida 33173. P: (305) 670-2350 F: (305) 670-2351 Certificate of Authorization No. 7184		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
REVISIONS															
DATE	DESCRIPTION														
<table border="1"> <thead> <tr> <th>ROAD NO.</th> <th>COUNTY</th> <th>FINANCIAL PROJECT ID</th> </tr> </thead> <tbody> <tr> <td>9</td> <td>BROWARD</td> <td>433108-4-52-01</td> </tr> </tbody> </table>		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	9	BROWARD	433108-4-52-01	8/22/2016 10:37:27 AM H:\CADD\43310845201\drainage\6-DRAINAGE REPORT CADD_FILES\DRAINAGE MAPS\Pos							
ROAD NO.	COUNTY	FINANCIAL PROJECT ID													
9	BROWARD	433108-4-52-01													

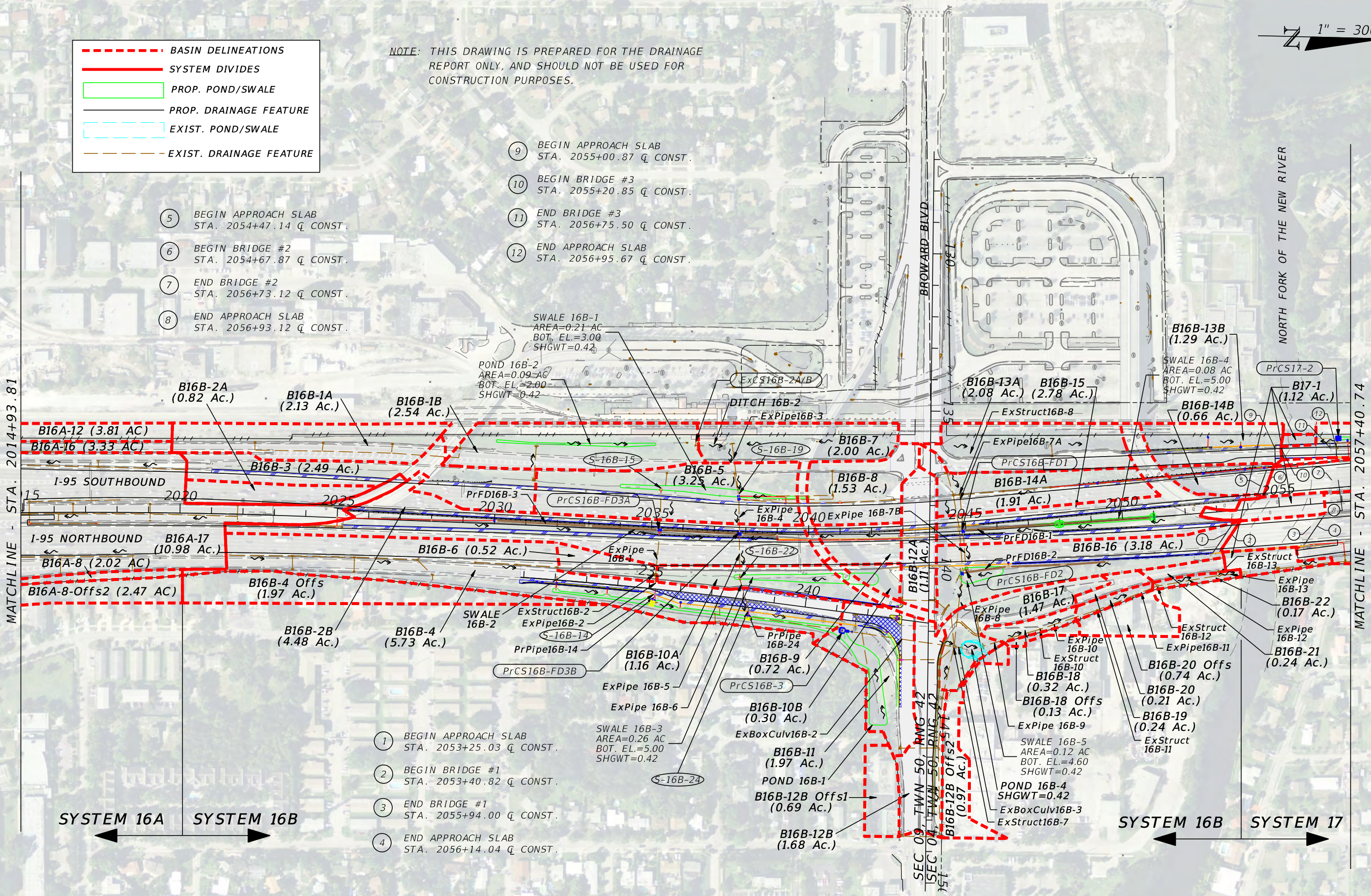
--- BASIN DELINEATIONS
— SYSTEM DIVIDES
▭ PROP. POND/SWALE
— PROP. DRAINAGE FEATURE
- - - EXIST. POND/SWALE
- - - EXIST. DRAINAGE FEATURE

NOTE: THIS DRAWING IS PREPARED FOR THE DRAINAGE REPORT ONLY, AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

- ⑤ BEGIN APPROACH SLAB STA. 2054+47.14 Q CONST.
- ⑥ BEGIN BRIDGE #2 STA. 2054+67.87 Q CONST.
- ⑦ END BRIDGE #2 STA. 2056+73.12 Q CONST.
- ⑧ END APPROACH SLAB STA. 2056+93.12 Q CONST.
- ⑨ BEGIN APPROACH SLAB STA. 2055+00.87 Q CONST.
- ⑩ BEGIN BRIDGE #3 STA. 2055+20.85 Q CONST.
- ⑪ END BRIDGE #3 STA. 2056+75.50 Q CONST.
- ⑫ END APPROACH SLAB STA. 2056+95.67 Q CONST.

MATCHLINE - STA. 2014+93.81

MATCHLINE - STA. 2057+40.74



SYSTEM 16A SYSTEM 16B

SYSTEM 16B SYSTEM 17

- ① BEGIN APPROACH SLAB STA. 2053+25.03 Q CONST.
- ② BEGIN BRIDGE #1 STA. 2053+40.82 Q CONST.
- ③ END BRIDGE #1 STA. 2055+94.00 Q CONST.
- ④ END APPROACH SLAB STA. 2056+14.04 Q CONST.

REVISIONS				BCC ENGINEERING, INC. RODOLFO GARCIA, P.E. No. 73807 6401 SW 87th Ave, Suite 200, Miami, Florida 33173. P: (305) 670-2350 F: (305) 670-2351 Certificate of Authorization No. 7184	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					9	BROWARD	433108-4-52-01		

1" = 300'

--- BASIN DELINEATIONS
— SYSTEM DIVIDES
▭ PROP. POND/SWALE
— PROP. DRAINAGE FEATURE
- - - EXIST. POND/SWALE
- - - EXIST. DRAINAGE FEATURE

- 17 BEGIN APPROACH SLAB
STA. 2069+56.94 Q CONST.
- 18 BEGIN BRIDGE #4
STA. 2069+77.16 Q CONST.
- 19 END BRIDGE #4
STA. 2071+35.53 Q CONST.
- 20 END APPROACH SLAB
STA. 2071+55.53 Q CONST.

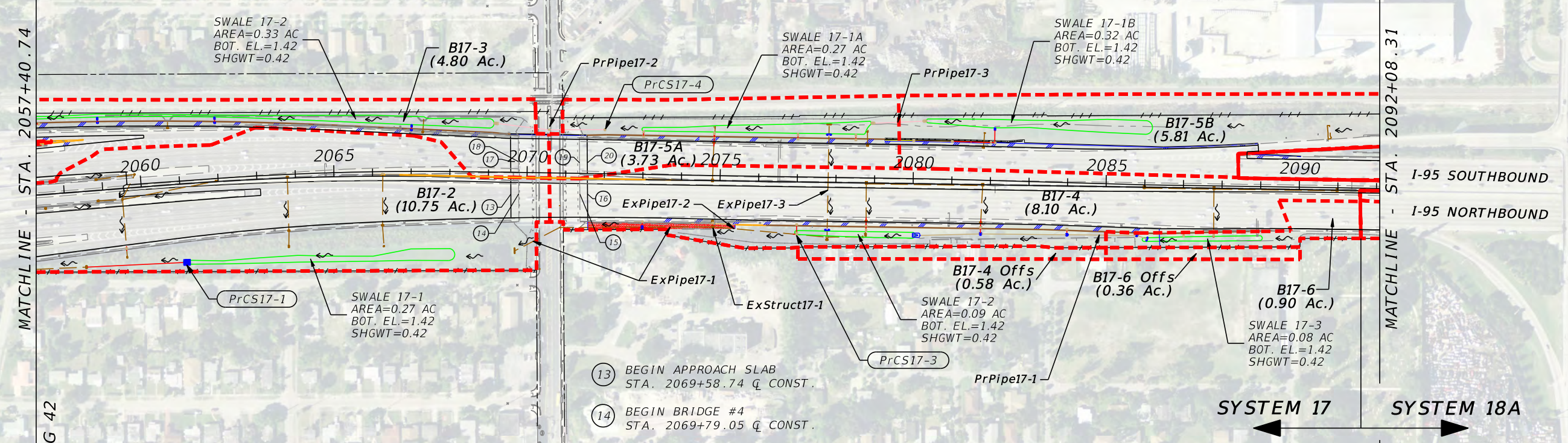
MATCHLINE - STA. 2057+40.74

MATCHLINE - STA. 2092+08.31

SEC 04, TWN 50, RNG 42

NORTH FORK OF THE NEW RIVER

SUNRISE BLVD.



- 13 BEGIN APPROACH SLAB
STA. 2069+58.74 Q CONST.
- 14 BEGIN BRIDGE #4
STA. 2069+79.05 Q CONST.
- 15 END BRIDGE #4
STA. 2071+37.41 Q CONST.
- 16 END APPROACH SLAB
STA. 2071+57.26 Q CONST.

NOTE: THIS DRAWING IS PREPARED FOR THE DRAINAGE REPORT ONLY, AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

REVISIONS				BCC ENGINEERING, INC. RODOLFO GARCIA, P.E. No. 73807 6401 SW 87th Ave, Suite 200, Miami, Florida 33173. P: (305) 670-2350 F: (305) 670-2351 Certificate of Authorization No. 7184	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POST-DEVELOPMENT DRAINAGE MAP	SHEET NO.
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					9	BROWARD	433108-4-52-01		

Appendix F

System 16 A

- Land-Use Tables
- Drainage Calculations
- Summary Tables
- ICPR: Pre-Development
- ICPR: Post-Development

I-95 CDC DRAINAGE CALCULATIONS
PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 16A

SHGWT EL. (ft-NAVD): 0.42

BASIN	TIME OF CONC. tc (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER CN
B16A-1	10	13.01	13.01	10.69	0.24	2.08	0.00	0.00	0.00	0.00	3.00	2.58	4.95	92.67
B16A-2	10	1.68	1.68	1.68	0.00	0.00	0.00	0.00	0.00	0.00	45.00	44.58	8.18	100.00
B16A-3A	10	14.49	14.49	9.70	0.00	4.79	0.00	0.00	0.00	0.00	5.00	4.58	8.18	78.71
B16A-3A Offs	10	7.11	0.00	0.00	0.00	0.00	7.11	2.72	0.00	4.39	5.00	4.58	8.18	66.44
B16A-3B	10	2.56	2.56	1.13	0.00	1.43	0.00	0.00	0.00	0.00	5.00	4.58	8.18	68.64
B16A-3B Offs	10	1.27	0.00	0.00	0.00	0.00	1.27	0.46	0.00	0.81	5.00	4.58	8.18	65.72
B16A-4	10	0.33	0.33	0.33	0.00	0.00	0.00	0.00	0.00	0.00	9.00	8.58	8.18	100.00
B16A-5A	10	15.76	15.76	10.24	0.00	5.52	0.00	0.00	0.00	0.00	5.00	4.58	8.18	77.73
B16A-5B	10	3.80	3.80	2.50	0.00	1.30	0.00	0.00	0.00	0.00	5.00	4.58	8.18	78.13
B16A-5C	10	0.44	0.44	0.41	0.00	0.03	0.00	0.00	0.00	0.00	5.00	4.58	8.18	94.72
B16A-6	10	2.38	2.38	1.43	0.00	0.95	0.00	0.00	0.00	0.00	5.00	4.58	8.18	75.39
B16A-6 Offs	10	0.46	0.00	0.00	0.00	0.00	0.46	0.14	0.00	0.32	5.00	4.58	8.18	63.73
B16A-7	10	3.01	3.01	2.23	0.00	0.78	0.00	0.00	0.00	0.00	5.00	4.58	8.18	82.51
B16A-8	10	2.02	2.02	0.19	0.00	1.83	0.00	0.00	0.00	0.00	6.00	5.58	8.18	57.44
B16A-8 Offs1	10	0.85	0.00	0.00	0.00	0.00	0.85	0.44	0.00	0.41	5.00	4.58	8.18	71.71
B16A-8 Offs2	10	2.47	0.00	0.00	0.00	0.00	2.47	0.57	0.00	1.90	5.00	4.58	8.18	61.38
B16A-9	10	1.89	1.89	1.48	0.00	0.41	0.00	0.00	0.00	0.00	8.00	7.58	8.18	84.93
B16A-10	10	2.58	2.58	2.58	0.00	0.00	0.00	0.00	0.00	0.00	17.00	16.58	8.18	100.00
B16A-11	10	3.70	3.70	2.23	0.00	1.47	0.00	0.00	0.00	0.00	9.00	8.58	8.18	75.47
B16A-12	10	3.81	3.81	0.17	0.00	3.64	0.00	0.00	0.00	0.00	5.00	4.58	8.18	56.13
B16A-13	10	1.74	1.74	0.83	0.00	0.91	0.00	0.00	0.00	0.00	9.00	8.58	8.18	70.04
B16A-14	10	2.79	2.79	2.03	0.00	0.76	0.00	0.00	0.00	0.00	7.00	6.58	8.18	81.78
B16A-15	10	2.57	2.57	2.23	0.00	0.34	0.00	0.00	0.00	0.00	12.00	11.58	8.18	90.23
B16A-16	10	3.33	3.33	3.05	0.00	0.28	0.00	0.00	0.00	0.00	10.00	9.58	8.18	93.56
B16A-17	10	10.98	10.98	10.79	0.00	0.19	0.00	0.00	0.00	0.00	11.00	10.58	8.18	98.60
SYSTEM TOTALS		105.03	92.87	65.92	0.24	26.71	12.16	4.33	0.00	7.83	--	--	--	--

I-95 CDC DRAINAGE CALCULATIONS
POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 16A

SHGWT EL. (ft-NAVD): 0.42

BASIN	TIME OF CONC. tc (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER CN
B16A-5A2	10	2.53	2.53	1.83	0.00	0.70	0.00	0.00	0.00	0.00	5.00	4.58	8.18	81.54
16A-FD-3		2.53	2.53	1.83	0.00	0.70	0.00	0.00	0.00	0.00	--	--	--	--
B16A-11	10	3.70	3.70	2.23	0.00	1.47	0.00	0.00	0.00	0.00	9.00	8.58	8.18	75.47
16A-FD-2		3.70	3.70	2.23	0.00	1.47	0.00	0.00	0.00	0.00	--	--	--	--
B16A-14	10	2.79	2.79	2.12	0.00	0.67	0.00	0.00	0.00	0.00	7.00	6.58	8.18	83.58
16A-FD-1		2.79	2.79	2.12	0.00	0.67	0.00	0.00	0.00	0.00	--	--	--	--
B16A-3	10	17.05	17.05	10.83	0.00	6.22	0.00	0.00	0.00	0.00	5.00	4.58	8.18	77.02
B16A-3 Offs	10	8.38	0.00	0.00	0.00	0.00	8.38	3.18	0.00	5.20	5.00	4.58	8.18	66.33
B16A-4	10	0.33	0.33	0.33	0.00	0.00	0.00	0.00	0.00	0.00	9.00	8.58	8.18	100.00
B16A-5A1	10	13.23	13.23	8.71	0.00	4.52	0.00	0.00	0.00	0.00	5.00	4.58	8.18	78.16
B16A-5B	10	3.80	3.80	2.78	0.00	1.02	0.00	0.00	0.00	0.00	5.00	4.58	8.18	82.00
B16A-5C	10	0.44	0.44	0.41	0.00	0.03	0.00	0.00	0.00	0.00	5.00	4.58	8.18	94.72
B16A-6	10	2.38	2.38	1.43	0.00	0.95	0.00	0.00	0.00	0.00	5.00	4.58	8.18	75.39
B16A-6 Offs	10	0.46	0.00	0.00	0.00	0.00	0.46	0.14	0.00	0.32	5.00	4.58	8.18	63.73
B16A-7	10	3.01	3.01	2.23	0.00	0.78	0.00	0.00	0.00	0.00	5.00	4.58	8.18	82.51
B16A-8	10	2.02	2.02	0.19	0.00	1.83	0.00	0.00	0.00	0.00	6.00	5.58	8.18	57.44
B16A-8 Offs1	10	0.85	0.00	0.00	0.00	0.00	0.85	0.44	0.00	0.41	5.00	4.58	8.18	71.71
B16A-8 Offs2	10	2.47	0.00	0.00	0.00	0.00	2.47	0.57	0.00	1.90	5.00	4.58	8.18	61.38
B16A-9	10	1.89	1.89	1.48	0.00	0.41	0.00	0.00	0.00	0.00	8.00	7.58	8.18	84.93
B16A-10	10	2.58	2.58	2.58	0.00	0.00	0.00	0.00	0.00	0.00	17.00	16.58	8.18	100.00
B16A-12	10	3.81	3.81	0.17	0.00	3.64	0.00	0.00	0.00	0.00	5.00	4.58	8.18	56.13
B16A-13	10	1.74	1.74	0.83	0.00	0.91	0.00	0.00	0.00	0.00	9.00	8.58	8.18	70.04
B16A-15	10	2.57	2.57	2.23	0.00	0.34	0.00	0.00	0.00	0.00	12.00	11.58	8.18	90.23
B16A-16	10	3.33	3.33	3.05	0.00	0.28	0.00	0.00	0.00	0.00	10.00	9.58	8.18	93.56
B16A-17	10	10.98	10.98	10.79	0.00	0.19	0.00	0.00	0.00	0.00	11.00	10.58	8.18	98.60
16A-PONDS		81.32	69.16	48.04	0.00	21.12	12.16	4.33	0.00	7.83	--	--	--	--
B16A-1	10	13.01	13.01	10.69	0.24	2.08	0.00	0.00	0.00	0.00	3.00	2.58	4.95	92.67
B16A-2	10	1.68	1.68	1.68	0.00	0.00	0.00	0.00	0.00	0.00	45.00	44.58	8.18	100.00
DS of PrCS16A-1		14.69	14.69	12.37	0.24	2.08	0.00	0.00	0.00	0.00	--	--	--	--
SYSTEM TOTALS		105.03	92.87	66.59	0.24	26.04	12.16	4.33	0.00	7.83	--	--	--	--

I-95 CDC DRAINAGE CALCULATIONS

WATER QUALITY

DRAINAGE SYSTEM: 16A

SYSTEM	SHGWT EL. (FT-NAVD)	TOTAL ONSITE AREA (Ac.) [POST-DEV]	ONSITE IMPERVIOUS AREA (Ac.) [POST-DEV]	ONSITE PERVIOUS AREA (Ac.) [POST-DEV]	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY FULL TREATMENT REQUIRED (Ac-ft)	⁴ WATER QUALITY TREATMENT PROVIDED IN PRE (Ac-ft)	⁵ WATER QUALITY TREATMENT REQ. FOR ADDITIONAL IMP. AREA (Ac-ft)	⁶ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETECTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETECTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY-/WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	² TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	³ SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
16A-FD-3	0.42	2.53	1.83	0.70	0.21	0.38	0.38				0.00	0.00	0.00	0.12	0.12	-0.26
16A-FD-2	0.42	3.70	2.23	1.47	0.31	0.46	0.46				0.00	0.00	0.00	0.37	0.37	-0.10
16A-FD-1	0.42	2.79	2.12	0.67	0.23	0.44	0.44				0.00	0.00	0.00	0.47	0.47	0.03
16A-PONDS	0.42	69.16	48.04	21.12	5.76	10.01	10.01				6.65	0.00	0.61	0.00	10.08	0.07
SYSTEM TOTALS:		78.18	54.22	23.96	6.52	11.30	11.30	7.46	0.10	7.56	6.65	0.00	0.61	0.96	11.04	-0.26

¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

³Water quality treatment in System 16A provided for all onsite contributing basins with the exception of B16A-1 and B16A-2 (14.69 acres; located downstream of the existing control structure and project limits).

⁴See Example 1

Note: The entire basin is controlled by PrCS16A-1, all interconnected and detention/retention areas have the same invert elevation, therefore, the excess volume provided in 16A-Ponds can be applied to the entire basin.

WQ Req Full Area =	11.30	Ac-ft	
WQ Req Partial =	7.56	Ac-ft	(Existing Treatment plus additional Imperv.= 7.46+0.10 =7.56 Ac-ft)
WQ Provided =	11.04	Ac-ft	> 7.56 Ac-ft Meet Criteria Ok

POND/SWALE/FD	TYPE	WEIR EL.	VOLUME
		(ft-NAVD)	(Ac-ft)
POND 16A-1	DRY DETENTION	2.80	3.64
POND 16A-2A	DRY DETENTION	2.80	2.50
POND 16A-2B	DRY RETENTION	3.92	0.61
POND 16A-3	DRY DETENTION	2.80	0.44
POND 16A-4	DRY DETENTION	2.00	0.06
PrFD16A-1	FRENCH DRAIN	4.30	0.47
PrFD16A-2	FRENCH DRAIN	5.00	0.37
PrFD16A-3	FRENCH DRAIN	9.00	0.12



S.R 9/I-95 SEGMENT - 3A-1
FINANCIAL PROJECT ID:

Prepared by: J.R.
Check by: A.R.
Approved by: R.G.

Date: 8/20/2016
Date: 8/20/2016
Date: 8/20/2016

EXAMPLE -1

BASIN 16A

WATER QUALITY ANALYSIS (PRE DEVELOPMENT CONDITIONS)

AREA:

Impervious	52.42	Ac.	69%
Pervious	23.21	Ac.	31%
Total Area¹	75.63	Ac.	

¹Water quality treatment in System 16A provided for all onsite contributing basins with the exception of B16A-1 ,B16A-2, 16A-3B (14.69 +2.56 = 17.25 acres; located downstream of the existing control structure and project limits).

$$\begin{aligned} Imp &= 65.92 - 10.69 - 1.68 - 1.13 = & 52.42 & \text{Ac} \\ Perv &= 26.71 - 2.08 - 1.43 = & 23.21 & \text{Ac} \end{aligned}$$

I-PRE WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

2.5 inches times the impervious area or

1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.

For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \quad \mathbf{10.92} \quad \text{Ac-ft}$$

2-) 1 inch times total project area:

WQ Required (1")

$$WQ (1") = (A\text{-total} \times 1" \times 1"/12')$$

$$WQ (1") = \quad \mathbf{6.30} \quad \text{Ac-ft}$$

Larger of Step 1 and 2

$$WQ \text{ Required} = \quad \mathbf{10.92} \quad \text{Ac-ft}$$

3-) Volume Required for WQ Retention or Detention

Retention	50%	Required
Detention	75%	Required
Wet	100%	Required

Pond Type

Detention (Select pond type)

Volume required to be treated for water quality

$WQ \times Wet \text{ (Detention)} = 8.19 \text{ Ac-ft} = 13.73 \times 0.75 = 10.30 \text{ AC-FT}$

SFWMD Required Water Quality Volume = 8.19 Ac.-ft.

DRY RETENTION VOLUME PROVIDED:

Pond/Ditch:

Pond/Ditch:	WQ Volume (Ac-ft)	SEE WATER QUALITY PROVIDED CALCULATIONS FOR PRE DEVELOPMENT CONDITIONS BASIN 16A .
SWALES BASIN 16A	7.46	
Total	7.46	

Retention/Detention Volume Provided: WQp= 7.46 AC-FT
 Retention/Detention Volume Required: WQr= 8.19 AC-FT
 Deficit= **0.73** Ac-ft = **31642** cf = **8.72** Ac.-in.

Water quality provided in Pre development conditions is only 91.1 %



S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: J.R.
 Check by: A.R.
 Approved by: R.G.

Date: 8/20/2016
 Date: 8/20/2016
 Date: 8/20/2016

**BASIN 16A - ADDITIONAL IMPERVIOUS AREA
 WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)**

II- ADDED IMPERVIOUS AREA:

Added Impervious	0.67	Ac
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³Water quality treatment in System 16A provided for all onsite contributing basins with the exception of B16A-1 ,B16A-2, 16A-3B (14.69 +2.56 = 17.25 acres; located downstream of the existing control structure and project limits).

Existing Impervious Area= 65.92 Ac
Proposing Impervious Area= 66.59 Ac

WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.
 For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \quad \quad \quad \mathbf{0.14} \quad \text{Ac-ft}$$

2-) Volume Required for WQ Retention or Detention

Retention	50%	Required
Detention	75%	Required
Wet	100%	Required

Pond Type
Detention (Select pond type)

Volume required to be treated for water quality

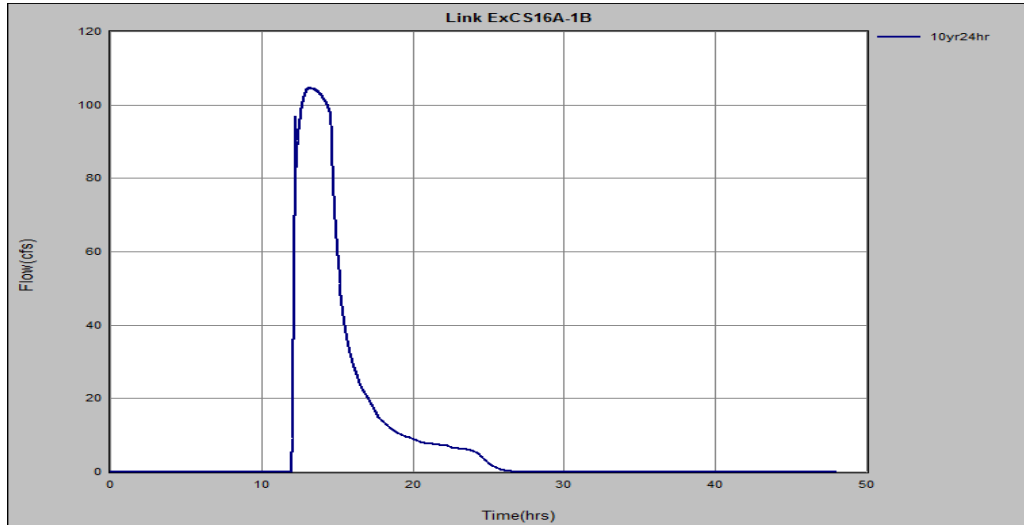
$$WQ \times Dry (Detention) = \quad \quad \quad \mathbf{0.10} \quad \text{Ac-ft}$$

$$\mathbf{SFWMD Required Water Quality Volume} = \quad \quad \quad \mathbf{0.10} \quad \text{Ac-ft}$$

III- Existing Water Quality Volume in Pre WQp = 7.46 Ac-ft

IV- Water Quality Volume required in Post = Existing + additional Impervious= 746+0.10 =7.56 Ac-ft

**WATER QUALITY PROVIDED BY SWALE
 PRE-DEVELOPMENT. BASIN 16A**



Water Quality Volume provided in BASIN 16A is equal to the total inflow at Weir ExDS16A-1 before it starts to overflow. Weir ExDS16A-1 starts to overflow at time: 11.93 hour.

Time: **11.93** hrs (Time when the water begins to overflow the weir)

Volume Total **456978** ft³ (Inflow from total contributing area)

Volume Off Basin 16A-1 **- 104901** ft³
 Basin 16A-2 **- 18266** ft³
 Basin 16A-3B **- 6163** ft³
 Basin 16A-3B OffS **- 2506** ft³

Vol. Provided **325142** ft³ (Total Volume Provided by the Swales)

Vol. Provided **7.46** Ac-ft (Total Volume Provided by the Swales)

Simulation	Time	Inflow Volume	Outflow Volume	Change in Sys Storage	Difference
	(hrs)	(ft3)	(ft3)	(ft3)	(ft ³)
10yr 24hr	11.83	396966	41474	355492	- 0
10yr 24hr	11.85	404144	41920	362224	0.0
10yr 24hr	11.87	412445	42424	370021	0.0
10yr 24hr	11.88	422128	43003	379126	0.0
10yr 24hr	11.90	432589	43621	388968	0.0
10yr 24hr	11.92	444267	44307	399961	0.0
10yr 24hr	11.93	456978	45049	411928	0.0
10yr 24hr	11.95	470767	45854	424914	0.0
10yr 24hr	11.97	485185	46694	438491	0.0
10yr 24hr	11.98	500480	47585	452895	0.0
10yr 24hr	12.00	516842	48563	468279	0.0
10yr 24hr	12.02	533579	49647	483932	0.0

*Segment of the table: "Mass Balance Report", Basin-16A

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	11.40	296447.9	34214.7	262233.3	-0.0	-0.00
10yr24hr	11.42	299302.3	34437.8	264864.5	-0.0	-0.00
10yr24hr	11.43	302143.9	34658.7	267485.1	0.0	0.00
10yr24hr	11.45	305187.1	34894.2	270292.9	-0.0	-0.00
10yr24hr	11.47	308026.4	35112.9	272913.5	-0.0	-0.00
10yr24hr	11.48	311066.7	35346.4	275720.3	-0.0	-0.00
10yr24hr	11.50	314143.1	35581.8	278561.3	-0.0	-0.00
10yr24hr	11.52	317311.1	35823.2	281487.9	-0.0	-0.00
10yr24hr	11.53	320480.4	36063.5	284416.9	0.0	0.00
10yr24hr	11.55	323761.4	36310.9	287450.5	0.0	0.00
10yr24hr	11.57	327081.0	36559.5	290521.5	-0.0	-0.00
10yr24hr	11.58	330656.7	36825.1	293831.6	-0.0	-0.00
10yr24hr	11.60	334119.3	37080.3	297039.0	-0.0	-0.00
10yr24hr	11.62	337929.7	37359.1	300570.6	-0.0	-0.00
10yr24hr	11.63	341695.4	37632.8	304062.6	-0.0	-0.00
10yr24hr	11.65	345537.4	37910.6	307626.8	-0.0	-0.00
10yr24hr	11.67	349459.0	38192.8	311266.2	0.0	0.00
10yr24hr	11.68	353594.7	38489.1	315105.5	-0.0	-0.00
10yr24hr	11.70	357792.9	38788.9	319004.0	-0.0	-0.00
10yr24hr	11.72	362020.5	39089.8	322930.7	-0.0	-0.00
10yr24hr	11.73	366318.4	39394.9	326923.5	-0.0	-0.00
10yr24hr	11.75	370772.3	39710.3	331062.0	-0.0	-0.00
10yr24hr	11.77	375390.2	40034.8	335355.4	-0.0	-0.00
10yr24hr	11.78	379992.3	40353.9	339638.4	-0.0	-0.00
10yr24hr	11.80	385037.9	40697.7	344340.2	-0.0	-0.00
10yr24hr	11.82	390636.8	41068.4	349568.4	-0.0	-0.00
10yr24hr	11.83	396965.7	41473.6	355492.1	-0.0	-0.00
10yr24hr	11.85	404143.8	41920.0	362223.9	0.0	0.00
10yr24hr	11.87	412445.1	42424.1	370021.0	-0.0	-0.00
10yr24hr	11.88	422128.0	43002.5	379125.6	-0.0	-0.00
10yr24hr	11.90	432588.7	43620.9	388967.8	-0.0	-0.00
10yr24hr	11.92	444267.1	44306.5	399960.6	-0.0	-0.00
10yr24hr	11.93	456977.5	45049.3	411928.1	-0.0	-0.00
10yr24hr	11.95	470767.4	45853.6	424913.8	-0.0	-0.00
10yr24hr	11.97	485185.1	46693.9	438491.2	-0.0	-0.00
10yr24hr	11.98	500480.2	47585.4	452894.8	-0.0	-0.00
10yr24hr	12.00	516841.7	48563.0	468278.6	-0.0	-0.00
10yr24hr	12.02	533578.8	49647.2	483931.5	-0.0	-0.00
10yr24hr	12.03	550792.3	50890.9	499901.4	-0.0	-0.00
10yr24hr	12.05	569180.6	52387.5	516793.1	-0.0	-0.00
10yr24hr	12.07	587708.1	54084.9	533623.2	-0.0	-0.00
10yr24hr	12.08	606794.1	56041.8	550752.3	-0.0	-0.00
10yr24hr	12.10	626917.6	58340.6	568577.0	-0.0	-0.00
10yr24hr	12.12	647049.3	60886.1	586163.2	-0.0	-0.00
10yr24hr	12.13	667663.2	63749.7	603913.5	-0.0	-0.00
10yr24hr	12.15	689277.3	67034.6	622242.7	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
BASIN TIME SERIES REPORT

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16A-1	BASE	11.42	2.529	0.016	1.778	0.015	74314	1.574	9.72	0.00
10yr24hr	B16A-1	BASE	11.43	2.546	0.016	1.793	0.015	74903	1.586	9.90	0.00
10yr24hr	B16A-1	BASE	11.45	2.562	0.016	1.809	0.015	75502	1.599	10.07	0.00
10yr24hr	B16A-1	BASE	11.47	2.579	0.016	1.824	0.015	76111	1.612	10.22	0.00
10yr24hr	B16A-1	BASE	11.48	2.595	0.016	1.840	0.015	76729	1.625	10.36	0.00
10yr24hr	B16A-1	BASE	11.50	2.613	0.018	1.858	0.018	77354	1.638	10.50	0.00
10yr24hr	B16A-1	BASE	11.52	2.636	0.023	1.878	0.020	77989	1.651	10.66	0.00
10yr24hr	B16A-1	BASE	11.53	2.658	0.023	1.899	0.021	78634	1.665	10.85	0.00
10yr24hr	B16A-1	BASE	11.55	2.681	0.023	1.921	0.021	79292	1.679	11.09	0.00
10yr24hr	B16A-1	BASE	11.57	2.704	0.023	1.942	0.021	79966	1.693	11.38	0.00
10yr24hr	B16A-1	BASE	11.58	2.726	0.023	1.963	0.021	80659	1.708	11.71	0.00
10yr24hr	B16A-1	BASE	11.60	2.749	0.023	1.985	0.021	81372	1.723	12.06	0.00
10yr24hr	B16A-1	BASE	11.62	2.771	0.023	2.006	0.021	82107	1.739	12.41	0.00
10yr24hr	B16A-1	BASE	11.63	2.794	0.023	2.028	0.021	82861	1.755	12.74	0.00
10yr24hr	B16A-1	BASE	11.65	2.817	0.023	2.049	0.021	83635	1.771	13.05	0.00
10yr24hr	B16A-1	BASE	11.67	2.839	0.023	2.070	0.021	84427	1.788	13.34	0.00
10yr24hr	B16A-1	BASE	11.68	2.862	0.023	2.092	0.021	85235	1.805	13.60	0.00
10yr24hr	B16A-1	BASE	11.70	2.885	0.023	2.113	0.021	86058	1.822	13.83	0.00
10yr24hr	B16A-1	BASE	11.72	2.907	0.023	2.135	0.022	86894	1.840	14.05	0.00
10yr24hr	B16A-1	BASE	11.73	2.930	0.023	2.156	0.022	87743	1.858	14.26	0.00
10yr24hr	B16A-1	BASE	11.75	2.953	0.023	2.178	0.022	88605	1.876	14.44	0.00
10yr24hr	B16A-1	BASE	11.77	3.005	0.053	2.238	0.060	89485	1.895	14.89	0.00
10yr24hr	B16A-1	BASE	11.78	3.103	0.098	2.322	0.083	90401	1.914	15.65	0.00
10yr24hr	B16A-1	BASE	11.80	3.201	0.098	2.415	0.094	91374	1.935	16.78	0.00
10yr24hr	B16A-1	BASE	11.82	3.299	0.098	2.509	0.094	92439	1.957	18.74	0.00
10yr24hr	B16A-1	BASE	11.83	3.397	0.098	2.603	0.094	93645	1.983	21.44	0.00
10yr24hr	B16A-1	BASE	11.85	3.495	0.098	2.697	0.094	95026	2.012	24.62	0.00
10yr24hr	B16A-1	BASE	11.87	3.592	0.098	2.791	0.094	96607	2.046	28.07	0.00
10yr24hr	B16A-1	BASE	11.88	3.690	0.098	2.886	0.095	98393	2.083	31.47	0.00
10yr24hr	B16A-1	BASE	11.90	3.788	0.098	2.980	0.095	100378	2.125	34.70	0.00
10yr24hr	B16A-1	BASE	11.92	3.886	0.098	3.075	0.095	102551	2.171	37.75	0.00
10yr24hr	B16A-1	BASE	11.93	3.984	0.098	3.170	0.095	104901	2.221	40.58	0.00
10yr24hr	B16A-1	BASE	11.95	4.082	0.098	3.265	0.095	107411	2.274	43.10	0.00
10yr24hr	B16A-1	BASE	11.97	4.179	0.098	3.360	0.095	110066	2.331	45.40	0.00
10yr24hr	B16A-1	BASE	11.98	4.277	0.098	3.455	0.095	112854	2.390	47.51	0.00
10yr24hr	B16A-1	BASE	12.00	4.375	0.098	3.551	0.095	115762	2.451	49.44	0.00
10yr24hr	B16A-1	BASE	12.02	4.473	0.098	3.647	0.096	118782	2.515	51.22	0.00
10yr24hr	B16A-1	BASE	12.03	4.572	0.098	3.743	0.096	121906	2.581	52.89	0.00
10yr24hr	B16A-1	BASE	12.05	4.670	0.098	3.839	0.096	125126	2.650	54.47	0.00
10yr24hr	B16A-1	BASE	12.07	4.769	0.098	3.935	0.096	128439	2.720	55.95	0.00
10yr24hr	B16A-1	BASE	12.08	4.867	0.098	4.032	0.096	131836	2.792	57.30	0.00
10yr24hr	B16A-1	BASE	12.10	4.966	0.098	4.128	0.096	135313	2.865	58.58	0.00
10yr24hr	B16A-1	BASE	12.12	5.064	0.098	4.225	0.097	138863	2.940	59.78	0.00
10yr24hr	B16A-1	BASE	12.13	5.162	0.098	4.321	0.097	142484	3.017	60.92	0.00
10yr24hr	B16A-1	BASE	12.15	5.261	0.098	4.418	0.097	146170	3.095	61.94	0.00
10yr24hr	B16A-1	BASE	12.17	5.359	0.098	4.515	0.097	149915	3.174	62.90	0.00
10yr24hr	B16A-1	BASE	12.18	5.458	0.098	4.611	0.097	153716	3.255	63.78	0.00

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PRE-DEVELOPMENT CONDITIONS
BASIN TIME SERIES REPORT

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16A-3B	BASE	11.27	2.382	0.015	0.357	0.006	2645	0.285	0.68	0.00
10yr24hr	B16A-3B	BASE	11.28	2.398	0.016	0.364	0.007	2686	0.289	0.69	0.00
10yr24hr	B16A-3B	BASE	11.30	2.415	0.016	0.371	0.007	2728	0.294	0.70	0.00
10yr24hr	B16A-3B	BASE	11.32	2.431	0.016	0.378	0.007	2770	0.298	0.72	0.00
10yr24hr	B16A-3B	BASE	11.33	2.447	0.016	0.385	0.007	2814	0.303	0.74	0.00
10yr24hr	B16A-3B	BASE	11.35	2.464	0.016	0.393	0.007	2859	0.308	0.76	0.00
10yr24hr	B16A-3B	BASE	11.37	2.480	0.016	0.400	0.007	2906	0.313	0.79	0.00
10yr24hr	B16A-3B	BASE	11.38	2.497	0.016	0.407	0.007	2954	0.318	0.81	0.00
10yr24hr	B16A-3B	BASE	11.40	2.513	0.016	0.415	0.007	3003	0.323	0.84	0.00
10yr24hr	B16A-3B	BASE	11.42	2.529	0.016	0.422	0.007	3054	0.329	0.86	0.00
10yr24hr	B16A-3B	BASE	11.43	2.546	0.016	0.430	0.007	3106	0.334	0.88	0.00
10yr24hr	B16A-3B	BASE	11.45	2.562	0.016	0.437	0.008	3160	0.340	0.90	0.00
10yr24hr	B16A-3B	BASE	11.47	2.579	0.016	0.445	0.008	3214	0.346	0.92	0.00
10yr24hr	B16A-3B	BASE	11.48	2.595	0.016	0.452	0.008	3270	0.352	0.94	0.00
10yr24hr	B16A-3B	BASE	11.50	2.613	0.018	0.461	0.009	3327	0.358	0.95	0.00
10yr24hr	B16A-3B	BASE	11.52	2.636	0.023	0.471	0.010	3384	0.364	0.97	0.00
10yr24hr	B16A-3B	BASE	11.53	2.658	0.023	0.482	0.011	3444	0.371	1.00	0.00
10yr24hr	B16A-3B	BASE	11.55	2.681	0.023	0.493	0.011	3504	0.377	1.03	0.00
10yr24hr	B16A-3B	BASE	11.57	2.704	0.023	0.504	0.011	3567	0.384	1.06	0.00
10yr24hr	B16A-3B	BASE	11.58	2.726	0.023	0.515	0.011	3632	0.391	1.10	0.00
10yr24hr	B16A-3B	BASE	11.60	2.749	0.023	0.526	0.011	3699	0.398	1.14	0.00
10yr24hr	B16A-3B	BASE	11.62	2.771	0.023	0.537	0.011	3768	0.405	1.18	0.00
10yr24hr	B16A-3B	BASE	11.63	2.794	0.023	0.548	0.011	3840	0.413	1.22	0.00
10yr24hr	B16A-3B	BASE	11.65	2.817	0.023	0.560	0.011	3914	0.421	1.26	0.00
10yr24hr	B16A-3B	BASE	11.67	2.839	0.023	0.571	0.011	3991	0.429	1.29	0.00
10yr24hr	B16A-3B	BASE	11.68	2.862	0.023	0.582	0.011	4069	0.438	1.32	0.00
10yr24hr	B16A-3B	BASE	11.70	2.885	0.023	0.594	0.012	4149	0.447	1.36	0.00
10yr24hr	B16A-3B	BASE	11.72	2.907	0.023	0.606	0.012	4232	0.455	1.39	0.00
10yr24hr	B16A-3B	BASE	11.73	2.930	0.023	0.617	0.012	4316	0.464	1.41	0.00
10yr24hr	B16A-3B	BASE	11.75	2.953	0.023	0.629	0.012	4401	0.474	1.44	0.00
10yr24hr	B16A-3B	BASE	11.77	3.005	0.053	0.663	0.033	4489	0.483	1.50	0.00
10yr24hr	B16A-3B	BASE	11.78	3.103	0.098	0.710	0.047	4582	0.493	1.59	0.00
10yr24hr	B16A-3B	BASE	11.80	3.201	0.098	0.763	0.054	4681	0.504	1.72	0.00
10yr24hr	B16A-3B	BASE	11.82	3.299	0.098	0.818	0.055	4791	0.516	1.95	0.00
10yr24hr	B16A-3B	BASE	11.83	3.397	0.098	0.875	0.056	4917	0.529	2.26	0.00
10yr24hr	B16A-3B	BASE	11.85	3.495	0.098	0.932	0.057	5064	0.545	2.64	0.00
10yr24hr	B16A-3B	BASE	11.87	3.592	0.098	0.990	0.058	5235	0.563	3.05	0.00
10yr24hr	B16A-3B	BASE	11.88	3.690	0.098	1.050	0.060	5431	0.584	3.47	0.00
10yr24hr	B16A-3B	BASE	11.90	3.788	0.098	1.110	0.061	5651	0.608	3.88	0.00
10yr24hr	B16A-3B	BASE	11.92	3.886	0.098	1.172	0.061	5896	0.634	4.27	0.00
10yr24hr	B16A-3B	BASE	11.93	3.984	0.098	1.234	0.062	6163	0.663	4.65	0.00
10yr24hr	B16A-3B	BASE	11.95	4.082	0.098	1.297	0.063	6453	0.694	5.00	0.00
10yr24hr	B16A-3B	BASE	11.97	4.179	0.098	1.361	0.064	6763	0.728	5.33	0.00
10yr24hr	B16A-3B	BASE	11.98	4.277	0.098	1.426	0.065	7093	0.763	5.65	0.00
10yr24hr	B16A-3B	BASE	12.00	4.375	0.098	1.492	0.066	7440	0.801	5.94	0.00
10yr24hr	B16A-3B	BASE	12.02	4.473	0.098	1.559	0.067	7805	0.840	6.23	0.00
10yr24hr	B16A-3B	BASE	12.03	4.572	0.098	1.627	0.068	8187	0.881	6.50	0.00

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Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16A-2	BASE	11.73	2.930	0.023	2.928	0.023	15935	2.613	1.96	0.00
10yr24hr	B16A-2	BASE	11.75	2.953	0.023	2.951	0.023	16053	2.632	1.98	0.00
10yr24hr	B16A-2	BASE	11.77	3.005	0.053	3.014	0.063	16173	2.652	2.04	0.00
10yr24hr	B16A-2	BASE	11.78	3.103	0.098	3.102	0.087	16299	2.673	2.14	0.00
10yr24hr	B16A-2	BASE	11.80	3.201	0.098	3.199	0.098	16432	2.694	2.29	0.00
10yr24hr	B16A-2	BASE	11.82	3.299	0.098	3.297	0.098	16577	2.718	2.56	0.00
10yr24hr	B16A-2	BASE	11.83	3.397	0.098	3.395	0.098	16741	2.745	2.92	0.00
10yr24hr	B16A-2	BASE	11.85	3.495	0.098	3.493	0.098	16929	2.776	3.35	0.00
10yr24hr	B16A-2	BASE	11.87	3.592	0.098	3.591	0.098	17144	2.811	3.81	0.00
10yr24hr	B16A-2	BASE	11.88	3.690	0.098	3.689	0.098	17386	2.851	4.26	0.00
10yr24hr	B16A-2	BASE	11.90	3.788	0.098	3.786	0.098	17655	2.895	4.69	0.00
10yr24hr	B16A-2	BASE	11.92	3.886	0.098	3.884	0.098	17949	2.943	5.10	0.00
10yr24hr	B16A-2	BASE	11.93	3.984	0.098	3.982	0.098	18266	2.995	5.47	0.00
10yr24hr	B16A-2	BASE	11.95	4.082	0.098	4.080	0.098	18604	3.051	5.81	0.00
10yr24hr	B16A-2	BASE	11.97	4.179	0.098	4.178	0.098	18962	3.109	6.11	0.00
10yr24hr	B16A-2	BASE	11.98	4.277	0.098	4.276	0.098	19337	3.171	6.38	0.00
10yr24hr	B16A-2	BASE	12.00	4.375	0.098	4.373	0.098	19727	3.235	6.64	0.00
10yr24hr	B16A-2	BASE	12.02	4.473	0.098	4.472	0.098	20132	3.301	6.87	0.00
10yr24hr	B16A-2	BASE	12.03	4.572	0.098	4.570	0.098	20551	3.370	7.08	0.00
10yr24hr	B16A-2	BASE	12.05	4.670	0.098	4.669	0.098	20982	3.441	7.29	0.00
10yr24hr	B16A-2	BASE	12.07	4.769	0.098	4.767	0.098	21425	3.513	7.48	0.00
10yr24hr	B16A-2	BASE	12.08	4.867	0.098	4.866	0.098	21879	3.588	7.65	0.00
10yr24hr	B16A-2	BASE	12.10	4.966	0.098	4.964	0.098	22342	3.664	7.81	0.00
10yr24hr	B16A-2	BASE	12.12	5.064	0.098	5.062	0.098	22816	3.741	7.97	0.00
10yr24hr	B16A-2	BASE	12.13	5.162	0.098	5.161	0.098	23298	3.820	8.11	0.00
10yr24hr	B16A-2	BASE	12.15	5.261	0.098	5.259	0.098	23788	3.901	8.24	0.00
10yr24hr	B16A-2	BASE	12.17	5.359	0.098	5.358	0.098	24286	3.982	8.36	0.00
10yr24hr	B16A-2	BASE	12.18	5.458	0.098	5.456	0.098	24791	4.065	8.47	0.00
10yr24hr	B16A-2	BASE	12.20	5.556	0.098	5.555	0.098	25302	4.149	8.57	0.00
10yr24hr	B16A-2	BASE	12.22	5.655	0.098	5.653	0.098	25820	4.234	8.67	0.00
10yr24hr	B16A-2	BASE	12.23	5.753	0.098	5.742	0.089	26343	4.320	8.76	0.00
10yr24hr	B16A-2	BASE	12.25	5.806	0.053	5.804	0.062	26870	4.406	8.81	0.00
10yr24hr	B16A-2	BASE	12.27	5.828	0.022	5.826	0.022	27398	4.493	8.81	0.00
10yr24hr	B16A-2	BASE	12.28	5.850	0.022	5.848	0.022	27924	4.579	8.72	0.00
10yr24hr	B16A-2	BASE	12.30	5.872	0.022	5.870	0.022	28442	4.664	8.54	0.00
10yr24hr	B16A-2	BASE	12.32	5.894	0.022	5.893	0.022	28945	4.746	8.26	0.00
10yr24hr	B16A-2	BASE	12.33	5.916	0.022	5.915	0.022	29430	4.826	7.90	0.00
10yr24hr	B16A-2	BASE	12.35	5.938	0.022	5.937	0.022	29892	4.902	7.50	0.00
10yr24hr	B16A-2	BASE	12.37	5.960	0.022	5.959	0.022	30331	4.974	7.12	0.00
10yr24hr	B16A-2	BASE	12.38	5.983	0.022	5.981	0.022	30748	5.042	6.76	0.00
10yr24hr	B16A-2	BASE	12.40	6.005	0.022	6.003	0.022	31143	5.107	6.42	0.00
10yr24hr	B16A-2	BASE	12.42	6.027	0.022	6.025	0.022	31520	5.168	6.12	0.00
10yr24hr	B16A-2	BASE	12.43	6.049	0.022	6.047	0.022	31879	5.227	5.85	0.00
10yr24hr	B16A-2	BASE	12.45	6.071	0.022	6.069	0.022	32222	5.284	5.60	0.00
10yr24hr	B16A-2	BASE	12.47	6.093	0.022	6.091	0.022	32552	5.338	5.38	0.00
10yr24hr	B16A-2	BASE	12.48	6.115	0.022	6.113	0.022	32868	5.390	5.18	0.00
10yr24hr	B16A-2	BASE	12.50	6.137	0.022	6.134	0.021	33173	5.440	4.99	0.00

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PRE-DEVELOPMENT CONDITIONS
BASIN TIME SERIES REPORT

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps	
10yr24hr	B16A-3B	Offs	BASE	11.58	2.726	0.023	0.411	0.010	1396	0.303	0.47	0.00
10yr24hr	B16A-3B	Offs	BASE	11.60	2.749	0.023	0.420	0.010	1425	0.309	0.49	0.00
10yr24hr	B16A-3B	Offs	BASE	11.62	2.771	0.023	0.430	0.010	1455	0.316	0.51	0.00
10yr24hr	B16A-3B	Offs	BASE	11.63	2.794	0.023	0.440	0.010	1485	0.322	0.52	0.00
10yr24hr	B16A-3B	Offs	BASE	11.65	2.817	0.023	0.450	0.010	1517	0.329	0.54	0.00
10yr24hr	B16A-3B	Offs	BASE	11.67	2.839	0.023	0.460	0.010	1550	0.336	0.56	0.00
10yr24hr	B16A-3B	Offs	BASE	11.68	2.862	0.023	0.470	0.010	1584	0.344	0.57	0.00
10yr24hr	B16A-3B	Offs	BASE	11.70	2.885	0.023	0.481	0.010	1619	0.351	0.59	0.00
10yr24hr	B16A-3B	Offs	BASE	11.72	2.907	0.023	0.491	0.010	1655	0.359	0.60	0.00
10yr24hr	B16A-3B	Offs	BASE	11.73	2.930	0.023	0.501	0.010	1691	0.367	0.61	0.00
10yr24hr	B16A-3B	Offs	BASE	11.75	2.953	0.023	0.512	0.010	1728	0.375	0.63	0.00
10yr24hr	B16A-3B	Offs	BASE	11.77	3.005	0.053	0.541	0.030	1767	0.383	0.65	0.00
10yr24hr	B16A-3B	Offs	BASE	11.78	3.103	0.098	0.583	0.042	1807	0.392	0.69	0.00
10yr24hr	B16A-3B	Offs	BASE	11.80	3.201	0.098	0.631	0.048	1850	0.401	0.75	0.00
10yr24hr	B16A-3B	Offs	BASE	11.82	3.299	0.098	0.681	0.050	1898	0.412	0.85	0.00
10yr24hr	B16A-3B	Offs	BASE	11.83	3.397	0.098	0.732	0.051	1954	0.424	0.99	0.00
10yr24hr	B16A-3B	Offs	BASE	11.85	3.495	0.098	0.784	0.052	2019	0.438	1.16	0.00
10yr24hr	B16A-3B	Offs	BASE	11.87	3.592	0.098	0.837	0.053	2094	0.454	1.35	0.00
10yr24hr	B16A-3B	Offs	BASE	11.88	3.690	0.098	0.891	0.054	2181	0.473	1.54	0.00
10yr24hr	B16A-3B	Offs	BASE	11.90	3.788	0.098	0.947	0.055	2278	0.494	1.72	0.00
10yr24hr	B16A-3B	Offs	BASE	11.92	3.886	0.098	1.003	0.056	2387	0.518	1.90	0.00
10yr24hr	B16A-3B	Offs	BASE	11.93	3.984	0.098	1.060	0.057	2506	0.544	2.08	0.00
10yr24hr	B16A-3B	Offs	BASE	11.95	4.082	0.098	1.118	0.058	2636	0.572	2.24	0.00
10yr24hr	B16A-3B	Offs	BASE	11.97	4.179	0.098	1.178	0.059	2775	0.602	2.39	0.00
10yr24hr	B16A-3B	Offs	BASE	11.98	4.277	0.098	1.238	0.060	2923	0.634	2.54	0.00
10yr24hr	B16A-3B	Offs	BASE	12.00	4.375	0.098	1.299	0.061	3079	0.668	2.68	0.00
10yr24hr	B16A-3B	Offs	BASE	12.02	4.473	0.098	1.361	0.062	3244	0.704	2.81	0.00
10yr24hr	B16A-3B	Offs	BASE	12.03	4.572	0.098	1.424	0.063	3416	0.741	2.94	0.00
10yr24hr	B16A-3B	Offs	BASE	12.05	4.670	0.098	1.488	0.064	3596	0.780	3.07	0.00
10yr24hr	B16A-3B	Offs	BASE	12.07	4.769	0.098	1.552	0.064	3784	0.821	3.19	0.00
10yr24hr	B16A-3B	Offs	BASE	12.08	4.867	0.098	1.618	0.065	3979	0.863	3.30	0.00
10yr24hr	B16A-3B	Offs	BASE	12.10	4.966	0.098	1.684	0.066	4180	0.907	3.42	0.00
10yr24hr	B16A-3B	Offs	BASE	12.12	5.064	0.098	1.750	0.067	4389	0.952	3.53	0.00
10yr24hr	B16A-3B	Offs	BASE	12.13	5.162	0.098	1.818	0.067	4603	0.999	3.63	0.00
10yr24hr	B16A-3B	Offs	BASE	12.15	5.261	0.098	1.886	0.068	4824	1.046	3.73	0.00
10yr24hr	B16A-3B	Offs	BASE	12.17	5.359	0.098	1.954	0.069	5051	1.096	3.83	0.00
10yr24hr	B16A-3B	Offs	BASE	12.18	5.458	0.098	2.024	0.069	5284	1.146	3.93	0.00
10yr24hr	B16A-3B	Offs	BASE	12.20	5.556	0.098	2.093	0.070	5522	1.198	4.02	0.00
10yr24hr	B16A-3B	Offs	BASE	12.22	5.655	0.098	2.164	0.071	5766	1.251	4.11	0.00
10yr24hr	B16A-3B	Offs	BASE	12.23	5.753	0.098	2.228	0.064	6015	1.305	4.19	0.00
10yr24hr	B16A-3B	Offs	BASE	12.25	5.806	0.053	2.273	0.045	6268	1.360	4.25	0.00
10yr24hr	B16A-3B	Offs	BASE	12.27	5.828	0.022	2.289	0.016	6524	1.415	4.29	0.00
10yr24hr	B16A-3B	Offs	BASE	12.28	5.850	0.022	2.305	0.016	6781	1.471	4.27	0.00
10yr24hr	B16A-3B	Offs	BASE	12.30	5.872	0.022	2.321	0.016	7035	1.526	4.20	0.00
10yr24hr	B16A-3B	Offs	BASE	12.32	5.894	0.022	2.337	0.016	7284	1.580	4.08	0.00
10yr24hr	B16A-3B	Offs	BASE	12.33	5.916	0.022	2.354	0.016	7524	1.632	3.92	0.00
10yr24hr	B16A-3B	Offs	BASE	12.35	5.938	0.022	2.370	0.016	7753	1.682	3.73	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
Post-Development Conditions
BCC Engineering

Prepared by: S.O. Date: 8/20/2016
 Checked by: H.S.M Date: 8/20/2016
 Approved by: R.G. Date: 8/20/2016

POND 16A-1

DRY DETENTION

Receiving River Basin: **South Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	1.9200	0.000	0.000	
2.00	2.6847	1.335	1.335	
2.80	3.0888	2.309	3.645	Weir El. (PrCS16A-1)
3.00	3.1898	0.628	4.273	
4.00	3.8478	3.519	7.791	
5.00	4.0668	3.957	11.749	
6.00	4.4188	4.243	15.992	

POND 16A-2A

DRY DETENTION

Receiving River Basin: **South Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	1.6217	0.000	0.000	
2.80	2.0021	2.500	2.500	Weir El. (PrCS16A-1)
3.00	2.0572	0.406	2.906	
5.00	2.7530	4.810	7.717	
7.42	3.3880	7.431	15.147	
7.43	3.4917	0.034	15.182	
8.00	3.6367	2.032	17.213	

POND 16A-2B

DRY RETENTION

Receiving River Basin: **South Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.1896	0.000	0.000	
3.92	0.2990	0.611	0.611	Weir El. (ExWeir16A-1)
4.00	0.3025	0.024	0.635	
4.01	0.3335	0.003	0.638	
7.00	0.4003	1.097	1.735	
9.70	0.5330	1.260	2.995	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
Post-Development Conditions
BCC Engineering

Prepared by: S.O.
 Checked by: H.S.M
 Approved by: R.G.

Date: 7/15/2016
 Date: 7/15/2016
 Date: 7/15/2016

POND 16A-3

DRY DETENTION

Receiving River Basin: **South Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.2981	0.000	0.000	
2.00	0.3148	0.178	0.178	
2.80	0.3463	0.264	0.442	Weir El. (PrCS16A-1)
3.50	0.3739	0.252	0.694	
5.00	0.4462	0.615	1.309	
5.25	0.4583	0.728	1.422	

POND 16A-4

DRY DETENTION

Receiving River Basin: **South Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.0774	0.000	0.000	
2.00	0.1251	0.059	0.059	
2.80	0.1940	0.128	0.186	Weir El. (PrCS16A-1)
4.00	0.2973	0.295	0.481	
5.00	0.3900	0.344	0.825	
5.25	0.4132	0.444	0.925	

SWALE 16A-1

DRY SWALE

Receiving River Basin: **South Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.0000	0.000	0.000	
3.00	0.0030	0.002	0.000	
4.00	0.0236	0.013	0.000	
4.50	0.0514	0.019	0.000	
5.00	0.1460	0.0494	0.000	
6.00	0.4400	0.293	0.000	

* NOT USED FOR WATER QUALITY. STAGE AREA IS ONLY FOR ICPR MODEL.

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
Post-Development Conditions
BCC Engineering

Prepared by: S.O.
 Checked by: H.S.M
 Approved by: R.G.

Date: 7/15/2016
 Date: 7/15/2016
 Date: 7/15/2016

SWALE 16A-2

DRY SWALE

Receiving River Basin: South Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
7.00	0.0020	0.000	0.000	
7.50	0.0062	0.002	0.000	
8.00	0.1805	0.047	0.000	
8.50	0.3660	0.137	0.000	

* NOT USED FOR WATER QUALITY. STAGE AREA IS ONLY FOR ICPR MODEL. (INCLUDED IN PrFD16A-2)

SWALE 16A-3

DRY SWALE

Receiving River Basin: South Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
5.00	0.0010	0.000	0.000	
6.00	0.0050	0.003	0.000	
7.00	0.0660	0.036	0.000	
8.00	0.1760	0.121	0.000	
9.00	0.3630	0.270	0.000	

* NOT USED FOR WATER QUALITY. STAGE AREA IS ONLY FOR ICPR MODEL.

SWALE 16A-4

DRY SWALE

Receiving River Basin: South Fork of the New River

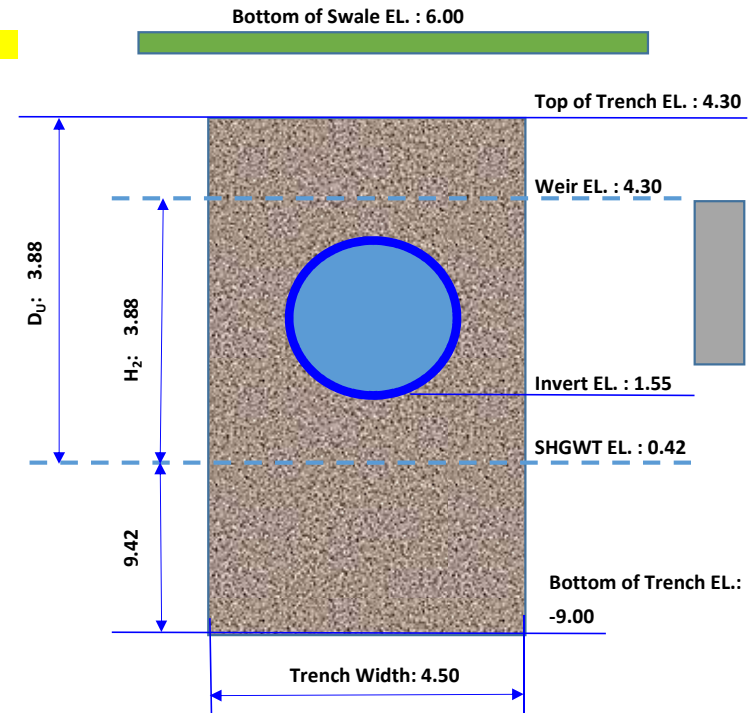
Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
6.00	0.1808	0.000	0.000	
7.00	0.2865	0.234	0.000	
7.95	0.3949	0.324	0.000	

* NOT USED FOR WATER QUALITY. STAGE AREA IS ONLY FOR ICPR MODEL. (INCLUDED IN PrFD16A-1)

**I-95 CDC DRAINAGE CALCULATIONS
 FRENCH DRAIN DESIGN & TREATMENT VOLUMES**

Drainage System:	16A
French Drain (ICPR Link Name):	PrFD16A-1 **
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	501.5
Pipe Thickness (in):	3
Pipe Invert EL. (ft-NAVD):	1.55
Top of Trench EL. (ft-NAVD):	4.30
Bottom of Trench EL. (ft-NAVD):	-9.00
Trench Height, H T (ft):	13.3
Weir EL. (ft-NAVD):	4.30
Trench Width, W (ft):	4.50
(P-9) Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	1.000E-04
Depth to Water Table, H ₂ (ft):	3.88
Non-Saturated Trench Depth, D _u (ft):	3.88
Saturated Trench Depth, D _s (ft):	9.42
$V = L(K_{10}(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.54
$V = L(K_{10}(2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.47
D _u > D _s and W < 2H _T (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.47

**** WEIR ELEV. 4.30' SEE DRAINAGE DETAIL _PrCS16A1-1**



I-95 CDC DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: **16A**
 French Drain (ICPR Link Name): PrFD16A-1
 Pipe Size (in): 24
 Length of French Drain, L (LF): 251 (FS=2.00)
 Trench Height, H T (ft): 13.30
 Trench Width, W (ft): 4.50
 Weir EL. (ft-NAVD): 4.30

Pipe Invert EL. (ft-NAVD): 1.55
 Top of Trench EL. (ft-NAVD): 4.30
 Bottom of Trench EL. (ft-NAVD): -9.00
 Maximum Ground Water Elevation (ft-NAVD): 1.42
 Maximum Possible Stage (ft-NAVD): 7.80
 SHGWT EL. (ft-NAVD): 0.42

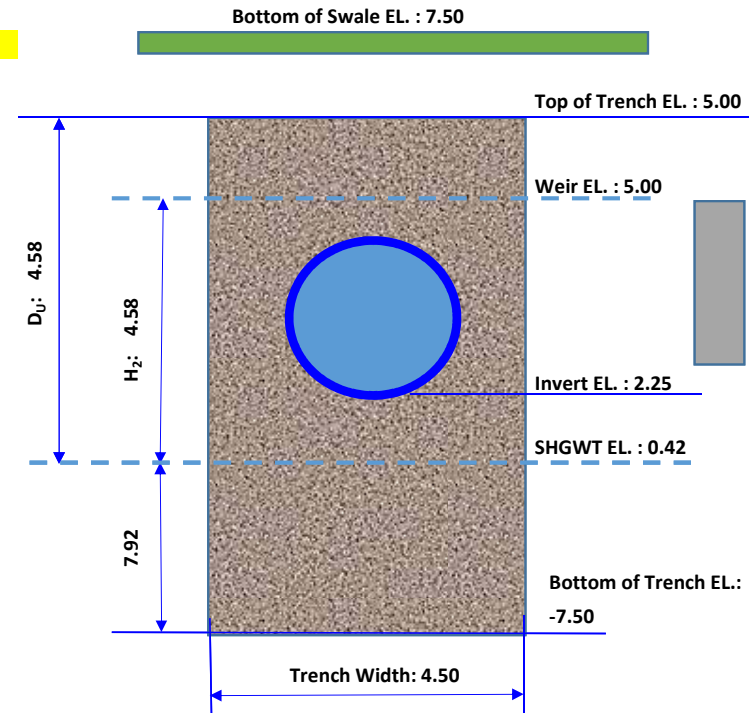
(P-9) Average Hydraulic Conductivity, K 15 (cfs/ft²/ft-head): 1.000E-04

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	d _u (ft)	d _s (ft)	Head d _p (ft)	Exfiltration E (cfs/ft)	Discharge Q (cfs)	Equations	Comments
0.42	0.42	--	--	0.00	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	4.30	3.88	9.42	3.88	0.00882	2.213	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	7.80	3.88	9.42	7.38	0.05817	14.600	$E = 2K_{15} (d_u (d_p \cdot d_u / 2) + d_s d_p)$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage
1.42	1.42	--	--	--	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
1.42	4.30	2.88	10.42	--	0.00683	1.715	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Swale
1.42	7.80	2.88	10.42	6.38	0.01614	4.051	$E = 2K_{15} (d_u (d_p \cdot d_u / 2) + d_s d_p)$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage

FRENCH DRAIN NODE: STAGE AREA DATA			
STAGE (ft-NAVD)		AREA (Ac)	
Bottom of Trench EL.	-9.00	Area within Trench x 50% (0.5 x L x W x FS)	0.0259
Top of Trench EL.	4.30	Area within Trench x 50% (0.5 x L x W x FS)	0.0259
0.1' Above Top of Trench EL.	4.31	Area within Drainage Structure(s)	0.0060
Structure Rim/Grate EL.	6.00	Area within Drainage Structure(s)	0.0060
Bottom EL. of Swale 16A-4	6.01	Area within Swale	0.1808
Swale 16A-4	7.95	Area within Swale	0.3949

**I-95 CDC DRAINAGE CALCULATIONS
 FRENCH DRAIN DESIGN & TREATMENT VOLUMES**

Drainage System:	16A
French Drain (ICPR Link Name):	PrFD16A-2 **
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	516
Pipe Thickness (in):	3
Pipe Invert EL. (ft-NAVD):	2.25
Top of Trench EL. (ft-NAVD):	5.00
Bottom of Trench EL. (ft-NAVD):	-7.50
Trench Height, H T (ft):	12.5
Weir EL. (ft-NAVD):	5.00
Trench Width, W (ft):	4.50
(P-8) Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	6.100E-05
Depth to Water Table, H ₂ (ft):	4.58
Non-Saturated Trench Depth, D _u (ft):	4.58
Saturated Trench Depth, D _s (ft):	7.92
$V = L(K_{10}(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.42
$V = L(K_{10}(2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.37
D _u > D _s and W < 2H _T (Yes/No):	No
Treatment Volume Provided, V (Ac-ft):	0.37



**** INCLUDED IN DRAINAGE DETAIL_PrCS16A-2**
 (P-8) Hydraulic Conductivity, K 15 (cfs/ft²/ft-head):

6.100E-05

I-95 CDC DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: **16A**
 French Drain (ICPR Link Name): PrFD16A-2
 Pipe Size (in): 24
 Length of French Drain, L (LF): 258 (FS=2.00)
 Trench Height, H T (ft): 12.50
 Trench Width, W (ft): 4.50
 Weir EL. (ft-NAVD): 5.00

Pipe Invert EL. (ft-NAVD): 2.25
 Top of Trench EL. (ft-NAVD): 5.00
 Bottom of Trench EL. (ft-NAVD): -7.50
 Maximum Ground Water Elevation (ft-NAVD): 1.42
 Maximum Possible Stage (ft-NAVD): 8.50
 SHGWT EL. (ft-NAVD): 0.42

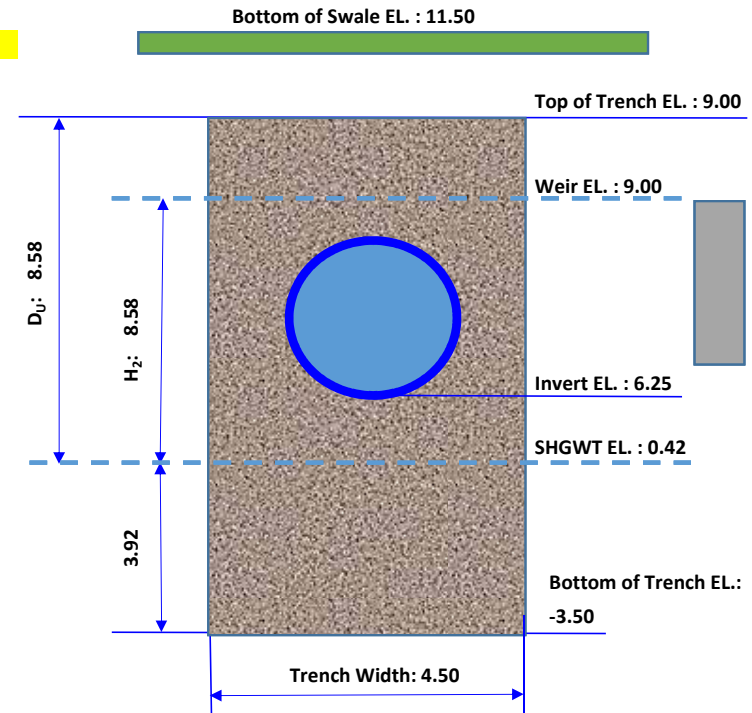
(P-8) Average Hydraulic Conductivity, K 15 (cfs/ft²/ft-head): 6.100E-05

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	d _u (ft)	d _s (ft)	Head d _p (ft)	Exfiltration E (cfs/ft)	Discharge Q (cfs)	Equations	Comments
0.42	0.42	--	--	0.00	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	5.00	4.58	7.92	4.58	0.00570	1.472	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	8.50	4.58	7.92	8.08	0.03899	10.060	$E = 2K_{15} (d_u (d_p \cdot d_u / 2) + d_s d_p)$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage
1.42	1.42	--	--	--	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
1.42	5.00	3.58	8.92	--	0.00468	1.207	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Swale
1.42	8.50	3.58	8.92	7.08	0.01002	2.584	$E = 2K_{10} [D_U (D_p - D_U / 2) + D_S D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage

FRENCH DRAIN NODE: STAGE AREA DATA			
STAGE (ft-NAVD)		AREA (Ac)	
Bottom of Trench EL.	-7.50	Area within Trench x 50% (0.5 x L x W x FS)	0.0267
Top of Trench EL.	5.00	Area within Trench x 50% (0.5 x L x W x FS)	0.0267
0.1' Above Top of Trench EL.	5.01	Area within Drainage Structure(s)	0.0060
Structure Rim/Grate EL.	7.50	Area within Drainage Structure(s)	0.0060
Bottom of Swale 16A-2 EL.	7.51	Area within Swale	0.0617
Swale 16A-2	8.50	Area within Swale	0.3660

**I-95 CDC DRAINAGE CALCULATIONS
 FRENCH DRAIN DESIGN & TREATMENT VOLUMES**

Drainage System:	16A
French Drain (ICPR Link Name):	PrFD16A-3 **
Existing/Proposed:	Proposed
SHGWT EL. (ft-NAVD):	0.42
Pipe Size (in):	24
Length of French Drain, L (LF):	87
Pipe Thickness (in):	3
Pipe Invert EL. (ft-NAVD):	6.25
Top of Trench EL. (ft-NAVD):	9.00
Bottom of Trench EL. (ft-NAVD):	-3.50
Trench Height, H T (ft):	12.5
Weir EL. (ft-NAVD):	9.00
Trench Width, W (ft):	4.50
(P-8) Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	6.100E-05
Depth to Water Table, H ₂ (ft):	8.58
Non-Saturated Trench Depth, D _u (ft):	8.58
Saturated Trench Depth, D _s (ft):	3.92
$V = L(K_{10}(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.12
$V = L(K_{10}(2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.10
D _u > D _s and W < 2H _T (Yes/No):	Yes
Treatment Volume Provided, V (Ac-ft):	0.12



**** INCLUDED IN DRAINAGE DETAIL_PrCS16A-3**
 (P-8) Hydraulic Conductivity, K 15 (cfs/ft²/ft-head): **6.100E-05**

I-95 CDC DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System: **16A**
 French Drain (ICPR Link Name): PrFD16A-3
 Pipe Size (in): 24
 Length of French Drain, L (LF): 44 (FS=2.00)
 Trench Height, H T (ft): 12.50
 Trench Width, W (ft): 4.50
 Weir EL. (ft-NAVD): 9.00

Pipe Invert EL. (ft-NAVD): 6.25
 Top of Trench EL. (ft-NAVD): 9.00
 Bottom of Trench EL. (ft-NAVD): -3.50
 Maximum Ground Water Elevation (ft-NAVD): 1.42
 Maximum Possible Stage (ft-NAVD): 13.20
 SHGWT EL. (ft-NAVD): 0.42
 (P-8) Average Hydraulic Conductivity, K 15 (cfs/ft²/ft-head): 6.100E-05

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	d _u (ft)	d _s (ft)	Head d _p (ft)	Exfiltration E (cfs/ft)	Discharge Q (cfs)	Equations	Comments
0.42	0.42	--	--	0.00	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	9.00	8.58	3.92	8.58	0.00859	0.378	$E = 2K_{15} d_u (d_u/2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	13.20	8.58	3.92	12.78	0.06133	2.698	$E = 2K_{15} (d_u (d_p \cdot d_u/2) + d_s d_p)$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage
1.42	1.42	--	--	--	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
1.42	9.00	7.58	4.92	--	0.00805	0.354	$E = 2K_{15} d_u (d_u/2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Swale
1.42	13.20	7.58	4.92	11.78	0.01446	0.636	$E = 2K_{10} [D_u (D_p - D_u/2) + D_s D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage

FRENCH DRAIN NODE: STAGE AREA DATA			
STAGE (ft-NAVD)		AREA (Ac)	
Bottom of Trench EL.	-3.50	Area within Trench x 50% (0.5 x L x WxFS)	0.0045
Top of Trench EL.	9.00	Area within Trench x 50% (0.5 x L x W)	0.0045
0.1' Above Top of Trench EL.	9.01	Area within Drainage Structure(s)	0.0060
Structure Rim/Grate EL.	11.50	Area within Drainage Structure(s)	0.0060
Bottom of Existing Swale EL.	11.51	Area within Swale	0.0360
Existing Swale	13.20	Area within Swale	0.1310

Basin: **16A** Pond : **16A-1** Control Structure : **PrCS16A-1**

-Design for Detention Type.....	Dry Detention
-Seasonal high groundwater elevation at the proposed basin.....	0.42 ft
-Flow line of the orifice.....	0.42 ft
-Contributing Area :.....	69.16 Ac
-Detention Volume, 1" x Total Area	5.76 Ac-ft
-Weir elevation	2.80 ft
-One-half the treatment volume	2.88 ac-ft
-Elevation at one-half.....	1.61 ft

Trial #1

From Equation 25-3

$$h = \frac{(h_1 + h_2)}{2}$$

where:

h1 = Depth of water between the top of the treatment volume and the flow line of the orifice **2.38 ft**

h2 = Depth of water between the stage when half the treatment volume has been released and the flow line of the orifice **1.19 ft**

h= 1.79 ft

The average flow rate (Q) required to drawdown one-half the treatment volume between 24 and 30 hours is found from Equation 25-2:

$$Q = \frac{TV}{2tCF}$$

where:

TV = Treatment Volume **251050.80 ft3**
 t = Recovery time..... **30 hrs**
 CF = Conversion Factor **4500 sec/hr**

Q_{1/2} = 0.930 cfs
Q_{used} = 0.930 cfs < Q_{1/2}"

Find the area (A) of the orifice utilizing Equation 25-4:

$$A = \frac{Q}{C\sqrt{2gh}}$$

Given:

G = Gravitational constant **32.17 ft/sec²**
C = Orifice coefficient (usually assumed = 0.6)..... **0.60**

A= 0.145 ft²

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.429 ft

D= 5.15 inches

Trial #2

Adjust h₁, h₂, and the orifice diameter (D) to the flow line of the orifice.

Flow line elevation = 0.63 ft

h₁ = 2.17 ft

h₂ = 0.98 ft

From Equation 25-3

$$h = \frac{(h_1 + h_2)}{2}$$

h= 1.57 ft

Find the area (A) of the orifice utilizing Equation 25-4:

$$A = \frac{Q}{C\sqrt{2gh}}$$

Given:

G = Gravitational constant **32.17 ft/sec²**
C = Orifice coefficient (usually assumed = 0.6)..... **0.60**

A= 0.154 ft²

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.443 ft

D= 5.32 inches

Adjusted flow line elev. = 0.64 ft

Difference FLE. 0.01 ft*

D= 6.00 inches**

* This trial is acceptable because there is no difference between the Flow Line Elevations (FLE).

** The diameter may be rounded up to 1.0 inch for construction purposes

Contributing Basin Areas	
B16A-3	17.05
B16A-3 Offs	0.00
B16A-4	0.33
B16A-5A1	13.23
B16A-5B	3.80
B16A-5C	0.44
B16A-6	2.38
B16A-7	3.01
B16A-8	2.02
B16A-9	1.89
B16A-10	2.58
B16A-12	3.81
B16A-13	1.74
B16A-15	2.57
B16A-16	3.33
B16A-17	10.98
16 A PONDS	69.16

I-95 CDC DRAINAGE CALCULATIONS
DRAINAGE SYSTEM SUMMARY TABLES
DRAINAGE SYSTEM: 16A

Summary of Peak Discharges								
Receiving Waterbody:			South Fork of the New River					
PRE-DEVELOPMENT								
ICPR Link	Outfall Description	Flow Area (ft ²)	10yr-24hr Peak-Flow rate* (cfs)	10yr-24hr Peak-Flow Velocity (fps)	25yr-72hr Peak-Flow rate* (cfs)	25yr-72hr Peak-Flow Velocity (fps)	100yr-24hr Peak-Flow rate* (cfs)	100yr-24hr Peak-Flow Velocity (fps)
ExPipe 16A-1A	66" RCP	23.76	108.92	4.58	119.45	5.03	125.93	5.30
B16A-1	Basin (Sheet Flow)	--	66.60	--	80.34	--	104.11	--
PRE-DEVELOPMENT TOTALS:		--	--	--	199.79	--	--	--
POST-DEVELOPMENT								
ICPR Link	Outfall Description	Flow Area (ft ²)	10yr-24hr Peak-Flow rate* (cfs)	10yr-24hr Peak-Flow Velocity (fps)	25yr-72hr Peak-Flow rate* (cfs)	25yr-72hr Peak-Flow Velocity (fps)	100yr-24hr Peak-Flow rate* (cfs)	100yr-24hr Peak-Flow Velocity (fps)
ExPipe 16A-1A	66" RCP	23.76	47.70	2.01	108.85	4.58	115.67	4.87
B16A-1	Basin (Sheet Flow)	--	66.60	--	80.34	--	104.11	--
POST-DEVELOPMENT TOTALS:		--	--	--	189.19	--	--	--

* Peak flows at respective ICPR Links occur at different times.
For Pre Dev. Condition, Maximum Inflow (cfs) at South Fork New River (at 60.03 hrs) = 192.24
For Post Dev. Condition, Maximum Inflow (cfs) at South Fork New River (at 60.07 hrs) = 142.82

} SEE EXAMPLE #1
ON NEXT PAGE

PRE-POST 25yr-72hr Peak Discharge Reduction (cfs): 49.42

Note: Link max condition and basin max condition was used as peak discharge.

Summary of Peak Stages									
Pond/ Swale/ FD #	Type: [Wet/Dry, Det./Ret., FD]	Disposition [Exist./ Prop./ Modified]	Warning EL [Min. Berm/ Min. EOS] (ft-NAVD)	PRE-DEVELOPMENT			POST-DEVELOPMENT		
				Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)	Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)
PrFD16A-1	FD	Proposed	7.95	--	--	--	7.28	7.78	8.43 ¹
PrFD16A-2	FD	Proposed	8.50	--	--	--	7.64	8.33	9.06 ²
PrFD16A-3	FD	Proposed	13.20	--	--	--	9.82	9.99	10.16
POND 16A-1	Dry Det.	Existing	6.00	4.18	4.91	5.40	4.90	5.75	5.92
POND 16A-2A	Dry Det.	Modified	7.00	5.21	6.47	7.19	5.19	6.80	7.19 ³
POND 16A-2B	Dry Ret.	Modified	9.70	6.51	6.74	7.30	6.38	6.87	7.27

¹ Minimum EOP elevation in PrFD16A-1 is 8.55' in post-development and will not impact any travel lane.

² Minimum EOP elevation in PrFD16A-2 is 8.60' in post-development and the travel lane will be partially impacted.

³ Post-development elevation is the same in pre-development condition and does not impact any travel lane.

Control Structure Summary Table- Proposed Conditions					
Control Structure	Disposition [Exist./ Prop./ Modified]	Weir Type/ Geometry	Weir EL (ft-NAVD)	Bleeder Type/ Geometry	Bleeder Invert EL. (ft-NAVD)
PrCS16A-1	Proposed	Vertical Slot + Horizontal Weir	2.80	6" Circular Orifice	0.42
PrCS16A1-1	Proposed	Internal Weir Wall	4.30	--	--
PrCS16A-2	Proposed	Internal Weir Wall	5.00	--	--
PrCS16A-3	Proposed	Internal Weir Wall	9.00	--	--

EXAMPLE # 1

From Node Maximum Condition Report of Basin 16A (Pre Dev. Condition)

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExStruct16A-6	BASE	25yr72hr	60.08	8.48	14.87	0.0042	454	60.24	34.57	60.23	34.95
ExStruct16A-7	BASE	25yr72hr	60.11	8.71	8.50	0.0045	184	60.31	25.74	60.31	25.87
ExStruct16A-8	BASE	25yr72hr	60.09	8.97	7.80	0.0041	1962	60.02	10.40	62.97	9.05
ExStruct16A-9	BASE	25yr72hr	60.08	8.28	9.88	0.0058	516	60.03	63.54	60.08	63.40
Pond16A-1	BASE	25yr72hr	60.83	4.91	6.00	0.0018	176316	59.99	207.74	60.95	114.09
Pond16A-2A	BASE	25yr72hr	60.72	6.47	7.00	0.0031	144197	60.03	240.14	60.65	92.68
Pond16A-2B	BASE	25yr72hr	60.07	6.74	9.70	0.0024	14015	60.04	144.39	60.07	143.07
Pond16A-3	BASE	25yr72hr	60.75	6.48	5.25	0.0029	22609	60.02	15.97	63.27	6.81
Pond16A-4	BASE	25yr72hr	60.74	6.48	5.25	0.0029	22995	60.02	17.97	63.04	6.05
SFNR	BASE	25yr72hr	0.00	0.42	0.43	0.0000	2585	60.03	192.24	0.00	0.00
Swale16A-1	BASE	25yr72hr	60.70	6.74	5.30	0.0033	28684	60.02	26.46	59.77	10.05
Swale16A-2	BASE	25yr72hr	60.16	8.82	8.50	-0.0050	21134	60.02	21.19	60.34	21.61
Swale16A-3	BASE	25yr72hr	60.05	7.61	8.50	-0.0005	5817	60.02	9.53	60.05	9.36
Swale16A-4	BASE	25yr72hr	60.21	8.40	7.95	0.0029	24824	60.02	16.60	60.66	13.10

From Node Maximum Condition Report of Basin 16A (Post Dev. Condition)

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
PrFD16A-1	BASE	10Y24H	12.38	7.28	7.95	-0.0132	13967	12.27	13.10	12.52	17.44
PrFD16A-2	BASE	10Y24H	12.31	7.64	8.50	0.0073	4420	12.27	15.38	12.37	15.99
PrFD16A-3	BASE	10Y24H	12.27	9.82	13.20	0.0023	261	12.27	11.57	12.27	11.56
S-16A-04	BASE	10Y24H	13.78	1.14	5.00	0.0036	1497	13.77	46.80	13.78	46.80
SFNR	BASE	10Y24H	0.00	0.42	0.43	0.0000	2585	12.30	89.14	0.00	0.00
Swale16A-1	BASE	10Y24H	12.88	5.31	5.30	0.0041	10375	12.27	16.02	12.14	11.11
Swale16A-3	BASE	10Y24H	12.30	7.52	8.50	0.0010	5384	12.27	6.50	12.30	6.33
Ditch16A-2	BASE	25Y72H	60.73	7.53	7.00	0.0020	44434	60.02	17.48	62.76	6.62
ExStruct16A-1	BASE	25Y72H	60.70	3.04	6.00	0.0038	941	60.68	108.86	60.70	108.85
ExStruct16A-2	BASE	25Y72H	60.69	6.27	8.50	0.0062	152	60.59	76.69	60.59	76.68
ExStruct16A-3	BASE	25Y72H	60.65	6.89	7.50	-0.0064	123	59.88	17.66	59.88	17.51
ExStruct16A-4	BASE	25Y72H	60.06	7.41	16.16	-0.0054	537	60.04	101.32	60.04	101.21
ExStruct16A-5	BASE	25Y72H	60.06	7.78	13.88	0.0064	455	60.07	44.87	60.07	44.91
ExStruct16A-6	BASE	25Y72H	60.07	8.12	14.87	0.0034	454	60.13	30.71	60.13	31.06
ExStruct16A-7	BASE	25Y72H	60.09	8.27	8.50	0.0097	184	60.18	18.99	60.18	19.12
ExStruct16A-8	BASE	25Y72H	60.08	8.62	7.80	0.0047	1639	60.02	11.09	60.05	9.88
Groundwater	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.16	14.52	0.00	0.00
Groundwater2	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.12	9.63	0.00	0.00
Groundwater3	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.02	0.92	0.00	0.00
Pond16A-1	BASE	25Y72H	60.73	5.75	6.00	0.0020	188616	60.03	203.43	60.74	106.62
Pond16A-2A	BASE	25Y72H	60.67	6.80	7.00	0.0031	140589	60.03	223.11	60.62	76.10
Pond16A-2B	BASE	25Y72H	60.61	6.87	9.70	0.0025	17327	60.04	135.67	60.07	133.24
Pond16A-3	BASE	25Y72H	60.70	6.82	5.25	0.0029	23318	60.02	15.97	61.34	5.62
Pond16A-4	BASE	25Y72H	60.70	6.82	5.25	0.0030	24352	60.02	17.97	61.27	5.94
PrCS16A-1_1	BASE	25Y72H	60.05	8.18	9.88	0.0048	443	60.02	57.17	60.02	56.92
PrCS16A-1_2	BASE	25Y72H	60.05	7.90	9.88	0.0054	516	60.02	56.92	60.03	56.74
PrFD16A-1	BASE	25Y72H	60.16	7.78	7.95	0.0050	16381	60.02	16.74	60.27	17.01
PrFD16A-2	BASE	25Y72H	60.12	8.33	8.50	-0.0073	13601	60.02	21.19	60.22	21.18
PrFD16A-3	BASE	25Y72H	60.02	9.99	13.20	0.0021	261	60.02	15.03	60.02	15.03
S-16A-04	BASE	25Y72H	60.71	4.10	5.00	0.0050	194	60.74	106.62	60.75	106.63
SFNR	BASE	25Y72H	0.00	0.42	0.43	0.0000	2585	60.07	142.82	0.00	0.00
Swale16A-1	BASE	25Y72H	60.74	7.02	5.30	0.0029	32238	60.02	26.46	59.75	8.26
Swale16A-3	BASE	25Y72H	60.05	7.61	8.50	0.0005	5817	60.02	9.53	60.05	9.36

For Pre Dev. Condition, Maximum Inflow (cfs) at South Fork New River (at 60.03 hrs) = 192.24
 For Post Dev. Condition, Maximum Inflow (cfs) at South Fork New River (at 60.07 hrs) = 142.82

PRE-POST 25yr-72hr Peak Discharge Reduction (cfs) = (192.24-138.98) = 49.42

ICPR: Pre-Development

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Ditch16A-1	BASE	100yr24hr	13.30	5.36	5.00	0.0050	34023	12.76	126.25	13.43	124.15
Ditch16A-2	BASE	100yr24hr	13.31	8.02	7.00	0.0020	50809	12.27	20.17	16.60	7.83
ExStruct16A-1	BASE	100yr24hr	13.24	3.93	6.00	0.0049	941	13.22	125.93	13.24	125.93
ExStruct16A-2	BASE	100yr24hr	13.12	6.28	8.50	0.0049	152	12.92	100.14	12.92	100.13
ExStruct16A-3	BASE	100yr24hr	13.07	7.27	7.50	-0.0066	1589	12.14	20.58	12.14	20.40
ExStruct16A-4	BASE	100yr24hr	12.30	8.26	16.16	-0.0062	537	12.28	130.12	12.29	130.01
ExStruct16A-5	BASE	100yr24hr	12.30	8.77	13.88	0.0066	455	12.34	52.88	12.35	53.22
ExStruct16A-6	BASE	100yr24hr	12.33	9.20	14.87	0.0040	454	12.46	37.13	12.46	37.42
ExStruct16A-7	BASE	100yr24hr	12.38	9.40	8.50	0.0050	184	12.63	25.95	12.63	26.04
ExStruct16A-8	BASE	100yr24hr	12.34	9.84	7.80	0.0046	2769	12.25	14.53	12.29	11.57
ExStruct16A-9	BASE	100yr24hr	12.28	9.22	9.88	0.0051	516	12.27	78.88	12.27	78.55
Pond16A-1	BASE	100yr24hr	13.29	5.40	6.00	0.0017	183372	12.28	235.20	13.20	120.39
Pond16A-2A	BASE	100yr24hr	13.07	7.19	7.00	0.0030	155558	12.27	286.11	12.95	99.57
Pond16A-2B	BASE	100yr24hr	12.99	7.30	9.70	0.0018	15751	12.28	171.88	12.31	170.23
Pond16A-3	BASE	100yr24hr	13.11	7.21	5.25	0.0030	24141	12.27	19.84	17.04	6.69
Pond16A-4	BASE	100yr24hr	13.10	7.21	5.25	0.0030	25930	12.27	22.88	14.31	6.00
SFNR	BASE	100yr24hr	0.00	0.42	0.43	0.0000	2585	12.27	220.87	0.00	0.00
Swale16A-1	BASE	100yr24hr	13.20	7.37	5.30	0.0030	36719	12.27	31.38	11.98	8.65
Swale16A-2	BASE	100yr24hr	12.46	9.51	8.50	-0.0038	32268	12.27	26.48	12.75	23.07
Swale16A-3	BASE	100yr24hr	12.32	7.71	8.50	-0.0008	6301	12.27	11.70	12.34	10.91
Swale16A-4	BASE	100yr24hr	12.55	9.07	7.95	0.0027	31159	12.27	21.10	12.94	13.18
Ditch16A-1	BASE	10yr24hr	12.99	4.11	5.00	0.0050	4226	12.27	111.34	13.11	107.27
Ditch16A-2	BASE	10yr24hr	12.84	6.62	7.00	0.0025	32512	12.28	9.60	13.55	6.51
ExStruct16A-1	BASE	10yr24hr	12.91	3.04	6.00	0.0048	941	12.90	108.93	12.91	108.92
ExStruct16A-2	BASE	10yr24hr	12.96	4.58	8.50	-0.0050	152	12.41	95.99	12.40	95.49
ExStruct16A-3	BASE	10yr24hr	12.82	5.30	7.50	-0.0063	123	12.25	18.03	12.25	17.90
ExStruct16A-4	BASE	10yr24hr	12.31	7.23	16.16	0.0049	537	12.30	98.12	12.30	98.03
ExStruct16A-5	BASE	10yr24hr	12.31	7.55	13.88	0.0061	455	12.28	41.54	12.28	41.36
ExStruct16A-6	BASE	10yr24hr	12.32	7.87	14.87	-0.0039	454	12.39	29.45	12.40	29.86
ExStruct16A-7	BASE	10yr24hr	12.33	8.05	8.50	0.0050	184	12.46	20.25	12.46	20.45
ExStruct16A-8	BASE	10yr24hr	12.32	8.16	7.80	-0.0048	1206	13.26	8.74	13.15	8.87
ExStruct16A-9	BASE	10yr24hr	12.31	7.73	9.88	0.0058	516	12.30	56.95	12.30	56.81
Pond16A-1	BASE	10yr24hr	12.99	4.18	6.00	0.0017	169302	12.29	174.00	13.20	104.76
Pond16A-2A	BASE	10yr24hr	12.91	5.21	7.00	0.0029	124794	12.28	196.41	12.41	94.76
Pond16A-2B	BASE	10yr24hr	12.32	6.51	9.70	0.0024	13322	12.30	122.65	12.32	121.28
Pond16A-3	BASE	10yr24hr	12.94	5.22	5.25	0.0031	19944	12.27	11.35	13.82	6.18
Pond16A-4	BASE	10yr24hr	12.93	5.22	5.25	0.0029	17894	12.27	13.94	13.54	5.69
SFNR	BASE	10yr24hr	0.00	0.42	0.43	0.0000	2585	12.28	168.93	0.00	0.00
Swale16A-1	BASE	10yr24hr	12.66	5.49	5.30	0.0029	12642	12.27	16.02	12.16	9.26
Swale16A-2	BASE	10yr24hr	12.35	8.15	8.50	-0.0036	10324	12.27	15.38	12.47	17.37
Swale16A-3	BASE	10yr24hr	12.30	7.52	8.50	0.0005	5384	12.27	6.50	12.30	6.33
Swale16A-4	BASE	10yr24hr	12.42	7.86	7.95	-0.0031	19569	12.27	12.80	12.72	14.09
Ditch16A-1	BASE	25yr72hr	60.83	4.87	5.00	0.0050	18031	60.61	118.00	60.93	117.69
Ditch16A-2	BASE	25yr72hr	60.72	7.69	7.00	0.0020	46431	60.02	17.48	63.05	7.91
ExStruct16A-1	BASE	25yr72hr	60.74	3.57	6.00	0.0049	941	60.72	119.45	60.74	119.45
ExStruct16A-2	BASE	25yr72hr	60.75	5.68	8.50	-0.0047	152	60.64	93.21	60.64	93.20
ExStruct16A-3	BASE	25yr72hr	60.67	6.58	7.50	-0.0065	123	59.93	19.99	59.93	19.84
ExStruct16A-4	BASE	25yr72hr	60.08	7.66	16.16	0.0061	537	60.05	110.67	60.05	110.59
ExStruct16A-5	BASE	25yr72hr	60.07	8.07	13.88	0.0060	455	60.05	47.47	60.07	47.44

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExStruct16A-6	BASE	25yr72hr	60.08	8.48	14.87	0.0042	454	60.24	34.57	60.23	34.95
ExStruct16A-7	BASE	25yr72hr	60.11	8.71	8.50	0.0045	184	60.31	25.74	60.31	25.87
ExStruct16A-8	BASE	25yr72hr	60.09	8.97	7.80	0.0041	1962	60.02	10.40	62.97	9.05
ExStruct16A-9	BASE	25yr72hr	60.08	8.28	9.88	0.0058	516	60.03	63.54	60.08	63.40
Pond16A-1	BASE	25yr72hr	60.83	4.91	6.00	0.0018	176316	59.99	207.74	60.95	114.09
Pond16A-2A	BASE	25yr72hr	60.72	6.47	7.00	0.0031	144197	60.03	240.14	60.65	92.68
Pond16A-2B	BASE	25yr72hr	60.07	6.74	9.70	0.0024	14015	60.04	144.39	60.07	143.07
Pond16A-3	BASE	25yr72hr	60.75	6.48	5.25	0.0029	22609	60.02	15.97	63.27	6.81
Pond16A-4	BASE	25yr72hr	60.74	6.48	5.25	0.0029	22995	60.02	17.97	63.04	6.05
SFNR	BASE	25yr72hr	0.00	0.42	0.43	0.0000	2585	60.03	192.24	0.00	0.00
Swale16A-1	BASE	25yr72hr	60.70	6.74	5.30	0.0033	28684	60.02	26.46	59.77	10.05
Swale16A-2	BASE	25yr72hr	60.16	8.82	8.50	-0.0050	21134	60.02	21.19	60.34	21.61
Swale16A-3	BASE	25yr72hr	60.05	7.61	8.50	-0.0005	5817	60.02	9.53	60.05	9.36
Swale16A-4	BASE	25yr72hr	60.21	8.40	7.95	0.0029	24824	60.02	16.60	60.66	13.10

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExCS16A-1A	BASE	100yr24hr	24.20	1.31	-0.073	13.29	5.40	13.30	5.36
ExCS16A-1B	BASE	100yr24hr	13.20	120.23	-0.405	13.29	5.40	13.30	5.36
ExDS16A-1	BASE	100yr24hr	16.60	7.83	0.170	13.31	8.02	12.34	9.84
ExDS16A-2	BASE	100yr24hr	12.34	10.91	-0.023	12.32	7.71	12.99	7.30
ExDS16A-3	BASE	100yr24hr	12.94	13.18	0.362	12.55	9.07	12.28	9.22
ExPipe16A-10	BASE	100yr24hr	12.63	26.04	3.755	12.38	9.40	12.33	9.20
ExPipe16A-11	BASE	100yr24hr	12.29	11.57	1.273	12.34	9.84	12.38	9.40
ExPipe16A-12	BASE	100yr24hr	12.27	78.55	12.490	12.28	9.22	12.30	8.26
ExPipe16A-1A	BASE	100yr24hr	13.24	125.93	-4.185	13.24	3.93	0.00	0.42
ExPipe16A-1B	BASE	100yr24hr	13.43	124.15	9.578	13.30	5.36	13.24	3.93
ExPipe16A-2A	BASE	100yr24hr	12.95	99.57	6.619	13.07	7.19	13.12	6.28
ExPipe16A-2B	BASE	100yr24hr	12.92	100.13	-3.030	13.12	6.28	13.29	5.40
ExPipe16A-3	BASE	100yr24hr	17.04	6.69	0.099	13.11	7.21	13.07	7.19
ExPipe16A-4	BASE	100yr24hr	14.31	6.00	0.132	13.10	7.21	13.07	7.19
ExPipe16A-5	BASE	100yr24hr	11.98	8.65	2.305	13.20	7.37	13.07	7.27
ExPipe16A-6	BASE	100yr24hr	12.14	20.40	3.762	13.07	7.27	13.07	7.19
ExPipe16A-7	BASE	100yr24hr	12.29	130.01	16.857	12.30	8.26	12.99	7.30
ExPipe16A-8	BASE	100yr24hr	12.35	53.22	13.250	12.30	8.77	12.30	8.26
ExPipe16A-9	BASE	100yr24hr	12.46	37.42	5.089	12.33	9.20	12.30	8.77
ExWeir16A-1	BASE	100yr24hr	12.31	170.23	-0.220	12.99	7.30	13.07	7.19
ExWeir16A-2	BASE	100yr24hr	12.75	23.07	1.346	12.46	9.51	12.38	9.40
ExCS16A-1A	BASE	10yr24hr	19.25	1.31	-0.047	12.99	4.18	12.99	4.11
ExCS16A-1B	BASE	10yr24hr	13.20	104.56	-0.425	12.99	4.18	12.99	4.11
ExDS16A-1	BASE	10yr24hr	13.55	6.51	0.048	12.84	6.62	12.32	8.16
ExDS16A-2	BASE	10yr24hr	12.30	6.33	-0.011	12.30	7.52	12.32	6.51
ExDS16A-3	BASE	10yr24hr	12.72	14.09	-0.095	12.42	7.86	12.31	7.73
ExPipe16A-10	BASE	10yr24hr	12.46	20.45	3.229	12.33	8.05	12.32	7.87
ExPipe16A-11	BASE	10yr24hr	13.15	8.87	1.266	12.32	8.16	12.33	8.05
ExPipe16A-12	BASE	10yr24hr	12.30	56.81	8.710	12.31	7.73	12.31	7.23
ExPipe16A-1A	BASE	10yr24hr	12.91	108.92	-3.060	12.91	3.04	0.00	0.42
ExPipe16A-1B	BASE	10yr24hr	13.11	107.27	6.662	12.99	4.11	12.91	3.04
ExPipe16A-2A	BASE	10yr24hr	12.41	94.76	6.711	12.91	5.21	12.96	4.58
ExPipe16A-2B	BASE	10yr24hr	12.40	95.49	-3.073	12.96	4.58	12.99	4.18
ExPipe16A-3	BASE	10yr24hr	13.82	6.18	0.082	12.94	5.22	12.91	5.21
ExPipe16A-4	BASE	10yr24hr	13.54	5.69	0.123	12.93	5.22	12.91	5.21
ExPipe16A-5	BASE	10yr24hr	12.16	9.26	2.368	12.66	5.49	12.82	5.30
ExPipe16A-6	BASE	10yr24hr	12.25	17.90	3.846	12.82	5.30	12.91	5.21
ExPipe16A-7	BASE	10yr24hr	12.30	98.03	13.962	12.31	7.23	12.32	6.51
ExPipe16A-8	BASE	10yr24hr	12.28	41.36	13.122	12.31	7.55	12.31	7.23
ExPipe16A-9	BASE	10yr24hr	12.40	29.86	4.622	12.32	7.87	12.31	7.55
ExWeir16A-1	BASE	10yr24hr	12.32	121.28	-0.120	12.32	6.51	12.91	5.21
ExWeir16A-2	BASE	10yr24hr	12.47	17.37	-0.078	12.35	8.15	12.33	8.05
ExCS16A-1A	BASE	25yr72hr	69.22	1.31	0.047	60.83	4.91	60.83	4.87
ExCS16A-1B	BASE	25yr72hr	60.95	113.92	-0.394	60.83	4.91	60.83	4.87
ExDS16A-1	BASE	25yr72hr	63.05	7.91	0.182	60.72	7.69	60.09	8.97
ExDS16A-2	BASE	25yr72hr	60.05	9.36	-0.014	60.05	7.61	60.07	6.74
ExDS16A-3	BASE	25yr72hr	60.66	13.10	0.206	60.21	8.40	60.08	8.28
ExPipe16A-10	BASE	25yr72hr	60.31	25.87	-3.063	60.11	8.71	60.08	8.48
ExPipe16A-11	BASE	25yr72hr	62.97	9.05	-1.461	60.09	8.97	60.11	8.71

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExPipe16A-12	BASE	25yr72hr	60.08	63.40	9.345	60.08	8.28	60.08	7.66
ExPipe16A-1A	BASE	25yr72hr	60.74	119.45	-2.946	60.74	3.57	0.00	0.42
ExPipe16A-1B	BASE	25yr72hr	60.93	117.69	6.410	60.83	4.87	60.74	3.57
ExPipe16A-2A	BASE	25yr72hr	60.65	92.68	6.630	60.72	6.47	60.75	5.68
ExPipe16A-2B	BASE	25yr72hr	60.64	93.20	7.617	60.75	5.68	60.83	4.91
ExPipe16A-3	BASE	25yr72hr	63.27	6.81	0.111	60.75	6.48	60.72	6.47
ExPipe16A-4	BASE	25yr72hr	63.04	6.05	-0.225	60.74	6.48	60.72	6.47
ExPipe16A-5	BASE	25yr72hr	59.77	10.05	2.318	60.70	6.74	60.67	6.58
ExPipe16A-6	BASE	25yr72hr	59.93	19.84	3.631	60.67	6.58	60.72	6.47
ExPipe16A-7	BASE	25yr72hr	60.05	110.59	16.094	60.08	7.66	60.07	6.74
ExPipe16A-8	BASE	25yr72hr	60.07	47.44	13.513	60.07	8.07	60.08	7.66
ExPipe16A-9	BASE	25yr72hr	60.23	34.95	4.693	60.08	8.48	60.07	8.07
ExWeir16A-1	BASE	25yr72hr	60.07	143.07	-0.213	60.07	6.74	60.72	6.47
ExWeir16A-2	BASE	25yr72hr	60.34	21.61	-0.108	60.16	8.82	60.11	8.71

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100yr24hr	B16A-1	BASE	12.27	104.11	12.591	594620
100yr24hr	B16A-10	BASE	12.27	20.88	13.495	126390
100yr24hr	B16A-11	BASE	12.27	26.48	10.252	137699
100yr24hr	B16A-12	BASE	12.27	20.17	7.211	99733
100yr24hr	B16A-13	BASE	12.27	11.70	9.445	59657
100yr24hr	B16A-14	BASE	12.27	21.10	11.148	112899
100yr24hr	B16A-15	BASE	12.27	20.39	12.278	114544
100yr24hr	B16A-16	BASE	12.27	26.72	12.703	153558
100yr24hr	B16A-17	BASE	12.27	88.82	13.327	531164
100yr24hr	B16A-2	BASE	12.27	13.59	13.495	82301
100yr24hr	B16A-3A	BASE	12.27	106.92	10.718	563733
100yr24hr	B16A-3A Offs	BASE	12.27	45.49	8.890	229449
100yr24hr	B16A-3B	BASE	12.27	16.90	9.231	85783
100yr24hr	B16A-3B Offs	BASE	12.27	8.04	8.777	40464
100yr24hr	B16A-4	BASE	12.27	2.67	13.495	16166
100yr24hr	B16A-5A	BASE	12.27	115.28	10.578	605164
100yr24hr	B16A-5B	BASE	12.27	27.90	10.635	146702
100yr24hr	B16A-5C	BASE	12.27	3.54	12.849	20522
100yr24hr	B16A-6	BASE	12.27	17.02	10.241	88474
100yr24hr	B16A-6 Offs	BASE	12.27	2.82	8.462	14130
100yr24hr	B16A-7	BASE	12.27	22.89	11.248	122901
100yr24hr	B16A-8	BASE	12.27	11.01	7.432	54496
100yr24hr	B16A-8 Offs1	BASE	12.27	5.84	9.697	29920
100yr24hr	B16A-8 Offs2	BASE	12.27	14.54	8.083	72473
100yr24hr	B16A-9	BASE	12.27	14.60	11.578	79432
10yr24hr	B16A-1	BASE	12.27	66.60	7.865	371428
10yr24hr	B16A-10	BASE	12.27	13.53	8.747	81920
10yr24hr	B16A-11	BASE	12.27	15.38	5.778	77610
10yr24hr	B16A-12	BASE	12.29	9.61	3.442	47598
10yr24hr	B16A-13	BASE	12.27	6.50	5.118	32329
10yr24hr	B16A-14	BASE	12.27	12.80	6.546	66291
10yr24hr	B16A-15	BASE	12.27	12.93	7.570	70622
10yr24hr	B16A-16	BASE	12.27	17.14	7.972	96368
10yr24hr	B16A-17	BASE	12.27	57.53	8.579	341937
10yr24hr	B16A-2	BASE	12.27	8.81	8.747	53343
10yr24hr	B16A-3A	BASE	12.27	63.57	6.172	324663
10yr24hr	B16A-3A Offs	BASE	12.27	24.44	4.682	120832
10yr24hr	B16A-3B	BASE	12.27	9.27	4.948	45985
10yr24hr	B16A-3B Offs	BASE	12.27	4.29	4.595	21181
10yr24hr	B16A-4	BASE	12.27	1.73	8.747	10478
10yr24hr	B16A-5A	BASE	12.27	68.08	6.053	346301
10yr24hr	B16A-5B	BASE	12.27	16.52	6.102	84170
10yr24hr	B16A-5C	BASE	12.27	2.28	8.112	12957
10yr24hr	B16A-6	BASE	12.27	9.88	5.769	49838
10yr24hr	B16A-6 Offs	BASE	12.27	1.47	4.354	7270
10yr24hr	B16A-7	BASE	12.27	13.95	6.634	72488
10yr24hr	B16A-8	BASE	12.27	5.33	3.598	26381
10yr24hr	B16A-8 Offs1	BASE	12.27	3.29	5.321	16419
10yr24hr	B16A-8 Offs2	BASE	12.27	7.40	4.070	36496
10yr24hr	B16A-9	BASE	12.27	9.02	6.928	47531
25yr72hr	B16A-1	BASE	60.02	80.34	13.089	618147
25yr72hr	B16A-10	BASE	60.02	16.04	13.995	131070
25yr72hr	B16A-11	BASE	60.02	21.20	10.732	144145
25yr72hr	B16A-12	BASE	60.02	17.50	7.635	105588
25yr72hr	B16A-13	BASE	60.02	9.54	9.914	62617
25yr72hr	B16A-14	BASE	60.02	16.61	11.637	117855
25yr72hr	B16A-15	BASE	60.02	15.79	12.775	119180
25yr72hr	B16A-16	BASE	60.02	20.60	13.202	159584
25yr72hr	B16A-17	BASE	60.02	68.25	13.826	551078
25yr72hr	B16A-2	BASE	60.02	10.45	13.995	85348
25yr72hr	B16A-3A	BASE	60.02	84.81	11.203	589256
25yr72hr	B16A-3A Offs	BASE	60.02	37.60	9.350	241305
25yr72hr	B16A-3B	BASE	60.02	13.85	9.696	90106
25yr72hr	B16A-3B Offs	BASE	60.02	6.66	9.235	42572
25yr72hr	B16A-4	BASE	60.02	2.05	13.995	16765
25yr72hr	B16A-5A	BASE	60.02	91.69	11.062	632838
25yr72hr	B16A-5B	BASE	60.02	22.16	11.120	153384
25yr72hr	B16A-5C	BASE	60.02	2.73	13.348	21319
25yr72hr	B16A-6	BASE	60.02	13.63	10.720	92619
25yr72hr	B16A-6 Offs	BASE	60.02	2.36	8.913	14883
25yr72hr	B16A-7	BASE	60.02	17.98	11.738	128258
25yr72hr	B16A-8	BASE	60.02	9.48	7.861	57640
25yr72hr	B16A-8 Offs1	BASE	60.02	4.73	10.170	31378
25yr72hr	B16A-8 Offs2	BASE	60.02	12.28	8.527	76450
25yr72hr	B16A-9	BASE	60.02	11.41	12.071	82813

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 LINK CONNECTIVITY REPORT

Name	Group	From Node	To Node	Type	U/S Geometry	D/S Geometry	Flow Dir	Count
ExPipe16A-10	BASE	ExStruct16A-7	ExStruct16A-6	Pipe	Circular	Circular	Both	1
ExPipe16A-11	BASE	ExStruct16A-8	ExStruct16A-7	Pipe	Circular	Circular	Both	1
ExPipe16A-12	BASE	ExStruct16A-9	ExStruct16A-4	Pipe	Circular	Circular	Both	1
ExPipe16A-1A	BASE	ExStruct16A-1	SFNR	Pipe	Circular	Circular	Both	1
ExPipe16A-1B	BASE	Ditch16A-1	ExStruct16A-1	Pipe	Circular	Circular	Both	1
ExPipe16A-2A	BASE	Pond16A-2A	ExStruct16A-2	Pipe	Circular	Circular	Both	2
ExPipe16A-2B	BASE	ExStruct16A-2	Pond16A-1	Pipe	Circular	Circular	Both	2
ExPipe16A-3	BASE	Pond16A-3	Pond16A-2A	Pipe	Horz Ellipse	Horz Ellipse	Both	1
ExPipe16A-4	BASE	Pond16A-4	Pond16A-2A	Pipe	Horz Ellipse	Horz Ellipse	Both	1
ExPipe16A-5	BASE	Swale16A-1	ExStruct16A-3	Pipe	Circular	Circular	Both	1
ExPipe16A-6	BASE	ExStruct16A-3	Pond16A-2A	Pipe	Circular	Circular	Both	1
ExPipe16A-7	BASE	ExStruct16A-4	Pond16A-2B	Pipe	Circular	Circular	Both	1
ExPipe16A-8	BASE	ExStruct16A-5	ExStruct16A-4	Pipe	Circular	Circular	Both	1
ExPipe16A-9	BASE	ExStruct16A-6	ExStruct16A-5	Pipe	Circular	Circular	Both	1
ExCS16A-1B	BASE	Pond16A-1	Ditch16A-1	Vertical WGO Fread	Trapezoidal		Both	1
ExWeir16A-1	BASE	Pond16A-2B	Pond16A-2A	Vertical WGO Fread	Trapezoidal		Both	1
ExWeir16A-2	BASE	Swale16A-2	ExStruct16A-7	Horizontal WGO	Rectangular		Both	1
ExCS16A-1A	BASE	Pond16A-1	Ditch16A-1	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Pond16A-1	Ditch16A-1	Vertical WGO Mavis	Circular		Both	2
ExDS16A-1	BASE	Ditch16A-2	ExStruct16A-8	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Ditch16A-2	ExStruct16A-8	Horizontal WGO	Rectangular		Both	1
ExDS16A-2	BASE	Swale16A-3	Pond16A-2B	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Swale16A-3	Pond16A-2B	Horizontal WGO	Rectangular		Both	1
ExDS16A-3	BASE	Swale16A-4	ExStruct16A-9	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Swale16A-4	ExStruct16A-9	Horizontal WGO	Rectangular		Both	1

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Curve Number: 81.78 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-15 Node: ExStruct16A-5 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.570 Time Shift(hrs): 0.00
Curve Number: 90.23 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-16 Node: ExStruct16A-8 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.330 Time Shift(hrs): 0.00
Curve Number: 93.56 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-17 Node: ExStruct16A-9 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 10.980 Time Shift(hrs): 0.00
Curve Number: 98.60 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-2 Node: ExStruct16A-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.680 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-3A Node: Pond16A-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 14.490 Time Shift(hrs): 0.00
Curve Number: 78.71 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-3A Offs Node: Pond16A-1 Status: Offsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.440	Time Shift(hrs): 0.00
Curve Number: 94.72	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-6	Node: Pond16A-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.380	Time Shift(hrs): 0.00	
Curve Number: 75.39	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-6 Offs	Node: Pond16A-3	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.460	Time Shift(hrs): 0.00	
Curve Number: 63.73	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-7	Node: Pond16A-4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 3.010	Time Shift(hrs): 0.00	
Curve Number: 82.51	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-8	Node: Swale16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.020	Time Shift(hrs): 0.00	
Curve Number: 57.44	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-8 Offs1	Node: Swale16A-1	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.850	Time Shift(hrs): 0.00	
Curve Number: 71.71	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-8 Offs2	Node: Swale16A-1	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.470	Time Shift(hrs): 0.00
Curve Number: 61.38	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-9	Node: ExStruct16A-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.890	Time Shift(hrs): 0.00	
Curve Number: 84.93	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

=====
 === Nodes =====
 =====

Name: Ditch16A-1	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 5.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-5.000	0.0030
0.420	0.0060
1.420	0.0100
2.000	0.0120
3.000	0.0380
4.000	0.0830
4.500	0.1360
5.000	0.5140
5.500	0.8780

Name: Ditch16A-2	Base Flow(cfs): 0.000	Init Stage(ft): 3.000
Group: BASE		Warn Stage(ft): 7.000
Type: Stage/Area		

Stage(ft)	Area(ac)
3.000	0.0030
3.500	0.0320
4.500	0.1620
6.000	0.5620
7.000	0.8610

Name: ExStruct16A-1	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 6.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-4.000	0.0006
6.000	0.0006

Name: ExStruct16A-2	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 8.500
Type: Stage/Area		

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
			Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	60.00	60.00	Entrance Loss Coef: 0.50
Rise(in):	60.00	60.00	Exit Loss Coef: 0.00
Invert(ft):	0.920	0.320	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name:	ExPipe16A-1A	From Node:	ExStruct16A-1	Length(ft):	977.00
Group:	BASE	To Node:	SFNR	Count:	1
	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic		
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive		
Span(in):	66.00	66.00	Flow: Both		
Rise(in):	66.00	66.00	Entrance Loss Coef: 0.50		
Invert(ft):	-3.080	-3.080	Exit Loss Coef: 1.00		
Manning's N:	0.013000	0.013000	Bend Loss Coef: 0.00		
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw		
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc		
			Stabilizer Option: None		

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name:	ExPipe16A-1B	From Node:	Ditch16A-1	Length(ft):	588.00
Group:	BASE	To Node:	ExStruct16A-1	Count:	1
	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic		
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive		
Span(in):	66.00	66.00	Flow: Both		
Rise(in):	66.00	66.00	Entrance Loss Coef: 0.50		
Invert(ft):	-3.080	-3.080	Exit Loss Coef: 0.00		
Manning's N:	0.013000	0.013000	Bend Loss Coef: 0.00		
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw		
Bot Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc		
			Stabilizer Option: None		

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name:	ExPipe16A-2A	From Node:	Pond16A-2A	Length(ft):	118.00
Group:	BASE	To Node:	ExStruct16A-2	Count:	2
	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic		
Geometry:	Circular	Circular	Solution Algorithm: Most Restrictive		
Span(in):	42.00	42.00	Flow: Both		
Rise(in):	42.00	42.00	Entrance Loss Coef: 0.50		
Invert(ft):	0.920	0.770	Exit Loss Coef: 0.00		
Manning's N:	0.013000	0.013000	Bend Loss Coef: 0.00		
Top Clip(in):	0.000	0.000	Outlet Ctrl Spec: Use dc or tw		
			Inlet Ctrl Spec: Use dc		

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-2B	From Node: ExStruct16A-2	Length(ft): 107.00
Group: BASE	To Node: Pond16A-1	Count: 2
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 42.00	42.00	Entrance Loss Coef: 0.50
Rise(in): 42.00	42.00	Exit Loss Coef: 0.00
Invert(ft): 0.770	0.620	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-3	From Node: Pond16A-3	Length(ft): 527.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Horz Ellipse	Horz Ellipse	Flow: Both
Span(in): 45.00	45.00	Entrance Loss Coef: 0.50
Rise(in): 29.00	29.00	Exit Loss Coef: 0.00
Invert(ft): 0.920	0.920	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Name: ExPipe16A-4	From Node: Pond16A-4	Length(ft): 277.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Horz Ellipse	Horz Ellipse	Flow: Both
Span(in): 45.00	45.00	Entrance Loss Coef: 0.50
Rise(in): 29.00	29.00	Exit Loss Coef: 0.00
Invert(ft): 0.420	0.420	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:

Horizontal Ellipse Concrete: Square edge with headwall

```

-----
Name: ExPipe16A-5      From Node: Swale16A-1      Length(ft): 106.00
Group: BASE           To Node: ExStruct16A-3      Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 24.00       24.00
Rise(in): 24.00       24.00
Invert(ft): 1.420     1.020
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: ExPipe16A-6      From Node: ExStruct16A-3      Length(ft): 78.00
Group: BASE           To Node: Pond16A-2A          Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 30.00       30.00
Rise(in): 30.00       30.00
Invert(ft): 1.020     0.920
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: ExPipe16A-7      From Node: ExStruct16A-4      Length(ft): 102.00
Group: BASE           To Node: Pond16A-2B          Count: 1
                        Friction Equation: Automatic
                        Solution Algorithm: Most Restrictive
                        Flow: Both
UPSTREAM              DOWNSTREAM
Geometry: Circular    Circular
Span(in): 60.00       60.00
Rise(in): 60.00       60.00
Invert(ft): 0.320     0.120
Manning's N: 0.013000 0.013000
Top Clip(in): 0.000   0.000
Bot Clip(in): 0.000   0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: ExPipe16A-8      From Node: ExStruct16A-5      Length(ft): 78.00
Group: BASE           To Node: ExStruct16A-4      Count: 1
                        Friction Equation: Automatic
  
```


I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 48.00	48.00	Entrance Loss Coef: 0.50
Rise(in): 48.00	48.00	Exit Loss Coef: 0.00
Invert(ft): 1.720	1.320	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```
-----
```

Name: ExPipe16A-9	From Node: ExStruct16A-6	Length(ft): 136.00
Group: BASE	To Node: ExStruct16A-5	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 42.00	42.00	Flow: Both
Rise(in): 42.00	42.00	Entrance Loss Coef: 0.50
Invert(ft): 2.520	2.420	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```
=====
```

==== Drop Structures =====

```
=====
```

Name: ExCS16A-1A	From Node: Pond16A-1	Length(ft): 36.00
Group: BASE	To Node: Ditch16A-1	Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 15.00	15.00	Flow: Both
Rise(in): 15.00	15.00	Entrance Loss Coef: 0.500
Invert(ft): -1.380	-1.380	Exit Loss Coef: 0.000
Manning's N: 0.024000	0.024000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExCS16A-1A ***

Count: 2	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 4.00	Invert(ft): -0.380	
Rise(in): 4.00	Control Elev(ft): -0.380	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

```

-----
Name: ExDS16A-1          From Node: Ditch16A-2      Length(ft): 12.00
Group: BASE              To Node: ExStruct16A-8      Count: 1

      UPSTREAM          DOWNSTREAM          Friction Equation: Average Conveyance
Geometry: Circular      Circular          Solution Algorithm: Most Restrictive
Span(in): 15.00         15.00           Flow: Both
Rise(in): 15.00         15.00           Entrance Loss Coef: 0.500
Invert(ft): 3.020       2.920           Exit Loss Coef: 0.000
Manning's N: 0.013000   0.013000       Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000     0.000           Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000     0.000           Solution Incs: 10
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16A-1 ***

```

TABLE
Count: 1                Bottom Clip(in): 0.000
Type: Horizontal        Top Clip(in): 0.000
Flow: Both              Weir Disc Coef: 3.200
Geometry: Rectangular   Orifice Disc Coef: 0.600

Span(in): 27.00         Invert(ft): 5.420
Rise(in): 36.00        Control Elev(ft): 5.420
  
```

```

-----
Name: ExDS16A-2          From Node: Swale16A-3      Length(ft): 88.00
Group: BASE              To Node: Pond16A-2B      Count: 1

      UPSTREAM          DOWNSTREAM          Friction Equation: Average Conveyance
Geometry: Circular      Circular          Solution Algorithm: Most Restrictive
Span(in): 24.00         24.00           Flow: Both
Rise(in): 24.00         24.00           Entrance Loss Coef: 0.500
Invert(ft): 3.420       2.420           Exit Loss Coef: 0.000
Manning's N: 0.013000   0.013000       Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000     0.000           Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000     0.000           Solution Incs: 10
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16A-2 ***

```

TABLE
Count: 1                Bottom Clip(in): 0.000
Type: Horizontal        Top Clip(in): 0.000
Flow: Both              Weir Disc Coef: 3.200
Geometry: Rectangular   Orifice Disc Coef: 0.600

Span(in): 25.00         Invert(ft): 7.220
Rise(in): 46.00        Control Elev(ft): 7.220
  
```

```

-----
Name: ExDS16A-3          From Node: Swale16A-4      Length(ft): 152.00
Group: BASE              To Node: ExStruct16A-9    Count: 1

      UPSTREAM          DOWNSTREAM          Friction Equation: Average Conveyance
Geometry: Circular      Circular          Solution Algorithm: Most Restrictive
Span(in): 24.00         24.00           Flow: Both
Rise(in): 24.00         24.00           Entrance Loss Coef: 0.500
Invert(ft): 1.920       1.320           Exit Loss Coef: 0.000
Manning's N: 0.013000   0.013000       Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000     0.000           Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000     0.000           Solution Incs: 10
  
```

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16A-3 ***

TABLE

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Span(in): 25.00
Rise(in): 46.00
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 5.920
Control Elev(ft): 5.920

=====
--- Weirs ---
=====

Name: ExCS16A-1B From Node: Pond16A-1
Group: BASE To Node: Ditch16A-1
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 55.50
Left Side Slope(h/v): 4.00
Right Side Slope(h/v): 4.00
Invert(ft): 2.920
Control Elevation(ft): 2.920
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16A-1 From Node: Pond16A-2B
Group: BASE To Node: Pond16A-2A
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 5.00
Left Side Slope(h/v): 2.00
Right Side Slope(h/v): 2.00
Invert(ft): 3.920
Control Elevation(ft): 3.920
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16A-2 From Node: Swale16A-2
Group: BASE To Node: ExStruct16A-7
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 25.00
Rise(in): 46.00
Invert(ft): 7.000
Control Elevation(ft): 7.000

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

=====
Hydrology Simulations
=====

Name: 100yr24hr
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16A_ICPR Pre\100yr24hr.R
Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10yr24hr
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16A_ICPR Pre\10yr24hr.R3
Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 25yr72hr
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16A_ICPR Pre\25yr72hr.R3
Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

=====
Routing Simulations
=====

Name: 100yr24hr Hydrology Sim: 100yr24hr
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16A_ICPR Pre\100yr24hr.I
Execute: Yes Restart: No Patch: No
Alternative: No
Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 48.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

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 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Time (hrs)	Print Inc (min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 10yr24hr Hydrology Sim: 10yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16A_ICPR Pre\10yr24hr.I3

Execute: Yes	Restart: No	Patch: No
Alternative: No		
Max Delta Z (ft): 1.00		Delta Z Factor: 0.00500
Time Step Optimizer: 10.000		
Start Time (hrs): 0.000		End Time (hrs): 48.00
Min Calc Time (sec): 0.5000		Max Calc Time (sec): 60.0000
Boundary Stages:		Boundary Flows:

Time (hrs)	Print Inc (min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 25yr72hr Hydrology Sim: 25yr72hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16A_ICPR Pre\25yr72hr.I3

Execute: Yes	Restart: No	Patch: No
Alternative: No		
Max Delta Z (ft): 1.00		Delta Z Factor: 0.00500
Time Step Optimizer: 10.000		
Start Time (hrs): 0.000		End Time (hrs): 96.00
Min Calc Time (sec): 0.5000		Max Calc Time (sec): 60.0000
Boundary Stages:		Boundary Flows:

Time (hrs)	Print Inc (min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
BASE	Yes

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	0.00	0.0	0.0	0.0	0.0	0.00
100yr24hr	0.25	141.4	52.3	89.1	-0.0	-0.00
100yr24hr	0.50	630.7	196.2	434.4	-0.0	-0.00
100yr24hr	0.75	1435.6	388.8	1046.8	-0.0	-0.00
100yr24hr	1.00	2562.6	624.7	1937.8	-0.0	-0.00
100yr24hr	1.25	3892.1	869.0	3023.1	-0.0	-0.00
100yr24hr	1.50	5390.7	1111.6	4279.1	0.0	0.00
100yr24hr	1.75	7010.8	1356.6	5654.2	-0.0	-0.00
100yr24hr	2.00	8801.0	1606.9	7194.1	-0.0	-0.00
100yr24hr	2.25	10873.3	1882.8	8990.5	-0.0	-0.00
100yr24hr	2.50	13127.2	2169.3	10957.9	-0.0	-0.00
100yr24hr	2.75	15268.0	2436.0	12831.9	-0.0	-0.00
100yr24hr	3.00	17376.8	2686.8	14690.0	-0.0	-0.00
100yr24hr	3.25	19817.4	2968.3	16849.2	-0.0	-0.00
100yr24hr	3.50	22394.4	3258.3	19136.1	-0.0	-0.00
100yr24hr	3.75	25084.7	3551.4	21533.3	-0.0	-0.00
100yr24hr	4.00	27861.8	3852.6	24009.2	-0.0	-0.00
100yr24hr	4.25	31087.9	4220.5	26867.4	-0.0	-0.00
100yr24hr	4.50	34637.1	4664.6	29972.5	-0.0	-0.00
100yr24hr	4.75	38148.1	5134.7	33013.3	-0.0	-0.00
100yr24hr	5.00	42240.4	5736.3	36504.1	-0.0	-0.00
100yr24hr	5.25	46607.4	6620.7	39986.7	-0.0	-0.00
100yr24hr	5.50	51261.6	7591.9	43669.7	-0.0	-0.00
100yr24hr	5.75	56566.5	8624.3	47942.3	-0.0	-0.00
100yr24hr	6.00	62346.9	9683.1	52663.8	-0.0	-0.00
100yr24hr	6.25	68670.8	10768.5	57902.4	-0.0	-0.00
100yr24hr	6.50	75203.9	11867.4	63336.5	-0.0	-0.00
100yr24hr	6.75	82538.6	13014.5	69524.1	-0.0	-0.00
100yr24hr	7.00	90391.3	14200.4	76190.9	-0.0	-0.00
100yr24hr	7.25	98682.1	15420.5	83261.6	-0.0	-0.00
100yr24hr	7.50	108479.1	16734.8	91744.3	-0.0	-0.00
100yr24hr	7.75	120494.2	18182.0	102312.2	-0.0	-0.00
100yr24hr	8.00	135587.6	19813.4	115774.2	-0.0	-0.00
100yr24hr	8.25	152036.6	21538.9	130497.7	-0.0	-0.00
100yr24hr	8.33	157471.4	22117.1	135354.3	-0.0	-0.00
100yr24hr	8.42	163157.5	22710.4	140447.1	-0.0	-0.00
100yr24hr	8.50	169203.1	23326.6	145876.4	-0.0	-0.00
100yr24hr	8.58	175503.5	23959.1	151544.4	-0.0	-0.00
100yr24hr	8.67	181991.5	24603.0	157388.5	-0.0	-0.00
100yr24hr	8.75	188691.9	25262.3	163429.6	-0.0	-0.00
100yr24hr	8.83	195607.1	25936.5	169670.5	-0.0	-0.00
100yr24hr	8.92	202820.2	26629.8	176190.4	-0.0	-0.00
100yr24hr	9.00	210316.7	27340.2	182976.5	-0.0	-0.00
100yr24hr	9.08	218092.9	28070.0	190022.8	-0.0	-0.00
100yr24hr	9.17	226019.4	28809.4	197210.0	-0.0	-0.00
100yr24hr	9.25	234137.2	29563.5	204573.7	-0.0	-0.00
100yr24hr	9.33	242401.8	30328.7	212073.1	-0.0	-0.00
100yr24hr	9.42	250838.0	31107.6	219730.4	-0.0	-0.00
100yr24hr	9.50	259381.4	31894.5	227486.8	-0.0	-0.00
100yr24hr	9.58	268236.5	32704.2	235532.3	-0.0	-0.00
100yr24hr	9.67	277528.3	33538.4	243989.9	-0.0	-0.00
100yr24hr	9.75	287353.6	34405.1	252948.5	-0.0	-0.00
100yr24hr	9.83	297494.4	35293.1	262201.3	-0.0	-0.00
100yr24hr	9.92	307744.9	36192.0	271552.9	-0.0	-0.00
100yr24hr	10.00	318050.5	37099.1	280951.3	-0.0	-0.00
100yr24hr	10.02	320065.9	37276.8	282789.2	-0.0	-0.00
100yr24hr	10.03	322140.6	37459.5	284681.1	-0.0	-0.00
100yr24hr	10.05	324210.2	37641.4	286568.8	-0.0	-0.00
100yr24hr	10.07	326310.6	37825.5	288485.1	-0.0	-0.00
100yr24hr	10.08	328468.5	38013.8	290454.7	-0.0	-0.00
100yr24hr	10.10	330613.1	38199.9	292413.3	-0.0	-0.00
100yr24hr	10.12	332797.0	38388.2	294408.8	-0.0	-0.00
100yr24hr	10.13	335071.5	38583.3	296488.2	-0.0	-0.00
100yr24hr	10.15	337363.5	38778.8	298584.7	-0.0	-0.00
100yr24hr	10.17	339708.6	38977.9	300730.7	-0.0	-0.00
100yr24hr	10.18	342040.1	39174.9	302865.2	-0.0	-0.00
100yr24hr	10.20	344414.2	39374.8	305039.4	-0.0	-0.00
100yr24hr	10.22	346808.9	39575.8	307233.1	-0.0	-0.00
100yr24hr	10.23	349248.5	39779.9	309468.5	-0.0	-0.00
100yr24hr	10.25	351790.5	39992.1	311798.4	-0.0	-0.00
100yr24hr	10.27	354245.5	40196.5	314049.0	-0.0	-0.00
100yr24hr	10.28	356721.0	40402.3	316318.8	-0.0	-0.00
100yr24hr	10.30	359244.1	40611.6	318632.4	-0.0	-0.00
100yr24hr	10.32	361814.2	40824.6	320989.5	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	10.33	364395.1	41038.3	323356.9	-0.0	-0.00
100yr24hr	10.35	366941.4	41248.8	325692.5	-0.0	-0.00
100yr24hr	10.37	369603.3	41468.8	328134.5	-0.0	-0.00
100yr24hr	10.38	372133.7	41677.8	330455.9	-0.0	-0.00
100yr24hr	10.40	374779.1	41896.1	332882.9	-0.0	-0.00
100yr24hr	10.42	377365.8	42109.5	335256.3	-0.0	-0.00
100yr24hr	10.43	380001.6	42326.9	337674.7	-0.0	-0.00
100yr24hr	10.45	382686.3	42548.2	340138.1	-0.0	-0.00
100yr24hr	10.47	385314.7	42764.8	342549.9	-0.0	-0.00
100yr24hr	10.48	387957.7	42982.5	344975.2	-0.0	-0.00
100yr24hr	10.50	390705.3	43208.8	347496.6	-0.0	-0.00
100yr24hr	10.52	393339.8	43425.6	349914.2	-0.0	-0.00
100yr24hr	10.53	396052.0	43648.6	352403.3	-0.0	-0.00
100yr24hr	10.55	398799.1	43874.1	354924.9	-0.0	-0.00
100yr24hr	10.57	401457.3	44091.7	357365.5	-0.0	-0.00
100yr24hr	10.58	404260.7	44320.4	359940.3	-0.0	-0.00
100yr24hr	10.60	407095.3	44550.5	362544.8	-0.0	-0.00
100yr24hr	10.62	409948.2	44780.9	365167.3	-0.0	-0.00
100yr24hr	10.63	412884.6	45017.0	367867.6	-0.0	-0.00
100yr24hr	10.65	415829.5	45252.7	370576.8	-0.0	-0.00
100yr24hr	10.67	418891.4	45496.8	373394.6	-0.0	-0.00
100yr24hr	10.68	421911.0	45736.6	376174.3	-0.0	-0.00
100yr24hr	10.70	425049.8	45985.2	379064.6	-0.0	-0.00
100yr24hr	10.72	428216.2	46235.3	381980.9	-0.0	-0.00
100yr24hr	10.73	431427.2	46488.3	384938.9	-0.0	-0.00
100yr24hr	10.75	434577.7	46736.0	387841.8	-0.0	-0.00
100yr24hr	10.77	437862.9	46993.7	390869.1	-0.0	-0.00
100yr24hr	10.78	441104.1	47247.5	393856.7	-0.0	-0.00
100yr24hr	10.80	444543.9	47516.1	397027.8	-0.0	-0.00
100yr24hr	10.82	447774.3	47767.6	400006.7	-0.0	-0.00
100yr24hr	10.83	451196.6	48033.3	403163.3	-0.0	-0.00
100yr24hr	10.85	454604.3	48297.0	406307.3	-0.0	-0.00
100yr24hr	10.87	458133.6	48573.9	409559.7	-0.0	-0.00
100yr24hr	10.88	461730.4	48874.0	412856.5	-0.0	-0.00
100yr24hr	10.90	465248.4	49193.1	416055.3	-0.0	-0.00
100yr24hr	10.92	468880.8	49554.7	419326.1	-0.0	-0.00
100yr24hr	10.93	472589.0	49961.2	422627.8	-0.0	-0.00
100yr24hr	10.95	476333.3	50413.0	425920.3	-0.0	-0.00
100yr24hr	10.97	479947.8	50891.0	429056.9	-0.0	-0.00
100yr24hr	10.98	483736.1	51437.6	432298.5	-0.0	-0.00
100yr24hr	11.00	487637.4	52051.0	435586.5	-0.0	-0.00
100yr24hr	11.02	491373.7	52686.9	438686.8	-0.0	-0.00
100yr24hr	11.03	495225.4	53393.0	441832.4	-0.0	-0.00
100yr24hr	11.05	499151.4	54165.0	444986.4	-0.0	-0.00
100yr24hr	11.07	503056.8	54985.0	448071.8	-0.0	-0.00
100yr24hr	11.08	507135.4	55896.1	451239.3	-0.0	-0.00
100yr24hr	11.10	510993.9	56808.8	454185.1	-0.0	-0.00
100yr24hr	11.12	515080.9	57828.9	457252.0	-0.0	-0.00
100yr24hr	11.13	519136.0	58894.6	460241.4	-0.0	-0.00
100yr24hr	11.15	523247.3	60029.5	463217.8	-0.0	-0.00
100yr24hr	11.17	527436.3	61241.2	466195.1	-0.0	-0.00
100yr24hr	11.18	531574.4	62492.9	469081.6	-0.0	-0.00
100yr24hr	11.20	535715.8	63799.1	471916.7	-0.0	-0.00
100yr24hr	11.22	539978.2	65199.3	474779.0	-0.0	-0.00
100yr24hr	11.23	544187.7	66636.6	477551.1	-0.0	-0.00
100yr24hr	11.25	548513.0	68169.0	480344.0	-0.0	-0.00
100yr24hr	11.27	552760.1	69725.7	483034.4	-0.0	-0.00
100yr24hr	11.28	557122.4	71373.6	485748.8	-0.0	-0.00
100yr24hr	11.30	561577.3	73099.5	488477.8	-0.0	-0.00
100yr24hr	11.32	566010.9	74852.3	491158.6	-0.0	-0.00
100yr24hr	11.33	570577.1	76685.2	493891.9	-0.0	-0.00
100yr24hr	11.35	575330.4	78612.2	496718.1	-0.0	-0.00
100yr24hr	11.37	580106.2	80563.9	499542.4	-0.0	-0.00
100yr24hr	11.38	585020.9	82587.8	502433.1	-0.0	-0.00
100yr24hr	11.40	590036.0	84671.2	505364.9	-0.0	-0.00
100yr24hr	11.42	595283.2	86872.4	508410.8	-0.0	-0.00
100yr24hr	11.43	600546.0	89105.6	511440.4	-0.0	-0.00
100yr24hr	11.45	605879.6	91396.5	514483.1	-0.0	-0.00
100yr24hr	11.47	611379.8	93790.1	517589.6	-0.0	-0.00
100yr24hr	11.48	616981.7	96263.2	520718.4	-0.0	-0.00
100yr24hr	11.50	622533.7	98748.3	523785.5	-0.0	-0.00
100yr24hr	11.52	628471.2	101438.8	527032.4	-0.0	-0.00
100yr24hr	11.53	634267.7	104092.1	530175.6	-0.0	-0.00
100yr24hr	11.55	640113.6	106783.8	533329.8	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	11.57	646255.3	109615.4	536639.8	-0.0	-0.00
100yr24hr	11.58	652481.1	112479.9	540001.2	-0.0	-0.00
100yr24hr	11.60	659160.4	115541.5	543618.9	-0.0	-0.00
100yr24hr	11.62	665755.1	118553.9	547201.2	-0.0	-0.00
100yr24hr	11.63	672538.6	121647.5	550891.1	-0.0	-0.00
100yr24hr	11.65	679647.4	124890.1	554757.3	-0.0	-0.00
100yr24hr	11.67	686891.0	128201.7	558689.3	-0.0	-0.00
100yr24hr	11.68	694410.7	131655.2	562755.5	-0.0	-0.00
100yr24hr	11.70	701873.8	135104.2	566769.6	-0.0	-0.00
100yr24hr	11.72	709662.3	138731.4	570930.9	-0.0	-0.00
100yr24hr	11.73	717283.5	142311.6	574971.9	-0.0	-0.00
100yr24hr	11.75	725306.5	146116.5	579190.0	-0.0	-0.00
100yr24hr	11.77	733359.3	149938.8	583420.4	-0.0	-0.00
100yr24hr	11.78	741895.6	153918.9	587976.7	-0.0	-0.00
100yr24hr	11.80	750823.6	157932.7	592890.9	-0.0	-0.00
100yr24hr	11.82	760783.6	162124.8	598658.8	-0.0	-0.00
100yr24hr	11.83	772024.7	166427.8	605597.0	-0.0	-0.00
100yr24hr	11.85	784946.0	170893.0	614053.0	-0.0	-0.00
100yr24hr	11.87	799939.8	175604.9	624334.9	-0.0	-0.00
100yr24hr	11.88	816664.6	180467.8	636196.8	-0.0	-0.00
100yr24hr	11.90	835296.2	185586.9	649709.3	-0.0	-0.00
100yr24hr	11.92	856095.2	191085.1	665010.1	-0.0	-0.00
100yr24hr	11.93	878209.2	196740.8	681468.4	-0.0	-0.00
100yr24hr	11.95	902403.3	202807.9	699595.4	-0.0	-0.00
100yr24hr	11.97	927878.3	208995.6	718882.7	-0.0	-0.00
100yr24hr	11.98	954432.4	215164.5	739267.9	-0.0	-0.00
100yr24hr	12.00	982558.0	221446.6	761111.3	-0.0	-0.00
100yr24hr	12.02	1011605.3	227715.2	783890.1	-0.0	-0.00
100yr24hr	12.03	1041726.6	234021.4	807705.2	-0.0	-0.00
100yr24hr	12.05	1073349.1	240463.0	832886.1	-0.0	-0.00
100yr24hr	12.07	1105300.2	246813.6	858486.6	-0.0	-0.00
100yr24hr	12.08	1138145.8	253203.1	884942.8	-0.0	-0.00
100yr24hr	12.10	1172705.1	259805.4	912899.7	-0.0	-0.00
100yr24hr	12.12	1207208.3	266294.1	940914.2	-0.0	-0.00
100yr24hr	12.13	1242468.9	272833.3	969635.6	-0.0	-0.00
100yr24hr	12.15	1279135.8	279549.9	999585.9	-0.0	-0.00
100yr24hr	12.17	1316484.4	286318.3	1030166.1	-0.0	-0.00
100yr24hr	12.18	1353269.4	292922.3	1060347.1	-0.0	-0.00
100yr24hr	12.20	1391845.0	299789.9	1092055.1	-0.0	-0.00
100yr24hr	12.22	1431044.8	306715.8	1124329.0	-0.0	-0.00
100yr24hr	12.23	1469699.5	313503.1	1156196.4	-0.0	-0.00
100yr24hr	12.25	1509107.1	320398.5	1188708.5	-0.0	-0.00
100yr24hr	12.27	1549305.1	327441.4	1221863.7	-0.0	-0.00
100yr24hr	12.28	1589526.7	334556.1	1254970.6	-0.0	-0.00
100yr24hr	12.30	1628109.7	341520.0	1286589.8	0.0	0.00
100yr24hr	12.32	1666695.4	348704.3	1317991.1	0.0	0.00
100yr24hr	12.33	1703820.5	355921.7	1347898.7	0.0	0.00
100yr24hr	12.35	1738340.2	362985.4	1375354.8	0.0	0.00
100yr24hr	12.37	1771431.0	370130.8	1401300.3	0.0	0.00
100yr24hr	12.38	1802870.4	377299.0	1425571.5	0.0	0.00
100yr24hr	12.40	1833910.0	384776.2	1449133.8	0.0	0.00
100yr24hr	12.42	1862308.3	391985.9	1470322.4	0.0	0.00
100yr24hr	12.43	1889433.9	399214.3	1490219.6	0.0	0.00
100yr24hr	12.45	1915401.9	406460.5	1508941.4	0.0	0.00
100yr24hr	12.47	1941060.1	413941.8	1527118.3	0.0	0.00
100yr24hr	12.48	1965029.4	421221.6	1543807.8	0.0	0.00
100yr24hr	12.50	1988143.8	428517.1	1559626.7	0.0	0.00
100yr24hr	12.52	2010441.6	435827.4	1574614.2	0.0	0.00
100yr24hr	12.53	2032751.1	443426.5	1589324.6	0.0	0.00
100yr24hr	12.55	2053492.9	450764.5	1602728.4	0.0	0.00
100yr24hr	12.57	2073507.7	458114.8	1615392.9	0.0	0.00
100yr24hr	12.58	2092806.6	465476.8	1627329.9	0.0	0.00
100yr24hr	12.60	2111398.3	472849.9	1638548.8	0.0	0.00
100yr24hr	12.62	2130133.3	480578.8	1649554.5	0.0	0.00
100yr24hr	12.63	2147642.7	488087.3	1659555.4	0.0	0.00
100yr24hr	12.65	2163259.8	495026.6	1668233.2	0.0	0.00
100yr24hr	12.67	2179626.7	502552.6	1677074.1	0.0	0.00
100yr24hr	12.68	2195461.7	510087.3	1685374.5	0.0	0.00
100yr24hr	12.70	2210794.6	517630.0	1693164.6	0.0	0.00
100yr24hr	12.72	2225642.3	525180.4	1700461.8	0.0	0.00
100yr24hr	12.73	2240021.3	532738.1	1707283.2	0.0	0.00
100yr24hr	12.75	2253940.5	540302.5	1713638.0	0.0	0.00
100yr24hr	12.77	2267402.3	547873.2	1719529.1	0.0	0.00
100yr24hr	12.78	2280407.9	555449.7	1724958.1	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	12.80	2292007.9	562448.1	1729559.7	0.0	0.00
100yr24hr	12.82	2304129.9	570034.4	1734095.5	0.0	0.00
100yr24hr	12.83	2315784.7	577624.9	1738159.8	0.0	0.00
100yr24hr	12.85	2326977.5	585219.2	1741758.3	0.0	0.00
100yr24hr	12.87	2337721.0	592816.9	1744904.0	0.0	0.00
100yr24hr	12.88	2348039.8	600417.7	1747622.2	0.0	0.00
100yr24hr	12.90	2357423.2	607600.0	1749823.2	0.0	0.00
100yr24hr	12.92	2366966.3	615182.5	1751783.8	0.0	0.00
100yr24hr	12.93	2376052.5	622673.5	1753379.0	0.0	0.00
100yr24hr	12.95	2385369.5	630635.0	1754734.6	0.0	0.00
100yr24hr	12.97	2393850.3	638130.0	1755720.3	0.0	0.00
100yr24hr	12.98	2402072.8	645626.6	1756446.2	0.0	0.00
100yr24hr	13.00	2410056.6	653124.8	1756931.8	0.0	0.00
100yr24hr	13.02	2417823.1	660624.4	1757198.7	0.0	0.00
100yr24hr	13.03	2425390.8	668125.2	1757265.6	0.0	0.00
100yr24hr	13.05	2432771.1	675627.2	1757143.9	0.0	0.00
100yr24hr	13.07	2439971.2	683130.1	1756841.1	0.0	0.00
100yr24hr	13.08	2446996.5	690633.9	1756362.6	0.0	0.00
100yr24hr	13.10	2453852.9	698138.3	1755714.6	0.0	0.00
100yr24hr	13.12	2460961.2	706112.3	1754848.9	0.0	0.00
100yr24hr	13.13	2467495.2	713617.6	1753877.6	0.0	0.00
100yr24hr	13.15	2473892.2	721123.2	1752769.0	0.0	0.00
100yr24hr	13.17	2480166.7	728628.9	1751537.8	0.0	0.00
100yr24hr	13.18	2486331.0	736134.9	1750196.1	0.0	0.00
100yr24hr	13.20	2492396.4	743640.9	1748755.5	0.0	0.00
100yr24hr	13.22	2498378.0	751146.9	1747231.1	0.0	0.00
100yr24hr	13.23	2504292.5	758652.9	1745639.6	0.0	0.00
100yr24hr	13.25	2510150.8	766159.0	1743991.8	0.0	0.00
100yr24hr	13.27	2516171.5	773946.5	1742225.0	0.0	0.00
100yr24hr	13.28	2521977.5	781533.9	1740443.6	0.0	0.00
100yr24hr	13.30	2527500.6	788833.1	1738667.5	0.0	0.00
100yr24hr	13.32	2533194.6	796455.5	1736739.0	0.0	0.00
100yr24hr	13.33	2538991.1	804335.3	1734655.8	0.0	0.00
100yr24hr	13.35	2544263.1	811621.5	1732641.6	0.0	0.00
100yr24hr	13.37	2549752.0	819334.6	1730417.4	0.0	0.00
100yr24hr	13.38	2555084.7	826953.7	1728130.9	0.0	0.00
100yr24hr	13.40	2560165.9	834328.1	1725837.8	0.0	0.00
100yr24hr	13.42	2565259.5	841827.8	1723431.7	0.0	0.00
100yr24hr	13.43	2570262.0	849292.3	1720969.7	0.0	0.00
100yr24hr	13.45	2575273.8	856864.5	1718409.2	0.0	0.00
100yr24hr	13.47	2580498.2	864852.4	1715645.8	0.0	0.00
100yr24hr	13.48	2585041.7	871871.0	1713170.7	0.0	0.00
100yr24hr	13.50	2590147.9	879832.5	1710315.4	0.0	0.00
100yr24hr	13.52	2594850.4	887230.4	1707620.0	0.0	0.00
100yr24hr	13.53	2599631.1	894814.1	1704817.0	0.0	0.00
100yr24hr	13.55	2604174.4	902077.9	1702096.5	0.0	0.00
100yr24hr	13.57	2609087.9	909995.2	1699092.6	0.0	0.00
100yr24hr	13.58	2613498.3	917157.5	1696340.8	0.0	0.00
100yr24hr	13.60	2618135.4	924745.6	1693389.8	0.0	0.00
100yr24hr	13.62	2622870.1	932554.4	1690315.8	0.0	0.00
100yr24hr	13.63	2627157.0	939675.8	1687481.2	0.0	0.00
100yr24hr	13.65	2631907.0	947620.7	1684286.3	0.0	0.00
100yr24hr	13.67	2636275.3	954974.8	1681300.6	0.0	0.00
100yr24hr	13.68	2640579.3	962261.5	1678317.8	0.0	0.00
100yr24hr	13.70	2645128.2	970003.8	1675124.4	0.0	0.00
100yr24hr	13.72	2649647.4	977734.4	1671913.0	0.0	0.00
100yr24hr	13.73	2653813.8	984893.5	1668920.2	0.0	0.00
100yr24hr	13.75	2658140.6	992358.5	1665782.1	0.0	0.00
100yr24hr	13.77	2662571.9	1000037.2	1662534.6	0.0	0.00
100yr24hr	13.78	2666915.0	1007602.0	1659313.1	0.0	0.00
100yr24hr	13.80	2671291.3	1015269.6	1656021.6	0.0	0.00
100yr24hr	13.82	2675405.5	1022531.2	1652874.3	0.0	0.00
100yr24hr	13.83	2679694.6	1030170.4	1649524.2	0.0	0.00
100yr24hr	13.85	2683754.6	1037476.3	1646278.3	0.0	0.00
100yr24hr	13.87	2687869.7	1044961.0	1642908.8	0.0	0.00
100yr24hr	13.88	2692060.5	1052666.1	1639394.3	0.0	0.00
100yr24hr	13.90	2695976.9	1059940.4	1636036.5	0.0	0.00
100yr24hr	13.92	2699999.9	1067483.3	1632516.6	0.0	0.00
100yr24hr	13.93	2703969.7	1074993.4	1628976.2	0.0	0.00
100yr24hr	13.95	2707835.9	1082366.7	1625469.2	0.0	0.00
100yr24hr	13.97	2711827.2	1090034.1	1621793.2	0.0	0.00
100yr24hr	13.98	2715626.0	1097380.4	1618245.6	0.0	0.00
100yr24hr	14.00	2719479.0	1104877.9	1614601.1	0.0	0.00
100yr24hr	14.08	2738188.1	1142062.7	1596125.4	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	14.17	2756359.5	1179571.5	1576787.9	0.0	0.00
100yr24hr	14.25	2773659.3	1216450.6	1557208.7	0.0	0.00
100yr24hr	14.33	2790812.1	1253784.1	1537028.0	0.0	0.00
100yr24hr	14.42	2807409.7	1290367.1	1517042.6	0.0	0.00
100yr24hr	14.50	2823979.3	1327167.7	1496811.6	0.0	0.00
100yr24hr	14.58	2840301.1	1364060.4	1476240.7	0.0	0.00
100yr24hr	14.67	2855825.9	1400567.5	1455258.4	0.0	0.00
100yr24hr	14.75	2870678.3	1436975.9	1433702.4	0.0	0.00
100yr24hr	14.83	2885191.9	1473534.5	1411657.4	0.0	0.00
100yr24hr	14.92	2899180.5	1509423.5	1389757.0	0.0	0.00
100yr24hr	15.00	2913058.7	1545473.4	1367585.3	0.0	0.00
100yr24hr	15.08	2926772.8	1581381.7	1345391.1	0.0	0.00
100yr24hr	15.17	2940367.0	1617155.2	1323211.9	0.0	0.00
100yr24hr	15.25	2953859.9	1652767.7	1301092.2	0.0	0.00
100yr24hr	15.33	2966980.9	1687986.5	1278994.4	0.0	0.00
100yr24hr	15.42	2979611.5	1723320.2	1256291.3	0.0	0.00
100yr24hr	15.50	2991603.2	1758314.4	1233288.8	0.0	0.00
100yr24hr	15.58	3003345.2	1793293.5	1210051.7	-0.0	-0.00
100yr24hr	15.67	3014999.5	1827922.1	1187077.4	-0.0	-0.00
100yr24hr	15.75	3026757.3	1862452.7	1164304.6	-0.0	-0.00
100yr24hr	15.83	3038459.9	1896782.4	1141677.5	-0.0	-0.00
100yr24hr	15.92	3049949.5	1930941.4	1119008.1	-0.0	-0.00
100yr24hr	16.00	3061186.7	1964859.0	1096327.7	-0.0	-0.00
100yr24hr	16.25	3093969.6	2065541.8	1028427.8	-0.0	-0.00
100yr24hr	16.50	3124912.0	2164460.9	960451.1	-0.0	-0.00
100yr24hr	16.75	3155087.0	2261938.3	893148.7	-0.0	-0.00
100yr24hr	17.00	3181834.0	2358141.8	823692.2	-0.0	-0.00
100yr24hr	17.25	3203928.6	2453045.4	750883.2	-0.0	-0.00
100yr24hr	17.50	3223983.3	2545926.9	678056.3	-0.0	-0.00
100yr24hr	17.75	3243305.0	2633128.4	610176.5	-0.0	-0.00
100yr24hr	18.00	3262469.5	2698273.9	564195.5	-0.0	-0.00
100yr24hr	18.25	3280904.0	2748603.6	532300.5	-0.0	-0.00
100yr24hr	18.50	3297249.8	2788701.9	508547.9	0.0	0.00
100yr24hr	18.75	3312669.5	2820877.7	491791.8	0.0	0.00
100yr24hr	19.00	3328995.7	2847701.8	481293.9	0.0	0.00
100yr24hr	19.25	3344496.7	2870887.5	473609.1	0.0	0.00
100yr24hr	19.50	3359663.0	2891474.2	468188.7	0.0	0.00
100yr24hr	19.75	3374666.1	2910344.2	464321.9	-0.0	-0.00
100yr24hr	20.00	3388741.6	2927836.3	460905.3	-0.0	-0.00
100yr24hr	20.25	3402052.7	2944215.2	457837.5	-0.0	-0.00
100yr24hr	20.50	3415021.3	2959618.2	455403.1	-0.0	-0.00
100yr24hr	20.75	3427878.7	2974296.9	453581.8	-0.0	-0.00
100yr24hr	21.00	3440734.6	2988429.9	452304.7	-0.0	-0.00
100yr24hr	21.25	3453944.1	3002215.9	451728.1	0.0	0.00
100yr24hr	21.50	3466954.4	3015796.0	451158.5	0.0	0.00
100yr24hr	21.75	3479877.9	3029187.0	450690.8	0.0	0.00
100yr24hr	22.00	3492751.6	3042448.3	450303.2	0.0	0.00
100yr24hr	22.25	3504302.0	3055444.3	448857.7	0.0	0.00
100yr24hr	22.50	3515281.9	3067954.3	447327.6	0.0	0.00
100yr24hr	22.75	3526040.3	3080074.5	445965.8	0.0	0.00
100yr24hr	23.00	3537078.3	3091803.1	445275.2	0.0	0.00
100yr24hr	23.25	3547970.3	3103375.5	444594.8	0.0	0.00
100yr24hr	23.50	3558766.5	3114672.2	444094.4	0.0	0.00
100yr24hr	23.75	3569546.7	3125902.7	443643.9	0.0	0.00
100yr24hr	24.00	3578988.8	3136789.1	442199.7	0.0	0.00
100yr24hr	24.25	3585539.1	3147030.8	438508.4	0.0	0.00
100yr24hr	24.50	3586559.7	3155645.7	430914.0	0.0	0.00
100yr24hr	24.75	3586559.7	3162390.2	424169.5	0.0	0.00
100yr24hr	25.00	3586559.7	3167667.6	418892.1	0.0	0.00
100yr24hr	25.25	3586559.7	3171814.7	414745.0	0.0	0.00
100yr24hr	25.50	3586559.7	3175144.0	411415.7	0.0	0.00
100yr24hr	25.75	3586559.7	3177886.4	408673.3	0.0	0.00
100yr24hr	26.00	3586559.7	3180181.2	406378.5	0.0	0.00
100yr24hr	26.25	3586559.7	3182136.2	404423.5	0.0	0.00
100yr24hr	26.50	3586559.7	3183834.2	402725.5	0.0	0.00
100yr24hr	26.75	3586559.7	3185332.6	401227.1	0.0	0.00
100yr24hr	27.00	3586559.7	3186682.6	399877.1	0.0	0.00
100yr24hr	27.25	3586559.7	3187922.9	398636.8	0.0	0.00
100yr24hr	27.50	3586559.7	3189097.9	397461.8	0.0	0.00
100yr24hr	27.75	3586559.7	3190258.2	396301.6	0.0	0.00
100yr24hr	28.00	3586559.7	3191418.6	395141.1	0.0	0.00
100yr24hr	28.25	3586559.7	3192576.8	393982.9	0.0	0.00
100yr24hr	28.50	3586559.7	3193733.9	392825.8	0.0	0.00
100yr24hr	28.75	3586559.7	3194891.0	391668.7	0.0	0.00

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 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	29.00	3586559.7	3196046.0	390513.7	0.0	0.00
100yr24hr	29.25	3586559.7	3197201.0	389358.7	0.0	0.00
100yr24hr	29.50	3586559.7	3198353.9	388205.8	0.0	0.00
100yr24hr	29.75	3586559.7	3199506.7	387053.0	0.0	0.00
100yr24hr	30.00	3586559.7	3200657.5	385902.2	0.0	0.00
100yr24hr	30.25	3586559.7	3201808.2	384751.5	0.0	0.00
100yr24hr	30.50	3586559.7	3202956.8	383602.9	0.0	0.00
100yr24hr	30.75	3586559.7	3204105.4	382454.3	0.0	0.00
100yr24hr	31.00	3586559.7	3205251.9	381307.8	0.0	0.00
100yr24hr	31.25	3586559.7	3206398.3	380161.4	0.0	0.00
100yr24hr	31.50	3586559.7	3207542.6	379017.1	0.0	0.00
100yr24hr	31.75	3586559.7	3208686.9	377872.8	0.0	0.00
100yr24hr	32.00	3586559.7	3209829.1	376730.6	0.0	0.00
100yr24hr	32.25	3586559.7	3210971.2	375588.5	0.0	0.00
100yr24hr	32.50	3586559.7	3212111.3	374448.4	0.0	0.00
100yr24hr	32.75	3586559.7	3213251.3	373308.4	0.0	0.00
100yr24hr	33.00	3586559.7	3214390.1	372169.6	0.0	0.00
100yr24hr	33.25	3586559.7	3215526.7	371033.0	0.0	0.00
100yr24hr	33.50	3586559.7	3216663.4	369896.3	0.0	0.00
100yr24hr	33.75	3586559.7	3217797.9	368761.9	0.0	0.00
100yr24hr	34.00	3586559.7	3218932.4	367627.3	0.0	0.00
100yr24hr	34.25	3586559.7	3220065.9	366493.8	0.0	0.00
100yr24hr	34.50	3586559.7	3221197.1	365362.6	0.0	0.00
100yr24hr	34.75	3586559.7	3222328.4	364231.3	0.0	0.00
100yr24hr	35.00	3586559.7	3223457.4	363102.3	0.0	0.00
100yr24hr	35.25	3586559.7	3224586.5	361973.2	0.0	0.00
100yr24hr	35.50	3586559.7	3225714.6	360845.1	0.0	0.00
100yr24hr	35.75	3586559.7	3226840.3	359719.4	0.0	0.00
100yr24hr	36.00	3586559.7	3227966.2	358593.5	0.0	0.00
100yr24hr	36.25	3586559.7	3229089.8	357469.9	0.0	0.00
100yr24hr	36.50	3586559.7	3230213.5	356346.2	0.0	0.00
100yr24hr	36.75	3586559.7	3231336.2	355223.5	0.0	0.00
100yr24hr	37.00	3586559.7	3232456.5	354103.2	0.0	0.00
100yr24hr	37.25	3586559.7	3233576.9	352982.8	0.0	0.00
100yr24hr	37.50	3586559.7	3234695.1	351864.6	0.0	0.00
100yr24hr	37.75	3586559.7	3235813.4	350746.4	0.0	0.00
100yr24hr	38.00	3586559.7	3236930.5	349629.2	0.0	0.00
100yr24hr	38.25	3586559.7	3238045.4	348514.3	0.0	0.00
100yr24hr	38.50	3586559.7	3239160.4	347399.3	0.0	0.00
100yr24hr	38.75	3586559.7	3240273.1	346286.6	0.0	0.00
100yr24hr	39.00	3586559.7	3241385.9	345173.8	0.0	0.00
100yr24hr	39.25	3586559.7	3242497.6	344062.1	0.0	0.00
100yr24hr	39.50	3586559.7	3243607.0	342952.7	0.0	0.00
100yr24hr	39.75	3586559.7	3244716.6	341843.1	0.0	0.00
100yr24hr	40.00	3586559.7	3245823.8	340735.9	0.0	0.00
100yr24hr	40.25	3586559.7	3246931.1	339628.6	0.0	0.00
100yr24hr	40.50	3586559.7	3248037.4	338522.3	0.0	0.00
100yr24hr	40.75	3586559.7	3249141.3	337418.4	0.0	0.00
100yr24hr	41.00	3586559.7	3250245.1	336314.6	0.0	0.00
100yr24hr	41.25	3586559.7	3251347.7	335212.0	0.0	0.00
100yr24hr	41.50	3586559.7	3252449.3	334110.5	0.0	0.00
100yr24hr	41.75	3586559.7	3253549.7	333010.0	0.0	0.00
100yr24hr	42.00	3586559.7	3254648.2	331911.6	0.0	0.00
100yr24hr	42.25	3586559.7	3255746.4	330813.3	0.0	0.00
100yr24hr	42.50	3586559.7	3256843.6	329716.2	0.0	0.00
100yr24hr	42.75	3586559.7	3257939.6	328620.1	0.0	0.00
100yr24hr	43.00	3586559.7	3259033.7	327526.1	0.0	0.00
100yr24hr	43.25	3586559.7	3260127.5	326432.2	0.0	0.00
100yr24hr	43.50	3586559.7	3261220.2	325339.5	0.0	0.00
100yr24hr	43.75	3586559.7	3262311.9	324247.8	0.0	0.00
100yr24hr	44.00	3586559.7	3263402.7	323157.0	0.0	0.00
100yr24hr	44.25	3586559.7	3264490.9	322068.8	0.0	0.00
100yr24hr	44.50	3586559.7	3265579.3	320980.5	0.0	0.00
100yr24hr	44.75	3586559.7	3266666.5	319893.2	0.0	0.00
100yr24hr	45.00	3586559.7	3267752.6	318807.1	0.0	0.00
100yr24hr	45.25	3586559.7	3268837.9	317721.8	0.0	0.00
100yr24hr	45.50	3586559.7	3269920.6	316639.1	0.0	0.00
100yr24hr	45.75	3586559.7	3271003.4	315556.3	0.0	0.00
100yr24hr	46.00	3586559.7	3272085.1	314474.7	0.0	0.00
100yr24hr	46.25	3586559.7	3273165.9	313393.8	0.0	0.00
100yr24hr	46.50	3586559.7	3274245.4	312314.3	0.0	0.00
100yr24hr	46.75	3586559.7	3275322.5	311237.2	0.0	0.00
100yr24hr	47.00	3586559.7	3276399.8	310159.9	0.0	0.00
100yr24hr	47.25	3586559.7	3277476.2	309083.5	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	47.50	3586559.7	3278551.2	308008.5	0.0	0.00
100yr24hr	47.75	3586559.7	3279625.1	306934.6	0.0	0.00
100yr24hr	48.00	3586559.7	3280696.7	305863.0	0.0	0.00
100yr24hr	48.00	3586559.7	3280696.7	305863.0	0.0	0.00
10yr24hr	0.00	0.0	0.0	0.0	0.0	0.00
10yr24hr	0.25	91.4	34.3	57.1	0.0	0.00
10yr24hr	0.50	360.7	127.5	233.2	0.0	0.00
10yr24hr	0.75	771.0	248.5	522.5	0.0	0.00
10yr24hr	1.00	1350.2	386.0	964.2	0.0	0.00
10yr24hr	1.25	2055.1	542.9	1512.2	0.0	0.00
10yr24hr	1.50	2869.5	700.5	2169.0	0.0	0.00
10yr24hr	1.75	3756.3	858.9	2897.3	0.0	0.00
10yr24hr	2.00	4745.1	1021.1	3724.0	0.0	0.00
10yr24hr	2.25	5901.5	1200.0	4701.5	0.0	0.00
10yr24hr	2.50	7164.6	1385.7	5778.9	-0.0	-0.00
10yr24hr	2.75	8366.9	1558.2	6808.7	-0.0	-0.00
10yr24hr	3.00	9565.0	1721.2	7843.7	-0.0	-0.00
10yr24hr	3.25	10955.6	1903.5	9052.1	0.0	0.00
10yr24hr	3.50	12422.0	2091.3	10330.7	-0.0	-0.00
10yr24hr	3.75	13948.7	2281.5	11667.3	-0.0	-0.00
10yr24hr	4.00	15508.4	2472.6	13035.8	-0.0	-0.00
10yr24hr	4.25	17267.2	2679.2	14588.0	-0.0	-0.00
10yr24hr	4.50	19134.0	2897.5	16236.4	0.0	0.00
10yr24hr	4.75	20907.2	3100.4	17806.8	0.0	0.00
10yr24hr	5.00	22875.8	3318.1	19557.7	0.0	0.00
10yr24hr	5.25	24909.4	3540.8	21368.7	0.0	0.00
10yr24hr	5.50	26999.4	3763.5	23235.9	0.0	0.00
10yr24hr	5.75	29332.1	4019.0	25313.0	0.0	0.00
10yr24hr	6.00	31852.6	4314.9	27537.7	0.0	0.00
10yr24hr	6.25	34616.7	4663.5	29953.1	0.0	0.00
10yr24hr	6.50	37497.2	5051.0	32446.2	0.0	0.00
10yr24hr	6.75	40756.0	5515.3	35240.7	0.0	0.00
10yr24hr	7.00	44263.7	6245.9	38017.8	0.0	0.00
10yr24hr	7.25	48000.1	7136.9	40863.2	0.0	0.00
10yr24hr	7.50	52443.0	8102.4	44340.7	0.0	0.00
10yr24hr	7.75	57928.0	9144.0	48784.1	0.0	0.00
10yr24hr	8.00	64872.8	10263.8	54609.0	0.0	0.00
10yr24hr	8.25	72518.3	11419.7	61098.7	0.0	0.00
10yr24hr	8.33	75052.0	11804.6	63247.4	0.0	0.00
10yr24hr	8.42	77718.7	12197.2	65521.5	0.0	0.00
10yr24hr	8.50	80561.3	12600.6	67960.8	0.0	0.00
10yr24hr	8.58	83531.7	13011.4	70520.3	0.0	0.00
10yr24hr	8.67	86628.2	13431.1	73197.1	0.0	0.00
10yr24hr	8.75	89815.2	13856.2	75959.0	0.0	0.00
10yr24hr	8.83	93115.6	14289.1	78826.5	0.0	0.00
10yr24hr	8.92	96568.5	14731.7	81836.8	0.0	0.00
10yr24hr	9.00	100185.5	15184.9	85000.6	0.0	0.00
10yr24hr	9.08	103922.3	15645.3	88277.0	0.0	0.00
10yr24hr	9.17	107782.3	16115.0	91667.2	0.0	0.00
10yr24hr	9.25	111745.0	16592.8	95152.2	0.0	0.00
10yr24hr	9.33	115789.3	17076.5	98712.7	0.0	0.00
10yr24hr	9.42	119914.4	17566.3	102348.1	0.0	0.00
10yr24hr	9.50	124128.7	18063.4	106065.3	0.0	0.00
10yr24hr	9.58	128477.9	18569.8	109908.1	0.0	0.00
10yr24hr	9.67	133085.6	19092.1	113993.5	0.0	0.00
10yr24hr	9.75	137987.6	19632.7	118354.9	0.0	0.00
10yr24hr	9.83	143081.7	20186.9	122894.8	0.0	0.00
10yr24hr	9.92	148217.0	20744.7	127472.3	0.0	0.00
10yr24hr	10.00	153377.6	21306.3	132071.3	0.0	0.00
10yr24hr	10.02	154411.4	21418.8	132992.6	0.0	0.00
10yr24hr	10.03	155462.7	21533.0	133929.7	0.0	0.00
10yr24hr	10.05	156516.1	21647.1	134869.1	0.0	0.00
10yr24hr	10.07	157579.5	21761.8	135817.7	-0.0	-0.00
10yr24hr	10.08	158663.8	21878.0	136785.8	-0.0	-0.00
10yr24hr	10.10	159762.0	21994.7	137767.3	-0.0	-0.00
10yr24hr	10.12	160864.9	22111.0	138753.9	-0.0	-0.00
10yr24hr	10.13	162006.7	22230.3	139776.3	-0.0	-0.00
10yr24hr	10.15	163158.6	22349.8	140808.8	-0.0	-0.00
10yr24hr	10.17	164348.5	22472.3	141876.2	-0.0	-0.00
10yr24hr	10.18	165540.3	22594.1	142946.2	-0.0	-0.00
10yr24hr	10.20	166765.5	22718.7	144046.9	-0.0	-0.00
10yr24hr	10.22	167990.0	22842.5	145147.5	-0.0	-0.00
10yr24hr	10.23	169225.3	22966.8	146258.5	-0.0	-0.00
10yr24hr	10.25	170511.8	23095.7	147416.1	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	10.27	171761.6	23220.5	148541.1	-0.0	-0.00
10yr24hr	10.28	173049.7	23348.6	149701.1	0.0	0.00
10yr24hr	10.30	174347.9	23477.4	150870.5	0.0	0.00
10yr24hr	10.32	175657.0	23606.9	152050.1	0.0	0.00
10yr24hr	10.33	176974.4	23737.0	153237.4	0.0	0.00
10yr24hr	10.35	178282.7	23865.9	154416.9	-0.0	-0.00
10yr24hr	10.37	179638.0	23999.1	155638.8	-0.0	-0.00
10yr24hr	10.38	180953.1	24128.3	156824.8	-0.0	-0.00
10yr24hr	10.40	182329.6	24263.2	158066.4	-0.0	-0.00
10yr24hr	10.42	183661.0	24393.5	159267.5	-0.0	-0.00
10yr24hr	10.43	185037.4	24528.1	160509.3	-0.0	-0.00
10yr24hr	10.45	186383.6	24659.6	161724.0	-0.0	-0.00
10yr24hr	10.47	187754.7	24793.3	162961.4	-0.0	-0.00
10yr24hr	10.48	189135.6	24927.9	164207.7	-0.0	-0.00
10yr24hr	10.50	190506.0	25061.3	165444.7	-0.0	-0.00
10yr24hr	10.52	191897.6	25196.6	166701.0	-0.0	-0.00
10yr24hr	10.53	193291.1	25331.8	167959.3	-0.0	-0.00
10yr24hr	10.55	194716.0	25469.6	169246.4	-0.0	-0.00
10yr24hr	10.57	196128.4	25605.7	170522.6	-0.0	-0.00
10yr24hr	10.58	197577.6	25744.7	171832.9	-0.0	-0.00
10yr24hr	10.60	199047.3	25884.6	173162.7	-0.0	-0.00
10yr24hr	10.62	200532.6	26025.0	174507.5	-0.0	-0.00
10yr24hr	10.63	202064.5	26168.8	175895.7	-0.0	-0.00
10yr24hr	10.65	203603.8	26312.3	177291.5	-0.0	-0.00
10yr24hr	10.67	205188.8	26459.2	178729.6	-0.0	-0.00
10yr24hr	10.68	206802.8	26607.9	180194.9	-0.0	-0.00
10yr24hr	10.70	208398.9	26754.2	181644.7	-0.0	-0.00
10yr24hr	10.72	210045.4	26904.5	183141.0	-0.0	-0.00
10yr24hr	10.73	211739.5	27058.5	184681.0	0.0	0.00
10yr24hr	10.75	213431.1	27211.7	186219.4	0.0	0.00
10yr24hr	10.77	215111.1	27363.3	187747.7	0.0	0.00
10yr24hr	10.78	216824.8	27517.5	189307.3	0.0	0.00
10yr24hr	10.80	218603.1	27676.8	190926.3	0.0	0.00
10yr24hr	10.82	220328.4	27830.7	192497.7	0.0	0.00
10yr24hr	10.83	222155.4	27992.9	194162.5	-0.0	-0.00
10yr24hr	10.85	223933.5	28150.0	195783.5	-0.0	-0.00
10yr24hr	10.87	225788.9	28313.1	197475.8	-0.0	-0.00
10yr24hr	10.88	227669.0	28477.7	199191.3	-0.0	-0.00
10yr24hr	10.90	229572.9	28643.6	200929.3	-0.0	-0.00
10yr24hr	10.92	231465.2	28807.9	202657.3	-0.0	-0.00
10yr24hr	10.93	233465.4	28980.9	204484.5	-0.0	-0.00
10yr24hr	10.95	235376.6	29145.8	206230.9	-0.0	-0.00
10yr24hr	10.97	237346.5	29315.2	208031.2	-0.0	-0.00
10yr24hr	10.98	239371.1	29489.0	209882.2	-0.0	-0.00
10yr24hr	11.00	241356.8	29658.9	211697.9	-0.0	-0.00
10yr24hr	11.02	243402.0	29833.6	213568.4	-0.0	-0.00
10yr24hr	11.03	245460.6	30009.0	215451.6	-0.0	-0.00
10yr24hr	11.05	247538.9	30185.6	217353.3	-0.0	-0.00
10yr24hr	11.07	249652.2	30364.8	219287.4	-0.0	-0.00
10yr24hr	11.08	251767.0	30543.5	221223.5	-0.0	-0.00
10yr24hr	11.10	253865.2	30720.4	223144.8	-0.0	-0.00
10yr24hr	11.12	256058.0	30904.7	225153.3	-0.0	-0.00
10yr24hr	11.13	258211.6	31085.4	227126.2	-0.0	-0.00
10yr24hr	11.15	260418.9	31270.1	229148.8	-0.0	-0.00
10yr24hr	11.17	262682.9	31459.2	231223.7	-0.0	-0.00
10yr24hr	11.18	264856.2	31640.3	233215.9	-0.0	-0.00
10yr24hr	11.20	267106.7	31827.6	235279.1	-0.0	-0.00
10yr24hr	11.22	269395.0	32017.8	237377.2	-0.0	-0.00
10yr24hr	11.23	271678.3	32207.3	239471.0	-0.0	-0.00
10yr24hr	11.25	274010.9	32400.6	241610.3	-0.0	-0.00
10yr24hr	11.27	276297.6	32589.8	243707.8	-0.0	-0.00
10yr24hr	11.28	278628.5	32782.1	245846.4	-0.0	-0.00
10yr24hr	11.30	281040.3	32980.2	248060.0	-0.0	-0.00
10yr24hr	11.32	283400.6	33173.1	250227.5	-0.0	-0.00
10yr24hr	11.33	285936.3	33378.9	252557.4	-0.0	-0.00
10yr24hr	11.35	288425.5	33579.2	254846.3	-0.0	-0.00
10yr24hr	11.37	291033.9	33787.4	257246.5	-0.0	-0.00
10yr24hr	11.38	293744.7	34002.1	259742.7	-0.0	-0.00
10yr24hr	11.40	296447.9	34214.7	262233.3	-0.0	-0.00
10yr24hr	11.42	299302.3	34437.8	264864.5	-0.0	-0.00
10yr24hr	11.43	302143.9	34658.7	267485.1	0.0	0.00
10yr24hr	11.45	305187.1	34894.2	270292.9	-0.0	-0.00
10yr24hr	11.47	308026.4	35112.9	272913.5	-0.0	-0.00
10yr24hr	11.48	311066.7	35346.4	275720.3	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	11.50	314143.1	35581.8	278561.3	-0.0	-0.00
10yr24hr	11.52	317311.1	35823.2	281487.9	-0.0	-0.00
10yr24hr	11.53	320480.4	36063.5	284416.9	0.0	0.00
10yr24hr	11.55	323761.4	36310.9	287450.5	0.0	0.00
10yr24hr	11.57	327081.0	36559.5	290521.5	-0.0	-0.00
10yr24hr	11.58	330656.7	36825.1	293831.6	-0.0	-0.00
10yr24hr	11.60	334119.3	37080.3	297039.0	-0.0	-0.00
10yr24hr	11.62	337929.7	37359.1	300570.6	-0.0	-0.00
10yr24hr	11.63	341695.4	37632.8	304062.6	-0.0	-0.00
10yr24hr	11.65	345537.4	37910.6	307626.8	-0.0	-0.00
10yr24hr	11.67	349459.0	38192.8	311266.2	0.0	0.00
10yr24hr	11.68	353594.7	38489.1	315105.5	-0.0	-0.00
10yr24hr	11.70	357792.9	38788.9	319004.0	-0.0	-0.00
10yr24hr	11.72	362020.5	39089.8	322930.7	-0.0	-0.00
10yr24hr	11.73	366318.4	39394.9	326923.5	-0.0	-0.00
10yr24hr	11.75	370772.3	39710.3	331062.0	-0.0	-0.00
10yr24hr	11.77	375390.2	40034.8	335355.4	-0.0	-0.00
10yr24hr	11.78	379992.3	40353.9	339638.4	-0.0	-0.00
10yr24hr	11.80	385037.9	40697.7	344340.2	-0.0	-0.00
10yr24hr	11.82	390636.8	41068.4	349568.4	-0.0	-0.00
10yr24hr	11.83	396965.7	41473.6	355492.1	-0.0	-0.00
10yr24hr	11.85	404143.8	41920.0	362223.9	0.0	0.00
10yr24hr	11.87	412445.1	42424.1	370021.0	-0.0	-0.00
10yr24hr	11.88	422128.0	43002.5	379125.6	-0.0	-0.00
10yr24hr	11.90	432588.7	43620.9	388967.8	-0.0	-0.00
10yr24hr	11.92	444267.1	44306.5	399960.6	-0.0	-0.00
10yr24hr	11.93	456977.5	45049.3	411928.1	-0.0	-0.00
10yr24hr	11.95	470767.4	45853.6	424913.8	-0.0	-0.00
10yr24hr	11.97	485185.1	46693.9	438491.2	-0.0	-0.00
10yr24hr	11.98	500480.2	47585.4	452894.8	-0.0	-0.00
10yr24hr	12.00	516841.7	48563.0	468278.6	-0.0	-0.00
10yr24hr	12.02	533578.8	49647.2	483931.5	-0.0	-0.00
10yr24hr	12.03	550792.3	50890.9	499901.4	-0.0	-0.00
10yr24hr	12.05	569180.6	52387.5	516793.1	-0.0	-0.00
10yr24hr	12.07	587708.1	54084.9	533623.2	-0.0	-0.00
10yr24hr	12.08	606794.1	56041.8	550752.3	-0.0	-0.00
10yr24hr	12.10	626917.6	58340.6	568577.0	-0.0	-0.00
10yr24hr	12.12	647049.3	60886.1	586163.2	-0.0	-0.00
10yr24hr	12.13	667663.2	63749.7	603913.5	-0.0	-0.00
10yr24hr	12.15	689277.3	67034.6	622242.7	-0.0	-0.00
10yr24hr	12.17	710892.9	70610.9	640282.0	-0.0	-0.00
10yr24hr	12.18	732915.3	74555.6	658359.7	-0.0	-0.00
10yr24hr	12.20	755325.1	78881.9	676443.2	-0.0	-0.00
10yr24hr	12.22	778104.6	83600.6	694504.0	-0.0	-0.00
10yr24hr	12.23	801208.6	88708.9	712499.7	-0.0	-0.00
10yr24hr	12.25	824745.3	94245.5	730499.9	-0.0	-0.00
10yr24hr	12.27	848197.9	100046.7	748151.2	0.0	0.00
10yr24hr	12.28	871848.2	106187.7	765660.6	0.0	0.00
10yr24hr	12.30	895753.4	112548.7	783204.6	0.0	0.00
10yr24hr	12.32	918077.7	118667.5	799410.2	0.0	0.00
10yr24hr	12.33	939806.6	124870.7	814935.9	0.0	0.00
10yr24hr	12.35	960547.4	131094.2	829453.2	0.0	0.00
10yr24hr	12.37	981233.8	137648.7	843585.1	0.0	0.00
10yr24hr	12.38	999933.8	143908.5	856025.2	0.0	0.00
10yr24hr	12.40	1017709.9	150184.1	867525.8	-0.0	-0.00
10yr24hr	12.42	1034480.9	156411.4	878069.5	-0.0	-0.00
10yr24hr	12.43	1050671.3	162715.4	887955.9	-0.0	-0.00
10yr24hr	12.45	1066176.6	169032.4	897144.2	-0.0	-0.00
10yr24hr	12.47	1081649.3	175615.0	906034.3	-0.0	-0.00
10yr24hr	12.48	1095969.0	181956.3	914012.7	-0.0	-0.00
10yr24hr	12.50	1109785.4	188308.5	921477.0	0.0	0.00
10yr24hr	12.52	1123016.5	194620.0	928396.4	0.0	0.00
10yr24hr	12.53	1136200.4	201145.2	935055.2	0.0	0.00
10yr24hr	12.55	1148532.2	207475.4	941056.7	0.0	0.00
10yr24hr	12.57	1160819.7	214018.6	946801.1	-0.0	-0.00
10yr24hr	12.58	1172301.2	220365.2	951936.0	0.0	0.00
10yr24hr	12.60	1183722.1	226925.1	956797.0	0.0	0.00
10yr24hr	12.62	1194384.2	233289.2	961095.1	0.0	0.00
10yr24hr	12.63	1204757.1	239713.3	965043.9	0.0	0.00
10yr24hr	12.65	1214856.1	246197.0	968659.1	0.0	0.00
10yr24hr	12.67	1224678.6	252727.2	971951.5	0.0	0.00
10yr24hr	12.68	1234031.8	259155.0	974876.7	0.0	0.00
10yr24hr	12.70	1243161.1	265633.8	977527.3	-0.0	-0.00
10yr24hr	12.72	1252047.0	272145.6	979901.4	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	12.73	1260805.2	278774.3	982030.8	0.0	0.00
10yr24hr	12.75	1269196.2	285335.9	983860.3	0.0	0.00
10yr24hr	12.77	1277322.3	291905.3	985417.0	0.0	0.00
10yr24hr	12.78	1284996.6	298323.2	986673.5	-0.0	-0.00
10yr24hr	12.80	1292513.3	304831.8	987681.6	0.0	0.00
10yr24hr	12.82	1299692.3	311279.6	988412.7	0.0	0.00
10yr24hr	12.83	1306678.5	317799.7	988878.7	-0.0	-0.00
10yr24hr	12.85	1313487.8	324413.8	989074.0	-0.0	-0.00
10yr24hr	12.87	1319917.5	330916.2	989001.3	-0.0	-0.00
10yr24hr	12.88	1326179.9	337505.4	988674.5	-0.0	-0.00
10yr24hr	12.90	1332234.3	344127.3	988107.0	0.0	0.00
10yr24hr	12.92	1337848.2	350499.3	987349.0	-0.0	-0.00
10yr24hr	12.93	1343478.2	357122.8	986355.4	0.0	0.00
10yr24hr	12.95	1348926.1	363757.7	985168.4	0.0	0.00
10yr24hr	12.97	1354087.4	370249.2	983838.2	0.0	0.00
10yr24hr	12.98	1359093.8	376740.2	982353.7	0.0	0.00
10yr24hr	13.00	1363957.1	383230.3	980726.8	0.0	0.00
10yr24hr	13.02	1368642.0	389652.9	978989.1	0.0	0.00
10yr24hr	13.03	1373301.9	396205.4	977096.5	0.0	0.00
10yr24hr	13.05	1377909.5	402847.8	975061.7	0.0	0.00
10yr24hr	13.07	1382331.6	409380.9	972950.7	0.0	0.00
10yr24hr	13.08	1386582.0	415812.8	970769.2	0.0	0.00
10yr24hr	13.10	1390864.7	422450.5	968414.2	0.0	0.00
10yr24hr	13.12	1394973.0	428969.6	966003.4	0.0	0.00
10yr24hr	13.13	1398949.3	435421.9	963527.4	0.0	0.00
10yr24hr	13.15	1402933.7	442023.5	960910.3	0.0	0.00
10yr24hr	13.17	1406697.9	448378.4	958319.5	0.0	0.00
10yr24hr	13.18	1410532.3	454964.0	955568.2	0.0	0.00
10yr24hr	13.20	1414306.3	461549.9	952756.5	0.0	0.00
10yr24hr	13.22	1418026.6	468130.7	949895.9	0.0	0.00
10yr24hr	13.23	1421610.8	474539.3	947071.5	0.0	0.00
10yr24hr	13.25	1425281.7	481162.7	944119.0	0.0	0.00
10yr24hr	13.27	1428715.3	487412.3	941303.0	0.0	0.00
10yr24hr	13.28	1432257.8	493921.0	938336.9	0.0	0.00
10yr24hr	13.30	1435868.5	500628.3	935240.2	0.0	0.00
10yr24hr	13.32	1439297.6	507079.7	932218.0	0.0	0.00
10yr24hr	13.33	1442629.4	513437.9	929191.5	0.0	0.00
10yr24hr	13.35	1446046.5	520063.8	925982.7	0.0	0.00
10yr24hr	13.37	1449283.8	526444.1	922839.7	0.0	0.00
10yr24hr	13.38	1452487.2	532857.3	919629.8	0.0	0.00
10yr24hr	13.40	1455695.8	539379.8	916316.0	0.0	0.00
10yr24hr	13.42	1458914.6	546017.8	912896.8	0.0	0.00
10yr24hr	13.43	1462004.7	552474.6	909530.1	0.0	0.00
10yr24hr	13.45	1464986.3	558778.7	906207.5	-0.0	-0.00
10yr24hr	13.47	1468009.5	565241.0	902768.5	0.0	0.00
10yr24hr	13.48	1471064.2	571836.0	899228.2	0.0	0.00
10yr24hr	13.50	1473962.7	578149.4	895813.3	0.0	0.00
10yr24hr	13.52	1476989.8	584798.0	892191.8	0.0	0.00
10yr24hr	13.53	1479877.8	591191.4	888686.4	0.0	0.00
10yr24hr	13.55	1482705.3	597497.1	885208.2	0.0	0.00
10yr24hr	13.57	1485651.9	604117.0	881534.9	0.0	0.00
10yr24hr	13.58	1488418.9	610379.6	878039.3	0.0	0.00
10yr24hr	13.60	1491294.3	616935.9	874358.4	0.0	0.00
10yr24hr	13.62	1494058.1	623284.3	870773.8	0.0	0.00
10yr24hr	13.63	1496831.2	629697.8	867133.3	0.0	0.00
10yr24hr	13.65	1499631.1	636215.9	863415.2	0.0	0.00
10yr24hr	13.67	1502391.9	642682.0	859709.9	0.0	0.00
10yr24hr	13.68	1505046.4	648932.9	856113.6	0.0	0.00
10yr24hr	13.70	1507790.0	655425.0	852365.0	0.0	0.00
10yr24hr	13.72	1510499.2	661865.0	848634.2	0.0	0.00
10yr24hr	13.73	1513218.9	668357.2	844861.7	-0.0	-0.00
10yr24hr	13.75	1515835.2	674626.1	841209.1	-0.0	-0.00
10yr24hr	13.77	1518504.5	681047.0	837457.5	-0.0	-0.00
10yr24hr	13.78	1521143.0	687423.3	833719.6	-0.0	-0.00
10yr24hr	13.80	1523778.0	693826.0	829952.0	0.0	0.00
10yr24hr	13.82	1526392.3	700222.1	826170.2	0.0	0.00
10yr24hr	13.83	1528945.0	706522.0	822423.0	0.0	0.00
10yr24hr	13.85	1531593.8	713124.9	818469.0	0.0	0.00
10yr24hr	13.87	1534067.4	719355.9	814711.5	0.0	0.00
10yr24hr	13.88	1536623.4	725860.8	810762.6	0.0	0.00
10yr24hr	13.90	1539081.7	732178.8	806902.9	0.0	0.00
10yr24hr	13.92	1541548.4	738576.0	802972.4	0.0	0.00
10yr24hr	13.93	1543960.8	744885.3	799075.5	0.0	0.00
10yr24hr	13.95	1546347.0	751173.3	795173.7	0.0	0.00

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DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	13.97	1548776.0	757617.4	791158.6	0.0	0.00
10yr24hr	13.98	1551116.4	763864.6	787251.7	0.0	0.00
10yr24hr	14.00	1553446.7	770120.0	783326.6	0.0	0.00
10yr24hr	14.08	1565034.3	801839.6	763194.6	0.0	0.00
10yr24hr	14.17	1576151.9	833350.2	742801.8	0.0	0.00
10yr24hr	14.25	1586834.1	864504.7	722329.4	0.0	0.00
10yr24hr	14.33	1597240.5	895362.8	701877.7	0.0	0.00
10yr24hr	14.42	1607580.2	926264.3	681315.8	0.0	0.00
10yr24hr	14.50	1617763.4	956756.8	661006.6	-0.0	-0.00
10yr24hr	14.58	1627775.0	987005.5	640769.5	0.0	0.00
10yr24hr	14.67	1637378.0	1016027.8	621350.2	-0.0	-0.00
10yr24hr	14.75	1646503.3	1042100.0	604403.2	-0.0	-0.00
10yr24hr	14.83	1655433.8	1065779.1	589654.7	-0.0	-0.00
10yr24hr	14.92	1664077.3	1087216.4	576860.9	-0.0	-0.00
10yr24hr	15.00	1672656.7	1107207.3	565449.4	-0.0	-0.00
10yr24hr	15.08	1681093.7	1125699.9	555393.8	-0.0	-0.00
10yr24hr	15.17	1689463.3	1142979.3	546484.0	-0.0	-0.00
10yr24hr	15.25	1697795.1	1159203.3	538591.7	-0.0	-0.00
10yr24hr	15.33	1705949.2	1174433.9	531515.4	-0.0	-0.00
10yr24hr	15.42	1713734.5	1188757.7	524976.8	-0.0	-0.00
10yr24hr	15.50	1721135.1	1202196.6	518938.5	-0.0	-0.00
10yr24hr	15.58	1728363.0	1214901.3	513461.7	-0.0	-0.00
10yr24hr	15.67	1735579.0	1226934.7	508644.3	-0.0	-0.00
10yr24hr	15.75	1742859.3	1238393.1	504466.2	-0.0	-0.00
10yr24hr	15.83	1750082.7	1249278.4	500804.3	-0.0	-0.00
10yr24hr	15.92	1757170.9	1259686.9	497484.1	-0.0	-0.00
10yr24hr	16.00	1764118.6	1269670.4	494448.3	-0.0	-0.00
10yr24hr	16.25	1784384.6	1297458.8	486925.8	-0.0	-0.00
10yr24hr	16.50	1803551.6	1322646.0	480905.6	0.0	0.00
10yr24hr	16.75	1822223.1	1345786.3	476436.7	-0.0	-0.00
10yr24hr	17.00	1838774.0	1367273.6	471500.4	-0.0	-0.00
10yr24hr	17.25	1852463.4	1386860.7	465602.7	-0.0	-0.00
10yr24hr	17.50	1864899.4	1404560.1	460339.3	-0.0	-0.00
10yr24hr	17.75	1876875.6	1420621.8	456253.8	-0.0	-0.00
10yr24hr	18.00	1888775.1	1435485.9	453289.2	-0.0	-0.00
10yr24hr	18.25	1900201.2	1449380.5	450820.7	-0.0	-0.00
10yr24hr	18.50	1910338.6	1462420.1	447918.5	0.0	0.00
10yr24hr	18.75	1919917.7	1474555.4	445362.4	0.0	0.00
10yr24hr	19.00	1930042.4	1486070.5	443971.9	0.0	0.00
10yr24hr	19.25	1939666.5	1497123.8	442542.7	0.0	0.00
10yr24hr	19.50	1949089.0	1507739.3	441349.6	0.0	0.00
10yr24hr	19.75	1958405.3	1518035.1	440370.2	0.0	0.00
10yr24hr	20.00	1967158.1	1527988.2	439169.9	0.0	0.00
10yr24hr	20.25	1975425.9	1537573.7	437852.2	0.0	0.00
10yr24hr	20.50	1983487.1	1546791.2	436696.0	0.0	0.00
10yr24hr	20.75	1991481.9	1555711.7	435770.3	0.0	0.00
10yr24hr	21.00	1999468.9	1564382.2	435086.7	0.0	0.00
10yr24hr	21.25	2007686.6	1572904.7	434781.9	0.0	0.00
10yr24hr	21.50	2015781.4	1581327.0	434454.4	0.0	0.00
10yr24hr	21.75	2023819.2	1589647.7	434171.5	0.0	0.00
10yr24hr	22.00	2031829.1	1597900.5	433928.6	0.0	0.00
10yr24hr	22.25	2039016.1	1605997.8	433018.3	0.0	0.00
10yr24hr	22.50	2045851.2	1613824.1	432027.1	0.0	0.00
10yr24hr	22.75	2052544.8	1621423.1	431121.7	0.0	0.00
10yr24hr	23.00	2059419.2	1628802.1	430617.2	0.0	0.00
10yr24hr	23.25	2066197.8	1636071.6	430126.2	0.0	0.00
10yr24hr	23.50	2072923.8	1643178.2	429745.7	0.0	0.00
10yr24hr	23.75	2079631.4	1650222.9	429408.6	0.0	0.00
10yr24hr	24.00	2085516.9	1657066.7	428450.2	0.0	0.00
10yr24hr	24.25	2089597.7	1663523.6	426074.0	0.0	0.00
10yr24hr	24.50	2090233.5	1669053.3	421180.2	0.0	0.00
10yr24hr	24.75	2090233.5	1673535.4	416698.2	0.0	0.00
10yr24hr	25.00	2090233.5	1677148.3	413085.2	0.0	0.00
10yr24hr	25.25	2090233.5	1680117.5	410116.0	0.0	0.00
10yr24hr	25.50	2090233.5	1682601.1	407632.4	0.0	0.00
10yr24hr	25.75	2090233.5	1684708.0	405525.5	0.0	0.00
10yr24hr	26.00	2090233.5	1686523.6	403709.9	0.0	0.00
10yr24hr	26.25	2090233.5	1688117.1	402116.5	0.0	0.00
10yr24hr	26.50	2090233.5	1689537.6	400695.9	0.0	0.00
10yr24hr	26.75	2090233.5	1690830.9	399402.6	0.0	0.00
10yr24hr	27.00	2090233.5	1692034.1	398199.4	0.0	0.00
10yr24hr	27.25	2090233.5	1693197.6	397035.9	0.0	0.00
10yr24hr	27.50	2090233.5	1694357.4	395876.1	0.0	0.00
10yr24hr	27.75	2090233.5	1695517.2	394716.4	0.0	0.00

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DRAINAGE SYSTEM 16A
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	28.00	2090233.5	1696674.9	393558.7	0.0	0.00
10yr24hr	28.25	2090233.5	1697832.5	392401.0	0.0	0.00
10yr24hr	28.50	2090233.5	1698988.1	391245.4	0.0	0.00
10yr24hr	28.75	2090233.5	1700143.7	390089.9	0.0	0.00
10yr24hr	29.00	2090233.5	1701297.1	388936.4	0.0	0.00
10yr24hr	29.25	2090233.5	1702450.6	387783.0	0.0	0.00
10yr24hr	29.50	2090233.5	1703601.9	386631.6	0.0	0.00
10yr24hr	29.75	2090233.5	1704753.4	385480.1	0.0	0.00
10yr24hr	30.00	2090233.5	1705902.7	384330.9	0.0	0.00
10yr24hr	30.25	2090233.5	1707051.8	383181.7	0.0	0.00
10yr24hr	30.50	2090233.5	1708198.9	382034.6	0.0	0.00
10yr24hr	30.75	2090233.5	1709345.9	380887.6	0.0	0.00
10yr24hr	31.00	2090233.5	1710490.9	379742.7	0.0	0.00
10yr24hr	31.25	2090233.5	1711635.7	378597.8	0.0	0.00
10yr24hr	31.50	2090233.5	1712778.5	377455.0	0.0	0.00
10yr24hr	31.75	2090233.5	1713921.2	376312.3	0.0	0.00
10yr24hr	32.00	2090233.5	1715061.9	375171.6	0.0	0.00
10yr24hr	32.25	2090233.5	1716202.5	374031.1	0.0	0.00
10yr24hr	32.50	2090233.5	1717341.0	372892.6	0.0	0.00
10yr24hr	32.75	2090233.5	1718478.9	371754.7	0.0	0.00
10yr24hr	33.00	2090233.5	1719616.2	370617.3	0.0	0.00
10yr24hr	33.25	2090233.5	1720751.2	369482.3	0.0	0.00
10yr24hr	33.50	2090233.5	1721886.4	368347.2	0.0	0.00
10yr24hr	33.75	2090233.5	1723020.4	367213.1	0.0	0.00
10yr24hr	34.00	2090233.5	1724152.2	366081.3	0.0	0.00
10yr24hr	34.25	2090233.5	1725284.1	364949.4	0.0	0.00
10yr24hr	34.50	2090233.5	1726413.7	363819.8	0.0	0.00
10yr24hr	34.75	2090233.5	1727543.5	362690.1	0.0	0.00
10yr24hr	35.00	2090233.5	1728672.1	361561.4	0.0	0.00
10yr24hr	35.25	2090233.5	1729798.5	360435.0	0.0	0.00
10yr24hr	35.50	2090233.5	1730925.0	359308.5	0.0	0.00
10yr24hr	35.75	2090233.5	1732049.2	358184.4	0.0	0.00
10yr24hr	36.00	2090233.5	1733173.5	357060.0	0.0	0.00
10yr24hr	36.25	2090233.5	1734296.7	355936.8	0.0	0.00
10yr24hr	36.50	2090233.5	1735417.6	354815.9	0.0	0.00
10yr24hr	36.75	2090233.5	1736538.7	353694.8	0.0	0.00
10yr24hr	37.00	2090233.5	1737657.5	352576.1	0.0	0.00
10yr24hr	37.25	2090233.5	1738776.3	351457.2	0.0	0.00
10yr24hr	37.50	2090233.5	1739894.1	350339.4	0.0	0.00
10yr24hr	37.75	2090233.5	1741009.9	349223.9	0.0	0.00
10yr24hr	38.00	2090233.5	1742125.2	348108.3	0.0	0.00
10yr24hr	38.25	2090233.5	1743238.5	346995.0	0.0	0.00
10yr24hr	38.50	2090233.5	1744351.9	345881.6	0.0	0.00
10yr24hr	38.75	2090233.5	1745464.2	344769.3	0.0	0.00
10yr24hr	39.00	2090233.5	1746574.3	343659.3	0.0	0.00
10yr24hr	39.25	2090233.5	1747684.4	342549.1	0.0	0.00
10yr24hr	39.50	2090233.5	1748792.2	341441.3	0.0	0.00
10yr24hr	39.75	2090233.5	1749900.2	340333.3	0.0	0.00
10yr24hr	40.00	2090233.5	1751007.0	339226.5	0.0	0.00
10yr24hr	40.25	2090233.5	1752111.6	338121.9	0.0	0.00
10yr24hr	40.50	2090233.5	1753216.5	337017.0	0.0	0.00
10yr24hr	40.75	2090233.5	1754318.6	335914.9	0.0	0.00
10yr24hr	41.00	2090233.5	1755420.7	334812.8	0.0	0.00
10yr24hr	41.25	2090233.5	1756522.1	333711.4	0.0	0.00
10yr24hr	41.50	2090233.5	1757622.1	332611.5	0.0	0.00
10yr24hr	41.75	2090233.5	1758720.9	331512.6	0.0	0.00
10yr24hr	42.00	2090233.5	1759817.5	330416.0	0.0	0.00
10yr24hr	42.25	2090233.5	1760914.1	329319.4	0.0	0.00
10yr24hr	42.50	2090233.5	1762010.0	328223.5	0.0	0.00
10yr24hr	42.75	2090233.5	1763104.5	327129.1	0.0	0.00
10yr24hr	43.00	2090233.5	1764197.8	326035.7	0.0	0.00
10yr24hr	43.25	2090233.5	1765288.9	324944.7	0.0	0.00
10yr24hr	43.50	2090233.5	1766380.3	323853.2	0.0	0.00
10yr24hr	43.75	2090233.5	1767470.3	322763.2	0.0	0.00
10yr24hr	44.00	2090233.5	1768559.3	321674.2	0.0	0.00
10yr24hr	44.25	2090233.5	1769647.1	320586.4	0.0	0.00
10yr24hr	44.50	2090233.5	1770732.9	319500.6	0.0	0.00
10yr24hr	44.75	2090233.5	1771818.6	318415.0	0.0	0.00
10yr24hr	45.00	2090233.5	1772903.1	317330.5	-0.0	-0.00
10yr24hr	45.25	2090233.5	1773986.5	316247.1	-0.0	-0.00
10yr24hr	45.50	2090233.5	1775069.0	315164.5	-0.0	-0.00
10yr24hr	45.75	2090233.5	1776149.1	314084.5	-0.0	-0.00
10yr24hr	46.00	2090233.5	1777229.1	313004.4	-0.0	-0.00
10yr24hr	46.25	2090233.5	1778308.1	311925.4	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	46.50	2090233.5	1779385.9	310847.6	-0.0	-0.00
10yr24hr	46.75	2090233.5	1780461.8	309771.7	-0.0	-0.00
10yr24hr	47.00	2090233.5	1781537.4	308696.1	-0.0	-0.00
10yr24hr	47.25	2090233.5	1782612.0	307621.6	-0.0	-0.00
10yr24hr	47.50	2090233.5	1783685.4	306548.2	-0.0	-0.00
10yr24hr	47.75	2090233.5	1784756.8	305476.8	-0.0	-0.00
10yr24hr	48.00	2090233.5	1785827.9	304405.6	-0.0	-0.00
10yr24hr	48.00	2090233.5	1785827.9	304405.6	-0.0	-0.00
25yr72hr	0.00	0.0	0.0	0.0	0.0	0.00
25yr72hr	0.25	78.3	29.5	48.7	0.0	0.00
25yr72hr	0.50	268.8	99.0	169.8	0.0	0.00
25yr72hr	0.75	533.8	187.5	346.3	0.0	0.00
25yr72hr	1.00	881.0	280.8	600.2	0.0	0.00
25yr72hr	1.25	1311.8	386.2	925.5	-0.0	-0.00
25yr72hr	1.50	1815.9	500.0	1315.8	-0.0	-0.00
25yr72hr	1.75	2377.4	614.2	1763.2	0.0	0.00
25yr72hr	2.00	2984.7	728.3	2256.4	0.0	0.00
25yr72hr	2.25	3629.6	842.5	2787.1	0.0	0.00
25yr72hr	2.50	4309.2	956.9	3352.2	0.0	0.00
25yr72hr	2.75	5017.6	1071.1	3946.5	0.0	0.00
25yr72hr	3.00	5756.3	1185.5	4570.8	0.0	0.00
25yr72hr	3.25	6518.7	1299.6	5219.1	0.0	0.00
25yr72hr	3.50	7303.8	1413.8	5890.0	0.0	0.00
25yr72hr	3.75	8112.7	1528.3	6584.4	0.0	0.00
25yr72hr	4.00	8939.0	1642.4	7296.6	0.0	0.00
25yr72hr	4.25	9784.9	1756.6	8028.3	0.0	0.00
25yr72hr	4.50	10651.4	1871.0	8780.4	0.0	0.00
25yr72hr	4.75	11533.0	1985.2	9547.8	0.0	0.00
25yr72hr	5.00	12429.4	2099.4	10330.1	0.0	0.00
25yr72hr	5.25	13340.2	2213.5	11126.8	0.0	0.00
25yr72hr	5.50	14267.7	2328.7	11939.0	0.0	0.00
25yr72hr	5.75	15204.3	2442.1	12762.2	0.0	0.00
25yr72hr	6.00	16153.0	2556.3	13596.7	-0.0	-0.00
25yr72hr	6.25	17116.5	2670.8	14445.7	-0.0	-0.00
25yr72hr	6.50	18087.7	2784.7	15303.0	-0.0	-0.00
25yr72hr	6.75	19074.4	2899.2	16175.2	-0.0	-0.00
25yr72hr	7.00	20068.8	3013.1	17055.7	-0.0	-0.00
25yr72hr	7.25	21077.5	3127.5	17950.0	-0.0	-0.00
25yr72hr	7.50	22096.3	3241.6	18854.8	-0.0	-0.00
25yr72hr	7.75	23129.9	3355.9	19774.0	-0.0	-0.00
25yr72hr	8.00	24176.2	3470.2	20706.0	-0.0	-0.00
25yr72hr	8.25	25234.9	3584.3	21650.6	-0.0	-0.00
25yr72hr	8.50	26305.8	3698.5	22607.4	-0.0	-0.00
25yr72hr	8.75	27390.3	3813.0	23577.2	-0.0	-0.00
25yr72hr	9.00	28487.8	3930.2	24557.6	-0.0	-0.00
25yr72hr	9.25	29603.7	4053.9	25549.8	-0.0	-0.00
25yr72hr	9.50	30742.5	4185.8	26556.8	-0.0	-0.00
25yr72hr	9.75	31911.3	4326.9	27584.4	-0.0	-0.00
25yr72hr	10.00	33109.5	4476.9	28632.6	-0.0	-0.00
25yr72hr	10.25	34336.5	4635.6	29701.0	-0.0	-0.00
25yr72hr	10.50	35594.4	4803.0	30791.4	-0.0	-0.00
25yr72hr	10.75	36881.4	4978.9	31902.6	-0.0	-0.00
25yr72hr	11.00	38200.8	5163.4	33037.4	-0.0	-0.00
25yr72hr	11.25	39549.5	5405.4	34144.1	-0.0	-0.00
25yr72hr	11.50	40929.8	5840.1	35089.7	-0.0	-0.00
25yr72hr	11.75	42338.4	6453.9	35884.5	-0.0	-0.00
25yr72hr	12.00	43778.1	7143.6	36634.5	-0.0	-0.00
25yr72hr	12.25	45245.0	7862.8	37382.2	-0.0	-0.00
25yr72hr	12.50	46741.8	8600.1	38141.8	-0.0	-0.00
25yr72hr	12.75	48266.6	9350.4	38916.2	-0.0	-0.00
25yr72hr	13.00	49816.9	10110.6	39706.3	-0.0	-0.00
25yr72hr	13.25	51396.2	10881.2	40514.9	-0.0	-0.00
25yr72hr	13.50	53000.2	11659.5	41340.7	-0.0	-0.00
25yr72hr	13.75	54632.4	12446.7	42185.7	-0.0	-0.00
25yr72hr	14.00	56290.5	13241.5	43049.1	-0.0	-0.00
25yr72hr	14.25	57972.5	14042.7	43929.8	-0.0	-0.00
25yr72hr	14.50	59682.1	14852.2	44829.8	-0.0	-0.00
25yr72hr	14.75	61414.8	15668.0	45746.8	-0.0	-0.00
25yr72hr	15.00	63174.7	16492.0	46682.6	-0.0	-0.00
25yr72hr	15.25	64959.7	17321.2	47638.5	-0.0	-0.00
25yr72hr	15.50	66767.4	18152.2	48615.2	-0.0	-0.00
25yr72hr	15.75	68601.8	18986.9	49614.9	-0.0	-0.00
25yr72hr	16.00	70458.2	19823.6	50634.6	-0.0	-0.00
25yr72hr	16.25	72340.6	20664.4	51676.2	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	16.50	74247.2	21508.3	52738.9	0.0	0.00
25yr72hr	16.75	76176.3	22354.5	53821.8	0.0	0.00
25yr72hr	17.00	78132.8	23205.1	54927.6	0.0	0.00
25yr72hr	17.25	80114.3	24059.3	56055.0	0.0	0.00
25yr72hr	17.50	82118.2	24916.2	57202.0	0.0	0.00
25yr72hr	17.75	84149.0	25777.8	58371.2	0.0	0.00
25yr72hr	18.00	86201.5	26642.2	59559.2	0.0	0.00
25yr72hr	18.25	88280.2	27511.4	60768.7	0.0	0.00
25yr72hr	18.50	90382.4	28384.4	61998.0	0.0	0.00
25yr72hr	18.75	92505.3	29260.2	63245.1	0.0	0.00
25yr72hr	19.00	94653.6	30140.8	64512.8	0.0	0.00
25yr72hr	19.25	96822.0	31024.3	65797.7	0.0	0.00
25yr72hr	19.50	99015.3	31912.6	67102.7	0.0	0.00
25yr72hr	19.75	101230.5	32804.6	68425.9	0.0	0.00
25yr72hr	20.00	103464.9	33699.5	69765.4	0.0	0.00
25yr72hr	20.25	105723.3	34599.2	71124.1	0.0	0.00
25yr72hr	20.50	108000.5	35501.7	72498.8	0.0	0.00
25yr72hr	20.75	110301.7	36409.0	73892.6	0.0	0.00
25yr72hr	21.00	112624.1	37320.2	75303.8	0.0	0.00
25yr72hr	21.25	114964.7	38234.2	76730.5	0.0	0.00
25yr72hr	21.50	117328.8	39153.0	78175.8	0.0	0.00
25yr72hr	21.75	119710.5	40074.6	79635.9	0.0	0.00
25yr72hr	22.00	122115.2	41001.0	81114.2	0.0	0.00
25yr72hr	22.25	124539.9	41931.3	82608.5	0.0	0.00
25yr72hr	22.50	126981.3	42864.3	84117.0	0.0	0.00
25yr72hr	22.75	129445.0	43802.2	85642.8	0.0	0.00
25yr72hr	23.00	131925.0	44742.8	87182.2	0.0	0.00
25yr72hr	23.25	134426.9	45688.3	88738.6	0.0	0.00
25yr72hr	23.50	136947.4	46637.6	90309.9	0.0	0.00
25yr72hr	23.75	139483.5	47589.5	91894.0	0.0	0.00
25yr72hr	24.00	142041.7	48546.4	93495.3	0.0	0.00
25yr72hr	24.25	144970.1	49524.8	95445.3	0.0	0.00
25yr72hr	24.50	148434.2	50536.2	97898.0	0.0	0.00
25yr72hr	24.75	152149.6	51564.9	100584.7	0.0	0.00
25yr72hr	25.00	155977.2	52602.9	103374.2	0.0	0.00
25yr72hr	25.25	159862.8	53649.5	106213.3	0.0	0.00
25yr72hr	25.50	163781.4	54701.4	109080.0	0.0	0.00
25yr72hr	25.75	167741.8	55761.1	111980.7	0.0	0.00
25yr72hr	26.00	171738.8	56827.4	114911.4	0.0	0.00
25yr72hr	26.25	175767.0	57898.9	117868.1	0.0	0.00
25yr72hr	26.50	179835.4	58978.2	120857.2	0.0	0.00
25yr72hr	26.75	183933.8	60062.7	123871.1	0.0	0.00
25yr72hr	27.00	188071.4	61154.9	126916.5	0.0	0.00
25yr72hr	27.25	192242.8	62253.4	129989.3	0.0	0.00
25yr72hr	27.50	196442.4	63357.0	133085.4	0.0	0.00
25yr72hr	27.75	200679.7	64468.2	136211.5	0.0	0.00
25yr72hr	28.00	204949.3	65585.6	139363.7	0.0	0.00
25yr72hr	28.25	209245.4	66707.9	142537.6	0.0	0.00
25yr72hr	28.50	213578.0	67837.6	145740.4	0.0	0.00
25yr72hr	28.75	217936.1	68972.1	148964.0	0.0	0.00
25yr72hr	29.00	222329.7	70114.1	152215.6	0.0	0.00
25yr72hr	29.25	226753.2	71262.0	155491.1	0.0	0.00
25yr72hr	29.50	231200.8	72414.6	158786.2	0.0	0.00
25yr72hr	29.75	235682.6	73574.5	162108.1	0.0	0.00
25yr72hr	30.00	240187.7	74738.9	165448.8	0.0	0.00
25yr72hr	30.25	244726.3	75910.6	168815.7	0.0	0.00
25yr72hr	30.50	249292.6	77088.1	172204.5	0.0	0.00
25yr72hr	30.75	253880.8	78270.0	175610.8	0.0	0.00
25yr72hr	31.00	258501.3	79459.1	179042.2	0.0	0.00
25yr72hr	31.25	263143.0	80652.6	182490.4	0.0	0.00
25yr72hr	31.50	267816.3	81853.3	185963.0	0.0	0.00
25yr72hr	31.75	272515.4	83059.7	189455.7	0.0	0.00
25yr72hr	32.00	277234.4	84270.3	192964.1	0.0	0.00
25yr72hr	32.25	281984.1	85488.1	196496.0	0.0	0.00
25yr72hr	32.50	286752.9	86710.1	200042.7	0.0	0.00
25yr72hr	32.75	291551.7	87939.2	203612.5	0.0	0.00
25yr72hr	33.00	296374.6	89174.0	207200.7	0.0	0.00
25yr72hr	33.25	301215.6	90412.8	210802.8	0.0	0.00
25yr72hr	33.50	306085.7	91658.7	214427.0	0.0	0.00
25yr72hr	33.75	310973.2	92908.7	218064.4	-0.0	-0.00
25yr72hr	34.00	315889.2	94165.7	221723.5	-0.0	-0.00
25yr72hr	34.25	320827.7	95428.2	225399.5	-0.0	-0.00
25yr72hr	34.50	325782.6	96694.8	229087.8	-0.0	-0.00
25yr72hr	34.75	330765.3	97968.4	232796.9	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	35.00	335763.6	99246.0	236517.6	-0.0	-0.00
25yr72hr	35.25	340789.3	100530.6	240258.6	-0.0	-0.00
25yr72hr	35.50	345836.0	101820.7	244015.3	-0.0	-0.00
25yr72hr	35.75	350897.5	103114.7	247782.8	-0.0	-0.00
25yr72hr	36.00	355985.5	104415.6	251569.9	-0.0	-0.00
25yr72hr	36.25	361103.5	105721.2	255382.3	-0.0	-0.00
25yr72hr	36.50	366270.4	107035.1	259235.4	-0.0	-0.00
25yr72hr	36.75	371467.2	108354.8	263112.4	-0.0	-0.00
25yr72hr	37.00	376681.4	109678.6	267002.8	-0.0	-0.00
25yr72hr	37.25	381922.1	111009.4	270912.7	-0.0	-0.00
25yr72hr	37.50	387176.0	112344.0	274832.0	-0.0	-0.00
25yr72hr	37.75	392455.3	113685.5	278769.8	-0.0	-0.00
25yr72hr	38.00	397753.5	115032.3	282721.2	-0.0	-0.00
25yr72hr	38.25	403064.1	116382.8	286681.3	0.0	0.00
25yr72hr	38.50	408399.5	117740.1	290659.4	0.0	0.00
25yr72hr	38.75	413753.1	119102.7	294650.4	0.0	0.00
25yr72hr	39.00	419118.3	120468.9	298649.4	0.0	0.00
25yr72hr	39.25	424507.8	121841.9	302665.8	0.0	0.00
25yr72hr	39.50	429908.3	123218.5	306689.9	0.0	0.00
25yr72hr	39.75	435332.7	124601.8	310730.9	0.0	0.00
25yr72hr	40.00	440774.2	125990.3	314783.9	0.0	0.00
25yr72hr	40.25	446226.2	127382.2	318844.0	0.0	0.00
25yr72hr	40.50	451701.4	128780.8	322920.6	0.0	0.00
25yr72hr	40.75	457186.7	130182.9	327003.8	0.0	0.00
25yr72hr	41.00	462694.8	131591.6	331103.2	0.0	0.00
25yr72hr	41.25	468219.1	133005.4	335213.7	0.0	0.00
25yr72hr	41.50	473752.8	134422.5	339330.4	0.0	0.00
25yr72hr	41.75	479305.0	135845.1	343459.8	0.0	0.00
25yr72hr	42.00	484876.6	137273.8	347602.9	0.0	0.00
25yr72hr	42.25	490462.4	138707.0	351755.4	0.0	0.00
25yr72hr	42.50	496058.2	140143.8	355914.4	0.0	0.00
25yr72hr	42.75	501677.0	141587.5	360089.5	0.0	0.00
25yr72hr	43.00	507304.0	143034.3	364269.6	0.0	0.00
25yr72hr	43.25	512951.1	144487.5	368463.6	0.0	0.00
25yr72hr	43.50	518607.4	145944.0	372663.4	0.0	0.00
25yr72hr	43.75	524279.5	147405.7	376873.7	0.0	0.00
25yr72hr	44.00	529967.7	148872.7	381094.9	0.0	0.00
25yr72hr	44.25	535672.4	150345.1	385327.3	0.0	0.00
25yr72hr	44.50	541385.9	151820.8	389565.1	0.0	0.00
25yr72hr	44.75	547115.3	153390.0	393725.3	0.0	0.00
25yr72hr	45.00	552858.4	155373.3	397485.2	0.0	0.00
25yr72hr	45.25	558615.0	157891.2	400723.8	0.0	0.00
25yr72hr	45.50	564384.8	160947.1	403437.7	0.0	0.00
25yr72hr	45.75	570167.9	164497.9	405670.0	0.0	0.00
25yr72hr	46.00	575964.0	168479.8	407484.3	0.0	0.00
25yr72hr	46.25	581775.3	172826.2	408949.1	0.0	0.00
25yr72hr	46.50	587596.0	177467.9	410128.1	0.0	0.00
25yr72hr	46.75	593429.3	182350.2	411079.1	0.0	0.00
25yr72hr	47.00	599275.1	187424.9	411850.2	0.0	0.00
25yr72hr	47.25	605137.7	192656.7	412481.0	0.0	0.00
25yr72hr	47.50	611008.1	198006.0	413002.1	0.0	0.00
25yr72hr	47.75	616890.6	203451.6	413439.0	-0.0	-0.00
25yr72hr	48.00	622788.6	208977.1	413811.6	-0.0	-0.00
25yr72hr	48.25	628878.8	214577.8	414301.1	-0.0	-0.00
25yr72hr	48.33	630992.4	216468.7	414523.6	-0.0	-0.00
25yr72hr	48.42	633134.9	218378.5	414756.4	-0.0	-0.00
25yr72hr	48.50	635289.8	220298.7	414991.0	-0.0	-0.00
25yr72hr	48.58	637462.9	222238.5	415224.4	-0.0	-0.00
25yr72hr	48.67	639642.1	224189.0	415453.1	-0.0	-0.00
25yr72hr	48.75	641829.6	226154.3	415675.3	-0.0	-0.00
25yr72hr	48.83	644028.3	228138.7	415889.6	-0.0	-0.00
25yr72hr	48.92	646226.3	230132.5	416093.8	-0.0	-0.00
25yr72hr	49.00	648432.2	232144.1	416288.1	-0.0	-0.00
25yr72hr	49.08	650638.1	234163.9	416474.2	-0.0	-0.00
25yr72hr	49.17	652860.0	236200.9	416659.1	-0.0	-0.00
25yr72hr	49.25	655089.1	238245.8	416843.4	-0.0	-0.00
25yr72hr	49.33	657327.0	240302.7	417024.3	-0.0	-0.00
25yr72hr	49.42	659576.4	242375.9	417200.5	-0.0	-0.00
25yr72hr	49.50	661825.6	244455.6	417370.0	-0.0	-0.00
25yr72hr	49.58	664084.1	246550.7	417533.4	-0.0	-0.00
25yr72hr	49.67	666339.7	248649.9	417689.7	-0.0	-0.00
25yr72hr	49.75	668604.7	250764.7	417840.0	-0.0	-0.00
25yr72hr	49.83	670867.2	252883.8	417983.4	-0.0	-0.00
25yr72hr	49.92	673136.9	255016.1	418120.8	-0.0	-0.00

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DRAINAGE SYSTEM 16A
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	50.00	675403.7	257151.6	418252.1	-0.0	-0.00
25yr72hr	50.08	677703.2	259296.4	418406.8	-0.0	-0.00
25yr72hr	50.17	680096.4	261460.6	418635.8	-0.0	-0.00
25yr72hr	50.25	682578.8	263639.8	418939.0	-0.0	-0.00
25yr72hr	50.33	685130.4	265846.2	419284.2	-0.0	-0.00
25yr72hr	50.42	687719.5	268071.6	419647.8	-0.0	-0.00
25yr72hr	50.50	690339.3	270322.3	420017.0	-0.0	-0.00
25yr72hr	50.58	692989.0	272603.9	420385.0	-0.0	-0.00
25yr72hr	50.67	695651.9	274906.5	420745.4	-0.0	-0.00
25yr72hr	50.75	698335.7	277240.3	421095.4	-0.0	-0.00
25yr72hr	50.83	701023.7	279593.8	421429.8	-0.0	-0.00
25yr72hr	50.92	703724.7	281977.0	421747.7	-0.0	-0.00
25yr72hr	51.00	706424.3	284377.6	422046.6	-0.0	-0.00
25yr72hr	51.08	709144.8	286800.9	422343.9	-0.0	-0.00
25yr72hr	51.17	711925.5	289254.4	422671.1	-0.0	-0.00
25yr72hr	51.25	714757.9	291729.2	423028.7	-0.0	-0.00
25yr72hr	51.33	717636.1	294237.1	423399.0	-0.0	-0.00
25yr72hr	51.42	720533.3	296765.4	423768.0	-0.0	-0.00
25yr72hr	51.50	723458.4	299328.1	424130.3	-0.0	-0.00
25yr72hr	51.58	726392.3	301911.8	424480.5	-0.0	-0.00
25yr72hr	51.67	729345.6	304527.4	424818.3	-0.0	-0.00
25yr72hr	51.75	732302.2	307162.0	425140.2	-0.0	-0.00
25yr72hr	51.83	735266.0	309820.3	425445.7	-0.0	-0.00
25yr72hr	51.92	738241.9	312507.1	425734.8	-0.0	-0.00
25yr72hr	52.00	741215.1	315208.8	426006.3	-0.0	-0.00
25yr72hr	52.08	744263.8	317940.0	426323.8	-0.0	-0.00
25yr72hr	52.17	747496.8	320699.7	426797.1	-0.0	-0.00
25yr72hr	52.25	750940.8	323508.9	427431.9	-0.0	-0.00
25yr72hr	52.33	754522.0	326369.4	428152.6	-0.0	-0.00
25yr72hr	52.42	758208.9	329295.9	428913.0	-0.0	-0.00
25yr72hr	52.50	761946.5	332269.6	429676.9	-0.0	-0.00
25yr72hr	52.58	765751.9	335317.7	430434.2	-0.0	-0.00
25yr72hr	52.67	769582.9	338414.8	431168.1	-0.0	-0.00
25yr72hr	52.75	773460.4	341584.9	431875.5	-0.0	-0.00
25yr72hr	52.83	777348.2	344804.5	432543.7	-0.0	-0.00
25yr72hr	52.92	781257.0	348085.6	433171.4	-0.0	-0.00
25yr72hr	53.00	785169.6	351414.9	433754.7	-0.0	-0.00
25yr72hr	53.08	789158.2	354801.8	434356.4	-0.0	-0.00
25yr72hr	53.17	793338.9	358249.2	435089.6	-0.0	-0.00
25yr72hr	53.25	797730.5	361768.7	435961.8	-0.0	-0.00
25yr72hr	53.33	802273.4	365372.6	436900.8	-0.0	-0.00
25yr72hr	53.42	806913.9	369057.5	437856.4	-0.0	-0.00
25yr72hr	53.50	811611.1	372814.3	438796.8	-0.0	-0.00
25yr72hr	53.58	816365.5	376655.7	439709.8	-0.0	-0.00
25yr72hr	53.67	821158.9	380573.8	440585.1	-0.0	-0.00
25yr72hr	53.75	826001.8	384582.9	441418.9	-0.0	-0.00
25yr72hr	53.83	830864.6	388663.2	442201.4	-0.0	-0.00
25yr72hr	53.92	835738.5	392809.0	442929.4	-0.0	-0.00
25yr72hr	54.00	840625.4	397021.6	443603.7	-0.0	-0.00
25yr72hr	54.08	845583.2	401295.0	444288.2	-0.0	-0.00
25yr72hr	54.17	850737.9	405634.8	445103.0	-0.0	-0.00
25yr72hr	54.25	856127.2	410066.8	446060.3	-0.0	-0.00
25yr72hr	54.33	861668.1	414587.0	447081.1	-0.0	-0.00
25yr72hr	54.42	867309.4	419195.4	448113.9	-0.0	-0.00
25yr72hr	54.50	873022.6	423894.0	449128.6	-0.0	-0.00
25yr72hr	54.58	878811.8	428699.1	450112.7	-0.0	-0.00
25yr72hr	54.67	884639.7	433586.7	451053.1	-0.0	-0.00
25yr72hr	54.75	890478.8	438538.8	451940.0	-0.0	-0.00
25yr72hr	54.83	896375.2	443598.9	452776.3	-0.0	-0.00
25yr72hr	54.92	902268.3	448716.7	453551.6	-0.0	-0.00
25yr72hr	55.00	908205.9	453933.0	454273.0	-0.0	-0.00
25yr72hr	55.08	914185.9	459188.4	454997.5	-0.0	-0.00
25yr72hr	55.17	920385.6	464531.6	455854.0	-0.0	-0.00
25yr72hr	55.25	926816.7	469964.4	456852.3	-0.0	-0.00
25yr72hr	55.33	933391.3	475479.8	457911.5	-0.0	-0.00
25yr72hr	55.42	940086.8	481102.6	458984.2	-0.0	-0.00
25yr72hr	55.50	946847.4	486812.2	460035.3	-0.0	-0.00
25yr72hr	55.58	953677.4	492625.3	461052.0	-0.0	-0.00
25yr72hr	55.67	960582.5	498554.3	462028.2	-0.0	-0.00
25yr72hr	55.75	967471.5	504525.9	462945.6	-0.0	-0.00
25yr72hr	55.83	974429.2	510617.6	463811.6	-0.0	-0.00
25yr72hr	55.92	981403.8	516786.0	464617.8	-0.0	-0.00
25yr72hr	56.00	988371.4	523008.3	465363.1	-0.0	-0.00
25yr72hr	56.02	989768.1	524261.8	465506.3	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	56.03	991169.2	525519.2	465650.0	-0.0	-0.00
25yr72hr	56.05	992573.9	526778.2	465795.8	-0.0	-0.00
25yr72hr	56.07	993976.8	528031.8	465945.0	-0.0	-0.00
25yr72hr	56.08	995435.5	529328.6	466107.0	-0.0	-0.00
25yr72hr	56.10	996856.5	530583.3	466273.3	-0.0	-0.00
25yr72hr	56.12	998291.0	531841.1	466449.9	-0.0	-0.00
25yr72hr	56.13	999756.7	533117.9	466638.9	-0.0	-0.00
25yr72hr	56.15	1001258.1	534417.6	466840.5	-0.0	-0.00
25yr72hr	56.17	1002739.7	535693.4	467046.3	-0.0	-0.00
25yr72hr	56.18	1004242.0	536981.2	467260.8	-0.0	-0.00
25yr72hr	56.20	1005754.6	538272.8	467481.8	-0.0	-0.00
25yr72hr	56.22	1007297.3	539586.0	467711.3	-0.0	-0.00
25yr72hr	56.23	1008795.6	540858.4	467937.2	-0.0	-0.00
25yr72hr	56.25	1010371.7	542194.4	468177.4	-0.0	-0.00
25yr72hr	56.27	1011924.5	543508.5	468416.0	-0.0	-0.00
25yr72hr	56.28	1013433.3	544784.0	468649.3	-0.0	-0.00
25yr72hr	56.30	1015027.5	546130.6	468896.9	-0.0	-0.00
25yr72hr	56.32	1016583.1	547444.0	469139.2	-0.0	-0.00
25yr72hr	56.33	1018164.5	548778.8	469385.7	-0.0	-0.00
25yr72hr	56.35	1019723.0	550094.4	469628.6	-0.0	-0.00
25yr72hr	56.37	1021310.2	551434.7	469875.6	-0.0	-0.00
25yr72hr	56.38	1022881.3	552761.9	470119.4	-0.0	-0.00
25yr72hr	56.40	1024489.2	554121.2	470368.0	-0.0	-0.00
25yr72hr	56.42	1026071.0	555459.6	470611.4	-0.0	-0.00
25yr72hr	56.43	1027657.9	556803.8	470854.1	-0.0	-0.00
25yr72hr	56.45	1029279.2	558178.7	471100.5	-0.0	-0.00
25yr72hr	56.47	1030885.3	559542.5	471342.8	-0.0	-0.00
25yr72hr	56.48	1032484.4	560902.2	471582.2	-0.0	-0.00
25yr72hr	56.50	1034069.9	562252.1	471817.8	-0.0	-0.00
25yr72hr	56.52	1035699.3	563641.4	472057.9	-0.0	-0.00
25yr72hr	56.53	1037311.1	565017.7	472293.4	-0.0	-0.00
25yr72hr	56.55	1038932.0	566404.0	472528.1	-0.0	-0.00
25yr72hr	56.57	1040546.1	567786.5	472759.6	-0.0	-0.00
25yr72hr	56.58	1042165.9	569176.2	472989.7	-0.0	-0.00
25yr72hr	56.60	1043806.5	570586.0	473220.5	-0.0	-0.00
25yr72hr	56.62	1045428.8	571982.5	473446.3	-0.0	-0.00
25yr72hr	56.63	1047056.6	573386.1	473670.5	-0.0	-0.00
25yr72hr	56.65	1048683.7	574791.6	473892.1	-0.0	-0.00
25yr72hr	56.67	1050324.7	576211.6	474113.0	-0.0	-0.00
25yr72hr	56.68	1051949.0	577619.8	474329.2	-0.0	-0.00
25yr72hr	56.70	1053600.1	579053.8	474546.3	-0.0	-0.00
25yr72hr	56.72	1055237.2	580478.4	474758.8	-0.0	-0.00
25yr72hr	56.73	1056880.0	581910.6	474969.4	-0.0	-0.00
25yr72hr	56.75	1058509.5	583334.0	475175.5	-0.0	-0.00
25yr72hr	56.77	1060164.4	584782.4	475382.0	-0.0	-0.00
25yr72hr	56.78	1061816.6	586231.4	475585.2	-0.0	-0.00
25yr72hr	56.80	1063459.2	587674.9	475784.4	-0.0	-0.00
25yr72hr	56.82	1065088.3	589109.3	475979.0	-0.0	-0.00
25yr72hr	56.83	1066754.2	590579.1	476175.0	-0.0	-0.00
25yr72hr	56.85	1068393.8	592028.7	476365.1	-0.0	-0.00
25yr72hr	56.87	1070067.8	593511.7	476556.1	-0.0	-0.00
25yr72hr	56.88	1071694.2	594955.5	476738.8	-0.0	-0.00
25yr72hr	56.90	1073338.2	596417.7	476920.5	-0.0	-0.00
25yr72hr	56.92	1075027.4	597923.1	477104.2	-0.0	-0.00
25yr72hr	56.93	1076656.0	599377.6	477278.5	-0.0	-0.00
25yr72hr	56.95	1078321.3	600867.7	477453.7	-0.0	-0.00
25yr72hr	56.97	1079987.2	602361.3	477625.9	-0.0	-0.00
25yr72hr	56.98	1081611.4	603820.4	477790.9	-0.0	-0.00
25yr72hr	57.00	1083271.7	605315.0	477956.8	-0.0	-0.00
25yr72hr	57.02	1084940.3	606818.8	478121.5	-0.0	-0.00
25yr72hr	57.03	1086610.5	608324.0	478286.5	-0.0	-0.00
25yr72hr	57.05	1088270.3	609817.6	478452.7	-0.0	-0.00
25yr72hr	57.07	1089956.2	611329.8	478626.4	-0.0	-0.00
25yr72hr	57.08	1091647.7	612838.5	478809.1	-0.0	-0.00
25yr72hr	57.10	1093330.0	614328.2	479001.8	-0.0	-0.00
25yr72hr	57.12	1095052.8	615842.2	479210.7	-0.0	-0.00
25yr72hr	57.13	1096795.7	617362.6	479433.2	-0.0	-0.00
25yr72hr	57.15	1098563.8	618894.6	479669.2	-0.0	-0.00
25yr72hr	57.17	1100331.5	620417.5	479914.0	-0.0	-0.00
25yr72hr	57.18	1102124.3	621954.4	480169.9	-0.0	-0.00
25yr72hr	57.20	1103948.5	623511.7	480436.8	-0.0	-0.00
25yr72hr	57.22	1105750.6	625044.9	480705.7	-0.0	-0.00
25yr72hr	57.23	1107598.4	626613.2	480985.2	-0.0	-0.00
25yr72hr	57.25	1109417.3	628153.8	481263.5	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	57.27	1111278.0	629727.4	481550.6	-0.0	-0.00
25yr72hr	57.28	1113145.8	631305.3	481840.6	-0.0	-0.00
25yr72hr	57.30	1115041.8	632905.6	482136.1	-0.0	-0.00
25yr72hr	57.32	1116879.4	634456.2	482423.2	-0.0	-0.00
25yr72hr	57.33	1118748.7	636033.4	482715.3	-0.0	-0.00
25yr72hr	57.35	1120685.1	637667.5	483017.5	-0.0	-0.00
25yr72hr	57.37	1122529.4	639224.8	483304.7	-0.0	-0.00
25yr72hr	57.38	1124469.1	640863.6	483605.5	-0.0	-0.00
25yr72hr	57.40	1126338.7	642444.7	483894.0	-0.0	-0.00
25yr72hr	57.42	1128244.5	644058.2	484186.2	-0.0	-0.00
25yr72hr	57.43	1130186.6	645704.9	484481.8	-0.0	-0.00
25yr72hr	57.45	1132107.5	647335.9	484771.6	-0.0	-0.00
25yr72hr	57.47	1134008.1	648952.2	485055.9	-0.0	-0.00
25yr72hr	57.48	1135923.3	650583.6	485339.7	-0.0	-0.00
25yr72hr	57.50	1137913.5	652281.5	485631.9	-0.0	-0.00
25yr72hr	57.52	1139819.2	653909.6	485909.6	-0.0	-0.00
25yr72hr	57.53	1141741.0	655552.7	486188.4	-0.0	-0.00
25yr72hr	57.55	1143692.6	657221.4	486471.2	-0.0	-0.00
25yr72hr	57.57	1145650.2	658893.8	486756.4	-0.0	-0.00
25yr72hr	57.58	1147651.7	660600.8	487051.0	-0.0	-0.00
25yr72hr	57.60	1149590.2	662250.1	487340.0	-0.0	-0.00
25yr72hr	57.62	1151608.7	663963.5	487645.2	-0.0	-0.00
25yr72hr	57.63	1153607.2	665656.0	487951.2	-0.0	-0.00
25yr72hr	57.65	1155659.8	667391.2	488268.6	-0.0	-0.00
25yr72hr	57.67	1157675.2	669092.4	488582.8	-0.0	-0.00
25yr72hr	57.68	1159708.3	670807.0	488901.2	-0.0	-0.00
25yr72hr	57.70	1161741.1	672520.6	489220.5	-0.0	-0.00
25yr72hr	57.72	1163804.1	674259.6	489544.5	-0.0	-0.00
25yr72hr	57.73	1165905.9	676031.8	489874.2	-0.0	-0.00
25yr72hr	57.75	1167954.8	677760.4	490194.4	-0.0	-0.00
25yr72hr	57.77	1170030.0	679512.8	490517.2	-0.0	-0.00
25yr72hr	57.78	1172109.3	681270.7	490838.7	-0.0	-0.00
25yr72hr	57.80	1174195.8	683036.8	491159.0	-0.0	-0.00
25yr72hr	57.82	1176314.6	684833.0	491481.6	-0.0	-0.00
25yr72hr	57.83	1178432.6	686631.5	491801.1	-0.0	-0.00
25yr72hr	57.85	1180536.0	688420.9	492115.1	-0.0	-0.00
25yr72hr	57.87	1182617.6	690195.0	492422.6	-0.0	-0.00
25yr72hr	57.88	1184740.1	692007.5	492732.6	-0.0	-0.00
25yr72hr	57.90	1186914.3	693868.2	493046.0	-0.0	-0.00
25yr72hr	57.92	1188997.1	695654.8	493342.3	-0.0	-0.00
25yr72hr	57.93	1191148.2	697504.0	493644.2	-0.0	-0.00
25yr72hr	57.95	1193258.2	699322.3	493935.9	-0.0	-0.00
25yr72hr	57.97	1195397.2	701170.0	494227.3	-0.0	-0.00
25yr72hr	57.98	1197543.6	703028.5	494515.1	-0.0	-0.00
25yr72hr	58.00	1199660.2	704865.7	494794.5	-0.0	-0.00
25yr72hr	58.02	1201803.7	706730.0	495073.7	-0.0	-0.00
25yr72hr	58.03	1203936.2	708587.2	495349.0	-0.0	-0.00
25yr72hr	58.05	1206137.4	710505.1	495632.3	-0.0	-0.00
25yr72hr	58.07	1208264.6	712357.6	495907.1	-0.0	-0.00
25yr72hr	58.08	1210430.1	714239.6	496190.4	-0.0	-0.00
25yr72hr	58.10	1212621.1	716138.1	496482.9	-0.0	-0.00
25yr72hr	58.12	1214842.7	718056.9	496785.8	-0.0	-0.00
25yr72hr	58.13	1217059.3	719965.4	497093.9	-0.0	-0.00
25yr72hr	58.15	1219291.2	721881.7	497409.4	-0.0	-0.00
25yr72hr	58.17	1221540.8	723809.1	497731.7	-0.0	-0.00
25yr72hr	58.18	1223773.5	725718.8	498054.8	-0.0	-0.00
25yr72hr	58.20	1226047.4	727661.2	498386.2	-0.0	-0.00
25yr72hr	58.22	1228390.4	729661.2	498729.2	-0.0	-0.00
25yr72hr	58.23	1230634.3	731576.2	499058.1	-0.0	-0.00
25yr72hr	58.25	1232984.4	733582.0	499402.4	-0.0	-0.00
25yr72hr	58.27	1235254.8	735520.5	499734.3	-0.0	-0.00
25yr72hr	58.28	1237581.9	737508.5	500073.4	-0.0	-0.00
25yr72hr	58.30	1239933.4	739519.1	500414.3	-0.0	-0.00
25yr72hr	58.32	1242241.7	741494.8	500746.8	-0.0	-0.00
25yr72hr	58.33	1244583.8	743501.9	501081.9	-0.0	-0.00
25yr72hr	58.35	1246960.9	745541.7	501419.2	-0.0	-0.00
25yr72hr	58.37	1249267.7	747524.2	501743.6	-0.0	-0.00
25yr72hr	58.38	1251618.7	749547.9	502070.8	-0.0	-0.00
25yr72hr	58.40	1253999.8	751601.1	502398.7	-0.0	-0.00
25yr72hr	58.42	1256347.1	753628.9	502718.2	-0.0	-0.00
25yr72hr	58.43	1258693.0	755659.5	503033.5	-0.0	-0.00
25yr72hr	58.45	1261093.3	757741.4	503351.9	-0.0	-0.00
25yr72hr	58.47	1263466.8	759804.4	503662.4	-0.0	-0.00
25yr72hr	58.48	1265827.6	761860.7	503966.9	-0.0	-0.00

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DRAINAGE SYSTEM 16A
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	58.50	1268206.5	763936.1	504270.4	-0.0	-0.00
25yr72hr	58.52	1270600.8	766025.8	504575.0	-0.0	-0.00
25yr72hr	58.53	1273021.9	768135.8	504886.1	-0.0	-0.00
25yr72hr	58.55	1275420.7	770217.3	505203.4	-0.0	-0.00
25yr72hr	58.57	1277894.4	772346.4	505548.1	-0.0	-0.00
25yr72hr	58.58	1280398.3	774476.7	505921.6	-0.0	-0.00
25yr72hr	58.60	1282895.1	776572.5	506322.7	-0.0	-0.00
25yr72hr	58.62	1285496.1	778725.0	506771.1	-0.0	-0.00
25yr72hr	58.63	1288096.5	780848.6	507247.9	-0.0	-0.00
25yr72hr	58.65	1290801.6	783031.7	507769.9	-0.0	-0.00
25yr72hr	58.67	1293514.3	785198.3	508316.1	-0.0	-0.00
25yr72hr	58.68	1296292.0	787397.6	508894.4	-0.0	-0.00
25yr72hr	58.70	1299074.0	789585.1	509488.9	-0.0	-0.00
25yr72hr	58.72	1301946.6	791831.3	510115.3	-0.0	-0.00
25yr72hr	58.73	1304794.5	794048.4	510746.1	-0.0	-0.00
25yr72hr	58.75	1307682.5	796289.4	511393.1	-0.0	-0.00
25yr72hr	58.77	1310592.1	798541.8	512050.3	-0.0	-0.00
25yr72hr	58.78	1313453.3	800752.9	512700.4	-0.0	-0.00
25yr72hr	58.80	1316497.0	803102.5	513394.5	-0.0	-0.00
25yr72hr	58.82	1319395.4	805338.9	514056.5	-0.0	-0.00
25yr72hr	58.83	1322456.9	807701.4	514755.5	-0.0	-0.00
25yr72hr	58.85	1325444.8	810008.5	515436.3	-0.0	-0.00
25yr72hr	58.87	1328428.8	812314.8	516114.0	-0.0	-0.00
25yr72hr	58.88	1331518.3	814706.0	516812.3	-0.0	-0.00
25yr72hr	58.90	1334509.2	817025.1	517484.1	-0.0	-0.00
25yr72hr	58.92	1337591.8	819420.3	518171.5	-0.0	-0.00
25yr72hr	58.93	1340693.2	821836.1	518857.0	-0.0	-0.00
25yr72hr	58.95	1343739.1	824215.0	519524.1	-0.0	-0.00
25yr72hr	58.97	1346889.3	826682.3	520207.0	-0.0	-0.00
25yr72hr	58.98	1349952.5	829088.2	520864.2	-0.0	-0.00
25yr72hr	59.00	1353200.9	831646.2	521554.7	-0.0	-0.00
25yr72hr	59.02	1356304.1	834089.6	522214.5	-0.0	-0.00
25yr72hr	59.03	1359466.8	836569.1	522897.7	-0.0	-0.00
25yr72hr	59.05	1362687.0	839071.8	523615.2	-0.0	-0.00
25yr72hr	59.07	1365940.3	841565.8	524374.6	-0.0	-0.00
25yr72hr	59.08	1369348.6	844126.6	525222.0	-0.0	-0.00
25yr72hr	59.10	1372811.0	846667.6	526143.4	-0.0	-0.00
25yr72hr	59.12	1376500.0	849314.5	527185.5	-0.0	-0.00
25yr72hr	59.13	1380212.8	851924.2	528288.7	-0.0	-0.00
25yr72hr	59.15	1383951.3	854506.8	529444.5	-0.0	-0.00
25yr72hr	59.17	1387865.3	857172.6	530692.7	-0.0	-0.00
25yr72hr	59.18	1391970.8	859936.2	532034.6	-0.0	-0.00
25yr72hr	59.20	1395995.4	862620.2	533375.2	-0.0	-0.00
25yr72hr	59.22	1400101.5	865340.6	534760.9	-0.0	-0.00
25yr72hr	59.23	1404354.9	868146.1	536208.8	-0.0	-0.00
25yr72hr	59.25	1408566.4	870915.5	537651.0	-0.0	-0.00
25yr72hr	59.27	1412978.1	873810.8	539167.4	-0.0	-0.00
25yr72hr	59.28	1417269.8	876625.0	540644.8	-0.0	-0.00
25yr72hr	59.30	1421706.0	879535.2	542170.8	-0.0	-0.00
25yr72hr	59.32	1426310.2	882559.1	543751.1	-0.0	-0.00
25yr72hr	59.33	1430872.6	885561.5	545311.1	-0.0	-0.00
25yr72hr	59.35	1435269.7	888462.8	546806.9	-0.0	-0.00
25yr72hr	59.37	1439894.4	891524.3	548370.0	-0.0	-0.00
25yr72hr	59.38	1444463.5	894560.6	549902.9	-0.0	-0.00
25yr72hr	59.40	1449141.9	897682.9	551458.9	-0.0	-0.00
25yr72hr	59.42	1453874.7	900857.0	553017.7	-0.0	-0.00
25yr72hr	59.43	1458552.2	904010.7	554541.5	-0.0	-0.00
25yr72hr	59.45	1463404.9	907300.7	556104.2	-0.0	-0.00
25yr72hr	59.47	1467963.8	910408.8	557555.0	-0.0	-0.00
25yr72hr	59.48	1472816.3	913736.0	559080.3	-0.0	-0.00
25yr72hr	59.50	1477664.9	917052.2	560612.7	-0.0	-0.00
25yr72hr	59.52	1482744.5	920441.5	562303.0	-0.0	-0.00
25yr72hr	59.53	1488086.4	923816.5	564269.9	-0.0	-0.00
25yr72hr	59.55	1494169.4	927311.0	566858.4	-0.0	-0.00
25yr72hr	59.57	1501148.0	930811.6	570336.4	-0.0	-0.00
25yr72hr	59.58	1509185.9	934289.1	574896.8	-0.0	-0.00
25yr72hr	59.60	1519053.0	937992.4	581060.6	-0.0	-0.00
25yr72hr	59.62	1530749.9	941872.4	588877.5	-0.0	-0.00
25yr72hr	59.63	1544116.4	945910.1	598206.3	-0.0	-0.00
25yr72hr	59.65	1559127.4	950152.4	608975.0	-0.0	-0.00
25yr72hr	59.67	1575731.9	954636.9	621095.0	-0.0	-0.00
25yr72hr	59.68	1593919.7	959415.0	634504.6	-0.0	-0.00
25yr72hr	59.70	1613322.1	964441.8	648880.3	-0.0	-0.00
25yr72hr	59.72	1633639.9	969692.4	663947.5	-0.0	-0.00

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DRAINAGE SYSTEM 16A
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	59.73	1655306.7	975301.6	680005.0	-0.0	-0.00
25yr72hr	59.75	1677966.6	981163.3	696803.3	-0.0	-0.00
25yr72hr	59.77	1701586.8	987288.9	714297.9	-0.0	-0.00
25yr72hr	59.78	1725759.4	993412.0	732347.4	-0.0	-0.00
25yr72hr	59.80	1751373.0	999725.7	751647.3	-0.0	-0.00
25yr72hr	59.82	1777088.1	1005913.9	771174.2	-0.0	-0.00
25yr72hr	59.83	1804166.4	1012294.0	791872.3	-0.0	-0.00
25yr72hr	59.85	1831035.6	1018507.0	812528.5	-0.0	-0.00
25yr72hr	59.87	1858496.4	1024751.9	833744.5	-0.0	-0.00
25yr72hr	59.88	1887421.0	1031231.9	856189.1	-0.0	-0.00
25yr72hr	59.90	1916421.7	1037644.0	878777.7	-0.0	-0.00
25yr72hr	59.92	1945673.8	1044038.0	901635.8	-0.0	-0.00
25yr72hr	59.93	1975374.9	1050470.4	924904.5	-0.0	-0.00
25yr72hr	59.95	2006710.9	1057205.3	949505.5	-0.0	-0.00
25yr72hr	59.97	2037250.7	1063724.5	973526.3	-0.0	-0.00
25yr72hr	59.98	2068176.2	1070285.6	997890.6	-0.0	-0.00
25yr72hr	60.00	2099457.7	1076888.3	1022569.4	-0.0	-0.00
25yr72hr	60.02	2130946.6	1083531.1	1047415.5	-0.0	-0.00
25yr72hr	60.03	2162402.2	1090211.7	1072190.4	-0.0	-0.00
25yr72hr	60.05	2194801.2	1097196.8	1097604.4	-0.0	-0.00
25yr72hr	60.07	2225329.0	1103946.0	1121383.0	-0.0	-0.00
25yr72hr	60.08	2254814.5	1110723.8	1144090.7	-0.0	-0.00
25yr72hr	60.10	2282967.2	1117525.9	1165441.3	-0.0	-0.00
25yr72hr	60.12	2309734.2	1124349.7	1185384.6	-0.0	-0.00
25yr72hr	60.13	2335130.6	1131193.0	1203937.6	-0.0	-0.00
25yr72hr	60.15	2360166.8	1138328.8	1221838.0	-0.0	-0.00
25yr72hr	60.17	2383029.3	1145207.0	1237822.3	-0.0	-0.00
25yr72hr	60.18	2404806.8	1152100.7	1252706.1	-0.0	-0.00
25yr72hr	60.20	2425589.7	1159009.0	1266580.6	-0.0	-0.00
25yr72hr	60.22	2445490.1	1165931.2	1279558.9	-0.0	-0.00
25yr72hr	60.23	2464610.1	1172866.8	1291743.4	-0.0	-0.00
25yr72hr	60.25	2483549.1	1180023.7	1303525.4	-0.0	-0.00
25yr72hr	60.27	2501243.7	1186984.4	1314259.4	-0.0	-0.00
25yr72hr	60.28	2518512.4	1194043.6	1324468.8	-0.0	-0.00
25yr72hr	60.30	2534977.6	1201026.6	1333951.0	-0.0	-0.00
25yr72hr	60.32	2550894.3	1208020.0	1342874.3	-0.0	-0.00
25yr72hr	60.33	2566298.6	1215023.2	1351275.4	-0.0	-0.00
25yr72hr	60.35	2581227.2	1222035.9	1359191.4	-0.0	-0.00
25yr72hr	60.37	2596605.1	1229496.7	1367108.4	-0.0	-0.00
25yr72hr	60.38	2610653.6	1236527.5	1374126.1	-0.0	-0.00
25yr72hr	60.40	2624317.8	1243566.7	1380751.1	-0.0	-0.00
25yr72hr	60.42	2637629.8	1250613.8	1387016.0	-0.0	-0.00
25yr72hr	60.43	2650615.9	1257668.6	1392947.3	-0.0	-0.00
25yr72hr	60.45	2663289.0	1264730.8	1398558.2	-0.0	-0.00
25yr72hr	60.47	2675655.6	1271800.0	1403855.6	-0.0	-0.00
25yr72hr	60.48	2687719.9	1278876.0	1408843.9	-0.0	-0.00
25yr72hr	60.50	2699481.0	1285958.2	1413522.8	-0.0	-0.00
25yr72hr	60.52	2711637.4	1293489.6	1418147.8	-0.0	-0.00
25yr72hr	60.53	2722747.1	1300583.5	1422163.6	-0.0	-0.00
25yr72hr	60.55	2733382.0	1307593.6	1425788.3	-0.0	-0.00
25yr72hr	60.57	2743779.8	1314696.8	1429083.0	-0.0	-0.00
25yr72hr	60.58	2753772.5	1321803.7	1431968.9	-0.0	-0.00
25yr72hr	60.60	2763337.5	1328913.6	1434423.9	-0.0	-0.00
25yr72hr	60.62	2772469.9	1336025.9	1436444.0	-0.0	-0.00
25yr72hr	60.63	2781185.0	1343140.2	1438044.7	-0.0	-0.00
25yr72hr	60.65	2789910.0	1350612.0	1439298.0	-0.0	-0.00
25yr72hr	60.67	2797837.7	1357729.2	1440108.5	-0.0	-0.00
25yr72hr	60.68	2805607.7	1365025.3	1440582.4	-0.0	-0.00
25yr72hr	60.70	2812983.4	1372255.4	1440728.0	-0.0	-0.00
25yr72hr	60.72	2820064.2	1379486.0	1440578.2	-0.0	-0.00
25yr72hr	60.73	2826648.5	1386472.1	1440176.4	-0.0	-0.00
25yr72hr	60.75	2832964.5	1393413.7	1439550.8	-0.0	-0.00
25yr72hr	60.77	2839350.5	1400672.3	1438678.2	-0.0	-0.00
25yr72hr	60.78	2845434.6	1407813.8	1437620.9	-0.0	-0.00
25yr72hr	60.80	2851411.0	1415043.8	1436367.1	-0.0	-0.00
25yr72hr	60.82	2857042.8	1422050.8	1434992.0	-0.0	-0.00
25yr72hr	60.83	2862742.9	1429333.0	1433409.9	-0.0	-0.00
25yr72hr	60.85	2868195.8	1436478.2	1431717.6	-0.0	-0.00
25yr72hr	60.87	2873760.4	1443949.7	1429810.7	-0.0	-0.00
25yr72hr	60.88	2878646.2	1450655.2	1427991.0	-0.0	-0.00
25yr72hr	60.90	2883854.7	1457946.6	1425908.1	-0.0	-0.00
25yr72hr	60.92	2888810.3	1465014.3	1423795.9	-0.0	-0.00
25yr72hr	60.93	2893682.4	1472080.8	1421601.6	-0.0	-0.00
25yr72hr	60.95	2898825.3	1479656.8	1419168.5	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	60.97	2903436.8	1486542.6	1416894.2	-0.0	-0.00
25yr72hr	60.98	2908215.7	1493760.1	1414455.6	-0.0	-0.00
25yr72hr	61.00	2912770.9	1500705.1	1412065.8	-0.0	-0.00
25yr72hr	61.02	2917444.5	1507897.2	1409547.4	-0.0	-0.00
25yr72hr	61.03	2922190.1	1515282.7	1406907.4	-0.0	-0.00
25yr72hr	61.05	2926649.1	1522313.9	1404335.1	-0.0	-0.00
25yr72hr	61.07	2931160.5	1529539.2	1401621.3	-0.0	-0.00
25yr72hr	61.08	2935532.8	1536678.8	1398854.0	-0.0	-0.00
25yr72hr	61.10	2939673.6	1543587.2	1396086.4	-0.0	-0.00
25yr72hr	61.12	2943933.8	1550854.7	1393079.1	-0.0	-0.00
25yr72hr	61.13	2947995.6	1557940.8	1390054.8	-0.0	-0.00
25yr72hr	61.15	2952128.1	1565308.7	1386819.4	-0.0	-0.00
25yr72hr	61.17	2955899.0	1572168.6	1383730.4	-0.0	-0.00
25yr72hr	61.18	2959786.6	1579374.6	1380412.1	-0.0	-0.00
25yr72hr	61.20	2963610.4	1586591.4	1377019.0	-0.0	-0.00
25yr72hr	61.22	2967232.6	1593539.7	1373692.9	-0.0	-0.00
25yr72hr	61.23	2970996.0	1600866.5	1370129.5	-0.0	-0.00
25yr72hr	61.25	2974486.2	1607755.3	1366730.9	-0.0	-0.00
25yr72hr	61.27	2978057.5	1614894.9	1363162.6	-0.0	-0.00
25yr72hr	61.28	2981532.6	1621925.1	1359607.4	-0.0	-0.00
25yr72hr	61.30	2985061.1	1629141.5	1355919.6	-0.0	-0.00
25yr72hr	61.32	2988528.4	1636305.5	1352222.9	-0.0	-0.00
25yr72hr	61.33	2991966.2	1643476.2	1348489.9	-0.0	-0.00
25yr72hr	61.35	2995224.3	1650331.1	1344893.3	-0.0	-0.00
25yr72hr	61.37	2998696.4	1657694.7	1341001.6	-0.0	-0.00
25yr72hr	61.38	3001979.2	1664709.5	1337269.7	-0.0	-0.00
25yr72hr	61.40	3005158.2	1671548.0	1333610.2	-0.0	-0.00
25yr72hr	61.42	3008574.2	1678941.4	1329632.8	-0.0	-0.00
25yr72hr	61.43	3011728.7	1685806.2	1325922.5	-0.0	-0.00
25yr72hr	61.45	3014913.1	1692769.8	1322143.3	-0.0	-0.00
25yr72hr	61.47	3018240.6	1700080.1	1318160.5	-0.0	-0.00
25yr72hr	61.48	3021346.9	1706932.6	1314414.3	-0.0	-0.00
25yr72hr	61.50	3024585.0	1714102.3	1310482.7	-0.0	-0.00
25yr72hr	61.52	3027760.3	1721161.0	1306599.3	-0.0	-0.00
25yr72hr	61.53	3030905.1	1728184.5	1302720.6	-0.0	-0.00
25yr72hr	61.55	3033987.1	1735108.2	1298878.9	-0.0	-0.00
25yr72hr	61.57	3037183.6	1742345.6	1294838.0	-0.0	-0.00
25yr72hr	61.58	3040188.6	1749215.6	1290973.0	-0.0	-0.00
25yr72hr	61.60	3043204.3	1756186.2	1287018.1	-0.0	-0.00
25yr72hr	61.62	3046324.7	1763487.4	1282837.3	-0.0	-0.00
25yr72hr	61.63	3049225.6	1770356.8	1278868.9	-0.0	-0.00
25yr72hr	61.65	3052150.6	1777361.6	1274789.0	-0.0	-0.00
25yr72hr	61.67	3054989.8	1784234.5	1270755.3	-0.0	-0.00
25yr72hr	61.68	3057866.2	1791266.6	1266599.6	-0.0	-0.00
25yr72hr	61.70	3060726.1	1798322.4	1262403.7	-0.0	-0.00
25yr72hr	61.72	3063548.4	1805343.9	1258204.6	-0.0	-0.00
25yr72hr	61.73	3066294.4	1812226.7	1254067.7	-0.0	-0.00
25yr72hr	61.75	3069127.7	1819376.9	1249750.8	-0.0	-0.00
25yr72hr	61.77	3071794.8	1826149.1	1245645.7	-0.0	-0.00
25yr72hr	61.78	3074525.9	1833122.8	1241403.1	-0.0	-0.00
25yr72hr	61.80	3077310.7	1840271.3	1237039.5	-0.0	-0.00
25yr72hr	61.82	3079966.8	1847121.5	1232845.3	-0.0	-0.00
25yr72hr	61.83	3082620.5	1853994.8	1228625.7	-0.0	-0.00
25yr72hr	61.85	3085348.1	1861087.1	1224261.0	-0.0	-0.00
25yr72hr	61.87	3088018.0	1868055.1	1219962.9	-0.0	-0.00
25yr72hr	61.88	3090616.0	1874857.2	1215758.8	-0.0	-0.00
25yr72hr	61.90	3093230.0	1881720.9	1211509.1	-0.0	-0.00
25yr72hr	61.92	3095891.1	1888726.0	1207165.1	-0.0	-0.00
25yr72hr	61.93	3098528.0	1895683.2	1202844.8	-0.0	-0.00
25yr72hr	61.95	3101118.9	1902532.5	1198586.3	-0.0	-0.00
25yr72hr	61.97	3103773.5	1909562.9	1194210.6	-0.0	-0.00
25yr72hr	61.98	3106317.9	1916311.6	1190006.4	-0.0	-0.00
25yr72hr	62.00	3108893.6	1923152.8	1185740.8	-0.0	-0.00
25yr72hr	62.02	3111530.9	1930174.5	1181356.4	-0.0	-0.00
25yr72hr	62.03	3114097.0	1937037.1	1177059.9	-0.0	-0.00
25yr72hr	62.05	3116643.9	1943893.3	1172750.5	-0.0	-0.00
25yr72hr	62.07	3119180.6	1950786.6	1168394.0	-0.0	-0.00
25yr72hr	62.08	3121665.3	1957629.6	1164035.7	-0.0	-0.00
25yr72hr	62.10	3124094.3	1964428.7	1159665.6	-0.0	-0.00
25yr72hr	62.12	3126510.3	1971307.9	1155202.4	-0.0	-0.00
25yr72hr	62.13	3128835.1	1978041.1	1150794.1	-0.0	-0.00
25yr72hr	62.15	3131167.1	1984906.2	1146260.9	-0.0	-0.00
25yr72hr	62.17	3133464.9	1991775.9	1141689.1	-0.0	-0.00
25yr72hr	62.18	3135696.4	1998542.9	1137153.6	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	62.20	3137966.4	2005519.0	1132447.4	-0.0	-0.00
25yr72hr	62.22	3140144.7	2012294.3	1127850.4	-0.0	-0.00
25yr72hr	62.23	3142268.3	2018969.3	1123299.0	-0.0	-0.00
25yr72hr	62.25	3144388.1	2025697.0	1118691.1	-0.0	-0.00
25yr72hr	62.27	3146526.3	2032545.9	1113980.4	-0.0	-0.00
25yr72hr	62.28	3148599.8	2039244.2	1109355.6	-0.0	-0.00
25yr72hr	62.30	3150704.9	2046097.5	1104607.4	-0.0	-0.00
25yr72hr	62.32	3152748.3	2052798.0	1099950.3	-0.0	-0.00
25yr72hr	62.33	3154799.9	2059570.2	1095229.8	-0.0	-0.00
25yr72hr	62.35	3156836.7	2066334.8	1090501.9	-0.0	-0.00
25yr72hr	62.37	3158848.2	2073053.6	1085794.7	-0.0	-0.00
25yr72hr	62.38	3160834.5	2079721.8	1081112.6	-0.0	-0.00
25yr72hr	62.40	3162859.5	2086552.9	1076306.6	-0.0	-0.00
25yr72hr	62.42	3164806.4	2093148.4	1071658.0	-0.0	-0.00
25yr72hr	62.43	3166789.9	2099893.5	1066896.5	-0.0	-0.00
25yr72hr	62.45	3168745.3	2106565.7	1062179.5	-0.0	-0.00
25yr72hr	62.47	3170704.7	2113274.1	1057430.6	-0.0	-0.00
25yr72hr	62.48	3172637.0	2119910.0	1052727.1	-0.0	-0.00
25yr72hr	62.50	3174592.5	2126645.3	1047947.2	-0.0	-0.00
25yr72hr	62.52	3176509.8	2133269.2	1043240.6	-0.0	-0.00
25yr72hr	62.53	3178475.1	2140083.2	1038392.0	-0.0	-0.00
25yr72hr	62.55	3180352.1	2146618.9	1033733.2	-0.0	-0.00
25yr72hr	62.57	3182267.7	2153324.8	1028942.9	-0.0	-0.00
25yr72hr	62.58	3184148.0	2159950.0	1024197.9	-0.0	-0.00
25yr72hr	62.60	3185996.1	2166510.5	1019485.6	-0.0	-0.00
25yr72hr	62.62	3187871.0	2173219.2	1014651.8	-0.0	-0.00
25yr72hr	62.63	3189705.6	2179835.6	1009870.0	-0.0	-0.00
25yr72hr	62.65	3191501.9	2186361.7	1005140.2	-0.0	-0.00
25yr72hr	62.67	3193322.5	2193022.6	1000299.9	-0.0	-0.00
25yr72hr	62.68	3195110.9	2199608.1	995502.8	-0.0	-0.00
25yr72hr	62.70	3196866.1	2206108.5	990757.6	-0.0	-0.00
25yr72hr	62.72	3198682.4	2212870.5	985812.0	-0.0	-0.00
25yr72hr	62.73	3200390.2	2219258.2	981132.0	-0.0	-0.00
25yr72hr	62.75	3202147.7	2225859.1	976288.6	-0.0	-0.00
25yr72hr	62.77	3203877.3	2232379.8	971497.6	-0.0	-0.00
25yr72hr	62.78	3205640.5	2239049.4	966591.1	-0.0	-0.00
25yr72hr	62.80	3207341.4	2245503.3	961838.1	-0.0	-0.00
25yr72hr	62.82	3209060.6	2252044.4	957016.3	-0.0	-0.00
25yr72hr	62.83	3210790.7	2258642.7	952148.0	-0.0	-0.00
25yr72hr	62.85	3212471.8	2265068.4	947403.4	-0.0	-0.00
25yr72hr	62.87	3214179.7	2271609.4	942570.2	-0.0	-0.00
25yr72hr	62.88	3215889.8	2278170.7	937719.1	-0.0	-0.00
25yr72hr	62.90	3217556.1	2284573.3	932982.9	-0.0	-0.00
25yr72hr	62.92	3219249.4	2291087.7	928161.7	-0.0	-0.00
25yr72hr	62.93	3220980.4	2297754.9	923225.5	-0.0	-0.00
25yr72hr	62.95	3222609.5	2304035.2	918574.4	-0.0	-0.00
25yr72hr	62.97	3224336.1	2310695.9	913640.2	-0.0	-0.00
25yr72hr	62.98	3225989.5	2317078.2	908911.3	-0.0	-0.00
25yr72hr	63.00	3227675.2	2323587.8	904087.4	-0.0	-0.00
25yr72hr	63.02	3229341.4	2330024.0	899317.5	-0.0	-0.00
25yr72hr	63.03	3230975.6	2336337.9	894637.7	-0.0	-0.00
25yr72hr	63.05	3232652.5	2342818.6	889833.9	-0.0	-0.00
25yr72hr	63.07	3234338.1	2349335.3	885002.8	-0.0	-0.00
25yr72hr	63.08	3235985.8	2355708.8	880277.0	-0.0	-0.00
25yr72hr	63.10	3237632.3	2362079.8	875552.4	-0.0	-0.00
25yr72hr	63.12	3239330.4	2368653.1	870677.3	-0.0	-0.00
25yr72hr	63.13	3240965.5	2374984.3	865981.2	-0.0	-0.00
25yr72hr	63.15	3242621.4	2381397.3	861224.1	-0.0	-0.00
25yr72hr	63.17	3244265.3	2387765.0	856500.3	-0.0	-0.00
25yr72hr	63.18	3245919.5	2394173.0	851746.5	-0.0	-0.00
25yr72hr	63.20	3247566.3	2400552.2	847014.1	-0.0	-0.00
25yr72hr	63.22	3249242.0	2407043.1	842198.9	-0.0	-0.00
25yr72hr	63.23	3250879.1	2413383.5	837495.6	-0.0	-0.00
25yr72hr	63.25	3252576.9	2419957.2	832619.7	-0.0	-0.00
25yr72hr	63.27	3254183.3	2426175.5	828007.8	-0.0	-0.00
25yr72hr	63.28	3255848.5	2432618.7	823229.8	-0.0	-0.00
25yr72hr	63.30	3257479.8	2438928.1	818551.6	-0.0	-0.00
25yr72hr	63.32	3259121.4	2445274.3	813847.1	-0.0	-0.00
25yr72hr	63.33	3260751.1	2451570.8	809180.3	-0.0	-0.00
25yr72hr	63.35	3262397.5	2457927.8	804469.7	-0.0	-0.00
25yr72hr	63.37	3264085.8	2464442.5	799643.3	-0.0	-0.00
25yr72hr	63.38	3265691.1	2470631.9	795059.2	-0.0	-0.00
25yr72hr	63.40	3267386.5	2477163.7	790222.8	-0.0	-0.00
25yr72hr	63.42	3268969.9	2483258.7	785711.2	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	63.43	3270660.0	2489758.7	780901.3	-0.0	-0.00
25yr72hr	63.45	3272264.3	2495922.9	776341.4	-0.0	-0.00
25yr72hr	63.47	3273932.6	2502326.4	771606.2	-0.0	-0.00
25yr72hr	63.48	3275555.1	2508547.7	767007.4	-0.0	-0.00
25yr72hr	63.50	3277212.7	2514896.2	762316.6	-0.0	-0.00
25yr72hr	63.52	3278827.9	2521074.7	757753.1	-0.0	-0.00
25yr72hr	63.53	3280477.7	2527378.1	753099.6	-0.0	-0.00
25yr72hr	63.55	3282184.3	2533890.2	748294.1	-0.0	-0.00
25yr72hr	63.57	3283798.3	2540040.7	743757.6	-0.0	-0.00
25yr72hr	63.58	3285394.7	2546116.7	739278.1	-0.0	-0.00
25yr72hr	63.60	3287055.6	2552429.2	734626.4	-0.0	-0.00
25yr72hr	63.62	3288697.6	2558661.6	730036.0	-0.0	-0.00
25yr72hr	63.63	3290366.4	2564986.2	725380.2	-0.0	-0.00
25yr72hr	63.65	3291985.6	2571114.4	720871.2	-0.0	-0.00
25yr72hr	63.67	3293645.0	2577385.1	716259.9	-0.0	-0.00
25yr72hr	63.68	3295248.6	2583435.9	711812.6	-0.0	-0.00
25yr72hr	63.70	3296890.6	2589622.4	707268.2	-0.0	-0.00
25yr72hr	63.72	3298535.4	2595809.1	702726.3	-0.0	-0.00
25yr72hr	63.73	3300190.7	2602025.3	698165.4	-0.0	-0.00
25yr72hr	63.75	3301823.8	2608147.7	693676.1	-0.0	-0.00
25yr72hr	63.77	3303463.6	2614284.8	689178.8	-0.0	-0.00
25yr72hr	63.78	3305124.2	2620488.5	684635.8	-0.0	-0.00
25yr72hr	63.80	3306790.7	2626702.5	680088.2	-0.0	-0.00
25yr72hr	63.82	3308432.5	2632812.4	675620.0	-0.0	-0.00
25yr72hr	63.83	3310043.6	2638796.3	671247.2	-0.0	-0.00
25yr72hr	63.85	3311688.7	2644893.9	666794.8	-0.0	-0.00
25yr72hr	63.87	3313381.9	2651155.0	662226.9	-0.0	-0.00
25yr72hr	63.88	3314967.5	2657004.1	657963.5	-0.0	-0.00
25yr72hr	63.90	3316635.2	2663138.4	653496.7	-0.0	-0.00
25yr72hr	63.92	3318296.7	2669229.3	649067.4	-0.0	-0.00
25yr72hr	63.93	3319895.0	2675059.7	644835.3	-0.0	-0.00
25yr72hr	63.95	3321549.7	2681044.7	640505.0	-0.0	-0.00
25yr72hr	63.97	3323179.4	2686859.5	636320.0	-0.0	-0.00
25yr72hr	63.98	3324851.0	2692714.9	632136.1	-0.0	-0.00
25yr72hr	64.00	3326480.5	2698356.9	628123.6	-0.0	-0.00
25yr72hr	64.02	3328100.7	2703887.6	624213.1	-0.0	-0.00
25yr72hr	64.10	3336007.5	2729811.4	606196.0	-0.0	-0.00
25yr72hr	64.18	3343146.6	2753004.4	590142.2	-0.0	-0.00
25yr72hr	64.27	3349561.4	2774017.2	575544.2	-0.0	-0.00
25yr72hr	64.35	3355517.4	2793311.1	562206.3	-0.0	-0.00
25yr72hr	64.43	3361175.2	2811129.9	550045.3	-0.0	-0.00
25yr72hr	64.52	3366601.3	2827539.1	539062.2	-0.0	-0.00
25yr72hr	64.60	3371847.5	2842665.1	529182.3	-0.0	-0.00
25yr72hr	64.68	3376980.1	2856693.9	520286.3	-0.0	-0.00
25yr72hr	64.77	3382010.2	2869648.0	512362.1	-0.0	-0.00
25yr72hr	64.85	3386982.9	2881650.9	505332.1	-0.0	-0.00
25yr72hr	64.93	3391925.5	2892800.6	499124.9	-0.0	-0.00
25yr72hr	65.02	3396829.0	2903129.1	493699.8	-0.0	-0.00
25yr72hr	65.10	3401753.7	2912817.8	488935.9	-0.0	-0.00
25yr72hr	65.18	3406681.3	2921893.9	484787.5	-0.0	-0.00
25yr72hr	65.27	3411607.6	2930429.0	481178.7	-0.0	-0.00
25yr72hr	65.35	3416546.6	2938519.4	478027.2	-0.0	-0.00
25yr72hr	65.43	3421499.3	2946227.1	475272.2	-0.0	-0.00
25yr72hr	65.52	3426448.9	2953579.1	472869.7	-0.0	-0.00
25yr72hr	65.60	3431393.7	2960620.6	470773.1	-0.0	-0.00
25yr72hr	65.68	3436342.0	2967403.5	468938.5	-0.0	-0.00
25yr72hr	65.77	3441299.1	2973968.9	467330.2	-0.0	-0.00
25yr72hr	65.85	3446251.6	2980329.0	465922.7	-0.0	-0.00
25yr72hr	65.93	3451203.7	2986515.1	464688.6	-0.0	-0.00
25yr72hr	66.02	3456162.1	2992557.7	463604.4	-0.0	-0.00
25yr72hr	66.10	3461114.8	2998461.4	462653.4	-0.0	-0.00
25yr72hr	66.18	3466073.7	3004257.2	461816.5	-0.0	-0.00
25yr72hr	66.27	3471020.8	3009938.4	461082.3	-0.0	-0.00
25yr72hr	66.35	3475981.6	3015546.8	460434.8	-0.0	-0.00
25yr72hr	66.43	3480934.6	3021068.7	459865.9	-0.0	-0.00
25yr72hr	66.52	3485891.8	3026527.1	459364.7	-0.0	-0.00
25yr72hr	66.60	3490861.4	3031938.9	458922.5	-0.0	-0.00
25yr72hr	66.68	3495819.1	3037285.0	458534.1	-0.0	-0.00
25yr72hr	66.77	3500777.2	3042585.0	458192.2	-0.0	-0.00
25yr72hr	66.85	3505734.7	3047843.6	457891.1	-0.0	-0.00
25yr72hr	66.93	3510703.9	3053078.5	457625.4	-0.0	-0.00
25yr72hr	67.02	3515650.7	3058258.2	457392.5	-0.0	-0.00
25yr72hr	67.10	3520607.5	3063420.5	457187.0	-0.0	-0.00
25yr72hr	67.18	3525576.3	3068570.6	457005.7	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	67.27	3530527.8	3073681.1	456846.7	-0.0	-0.00
25yr72hr	67.35	3535501.2	3078795.1	456706.1	-0.0	-0.00
25yr72hr	67.43	3540451.9	3083868.8	456583.1	-0.0	-0.00
25yr72hr	67.52	3545418.7	3088944.2	456474.5	-0.0	-0.00
25yr72hr	67.60	3550372.8	3093993.5	456379.3	-0.0	-0.00
25yr72hr	67.68	3555352.6	3099057.3	456295.3	-0.0	-0.00
25yr72hr	67.77	3560306.9	3104085.0	456221.9	-0.0	-0.00
25yr72hr	67.85	3565276.2	3109118.8	456157.4	-0.0	-0.00
25yr72hr	67.93	3570226.9	3114125.9	456100.9	-0.0	-0.00
25yr72hr	68.02	3575196.9	3119152.6	456044.3	-0.0	-0.00
25yr72hr	68.10	3579973.5	3124144.8	455828.7	-0.0	-0.00
25yr72hr	68.18	3584371.7	3129103.5	455268.2	-0.0	-0.00
25yr72hr	68.27	3588416.4	3133987.3	454429.1	-0.0	-0.00
25yr72hr	68.35	3592218.8	3138772.2	453446.5	-0.0	-0.00
25yr72hr	68.43	3595870.2	3143468.6	452401.6	-0.0	-0.00
25yr72hr	68.52	3599413.6	3148067.0	451346.6	-0.0	-0.00
25yr72hr	68.60	3602874.5	3152565.7	450308.8	-0.0	-0.00
25yr72hr	68.68	3606276.3	3156970.9	449305.4	-0.0	-0.00
25yr72hr	68.77	3609614.4	3161255.3	448359.1	-0.0	-0.00
25yr72hr	68.85	3612926.9	3165450.4	447476.5	-0.0	-0.00
25yr72hr	68.93	3616223.8	3169559.1	446664.7	-0.0	-0.00
25yr72hr	69.02	3619514.1	3173586.8	445927.4	-0.0	-0.00
25yr72hr	69.10	3622803.5	3177539.7	445263.8	-0.0	-0.00
25yr72hr	69.18	3626089.1	3181419.5	444669.6	-0.0	-0.00
25yr72hr	69.27	3629379.0	3185242.4	444136.6	-0.0	-0.00
25yr72hr	69.35	3632665.1	3189005.1	443660.0	-0.0	-0.00
25yr72hr	69.43	3635956.5	3192723.7	443232.8	-0.0	-0.00
25yr72hr	69.52	3639243.4	3196392.1	442851.3	-0.0	-0.00
25yr72hr	69.60	3642533.1	3200023.3	442509.8	-0.0	-0.00
25yr72hr	69.68	3645819.2	3203614.4	442204.7	-0.0	-0.00
25yr72hr	69.77	3649109.1	3207177.5	441931.7	-0.0	-0.00
25yr72hr	69.85	3652396.5	3210708.8	441687.7	-0.0	-0.00
25yr72hr	69.93	3655685.7	3214216.2	441469.5	-0.0	-0.00
25yr72hr	70.02	3658976.9	3217702.4	441274.4	-0.0	-0.00
25yr72hr	70.10	3662270.1	3221168.2	441101.9	-0.0	-0.00
25yr72hr	70.18	3665562.1	3224610.2	440951.9	-0.0	-0.00
25yr72hr	70.27	3668871.8	3228050.5	440821.2	-0.0	-0.00
25yr72hr	70.35	3672170.0	3231462.3	440707.7	-0.0	-0.00
25yr72hr	70.43	3675476.6	3234868.7	440607.9	-0.0	-0.00
25yr72hr	70.52	3678782.0	3238261.7	440520.3	-0.0	-0.00
25yr72hr	70.60	3682088.5	3241645.3	440443.2	-0.0	-0.00
25yr72hr	70.68	3685398.8	3245023.6	440375.3	-0.0	-0.00
25yr72hr	70.77	3688705.1	3248389.7	440315.4	-0.0	-0.00
25yr72hr	70.85	3692008.7	3251746.3	440262.5	-0.0	-0.00
25yr72hr	70.93	3695319.9	3255104.4	440215.5	-0.0	-0.00
25yr72hr	71.02	3698629.0	3258455.2	440173.8	-0.0	-0.00
25yr72hr	71.10	3701940.3	3261803.5	440136.8	-0.0	-0.00
25yr72hr	71.18	3705249.3	3265145.4	440103.9	-0.0	-0.00
25yr72hr	71.27	3708566.5	3268491.9	440074.6	-0.0	-0.00
25yr72hr	71.35	3711876.3	3271827.6	440048.6	-0.0	-0.00
25yr72hr	71.43	3715182.1	3275156.5	440025.6	-0.0	-0.00
25yr72hr	71.52	3718501.8	3278496.7	440005.1	-0.0	-0.00
25yr72hr	71.60	3721806.7	3281819.6	439987.0	-0.0	-0.00
25yr72hr	71.68	3725116.2	3285145.2	439971.0	-0.0	-0.00
25yr72hr	71.77	3728426.0	3288469.1	439956.8	-0.0	-0.00
25yr72hr	71.85	3731744.5	3291800.2	439944.3	-0.0	-0.00
25yr72hr	71.93	3735050.6	3295117.4	439933.2	-0.0	-0.00
25yr72hr	72.02	3738352.5	3298440.6	439911.9	-0.0	-0.00
25yr72hr	72.10	3741654.4	3301763.8	439892.7	-0.0	-0.00
25yr72hr	72.19	3744956.3	3305087.0	439875.5	-0.0	-0.00
25yr72hr	72.27	3748258.2	3308410.2	439859.3	-0.0	-0.00
25yr72hr	72.36	3751560.1	3311733.4	439844.1	-0.0	-0.00
25yr72hr	72.44	3754862.0	3315056.6	439829.9	-0.0	-0.00
25yr72hr	72.53	3758163.9	3318379.8	439816.7	-0.0	-0.00
25yr72hr	72.61	3761465.8	3321703.0	439804.5	-0.0	-0.00
25yr72hr	72.70	3764767.7	3325026.2	439793.3	-0.0	-0.00
25yr72hr	72.78	3768069.6	3328349.4	439783.1	-0.0	-0.00
25yr72hr	72.87	3771371.5	3331672.6	439773.9	-0.0	-0.00
25yr72hr	72.95	3774673.4	3335000.8	439765.7	-0.0	-0.00
25yr72hr	73.04	3777975.3	3338324.0	439758.5	-0.0	-0.00
25yr72hr	73.12	3781277.2	3341647.2	439752.3	-0.0	-0.00
25yr72hr	73.21	3784579.1	3344970.4	439747.1	-0.0	-0.00
25yr72hr	73.29	3787881.0	3348293.6	439742.9	-0.0	-0.00
25yr72hr	73.38	3791182.9	3351616.8	439739.7	-0.0	-0.00
25yr72hr	73.46	3794484.8	3354940.0	439737.5	-0.0	-0.00
25yr72hr	73.55	3797786.7	3358263.2	439736.3	-0.0	-0.00
25yr72hr	73.63	3801088.6	3361586.4	439736.1	-0.0	-0.00
25yr72hr	73.72	3804390.5	3364909.6	439736.9	-0.0	-0.00
25yr72hr	73.80	3807692.4	3368232.8	439738.7	-0.0	-0.00
25yr72hr	73.89	3811000.3	3371556.0	439741.5	-0.0	-0.00
25yr72hr	73.97	3814302.2	3374879.2	439745.3	-0.0	-0.00
25yr72hr	74.06	3817604.1	3378202.4	439750.1	-0.0	-0.00
25yr72hr	74.14	3820906.0	3381525.6	439755.9	-0.0	-0.00
25yr72hr	74.23	3824207.9	3384848.8	439762.7	-0.0	-0.00
25yr72hr	74.31	3827509.8	3388172.0	439770.5	-0.0	-0.00
25yr72hr	74.40	3830811.7	3391495.2	439779.3	-0.0	-0.00
25yr72hr	74.48	3834113.6	3394818.4	439789.1	-0.0	-0.00
25yr72hr	74.57	3837415.5	3398141.6	439799.9	-0.0	-0.00
25yr72hr	74.65	3840717.4	3401464.8	439811.7	-0.0	-0.00
25yr72hr	74.74	3844019.3	3404788.0	439824.5	-0.0	-0.00
25yr72hr	74.82	3847321.2	3408111.2	439838.3	-0.0	-0.00
25yr72hr	74.91	3850623.1	3411434.4	439853.1	-0.0	-0.00
25yr72hr	75.00	3853925.0	3414757.6	439868.9	-0.0	-0.00
25yr72hr	75.08	3857226.9	3418080.8	439885.7	-0.0	-0.00
25yr72hr	75.17	3860528.8	3421404.0	439903.5	-0.0	-0.00
25yr72hr	75.25	3863830.7	3424727.2	439922.3	-0.0	-0.00
25yr72hr	75.34	3867132.6	3428050.4	439942.1	-0.0	-0.00
25yr72hr	75.42	3870434.5	3431373.6	439962.9	-0.0	-0.00
25yr72hr	75.51	3873736.4	3434696.8	439984.7	-0.0	-0.00
25yr72hr	75.59	3877038.3	3438020.0	439999.5	-0.0	-0.00
25yr72hr	75.68	3880340.2	3441343.2	440015.3	-0.0	-0.00
25yr72hr	75.76	3883642.1	3444666.4	440032.1	-0.0	-0.00
25yr72hr	75.85	3886944.0	3447989.6	440049.9	-0.0	-0.00
25yr72hr	75.93	3890245.9	3451312.8	440068.7	-0.0	-0.00
25yr72hr	76.02	3893547.8	3454636.0	440088.5	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	76.27	3745879.1	3352061.4	393817.7	-0.0	-0.00
25yr72hr	76.52	3745879.1	3353219.4	392659.7	-0.0	-0.00
25yr72hr	76.77	3745879.1	3354375.3	391503.8	-0.0	-0.00
25yr72hr	77.02	3745879.1	3355531.1	390347.9	-0.0	-0.00
25yr72hr	77.27	3745879.1	3356685.0	389194.1	-0.0	-0.00
25yr72hr	77.52	3745879.1	3357838.7	388040.4	-0.0	-0.00
25yr72hr	77.77	3745879.1	3358990.4	386888.7	-0.0	-0.00
25yr72hr	78.02	3745879.1	3360142.0	385737.1	-0.0	-0.00
25yr72hr	78.27	3745879.1	3361291.5	384587.5	-0.0	-0.00
25yr72hr	78.52	3745879.1	3362441.3	383437.8	-0.0	-0.00
25yr72hr	78.77	3745879.1	3363588.7	382290.4	-0.0	-0.00
25yr72hr	79.02	3745879.1	3364736.0	381143.0	-0.0	-0.00
25yr72hr	79.27	3745879.1	3365881.3	379997.8	-0.0	-0.00
25yr72hr	79.52	3745879.1	3367026.5	378852.6	-0.0	-0.00
25yr72hr	79.77	3745879.1	3368169.6	377709.4	-0.0	-0.00
25yr72hr	80.02	3745879.1	3369312.7	376566.4	-0.0	-0.00
25yr72hr	80.27	3745879.1	3370453.6	375425.4	-0.0	-0.00
25yr72hr	80.52	3745879.1	3371594.5	374284.5	-0.0	-0.00
25yr72hr	80.77	3745879.1	3372733.3	373145.7	-0.0	-0.00
25yr72hr	81.02	3745879.1	3373871.8	372007.2	-0.0	-0.00
25yr72hr	81.27	3745879.1	3375009.5	370869.6	-0.0	-0.00
25yr72hr	81.52	3745879.1	3376144.8	369734.2	-0.0	-0.00
25yr72hr	81.77	3745879.1	3377280.3	368598.8	-0.0	-0.00
25yr72hr	82.02	3745879.1	3378413.5	367465.6	-0.0	-0.00
25yr72hr	82.27	3745879.1	3379546.8	366332.3	-0.0	-0.00
25yr72hr	82.52	3745879.1	3380679.1	365200.0	-0.0	-0.00
25yr72hr	82.77	3745879.1	3381809.0	364070.1	-0.0	-0.00
25yr72hr	83.02	3745879.1	3382939.1	362940.0	-0.0	-0.00
25yr72hr	83.27	3745879.1	3384066.8	361812.2	-0.0	-0.00
25yr72hr	83.52	3745879.1	3385194.7	360684.3	-0.0	-0.00
25yr72hr	83.77	3745879.1	3386321.6	359557.5	-0.0	-0.00
25yr72hr	84.02	3745879.1	3387446.1	358433.0	-0.0	-0.00
25yr72hr	84.27	3745879.1	3388570.7	357308.3	-0.0	-0.00
25yr72hr	84.52	3745879.1	3389693.1	356186.0	-0.0	-0.00
25yr72hr	84.77	3745879.1	3390815.5	355063.5	-0.0	-0.00
25yr72hr	85.02	3745879.1	3391936.9	353942.1	-0.0	-0.00
25yr72hr	85.27	3745879.1	3393056.0	352823.1	-0.0	-0.00
25yr72hr	85.52	3745879.1	3394175.2	351703.9	-0.0	-0.00
25yr72hr	85.77	3745879.1	3395292.1	350587.0	-0.0	-0.00
25yr72hr	86.02	3745879.1	3396409.1	349469.9	-0.0	-0.00
25yr72hr	86.27	3745879.1	3397525.1	348354.0	-0.0	-0.00
25yr72hr	86.52	3745879.1	3398638.7	347240.4	-0.0	-0.00
25yr72hr	86.77	3745879.1	3399752.4	346126.6	-0.0	-0.00
25yr72hr	87.02	3745879.1	3400863.9	345015.2	-0.0	-0.00
25yr72hr	87.27	3745879.1	3401975.5	343903.6	-0.0	-0.00
25yr72hr	87.52	3745879.1	3403085.9	342793.1	-0.0	-0.00
25yr72hr	87.77	3745879.1	3404194.1	341685.0	-0.0	-0.00
25yr72hr	88.02	3745879.1	3405302.4	340576.7	-0.0	-0.00
25yr72hr	88.27	3745879.1	3406408.3	339470.7	-0.0	-0.00
25yr72hr	88.52	3745879.1	3407514.4	338364.6	-0.0	-0.00
25yr72hr	88.77	3745879.1	3408618.5	337260.6	-0.0	-0.00
25yr72hr	89.02	3745879.1	3409722.4	336156.7	-0.0	-0.00
25yr72hr	89.27	3745879.1	3410824.9	335054.2	-0.0	-0.00
25yr72hr	89.52	3745879.1	3411926.3	333952.8	-0.0	-0.00
25yr72hr	89.77	3745879.1	3413025.4	332853.7	-0.0	-0.00
25yr72hr	90.02	3745879.1	3414124.9	331754.2	-0.0	-0.00
25yr72hr	90.27	3745879.1	3415223.0	330656.1	-0.0	-0.00
25yr72hr	90.52	3745879.1	3416320.0	329559.1	-0.0	-0.00
25yr72hr	90.77	3745879.1	3417415.8	328463.2	-0.0	-0.00
25yr72hr	91.02	3745879.1	3418509.7	327369.3	-0.0	-0.00
25yr72hr	91.27	3745879.1	3419603.4	326275.6	-0.0	-0.00
25yr72hr	91.52	3745879.1	3420696.0	325183.1	-0.0	-0.00
25yr72hr	91.77	3745879.1	3421787.5	324091.6	-0.0	-0.00
25yr72hr	92.02	3745879.1	3422878.1	323000.9	-0.0	-0.00
25yr72hr	92.27	3745879.1	3423966.2	321912.8	-0.0	-0.00
25yr72hr	92.52	3745879.1	3425054.4	320824.7	-0.0	-0.00
25yr72hr	92.77	3745879.1	3426141.5	319737.6	-0.0	-0.00
25yr72hr	93.02	3745879.1	3427227.4	318651.7	-0.0	-0.00
25yr72hr	93.27	3745879.1	3428311.4	317567.7	-0.0	-0.00
25yr72hr	93.52	3745879.1	3429395.1	316484.0	-0.0	-0.00
25yr72hr	93.77	3745879.1	3430477.7	315401.3	-0.0	-0.00
25yr72hr	94.02	3745879.1	3431559.2	314319.8	-0.0	-0.00
25yr72hr	94.27	3745879.1	3432639.9	313239.1	-0.0	-0.00
25yr72hr	94.52	3745879.1	3433718.1	312161.0	-0.0	-0.00

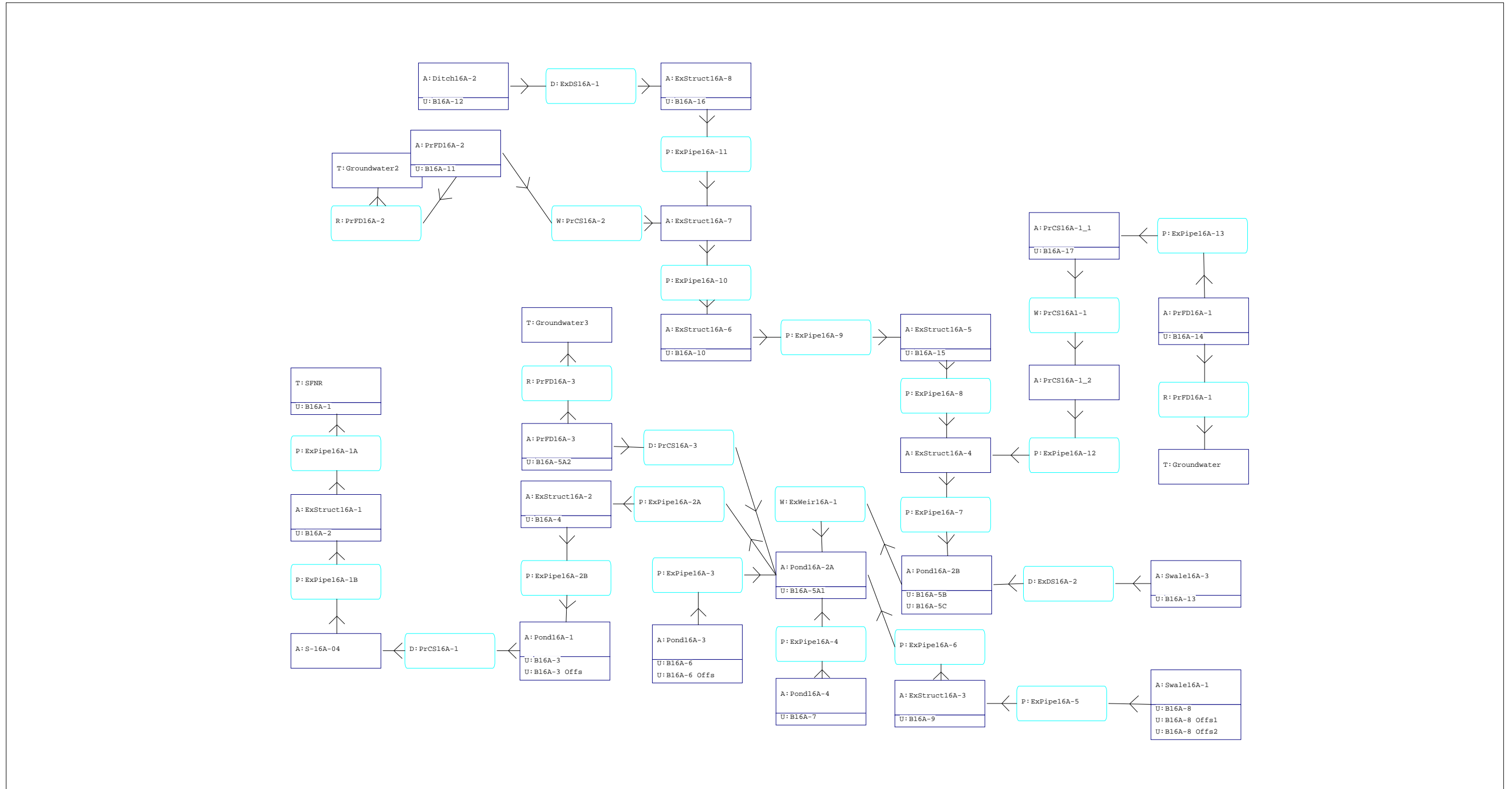
I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 PRE-DEVELOPMENT CONDITIONS
 MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	94.77	3745879.1	3434796.3	311082.8	-0.0	-0.00
25yr72hr	95.02	3745879.1	3435873.3	310005.7	-0.0	-0.00
25yr72hr	95.27	3745879.1	3436949.6	308929.5	-0.0	-0.00
25yr72hr	95.52	3745879.1	3438024.4	307854.6	-0.0	-0.00
25yr72hr	95.77	3745879.1	3439097.0	306782.0	-0.0	-0.00
25yr72hr	96.00	3745879.1	3440098.4	305780.7	-0.0	-0.00

ICPR: Post-Development

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 NODE-LINK DIAGRAM

- Nodes**
 A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole
- Basins**
 O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA
- Links**
 P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

=====
==== Basins =====
=====

Name: B16A-1 Node: SFNR Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 13.010 Time Shift(hrs): 0.00
Curve Number: 92.67 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-10 Node: ExStruct16A-6 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.580 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-11 Node: PrFD16A-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.700 Time Shift(hrs): 0.00
Curve Number: 75.47 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-12 Node: Ditch16A-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.810 Time Shift(hrs): 0.00
Curve Number: 56.13 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16A-13 Node: Swale16A-3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.740 Time Shift(hrs): 0.00
Curve Number: 70.04 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Name: B16A-14	Node: PrFD16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.790	Time Shift(hrs): 0.00	
Curve Number: 83.58	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-15	Node: ExStruct16A-5	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.570	Time Shift(hrs): 0.00	
Curve Number: 90.23	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-16	Node: ExStruct16A-8	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 3.330	Time Shift(hrs): 0.00	
Curve Number: 93.56	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-17	Node: PrCS16A-1_1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 10.980	Time Shift(hrs): 0.00	
Curve Number: 98.60	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-2	Node: ExStruct16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.680	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-3	Node: Pond16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	

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 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 17.050	Time Shift(hrs): 0.00
Curve Number: 77.02	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-3 Offs	Node: Pond16A-1	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 8.380	Time Shift(hrs): 0.00
Curve Number: 66.33	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-4	Node: ExStruct16A-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.330	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-5A1	Node: Pond16A-2A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 13.230	Time Shift(hrs): 0.00
Curve Number: 78.16	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-5A2	Node: PrFD16A-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.530	Time Shift(hrs): 0.00
Curve Number: 81.54	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-5B	Node: Pond16A-2B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 3.800	Time Shift(hrs): 0.00
Curve Number: 82.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

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DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: B16A-5C	Node: Pond16A-2B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.440	Time Shift(hrs): 0.00	
Curve Number: 94.72	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-6	Node: Pond16A-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.380	Time Shift(hrs): 0.00	
Curve Number: 75.39	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-6 Offs	Node: Pond16A-3	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.460	Time Shift(hrs): 0.00	
Curve Number: 63.73	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-7	Node: Pond16A-4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 3.010	Time Shift(hrs): 0.00	
Curve Number: 82.51	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-8	Node: Swale16A-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.020	Time Shift(hrs): 0.00	
Curve Number: 57.44	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16A-8 Offs1	Node: Swale16A-1	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	

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 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.850	Time Shift(hrs): 0.00
Curve Number: 71.71	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-8 Offs2	Node: Swale16A-1	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.470	Time Shift(hrs): 0.00
Curve Number: 61.38	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16A-9	Node: ExStruct16A-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 1.890	Time Shift(hrs): 0.00
Curve Number: 84.93	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

=====
 === Nodes =====
 =====

Name: Ditch16A-2	Base Flow(cfs): 0.000	Init Stage(ft): 3.000
Group: BASE		Warn Stage(ft): 7.000
Type: Stage/Area		

Stage(ft)	Area(ac)
3.000	0.0030
3.500	0.0320
4.500	0.1620
6.000	0.5620
7.000	0.8610

Name: ExStruct16A-1	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 6.000
Type: Stage/Area		

Stage(ft)	Area(ac)
-4.000	0.0006
6.000	0.0006

Name: ExStruct16A-2	Base Flow(cfs): 0.000	Init Stage(ft): 0.420
Group: BASE		Warn Stage(ft): 8.500
Type: Stage/Area		

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 DRAINAGE SYSTEM 16A
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Stage(ft)	Area(ac)
-1.000	0.0003
8.920	0.0003

Name: ExStruct16A-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.500
 Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0004
7.100	0.0004
7.500	0.0870

Name: ExStruct16A-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 16.160
 Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0100
16.160	0.0100

Name: ExStruct16A-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 13.880
 Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0100
13.880	0.0100

Name: ExStruct16A-6 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 14.870
 Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0100
14.870	0.0100

Name: ExStruct16A-7 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 8.500
 Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0040
7.000	0.0040

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: ExStruct16A-8 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 7.800
Type: Stage/Area

Stage(ft)	Area(ac)
0.000	0.0100
7.330	0.0100
7.800	0.0200

Name: Groundwater Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 0.430
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

Name: Groundwater2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 0.430
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

Name: Groundwater3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 0.430
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

Name: Pond16A-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 6.000
Type: Stage/Area

Stage(ft)	Area(ac)
0.420	0.0010
1.410	0.0010
1.420	1.9200
2.000	2.6847
2.800	3.0888
3.000	3.1898
4.000	3.8478
5.000	4.0668
6.000	4.4188

Name: Pond16A-2A Base Flow(cfs): 0.000 Init Stage(ft): 0.420
Group: BASE Warn Stage(ft): 7.000

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 DRAINAGE SYSTEM 16A
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 INPUT REPORT

1.420	4.30	1.72
1.420	7.80	4.05

 Name: PrFD16A-2 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	5.00	1.47
0.420	8.50	10.06
1.420	1.42	0.00
1.420	5.00	1.21
1.420	8.50	2.58

 Name: PrFD16A-3 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	9.00	0.38
0.420	13.20	2.70
1.420	1.42	0.00
1.420	9.00	0.35
1.420	13.20	0.64

==== Pipes =====

Name: ExPipe16A-10	From Node: ExStruct16A-7	Length(ft): 82.00
Group: BASE	To Node: ExStruct16A-6	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 36.00	36.00	36.00
Rise(in): 36.00	36.00	36.00
Invert(ft): 2.720	2.620	2.620
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
	Friction Equation: Automatic	Solution Algorithm: Most Restrictive
	Flow: Both	Entrance Loss Coef: 0.50
	Exit Loss Coef: 0.00	Bend Loss Coef: 0.00
	Outlet Ctrl Spec: Use dc or tw	Inlet Ctrl Spec: Use dc
	Stabilizer Option: None	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

 Name: ExPipe16A-11 From Node: ExStruct16A-8 Length(ft): 70.00
 Group: BASE To Node: ExStruct16A-7 Count: 1
 Friction Equation: Automatic
 Solution Algorithm: Most Restrictive
 Flow: Both
 Entrance Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00

	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 24.00	24.00	24.00
Rise(in): 24.00	24.00	24.00
Invert(ft): 2.920	2.720	2.720

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 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-12	From Node: PrCS16A-1_2	Length(ft): 646.00
Group: BASE	To Node: ExStruct16A-4	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 60.00	60.00	60.00
Rise(in): 60.00	60.00	60.00
Invert(ft): 0.920	0.320	0.320
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
		Entrance Loss Coef: 0.50
		Exit Loss Coef: 0.00
		Bend Loss Coef: 0.00
		Outlet Ctrl Spec: Use dc or tw
		Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-13	From Node: PrFD16A-1	Length(ft): 152.00
Group: BASE	To Node: PrCS16A-1_1	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 24.00	24.00	24.00
Rise(in): 24.00	24.00	24.00
Invert(ft): 0.920	0.320	0.320
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
		Entrance Loss Coef: 0.50
		Exit Loss Coef: 0.00
		Bend Loss Coef: 0.00
		Outlet Ctrl Spec: Use dc or tw
		Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-1A	From Node: ExStruct16A-1	Length(ft): 977.00
Group: BASE	To Node: SFNR	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 66.00	66.00	66.00
Rise(in): 66.00	66.00	66.00
Invert(ft): -3.080	-3.080	-3.080
Manning's N: 0.013000	0.013000	0.013000
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
		Entrance Loss Coef: 0.50
		Exit Loss Coef: 1.00
		Bend Loss Coef: 0.00
		Outlet Ctrl Spec: Use dc or tw

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: ExPipe16A-1B                    From Node: S-16A-04                    Length(ft): 588.00
Group: BASE                            To Node: ExStruct16A-1                    Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
      UPSTREAM                    DOWNSTREAM
Geometry: Circular                    Circular
Span(in): 66.00                    66.00                    Entrance Loss Coef: 0.50
Rise(in): 66.00                    66.00                    Exit Loss Coef: 0.00
Invert(ft): -3.080                    -3.080                    Bend Loss Coef: 0.00
Manning's N: 0.013000                    0.013000                    Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000                    0.000                    Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000                    0.000                    Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: ExPipe16A-2A                    From Node: Pond16A-2A                    Length(ft): 118.00
Group: BASE                            To Node: ExStruct16A-2                    Count: 2
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
      UPSTREAM                    DOWNSTREAM
Geometry: Circular                    Circular
Span(in): 42.00                    42.00                    Entrance Loss Coef: 0.50
Rise(in): 42.00                    42.00                    Exit Loss Coef: 0.00
Invert(ft): 0.920                    0.770                    Bend Loss Coef: 0.00
Manning's N: 0.013000                    0.013000                    Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000                    0.000                    Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000                    0.000                    Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: ExPipe16A-2B                    From Node: ExStruct16A-2                    Length(ft): 107.00
Group: BASE                            To Node: Pond16A-1                    Count: 2
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
      UPSTREAM                    DOWNSTREAM
Geometry: Circular                    Circular
Span(in): 42.00                    42.00                    Entrance Loss Coef: 0.50
Rise(in): 42.00                    42.00                    Exit Loss Coef: 0.00
Invert(ft): 0.770                    0.620                    Bend Loss Coef: 0.00
Manning's N: 0.013000                    0.013000                    Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000                    0.000                    Inlet Ctrl Spec: Use dc
  
```

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Bot Clip(in): 0.000 0.000 Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipel6A-3	From Node: Pond16A-3	Length(ft): 527.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.920	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Name: ExPipel6A-4	From Node: Pond16A-4	Length(ft): 277.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Horz Ellipse	Horz Ellipse	Entrance Loss Coef: 0.50
Span(in): 45.00	45.00	Exit Loss Coef: 0.00
Rise(in): 29.00	29.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Name: ExPipel6A-5	From Node: Swale16A-1	Length(ft): 106.00
Group: BASE	To Node: ExStruct16A-3	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 1.420	1.020	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

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 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-6	From Node: ExStruct16A-3	Length(ft): 78.00
Group: BASE	To Node: Pond16A-2A	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 30.00	30.00	Entrance Loss Coef: 0.50
Rise(in): 30.00	30.00	Exit Loss Coef: 0.00
Invert(ft): 1.020	0.920	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-7	From Node: ExStruct16A-4	Length(ft): 102.00
Group: BASE	To Node: Pond16A-2B	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 60.00	60.00	Entrance Loss Coef: 0.50
Rise(in): 60.00	60.00	Exit Loss Coef: 0.00
Invert(ft): 0.320	0.120	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16A-8	From Node: ExStruct16A-5	Length(ft): 78.00
Group: BASE	To Node: ExStruct16A-4	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 48.00	48.00	Entrance Loss Coef: 0.50
Rise(in): 48.00	48.00	Exit Loss Coef: 0.00
Invert(ft): 1.720	1.320	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
      Name: ExPipe16A-9      From Node: ExStruct16A-6      Length(ft): 136.00
      Group: BASE           To Node: ExStruct16A-5      Count: 1
                               Friction Equation: Automatic
                               Solution Algorithm: Most Restrictive
      UPSTREAM              DOWNSTREAM
      Geometry: Circular    Circular
      Span(in): 42.00       42.00
      Rise(in): 42.00      42.00
      Invert(ft): 2.520    2.420
      Manning's N: 0.013000 0.013000
      Top Clip(in): 0.000  0.000
      Bot Clip(in): 0.000  0.000
                               Entrance Loss Coef: 0.50
                               Exit Loss Coef: 0.00
                               Bend Loss Coef: 0.00
                               Outlet Ctrl Spec: Use dc or tw
                               Inlet Ctrl Spec: Use dc
                               Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

=====
==== Drop Structures =====
=====
      Name: ExDS16A-1      From Node: Ditch16A-2      Length(ft): 12.00
      Group: BASE           To Node: ExStruct16A-8      Count: 1
                               Friction Equation: Automatic
                               Solution Algorithm: Most Restrictive
      UPSTREAM              DOWNSTREAM
      Geometry: Circular    Circular
      Span(in): 15.00       15.00
      Rise(in): 15.00      15.00
      Invert(ft): 3.020    2.920
      Manning's N: 0.013000 0.013000
      Top Clip(in): 0.000  0.000
      Bot Clip(in): 0.000  0.000
                               Entrance Loss Coef: 0.500
                               Exit Loss Coef: 0.000
                               Outlet Ctrl Spec: Use dc or tw
                               Inlet Ctrl Spec: Use dc
                               Solution Incs: 10
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16A-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 27.00	Invert(ft): 5.420	
Rise(in): 36.00	Control Elev(ft): 5.420	

```

-----
      Name: ExDS16A-2      From Node: Swale16A-3      Length(ft): 88.00
  
```

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
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 INPUT REPORT

Group: BASE	To Node: Pond16A-2B	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft): 3.420	2.420	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16A-2 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 25.00	Invert(ft): 7.220	
Rise(in): 46.00	Control Elev(ft): 7.220	

Name: PrCS16A-1	From Node: Pond16A-1	Length(ft): 12.00
Group: BASE	To Node: S-16A-04	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 66.00	66.00	Flow: Both
Rise(in): 66.00	66.00	Entrance Loss Coef: 0.500
Invert(ft): -5.650	-6.000	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

INCLUDES A HORIZONTAL WEIR, A VERTICAL SLOT AND AN ORIFICE.

*** Weir 1 of 3 for Drop Structure PrCS16A-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 105.00	Invert(ft): 4.800	
Rise(in): 36.00	Control Elev(ft): 4.800	

*** Weir 2 of 3 for Drop Structure PrCS16A-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 6.00	Invert(ft): 0.420	
Rise(in): 6.00	Control Elev(ft): 0.420	

*** Weir 3 of 3 for Drop Structure PrCS16A-1 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600
 Span(in): 84.00 Invert(ft): 2.800
 Rise(in): 12.00 Control Elev(ft): 2.800

Name: PrCS16A-3 From Node: PrFD16A-3 Length(ft): 275.00
 Group: BASE To Node: Pond16A-2A Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 24.00	24.00	Flow: Both
Rise(in): 24.00	24.00	Entrance Loss Coef: 0.500
Invert(ft): 1.420	1.420	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure PrCS16A-3 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600
 Span(in): 54.00 Invert(ft): 9.000
 Rise(in): 16.00 Control Elev(ft): 9.000

=====
 Weirs =====
 =====

Name: ExWeir16A-1 From Node: Pond16A-2B
 Group: BASE To Node: Pond16A-2A
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 5.00
 Left Side Slope(h/v): 2.00
 Right Side Slope(h/v): 2.00
 Invert(ft): 3.920
 Control Elevation(ft): 3.920
 Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: PrCS16A-2 From Node: PrFD16A-2
 Group: BASE To Node: ExStruct16A-7

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Flow: Both Count: 1
 Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
 Rise(in): 16.00
 Invert(ft): 5.000
 Control Elevation(ft): 5.000

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

Name: PrCS16A1-1 From Node: PrCS16A-1_1
 Group: BASE To Node: PrCS16A-1_2
 Flow: Both Count: 1
 Type: Vertical: Mavis Geometry: Rectangular

Span(in): 84.00
 Rise(in): 53.00
 Invert(ft): 4.300
 Control Elevation(ft): 4.300

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

==== Rating Curves =====

Name: PrFD16A-1 From Node: PrFD16A-1 Count: 1
 Group: BASE To Node: Groundwater Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: PrFD16A-1	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: PrFD16A-2 From Node: PrFD16A-2 Count: 1
 Group: BASE To Node: Groundwater2 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: PrFD16A-2	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

Name: PrFD16A-3 From Node: PrFD16A-3 Count: 1
 Group: BASE To Node: Groundwater3 Flow: Both

TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1: PrFD16A-3	0.000	0.000
#2:	0.000	0.000
#3:	0.000	0.000
#4:	0.000	0.000

=====
==== Hydrology Simulations =====
=====

Name: 100Y01H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Override Defaults: Yes
Storm Duration(hrs): 1.00
 Rainfall File: Fdot-1
Rainfall Amount(in): 5.10

Time(hrs)	Print Inc(min)
1.000	1.00
1.330	1.00

Name: 100Y08H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Override Defaults: Yes
Storm Duration(hrs): 8.00
 Rainfall File: Fdot-8
Rainfall Amount(in): 9.60

Time(hrs)	Print Inc(min)
2.000	5.00
6.000	1.00
8.000	5.00
8.330	5.00

Name: 100Y24H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Override Defaults: Yes
Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10Y01H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Override Defaults: Yes
Storm Duration(hrs): 1.00
 Rainfall File: Fdot-1
Rainfall Amount(in): 3.60

Time(hrs)	Print Inc(min)
1.000	1.00
1.330	1.00

Name: 10Y08H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Override Defaults: Yes
 Storm Duration(hrs): 8.00
 Rainfall File: Fdot-8
 Rainfall Amount(in): 6.60

Time(hrs)	Print Inc(min)
2.000	5.00
6.000	1.00
8.000	5.00
8.330	5.00

Name: 10Y24H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 25Y72H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

=====
 === Routing Simulations ===
 =====

Name: 100Y01H Hydrology Sim: 100Y01H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Execute: No Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 25.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
1.000	1.000
25.000	15.000

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Group Run

 BASE Yes

 Name: 100Y08H Hydrology Sim: 100Y08H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post
 Execute: No Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 32.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

 2.000 5.000
 6.000 1.000
 8.000 5.000
 32.000 15.000

Group Run

 BASE Yes

 Name: 100Y24H Hydrology Sim: 100Y24H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post
 Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

 8.000 15.000
 10.000 5.000
 14.000 1.000
 16.000 5.000
 48.000 15.000

Group Run

 BASE Yes

 Name: 10Y01H Hydrology Sim: 10Y01H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post
 Execute: No Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Start Time(hrs): 0.000
 Min Calc Time(sec): 0.5000
 Boundary Stages:

End Time(hrs): 25.00
 Max Calc Time(sec): 60.0000
 Boundary Flows:

Time(hrs)	Print Inc(min)
1.000	1.000
25.000	15.000
Group	Run
-----	-----
BASE	Yes

 Name: 10Y08H Hydrology Sim: 10Y08H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post
 Execute: No Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 32.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
2.000	5.000
6.000	1.000
8.000	5.000
32.000	15.000
Group	Run
-----	-----
BASE	Yes

 Name: 10Y24H Hydrology Sim: 10Y24H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post
 Execute: Yes Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000
Group	Run
-----	-----
BASE	Yes

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: 25Y72H Hydrology Sim: 25Y72H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16A_ICPR Post

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 96.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
BASE	Yes

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
LINK CONNECTIVITY REPORT

Name	Group	From Node	To Node	Type	U/S Geometry	D/S Geometry	Flow Dir
ExPipe16A-10	BASE	ExStruct16A-7	ExStruct16A-6	Pipe	Circular	Circular	Both
ExPipe16A-11	BASE	ExStruct16A-8	ExStruct16A-7	Pipe	Circular	Circular	Both
ExPipe16A-12	BASE	PrCS16A-1_2	ExStruct16A-4	Pipe	Circular	Circular	Both
ExPipe16A-13	BASE	PrFD16A-1	PrCS16A-1_1	Pipe	Circular	Circular	Both
ExPipe16A-1A	BASE	ExStruct16A-1	SFNR	Pipe	Circular	Circular	Both
ExPipe16A-1B	BASE	S-16A-04	ExStruct16A-1	Pipe	Circular	Circular	Both
ExPipe16A-2A	BASE	Pond16A-2A	ExStruct16A-2	Pipe	Circular	Circular	Both
ExPipe16A-2B	BASE	ExStruct16A-2	Pond16A-1	Pipe	Circular	Circular	Both
ExPipe16A-3	BASE	Pond16A-3	Pond16A-2A	Pipe	Horz Ellipse	Horz Ellipse	Both
ExPipe16A-4	BASE	Pond16A-4	Pond16A-2A	Pipe	Horz Ellipse	Horz Ellipse	Both
ExPipe16A-5	BASE	Swale16A-1	ExStruct16A-3	Pipe	Circular	Circular	Both
ExPipe16A-6	BASE	ExStruct16A-3	Pond16A-2A	Pipe	Circular	Circular	Both
ExPipe16A-7	BASE	ExStruct16A-4	Pond16A-2B	Pipe	Circular	Circular	Both
ExPipe16A-8	BASE	ExStruct16A-5	ExStruct16A-4	Pipe	Circular	Circular	Both
ExPipe16A-9	BASE	ExStruct16A-6	ExStruct16A-5	Pipe	Circular	Circular	Both
ExWeir16A-1	BASE	Pond16A-2B	Pond16A-2A	Vertical WGO Fread	Trapezoidal		Both
PrCS16A-2	BASE	PrFD16A-2	ExStruct16A-7	Vertical WGO Mavis	Rectangular		Both
PrCS16A1-1	BASE	PrCS16A-1_1	PrCS16A-1_2	Vertical WGO Mavis	Rectangular		Both
ExDS16A-1	BASE	Ditch16A-2	ExStruct16A-8	Drop Structure	Circular	Circular	Both
--> slot	BASE	Ditch16A-2	ExStruct16A-8	Horizontal WGO	Rectangular		Both
ExDS16A-2	BASE	Swale16A-3	Pond16A-2B	Drop Structure	Circular	Circular	Both
--> slot	BASE	Swale16A-3	Pond16A-2B	Horizontal WGO	Rectangular		Both
PrCS16A-1	BASE	Pond16A-1	S-16A-04	Drop Structure	Circular	Circular	Both
--> slot	BASE	Pond16A-1	S-16A-04	Horizontal WGO	Rectangular		Both
--> slot	BASE	Pond16A-1	S-16A-04	Vertical WGO Mavis	Circular		Both
--> slot	BASE	Pond16A-1	S-16A-04	Vertical WGO Mavis	Rectangular		Both
PrCS16A-3	BASE	PrFD16A-3	Pond16A-2A	Drop Structure	Circular	Circular	Both
--> slot	BASE	PrFD16A-3	Pond16A-2A	Vertical WGO Mavis	Rectangular		Both
PrFD16A-1	BASE	PrFD16A-1	Groundwater	Rating Curve			Both
PrFD16A-2	BASE	PrFD16A-2	Groundwater2	Rating Curve			Both
PrFD16A-3	BASE	PrFD16A-3	Groundwater3	Rating Curve			Both

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Ditch16A-2	BASE	100Y24H	13.16	7.77	7.00	0.0018	47538	12.27	20.17	15.59	6.69
ExStruct16A-1	BASE	100Y24H	13.06	3.38	6.00	0.0037	941	13.04	115.68	13.06	115.67
ExStruct16A-2	BASE	100Y24H	12.99	6.54	8.50	-0.0069	152	12.87	84.80	12.87	84.78
ExStruct16A-3	BASE	100Y24H	12.97	7.27	7.50	-0.0066	1618	12.11	20.93	12.11	20.73
ExStruct16A-4	BASE	100Y24H	12.30	8.06	16.16	-0.0064	537	12.28	123.02	12.29	122.89
ExStruct16A-5	BASE	100Y24H	12.30	8.52	13.88	0.0065	455	12.35	50.68	12.35	51.40
ExStruct16A-6	BASE	100Y24H	12.33	8.89	14.87	0.0034	454	12.42	34.62	12.42	35.00
ExStruct16A-7	BASE	100Y24H	12.36	9.02	8.50	0.0103	184	12.47	21.03	12.47	21.14
ExStruct16A-8	BASE	100Y24H	12.34	9.55	7.80	0.0038	2495	12.25	14.95	12.30	12.38
Groundwater	BASE	100Y24H	0.00	0.42	0.43	0.0000	0	12.44	16.84	0.00	0.00
Groundwater2	BASE	100Y24H	0.00	0.42	0.43	0.0000	0	12.40	11.43	0.00	0.00
Groundwater3	BASE	100Y24H	0.00	0.42	0.43	0.0000	0	12.27	1.02	0.00	0.00
Pond16A-1	BASE	100Y24H	13.11	5.92	6.00	0.0021	191256	12.27	244.04	13.15	113.45
Pond16A-2A	BASE	100Y24H	12.95	7.19	7.00	0.0031	145073	12.27	275.31	12.89	84.14
Pond16A-2B	BASE	100Y24H	12.89	7.27	9.70	-0.0030	18024	12.28	165.76	12.32	163.40
Pond16A-3	BASE	100Y24H	13.00	7.21	5.25	0.0029	24150	12.27	19.84	13.61	5.99
Pond16A-4	BASE	100Y24H	12.99	7.21	5.25	0.0030	25947	12.27	22.88	13.54	6.51
PrCS16A-1_1	BASE	100Y24H	12.23	9.17	9.88	0.0342	443	12.27	74.57	12.23	100.35
PrCS16A-1_2	BASE	100Y24H	12.29	8.91	9.88	-0.0307	516	12.23	100.35	12.23	74.53
PrFD16A-1	BASE	100Y24H	12.44	8.43	7.95	0.0050	19527	12.27	21.37	12.60	20.02
PrFD16A-2	BASE	100Y24H	12.40	9.06	8.50	0.0042	23396	12.27	26.48	12.60	25.19
PrFD16A-3	BASE	100Y24H	12.27	10.16	13.20	0.0027	261	12.27	19.10	12.27	19.09
S-16A-04	BASE	100Y24H	13.09	4.58	5.00	0.0050	194	13.15	113.45	13.15	113.45
SFNR	BASE	100Y24H	0.00	0.42	0.43	0.0000	2585	12.30	161.18	0.00	0.00
Swale16A-1	BASE	100Y24H	13.14	7.37	5.30	0.0037	36763	12.27	31.38	11.97	9.34
Swale16A-3	BASE	100Y24H	12.32	7.70	8.50	0.0009	6224	12.27	11.70	12.32	10.97
Ditch16A-2	BASE	10Y24H	12.80	6.44	7.00	0.0023	30226	12.28	9.60	13.19	5.82
ExStruct16A-1	BASE	10Y24H	13.78	0.95	6.00	-0.0024	3961	13.76	47.71	13.78	47.70
ExStruct16A-2	BASE	10Y24H	13.49	5.02	8.50	-0.0073	152	12.42	74.15	12.43	73.95
ExStruct16A-3	BASE	10Y24H	13.00	5.24	7.50	-0.0064	123	12.15	19.35	12.15	19.16
ExStruct16A-4	BASE	10Y24H	12.30	6.94	16.16	0.0068	537	12.28	86.55	12.28	86.43
ExStruct16A-5	BASE	10Y24H	12.30	7.21	13.88	0.0068	455	12.27	38.83	12.28	38.71
ExStruct16A-6	BASE	10Y24H	12.30	7.48	14.87	-0.0043	454	12.21	26.32	12.33	26.20
ExStruct16A-7	BASE	10Y24H	12.31	7.59	8.50	0.0098	184	12.36	14.05	12.37	14.24
ExStruct16A-8	BASE	10Y24H	12.30	7.76	7.80	-0.0044	836	12.90	9.08	12.85	9.40
Groundwater	BASE	10Y24H	0.00	0.42	0.43	0.0000	0	12.38	12.74	0.00	0.00
Groundwater2	BASE	10Y24H	0.00	0.42	0.43	0.0000	0	12.31	7.95	0.00	0.00
Groundwater3	BASE	10Y24H	0.00	0.42	0.43	0.0000	0	12.27	0.83	0.00	0.00
Pond16A-1	BASE	10Y24H	13.77	4.90	6.00	0.0026	176221	12.28	167.47	13.77	46.80
Pond16A-2A	BASE	10Y24H	13.08	5.19	7.00	0.0029	122204	12.28	186.05	12.43	72.97
Pond16A-2B	BASE	10Y24H	12.32	6.38	9.70	0.0018	16847	12.28	112.36	12.32	109.99
Pond16A-3	BASE	10Y24H	13.10	5.20	5.25	0.0031	19902	12.27	11.35	13.24	2.23
Pond16A-4	BASE	10Y24H	13.09	5.20	5.25	0.0029	17811	12.27	13.94	13.16	2.51
PrCS16A-1_1	BASE	10Y24H	12.29	7.55	9.88	-0.0040	443	12.27	48.25	12.27	48.06
PrCS16A-1_2	BASE	10Y24H	12.29	7.29	9.88	0.0050	516	12.27	48.06	12.27	47.87

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
PrFD16A-1	BASE	10Y24H	12.38	7.28	7.95	-0.0132	13967	12.27	13.10	12.52	17.44
PrFD16A-2	BASE	10Y24H	12.31	7.64	8.50	0.0073	4420	12.27	15.38	12.37	15.99
PrFD16A-3	BASE	10Y24H	12.27	9.82	13.20	0.0023	261	12.27	11.57	12.27	11.56
S-16A-04	BASE	10Y24H	13.78	1.14	5.00	0.0036	1497	13.77	46.80	13.78	46.80
SFNR	BASE	10Y24H	0.00	0.42	0.43	0.0000	2585	12.30	89.14	0.00	0.00
Swale16A-1	BASE	10Y24H	12.88	5.31	5.30	0.0041	10375	12.27	16.02	12.14	11.11
Swale16A-3	BASE	10Y24H	12.30	7.52	8.50	0.0010	5384	12.27	6.50	12.30	6.33
Ditch16A-2	BASE	25Y72H	60.73	7.53	7.00	0.0020	44434	60.02	17.48	62.76	6.62
ExStruct16A-1	BASE	25Y72H	60.70	3.04	6.00	0.0038	941	60.68	108.86	60.70	108.85
ExStruct16A-2	BASE	25Y72H	60.69	6.27	8.50	0.0062	152	60.59	76.69	60.59	76.68
ExStruct16A-3	BASE	25Y72H	60.65	6.89	7.50	-0.0064	123	59.88	17.66	59.88	17.51
ExStruct16A-4	BASE	25Y72H	60.06	7.41	16.16	-0.0054	537	60.04	101.32	60.04	101.21
ExStruct16A-5	BASE	25Y72H	60.06	7.78	13.88	0.0064	455	60.07	44.87	60.07	44.91
ExStruct16A-6	BASE	25Y72H	60.07	8.12	14.87	0.0034	454	60.13	30.71	60.13	31.06
ExStruct16A-7	BASE	25Y72H	60.09	8.27	8.50	0.0097	184	60.18	18.99	60.18	19.12
ExStruct16A-8	BASE	25Y72H	60.08	8.62	7.80	0.0047	1639	60.02	11.09	60.05	9.88
Groundwater	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.16	14.52	0.00	0.00
Groundwater2	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.12	9.63	0.00	0.00
Groundwater3	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.02	0.92	0.00	0.00
Pond16A-1	BASE	25Y72H	60.73	5.75	6.00	0.0020	188616	60.03	203.43	60.74	106.62
Pond16A-2A	BASE	25Y72H	60.67	6.80	7.00	0.0031	140589	60.03	223.11	60.62	76.10
Pond16A-2B	BASE	25Y72H	60.61	6.87	9.70	0.0025	17327	60.04	135.67	60.07	133.24
Pond16A-3	BASE	25Y72H	60.70	6.82	5.25	0.0029	23318	60.02	15.97	61.34	5.62
Pond16A-4	BASE	25Y72H	60.70	6.82	5.25	0.0030	24352	60.02	17.97	61.27	5.94
PrCS16A-1_1	BASE	25Y72H	60.05	8.18	9.88	0.0048	443	60.02	57.17	60.02	56.92
PrCS16A-1_2	BASE	25Y72H	60.05	7.90	9.88	0.0054	516	60.02	56.92	60.03	56.74
PrFD16A-1	BASE	25Y72H	60.16	7.78	7.95	0.0050	16381	60.02	16.74	60.27	17.01
PrFD16A-2	BASE	25Y72H	60.12	8.33	8.50	-0.0073	13601	60.02	21.19	60.22	21.18
PrFD16A-3	BASE	25Y72H	60.02	9.99	13.20	0.0021	261	60.02	15.03	60.02	15.03
S-16A-04	BASE	25Y72H	60.71	4.10	5.00	0.0050	194	60.74	106.62	60.75	106.63
SFNR	BASE	25Y72H	0.00	0.42	0.43	0.0000	2585	60.07	142.82	0.00	0.00
Swale16A-1	BASE	25Y72H	60.74	7.02	5.30	0.0029	32238	60.02	26.46	59.75	8.26
Swale16A-3	BASE	25Y72H	60.05	7.61	8.50	0.0005	5817	60.02	9.53	60.05	9.36

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExDS16A-1	BASE	100Y24H	15.59	6.69	0.149	13.16	7.77	12.34	9.55
ExDS16A-2	BASE	100Y24H	12.32	10.97	-0.011	12.32	7.70	12.89	7.27
ExPipe16A-10	BASE	100Y24H	12.47	21.14	4.963	12.36	9.02	12.33	8.89
ExPipe16A-11	BASE	100Y24H	12.30	12.38	-0.626	12.34	9.55	12.36	9.02
ExPipe16A-12	BASE	100Y24H	12.23	74.53	11.675	12.29	8.91	12.30	8.06
ExPipe16A-13	BASE	100Y24H	12.63	4.03	-0.294	12.44	8.43	12.23	9.17
ExPipe16A-1A	BASE	100Y24H	13.06	115.67	-3.859	13.06	3.38	0.00	0.42
ExPipe16A-1B	BASE	100Y24H	13.15	113.45	9.228	13.09	4.58	13.06	3.38
ExPipe16A-2A	BASE	100Y24H	12.89	84.14	6.244	12.95	7.19	12.99	6.54
ExPipe16A-2B	BASE	100Y24H	12.87	84.78	2.854	12.99	6.54	13.11	5.92
ExPipe16A-3	BASE	100Y24H	13.61	5.99	0.284	13.00	7.21	12.95	7.19
ExPipe16A-4	BASE	100Y24H	13.54	6.51	-0.181	12.99	7.21	12.95	7.19
ExPipe16A-5	BASE	100Y24H	11.97	9.34	1.775	13.14	7.37	12.97	7.27
ExPipe16A-6	BASE	100Y24H	12.11	20.73	2.775	12.97	7.27	12.95	7.19
ExPipe16A-7	BASE	100Y24H	12.29	122.89	15.535	12.30	8.06	12.89	7.27
ExPipe16A-8	BASE	100Y24H	12.35	51.40	13.898	12.30	8.52	12.30	8.06
ExPipe16A-9	BASE	100Y24H	12.42	35.00	5.183	12.33	8.89	12.30	8.52
ExWeir16A-1	BASE	100Y24H	12.32	163.40	-0.135	12.89	7.27	12.95	7.19
PrCS16A-1	BASE	100Y24H	13.15	113.45	0.139	13.11	5.92	13.09	4.58
PrCS16A-2	BASE	100Y24H	12.62	14.50	-3.857	12.40	9.06	12.36	9.02
PrCS16A-3	BASE	100Y24H	12.27	18.07	0.027	12.27	10.16	12.95	7.19
PrCS16A1-1	BASE	100Y24H	12.23	100.35	-34.883	12.23	9.17	12.29	8.91
PrFD16A-1	BASE	100Y24H	12.44	16.84	0.018	12.44	8.43	0.00	0.42
PrFD16A-2	BASE	100Y24H	12.40	11.43	0.010	12.40	9.06	0.00	0.42
PrFD16A-3	BASE	100Y24H	12.27	1.02	0.001	12.27	10.16	0.00	0.42
ExDS16A-1	BASE	10Y24H	13.19	5.82	0.059	12.80	6.44	12.30	7.76
ExDS16A-2	BASE	10Y24H	12.30	6.33	-0.010	12.30	7.52	12.32	6.38
ExPipe16A-10	BASE	10Y24H	12.37	14.24	5.086	12.31	7.59	12.30	7.48
ExPipe16A-11	BASE	10Y24H	12.85	9.40	1.126	12.30	7.76	12.31	7.59
ExPipe16A-12	BASE	10Y24H	12.27	47.87	10.061	12.29	7.29	12.30	6.94
ExPipe16A-13	BASE	10Y24H	12.59	6.01	-1.480	12.38	7.28	12.29	7.55
ExPipe16A-1A	BASE	10Y24H	13.78	47.70	3.144	13.78	0.95	0.00	0.42
ExPipe16A-1B	BASE	10Y24H	13.78	46.80	6.832	13.78	1.14	13.78	0.95
ExPipe16A-2A	BASE	10Y24H	12.43	72.97	6.290	13.08	5.19	13.49	5.02
ExPipe16A-2B	BASE	10Y24H	12.43	73.95	-2.862	13.49	5.02	13.77	4.90
ExPipe16A-3	BASE	10Y24H	13.24	2.23	0.094	13.10	5.20	13.08	5.19
ExPipe16A-4	BASE	10Y24H	13.16	2.51	-0.253	13.09	5.20	13.08	5.19
ExPipe16A-5	BASE	10Y24H	12.14	11.11	1.707	12.88	5.31	13.00	5.24
ExPipe16A-6	BASE	10Y24H	12.15	19.16	2.254	13.00	5.24	13.08	5.19
ExPipe16A-7	BASE	10Y24H	12.28	86.43	19.060	12.30	6.94	12.32	6.38
ExPipe16A-8	BASE	10Y24H	12.28	38.71	12.104	12.30	7.21	12.30	6.94
ExPipe16A-9	BASE	10Y24H	12.33	26.20	5.242	12.30	7.48	12.30	7.21
ExWeir16A-1	BASE	10Y24H	12.32	109.99	-0.120	12.32	6.38	13.08	5.19
PrCS16A-1	BASE	10Y24H	13.77	46.80	0.085	13.77	4.90	13.78	1.14
PrCS16A-2	BASE	10Y24H	12.00	8.35	3.686	12.31	7.64	12.31	7.59
PrCS16A-3	BASE	10Y24H	12.27	10.73	-0.025	12.27	9.82	13.08	5.19

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
PrCS16A1-1	BASE	10Y24H	12.27	48.06	-0.329	12.29	7.55	12.29	7.29
PrFD16A-1	BASE	10Y24H	12.38	12.74	-0.047	12.38	7.28	0.00	0.42
PrFD16A-2	BASE	10Y24H	12.31	7.95	0.018	12.31	7.64	0.00	0.42
PrFD16A-3	BASE	10Y24H	12.27	0.83	0.001	12.27	9.82	0.00	0.42
ExDS16A-1	BASE	25Y72H	62.76	6.62	-0.111	60.73	7.53	60.08	8.62
ExDS16A-2	BASE	25Y72H	60.05	9.36	-0.014	60.05	7.61	60.61	6.87
ExPipe16A-10	BASE	25Y72H	60.18	19.12	3.635	60.09	8.27	60.07	8.12
ExPipe16A-11	BASE	25Y72H	60.05	9.88	-0.898	60.08	8.62	60.09	8.27
ExPipe16A-12	BASE	25Y72H	60.03	56.74	10.279	60.05	7.90	60.06	7.41
ExPipe16A-13	BASE	25Y72H	60.29	3.02	-0.207	60.16	7.78	60.05	8.18
ExPipe16A-1A	BASE	25Y72H	60.70	108.85	-2.946	60.70	3.04	0.00	0.42
ExPipe16A-1B	BASE	25Y72H	60.75	106.63	6.574	60.71	4.10	60.70	3.04
ExPipe16A-2A	BASE	25Y72H	60.62	76.10	6.261	60.67	6.80	60.69	6.27
ExPipe16A-2B	BASE	25Y72H	60.59	76.68	7.683	60.69	6.27	60.73	5.75
ExPipe16A-3	BASE	25Y72H	61.34	5.62	0.146	60.70	6.82	60.67	6.80
ExPipe16A-4	BASE	25Y72H	61.27	5.94	-0.214	60.70	6.82	60.67	6.80
ExPipe16A-5	BASE	25Y72H	59.75	8.26	2.019	60.74	7.02	60.65	6.89
ExPipe16A-6	BASE	25Y72H	59.88	17.51	2.854	60.65	6.89	60.67	6.80
ExPipe16A-7	BASE	25Y72H	60.04	101.21	16.555	60.06	7.41	60.61	6.87
ExPipe16A-8	BASE	25Y72H	60.07	44.91	13.120	60.06	7.78	60.06	7.41
ExPipe16A-9	BASE	25Y72H	60.13	31.06	3.941	60.07	8.12	60.06	7.78
ExWeir16A-1	BASE	25Y72H	60.07	133.24	-0.200	60.61	6.87	60.67	6.80
PrCS16A-1	BASE	25Y72H	60.74	106.62	0.144	60.73	5.75	60.71	4.10
PrCS16A-2	BASE	25Y72H	60.23	11.95	-3.503	60.12	8.33	60.09	8.27
PrCS16A-3	BASE	25Y72H	60.02	14.10	0.027	60.02	9.99	60.67	6.80
PrCS16A1-1	BASE	25Y72H	60.02	56.92	-0.870	60.05	8.18	60.05	7.90
PrFD16A-1	BASE	25Y72H	60.16	14.52	0.018	60.16	7.78	0.00	0.42
PrFD16A-2	BASE	25Y72H	60.12	9.63	-0.018	60.12	8.33	0.00	0.42
PrFD16A-3	BASE	25Y72H	60.02	0.92	0.001	60.02	9.99	0.00	0.42

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100Y24H	B16A-1	BASE	12.27	104.11	12.591	594620
100Y24H	B16A-10	BASE	12.27	20.88	13.495	126390
100Y24H	B16A-11	BASE	12.27	26.48	10.252	137699
100Y24H	B16A-12	BASE	12.27	20.17	7.211	99733
100Y24H	B16A-13	BASE	12.27	11.70	9.445	59657
100Y24H	B16A-14	BASE	12.27	21.37	11.395	115403
100Y24H	B16A-15	BASE	12.27	20.39	12.278	114544
100Y24H	B16A-16	BASE	12.27	26.72	12.703	153558
100Y24H	B16A-17	BASE	12.27	88.82	13.327	531164
100Y24H	B16A-2	BASE	12.27	13.59	13.495	82301
100Y24H	B16A-3	BASE	12.27	123.90	10.476	648403
100Y24H	B16A-3 Offs	BASE	12.27	53.53	8.873	269910
100Y24H	B16A-4	BASE	12.27	2.67	13.495	16166
100Y24H	B16A-5A1	BASE	12.27	97.15	10.639	510961
100Y24H	B16A-5A2	BASE	12.27	19.10	11.114	102073
100Y24H	B16A-5B	BASE	12.27	28.79	11.178	154188
100Y24H	B16A-5C	BASE	12.27	3.54	12.849	20522
100Y24H	B16A-6	BASE	12.27	17.02	10.241	88474
100Y24H	B16A-6 Offs	BASE	12.27	2.82	8.462	14130
100Y24H	B16A-7	BASE	12.27	22.89	11.248	122901
100Y24H	B16A-8	BASE	12.27	11.01	7.432	54496
100Y24H	B16A-8 Offs1	BASE	12.27	5.84	9.697	29920
100Y24H	B16A-8 Offs2	BASE	12.27	14.54	8.083	72473
100Y24H	B16A-9	BASE	12.27	14.60	11.578	79432
10Y24H	B16A-1	BASE	12.27	66.60	7.865	371428
10Y24H	B16A-10	BASE	12.27	13.53	8.747	81920
10Y24H	B16A-11	BASE	12.27	15.38	5.778	77610
10Y24H	B16A-12	BASE	12.29	9.61	3.442	47598
10Y24H	B16A-13	BASE	12.27	6.50	5.118	32329
10Y24H	B16A-14	BASE	12.27	13.11	6.764	68505
10Y24H	B16A-15	BASE	12.27	12.93	7.570	70622
10Y24H	B16A-16	BASE	12.27	17.14	7.972	96368
10Y24H	B16A-17	BASE	12.27	57.53	8.579	341937
10Y24H	B16A-2	BASE	12.27	8.81	8.747	53343
10Y24H	B16A-3	BASE	12.27	72.79	5.967	369304
10Y24H	B16A-3 Offs	BASE	12.27	28.73	4.668	142010
10Y24H	B16A-4	BASE	12.27	1.73	8.747	10478
10Y24H	B16A-5A1	BASE	12.27	57.55	6.106	293220
10Y24H	B16A-5A2	BASE	12.27	11.57	6.516	59846
10Y24H	B16A-5B	BASE	12.27	17.49	6.572	90658
10Y24H	B16A-5C	BASE	12.27	2.28	8.112	12957
10Y24H	B16A-6	BASE	12.27	9.88	5.769	49838
10Y24H	B16A-6 Offs	BASE	12.27	1.47	4.354	7270
10Y24H	B16A-7	BASE	12.27	13.95	6.634	72488
10Y24H	B16A-8	BASE	12.27	5.33	3.598	26381
10Y24H	B16A-8 Offs1	BASE	12.27	3.29	5.321	16419
10Y24H	B16A-8 Offs2	BASE	12.27	7.40	4.070	36496
10Y24H	B16A-9	BASE	12.27	9.02	6.928	47531
25Y72H	B16A-1	BASE	60.02	80.34	13.089	618147
25Y72H	B16A-10	BASE	60.02	16.04	13.995	131070
25Y72H	B16A-11	BASE	60.02	21.20	10.732	144145
25Y72H	B16A-12	BASE	60.02	17.50	7.635	105588
25Y72H	B16A-13	BASE	60.02	9.54	9.914	62617
25Y72H	B16A-14	BASE	60.02	16.75	11.886	120380
25Y72H	B16A-15	BASE	60.02	15.79	12.775	119180
25Y72H	B16A-16	BASE	60.02	20.60	13.202	159584
25Y72H	B16A-17	BASE	60.02	68.25	13.826	551078
25Y72H	B16A-2	BASE	60.02	10.45	13.995	85348
25Y72H	B16A-3	BASE	60.02	98.74	10.959	678271
25Y72H	B16A-3 Offs	BASE	60.02	44.26	9.332	283875
25Y72H	B16A-4	BASE	60.02	2.05	13.995	16765
25Y72H	B16A-5A1	BASE	60.02	77.17	11.124	534224
25Y72H	B16A-5A2	BASE	60.02	15.04	11.603	106564
25Y72H	B16A-5B	BASE	60.02	22.64	11.668	160943
25Y72H	B16A-5C	BASE	60.02	2.73	13.348	21319
25Y72H	B16A-6	BASE	60.02	13.63	10.720	92619
25Y72H	B16A-6 Offs	BASE	60.02	2.36	8.913	14883

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
25Y72H	B16A-7	BASE	60.02	17.98	11.738	128258
25Y72H	B16A-8	BASE	60.02	9.48	7.861	57640
25Y72H	B16A-8 Offs1	BASE	60.02	4.73	10.170	31378
25Y72H	B16A-8 Offs2	BASE	60.02	12.28	8.527	76450
25Y72H	B16A-9	BASE	60.02	11.41	12.071	82813

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	0.00	0.0	0.0	0.0	0.0	0.00
10Y24H	0.25	91.6	34.4	57.2	0.0	0.00
10Y24H	0.50	361.1	127.7	233.4	0.0	0.00
10Y24H	0.75	770.1	247.6	522.5	-0.0	-0.00
10Y24H	1.00	1350.9	378.4	972.4	0.0	0.00
10Y24H	1.25	2055.9	560.9	1494.9	-0.0	-0.00
10Y24H	1.50	2868.4	859.1	2009.4	-0.0	-0.00
10Y24H	1.75	3754.6	1273.3	2481.3	-0.0	-0.00
10Y24H	2.00	4746.2	1789.4	2956.9	-0.0	-0.00
10Y24H	2.25	5900.2	2415.6	3484.6	-0.0	-0.00
10Y24H	2.50	7164.0	3128.3	4035.7	-0.0	-0.00
10Y24H	2.75	8369.6	3896.0	4473.6	-0.0	-0.00
10Y24H	3.00	9564.4	4682.8	4881.6	-0.0	-0.00
10Y24H	3.25	10953.9	5531.6	5422.3	-0.0	-0.00
10Y24H	3.50	12421.4	6439.4	5982.0	-0.0	-0.00
10Y24H	3.75	13948.0	7396.3	6551.8	-0.0	-0.00
10Y24H	4.00	15506.6	8392.7	7113.9	-0.0	-0.00
10Y24H	4.25	17266.8	9446.4	7820.3	-0.0	-0.00
10Y24H	4.50	19141.6	10576.2	8565.5	-0.0	-0.00
10Y24H	4.75	20916.3	11723.4	9192.8	-0.0	-0.00
10Y24H	5.00	22912.7	12920.7	9992.0	-0.0	-0.00
10Y24H	5.25	24980.9	14176.0	10804.9	-0.0	-0.00
10Y24H	5.50	27126.9	15461.5	11665.4	-0.0	-0.00
10Y24H	5.75	29531.2	16823.2	12708.0	-0.0	-0.00
10Y24H	6.00	32109.8	18252.3	13857.5	-0.0	-0.00
10Y24H	6.25	34933.1	19779.5	15153.6	0.0	0.00
10Y24H	6.50	37875.6	21410.2	16465.4	0.0	0.00
10Y24H	6.75	41203.0	23162.7	18040.3	0.0	0.00
10Y24H	7.00	44791.0	25081.8	19709.2	0.0	0.00
10Y24H	7.25	48610.8	27182.8	21428.0	0.0	0.00
10Y24H	7.50	53170.8	29587.2	23583.7	-0.0	-0.00
10Y24H	7.75	58797.5	32265.4	26532.1	-0.0	-0.00
10Y24H	8.00	65936.0	35330.9	30605.1	-0.0	-0.00
10Y24H	8.25	73774.3	38828.9	34945.3	-0.0	-0.00
10Y24H	8.33	76369.3	39992.7	36376.6	-0.0	-0.00
10Y24H	8.42	79100.0	41172.0	37927.9	-0.0	-0.00
10Y24H	8.50	82009.5	42376.7	39632.7	-0.0	-0.00
10Y24H	8.58	85048.2	43595.2	41453.0	-0.0	-0.00
10Y24H	8.67	88210.0	44830.4	43379.6	-0.0	-0.00
10Y24H	8.75	91477.3	46081.6	45395.7	-0.0	-0.00
10Y24H	8.83	94844.6	47341.5	47503.1	-0.0	-0.00
10Y24H	8.92	98389.4	48627.2	49762.2	-0.0	-0.00
10Y24H	9.00	102069.1	49923.6	52145.5	-0.0	-0.00
10Y24H	9.08	105889.9	51238.0	54652.0	-0.0	-0.00
10Y24H	9.17	109845.5	52573.3	57272.2	-0.0	-0.00
10Y24H	9.25	113873.3	53913.7	59959.6	-0.0	-0.00

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	9.33	117989.0	55266.3	62722.7	-0.0	-0.00
10Y24H	9.42	122209.6	56635.4	65574.3	-0.0	-0.00
10Y24H	9.50	126511.8	58014.9	68496.9	-0.0	-0.00
10Y24H	9.58	130934.3	59404.9	71529.4	-0.0	-0.00
10Y24H	9.67	135647.4	60829.8	74817.6	-0.0	-0.00
10Y24H	9.75	140633.9	62280.5	78353.3	-0.0	-0.00
10Y24H	9.83	145812.5	63756.1	82056.3	-0.0	-0.00
10Y24H	9.92	151044.0	65240.9	85803.1	-0.0	-0.00
10Y24H	10.00	156292.4	66730.4	89562.0	-0.0	-0.00
10Y24H	10.02	157347.6	67029.3	90318.3	-0.0	-0.00
10Y24H	10.03	158407.7	67328.7	91079.0	-0.0	-0.00
10Y24H	10.05	159475.2	67628.9	91846.4	-0.0	-0.00
10Y24H	10.07	160553.2	67930.0	92623.2	-0.0	-0.00
10Y24H	10.08	161646.2	68232.4	93413.8	-0.0	-0.00
10Y24H	10.10	162783.3	68543.3	94240.1	-0.0	-0.00
10Y24H	10.12	163917.0	68849.3	95067.7	-0.0	-0.00
10Y24H	10.13	165072.3	69157.2	95915.1	-0.0	-0.00
10Y24H	10.15	166232.9	69463.6	96769.3	-0.0	-0.00
10Y24H	10.17	167445.2	69779.6	97665.6	-0.0	-0.00
10Y24H	10.18	168655.1	70091.8	98563.3	-0.0	-0.00
10Y24H	10.20	169899.2	70410.3	99488.9	-0.0	-0.00
10Y24H	10.22	171154.2	70728.9	100425.3	-0.0	-0.00
10Y24H	10.23	172420.3	71048.0	101372.3	-0.0	-0.00
10Y24H	10.25	173691.1	71366.3	102324.8	-0.0	-0.00
10Y24H	10.27	175002.0	71693.6	103308.4	-0.0	-0.00
10Y24H	10.28	176287.0	72013.3	104273.7	-0.0	-0.00
10Y24H	10.30	177616.0	72342.4	105273.5	-0.0	-0.00
10Y24H	10.32	178934.3	72667.6	106266.8	-0.0	-0.00
10Y24H	10.33	180269.1	72995.4	107273.7	-0.0	-0.00
10Y24H	10.35	181616.6	73325.1	108291.5	-0.0	-0.00
10Y24H	10.37	182983.4	73658.4	109325.0	-0.0	-0.00
10Y24H	10.38	184334.7	73986.9	110347.9	-0.0	-0.00
10Y24H	10.40	185707.9	74319.7	111388.3	-0.0	-0.00
10Y24H	10.42	187089.8	74653.6	112436.1	-0.0	-0.00
10Y24H	10.43	188461.2	74984.2	113477.0	-0.0	-0.00
10Y24H	10.45	189835.0	75314.5	114520.5	-0.0	-0.00
10Y24H	10.47	191228.4	75648.8	115579.6	-0.0	-0.00
10Y24H	10.48	192623.5	75982.8	116640.6	-0.0	-0.00
10Y24H	10.50	194032.9	76319.7	117713.3	-0.0	-0.00
10Y24H	10.52	195440.4	76655.3	118785.0	-0.0	-0.00
10Y24H	10.53	196861.8	76993.4	119868.5	-0.0	-0.00
10Y24H	10.55	198306.2	77335.3	120970.9	-0.0	-0.00
10Y24H	10.57	199757.4	77676.7	122080.6	-0.0	-0.00
10Y24H	10.58	201210.0	78015.7	123194.3	-0.0	-0.00
10Y24H	10.60	202713.2	78362.8	124350.4	-0.0	-0.00
10Y24H	10.62	204214.5	78705.4	125509.0	-0.0	-0.00

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	10.63	205775.4	79057.9	126717.5	-0.0	-0.00
10Y24H	10.65	207335.5	79406.4	127929.1	-0.0	-0.00
10Y24H	10.67	208942.7	79761.9	129180.8	-0.0	-0.00
10Y24H	10.68	210564.0	80117.6	130446.5	-0.0	-0.00
10Y24H	10.70	212213.3	80476.5	131736.8	-0.0	-0.00
10Y24H	10.72	213874.5	80834.9	133039.6	-0.0	-0.00
10Y24H	10.73	215563.7	81198.2	134365.5	0.0	0.00
10Y24H	10.75	217282.7	81565.3	135717.4	0.0	0.00
10Y24H	10.77	219022.3	81934.7	137087.5	0.0	0.00
10Y24H	10.78	220754.3	82300.4	138453.8	0.0	0.00
10Y24H	10.80	222522.3	82671.1	139851.3	-0.0	-0.00
10Y24H	10.82	224296.3	83040.9	141255.4	-0.0	-0.00
10Y24H	10.83	226106.7	83415.6	142691.1	-0.0	-0.00
10Y24H	10.85	227955.9	83795.0	144161.0	-0.0	-0.00
10Y24H	10.87	229832.7	84176.9	145655.8	-0.0	-0.00
10Y24H	10.88	231733.8	84560.8	147173.0	-0.0	-0.00
10Y24H	10.90	233646.1	84944.3	148701.8	-0.0	-0.00
10Y24H	10.92	235592.2	85331.9	150260.3	-0.0	-0.00
10Y24H	10.93	237573.7	85724.5	151849.2	-0.0	-0.00
10Y24H	10.95	239564.4	86116.2	153448.2	-0.0	-0.00
10Y24H	10.97	241568.9	86510.1	155058.8	-0.0	-0.00
10Y24H	10.98	243592.4	86905.3	156687.1	-0.0	-0.00
10Y24H	11.00	245631.8	87301.8	158330.0	-0.0	-0.00
10Y24H	11.02	247725.3	87708.0	160017.3	-0.0	-0.00
10Y24H	11.03	249781.9	88104.9	161677.0	-0.0	-0.00
10Y24H	11.05	251903.2	88512.6	163390.6	-0.0	-0.00
10Y24H	11.07	253999.6	88913.0	165086.6	-0.0	-0.00
10Y24H	11.08	256157.5	89324.1	166833.4	-0.0	-0.00
10Y24H	11.10	258331.7	89736.3	168595.4	-0.0	-0.00
10Y24H	11.12	260519.7	90148.8	170370.9	-0.0	-0.00
10Y24H	11.13	262694.6	90557.0	172137.6	-0.0	-0.00
10Y24H	11.15	264948.9	90978.4	173970.5	-0.0	-0.00
10Y24H	11.17	267161.2	91390.4	175770.9	-0.0	-0.00
10Y24H	11.18	269485.9	91821.1	177664.7	-0.0	-0.00
10Y24H	11.20	271760.6	92242.9	179517.7	0.0	0.00
10Y24H	11.22	274057.1	92666.7	181390.4	0.0	0.00
10Y24H	11.23	276336.8	93086.2	183250.6	0.0	0.00
10Y24H	11.25	278643.5	93509.6	185133.8	0.0	0.00
10Y24H	11.27	281011.7	93942.8	187068.8	0.0	0.00
10Y24H	11.28	283418.9	94380.4	189038.5	-0.0	-0.00
10Y24H	11.30	285825.9	94815.4	191010.6	0.0	0.00
10Y24H	11.32	288236.8	95247.1	192989.6	0.0	0.00
10Y24H	11.33	290714.6	95684.0	195030.6	0.0	0.00
10Y24H	11.35	293273.3	96128.5	197144.8	0.0	0.00
10Y24H	11.37	295899.4	96576.9	199322.5	0.0	0.00
10Y24H	11.38	298630.0	97036.7	201593.2	0.0	0.00

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DRAINAGE SYSTEM 16A
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	11.40	301391.4	97494.2	203897.2	0.0	0.00
10Y24H	11.42	304297.6	97969.4	206328.2	0.0	0.00
10Y24H	11.43	307202.8	98440.3	208762.6	0.0	0.00
10Y24H	11.45	310129.2	98908.4	211220.8	0.0	0.00
10Y24H	11.47	313166.8	99391.9	213774.9	0.0	0.00
10Y24H	11.48	316232.7	99875.4	216357.3	0.0	0.00
10Y24H	11.50	319376.9	100366.3	219010.6	0.0	0.00
10Y24H	11.52	322540.7	100859.3	221681.4	0.0	0.00
10Y24H	11.53	325732.4	101350.6	224381.8	0.0	0.00
10Y24H	11.55	329030.2	101851.9	227178.3	0.0	0.00
10Y24H	11.57	332476.1	102369.6	230106.5	0.0	0.00
10Y24H	11.58	335980.2	102886.0	233094.2	0.0	0.00
10Y24H	11.60	339539.4	103402.6	236136.8	0.0	0.00
10Y24H	11.62	343261.8	103934.5	239327.3	0.0	0.00
10Y24H	11.63	347108.2	104476.1	242632.1	0.0	0.00
10Y24H	11.65	350990.5	105014.5	245975.9	0.0	0.00
10Y24H	11.67	355121.5	105582.3	249539.1	0.0	0.00
10Y24H	11.68	359162.9	106130.4	253032.5	0.0	0.00
10Y24H	11.70	363426.7	106706.6	256720.1	0.0	0.00
10Y24H	11.72	367760.8	107285.3	260475.5	0.0	0.00
10Y24H	11.73	372140.4	107869.1	264271.4	0.0	0.00
10Y24H	11.75	376593.5	108456.9	268136.6	0.0	0.00
10Y24H	11.77	381166.4	109054.8	272111.6	-0.0	-0.00
10Y24H	11.78	385860.9	109652.8	276208.1	0.0	0.00
10Y24H	11.80	391029.4	110286.9	280742.5	0.0	0.00
10Y24H	11.82	396547.3	110925.4	285621.8	0.0	0.00
10Y24H	11.83	403033.7	111622.0	291411.6	0.0	0.00
10Y24H	11.85	410302.5	112346.3	297956.2	0.0	0.00
10Y24H	11.87	418713.3	113164.3	305549.0	0.0	0.00
10Y24H	11.88	428369.3	114071.7	314297.5	0.0	0.00
10Y24H	11.90	439073.5	115040.1	324033.5	0.0	0.00
10Y24H	11.92	450885.8	116080.3	334805.6	0.0	0.00
10Y24H	11.93	463683.9	117187.2	346496.7	0.0	0.00
10Y24H	11.95	477343.5	118338.9	359004.7	0.0	0.00
10Y24H	11.97	491960.9	119549.7	372411.2	0.0	0.00
10Y24H	11.98	507437.1	120815.7	386621.4	0.0	0.00
10Y24H	12.00	523928.6	122152.9	401775.7	0.0	0.00
10Y24H	12.02	540517.5	123485.9	417031.6	0.0	0.00
10Y24H	12.03	558179.8	124896.9	433282.9	0.0	0.00
10Y24H	12.05	576405.4	126345.9	450059.5	0.0	0.00
10Y24H	12.07	595254.8	127838.2	467416.6	0.0	0.00
10Y24H	12.08	614475.6	129358.8	485116.8	0.0	0.00
10Y24H	12.10	634738.6	130976.1	503762.5	0.0	0.00
10Y24H	12.12	655007.0	132619.8	522387.2	0.0	0.00
10Y24H	12.13	676027.3	134359.3	541667.9	0.0	0.00
10Y24H	12.15	697788.4	136204.2	561584.2	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	12.17	719295.7	138076.3	581219.4	0.0	0.00
10Y24H	12.18	741200.3	140036.4	601163.9	0.0	0.00
10Y24H	12.20	764208.2	142156.4	622051.8	0.0	0.00
10Y24H	12.22	786863.8	144307.2	642556.6	-0.0	-0.00
10Y24H	12.23	810601.4	146627.3	663974.1	-0.0	-0.00
10Y24H	12.25	834061.9	148994.5	685067.4	-0.0	-0.00
10Y24H	12.27	857679.3	151464.5	706214.8	-0.0	-0.00
10Y24H	12.28	881252.2	154037.8	727214.4	-0.0	-0.00
10Y24H	12.30	905439.1	156820.6	748618.4	-0.0	-0.00
10Y24H	12.32	928106.6	159594.2	768512.4	-0.0	-0.00
10Y24H	12.33	949940.5	162456.9	787483.6	-0.0	-0.00
10Y24H	12.35	970982.2	165430.8	805551.4	-0.0	-0.00
10Y24H	12.37	990790.5	168449.2	822341.2	-0.0	-0.00
10Y24H	12.38	1009511.3	171510.5	838000.9	-0.0	-0.00
10Y24H	12.40	1027675.1	174671.2	853004.0	-0.0	-0.00
10Y24H	12.42	1044585.9	177797.1	866788.8	-0.0	-0.00
10Y24H	12.43	1061356.3	181081.3	880275.0	-0.0	-0.00
10Y24H	12.45	1076810.8	184277.2	892533.6	-0.0	-0.00
10Y24H	12.47	1091773.3	187524.0	904249.3	-0.0	-0.00
10Y24H	12.48	1106320.0	190820.6	915499.4	-0.0	-0.00
10Y24H	12.50	1120476.7	194161.9	926314.8	-0.0	-0.00
10Y24H	12.52	1133798.4	197431.1	936367.3	-0.0	-0.00
10Y24H	12.53	1147067.6	200813.2	946254.4	-0.0	-0.00
10Y24H	12.55	1159633.8	204137.3	955496.5	-0.0	-0.00
10Y24H	12.57	1171671.1	207439.3	964231.8	-0.0	-0.00
10Y24H	12.58	1183548.3	210819.6	972728.7	-0.0	-0.00
10Y24H	12.60	1194670.9	214104.7	980566.2	-0.0	-0.00
10Y24H	12.62	1205505.9	217423.4	988082.4	-0.0	-0.00
10Y24H	12.63	1215959.8	220741.5	995218.3	0.0	0.00
10Y24H	12.65	1226206.7	224106.3	1002100.3	-0.0	-0.00
10Y24H	12.67	1235939.2	227408.6	1008530.6	-0.0	-0.00
10Y24H	12.68	1245365.9	230707.5	1014658.4	-0.0	-0.00
10Y24H	12.70	1254953.3	234166.9	1020786.4	-0.0	-0.00
10Y24H	12.72	1263798.5	237456.6	1026341.9	-0.0	-0.00
10Y24H	12.73	1272374.4	240740.7	1031633.7	-0.0	-0.00
10Y24H	12.75	1280686.1	244018.6	1036667.5	0.0	0.00
10Y24H	12.77	1288695.4	247274.2	1041421.2	-0.0	-0.00
10Y24H	12.78	1296440.7	250521.5	1045919.2	-0.0	-0.00
10Y24H	12.80	1304113.4	253844.0	1050269.4	-0.0	-0.00
10Y24H	12.82	1311342.7	257073.8	1054268.9	-0.0	-0.00
10Y24H	12.83	1318357.9	260284.7	1058073.2	-0.0	-0.00
10Y24H	12.85	1325146.8	263500.7	1061646.1	-0.0	-0.00
10Y24H	12.87	1331715.3	266729.1	1064986.2	-0.0	-0.00
10Y24H	12.88	1337849.2	269856.6	1067992.6	-0.0	-0.00
10Y24H	12.90	1343892.2	273050.4	1070841.8	-0.0	-0.00
10Y24H	12.92	1349764.6	276267.7	1073496.9	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	12.93	1355377.7	279452.9	1075924.8	-0.0	-0.00
10Y24H	12.95	1360569.3	282497.0	1078072.3	-0.0	-0.00
10Y24H	12.97	1365802.6	285662.5	1080140.2	-0.0	-0.00
10Y24H	12.98	1371004.8	288907.9	1082096.9	-0.0	-0.00
10Y24H	13.00	1375855.9	292024.8	1083831.1	-0.0	-0.00
10Y24H	13.02	1380567.0	295135.4	1085431.6	-0.0	-0.00
10Y24H	13.03	1385269.9	298322.5	1086947.4	-0.0	-0.00
10Y24H	13.05	1389793.0	301466.8	1088326.2	-0.0	-0.00
10Y24H	13.07	1394284.2	304668.6	1089615.7	-0.0	-0.00
10Y24H	13.08	1398537.6	307777.3	1090760.3	-0.0	-0.00
10Y24H	13.10	1402777.5	310953.4	1091824.1	-0.0	-0.00
10Y24H	13.12	1406967.4	314169.8	1092797.7	-0.0	-0.00
10Y24H	13.13	1410992.7	317333.2	1093659.4	-0.0	-0.00
10Y24H	13.15	1414958.7	320518.7	1094440.1	-0.0	-0.00
10Y24H	13.17	1418781.1	323649.5	1095131.6	-0.0	-0.00
10Y24H	13.18	1422644.8	326872.6	1095772.2	-0.0	-0.00
10Y24H	13.20	1426361.0	330027.1	1096333.9	-0.0	-0.00
10Y24H	13.22	1430050.7	333208.1	1096842.6	-0.0	-0.00
10Y24H	13.23	1433660.0	336361.0	1097299.0	-0.0	-0.00
10Y24H	13.25	1437279.7	339560.6	1097719.1	-0.0	-0.00
10Y24H	13.27	1440874.6	342776.1	1098098.6	-0.0	-0.00
10Y24H	13.28	1444422.4	345989.6	1098432.8	-0.0	-0.00
10Y24H	13.30	1447926.8	349208.4	1098718.5	-0.0	-0.00
10Y24H	13.32	1451463.8	352508.3	1098955.4	-0.0	-0.00
10Y24H	13.33	1454839.5	355713.4	1099126.1	-0.0	-0.00
10Y24H	13.35	1458185.0	358949.5	1099235.5	-0.0	-0.00
10Y24H	13.37	1461471.9	362189.5	1099282.4	-0.0	-0.00
10Y24H	13.38	1464745.6	365476.7	1099269.0	-0.0	-0.00
10Y24H	13.40	1467938.4	368740.2	1099198.2	-0.0	-0.00
10Y24H	13.42	1471136.8	372064.4	1099072.4	-0.0	-0.00
10Y24H	13.43	1474213.0	375310.9	1098902.2	0.0	0.00
10Y24H	13.45	1477251.2	378562.5	1098688.7	-0.0	-0.00
10Y24H	13.47	1480285.2	381852.4	1098432.8	-0.0	-0.00
10Y24H	13.48	1483298.3	385158.7	1098139.6	-0.0	-0.00
10Y24H	13.50	1486272.4	388457.8	1097814.7	-0.0	-0.00
10Y24H	13.52	1489258.7	391804.1	1097454.5	-0.0	-0.00
10Y24H	13.53	1492187.1	395117.5	1097069.6	-0.0	-0.00
10Y24H	13.55	1495079.9	398420.4	1096659.5	-0.0	-0.00
10Y24H	13.57	1497925.5	401698.0	1096227.5	-0.0	-0.00
10Y24H	13.58	1500785.3	405020.5	1095764.8	-0.0	-0.00
10Y24H	13.60	1503620.3	408342.7	1095277.6	-0.0	-0.00
10Y24H	13.62	1506439.4	411674.2	1094765.2	-0.0	-0.00
10Y24H	13.63	1509237.0	415006.6	1094230.4	-0.0	-0.00
10Y24H	13.65	1512023.9	418351.0	1093673.0	-0.0	-0.00
10Y24H	13.67	1514740.5	421633.1	1093107.4	-0.0	-0.00
10Y24H	13.68	1517463.9	424943.9	1092520.0	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	13.70	1520220.0	428313.3	1091906.7	-0.0	-0.00
10Y24H	13.72	1522917.9	431628.8	1091289.1	-0.0	-0.00
10Y24H	13.73	1525603.1	434944.1	1090658.9	-0.0	-0.00
10Y24H	13.75	1528276.6	438259.1	1090017.5	-0.0	-0.00
10Y24H	13.77	1530938.0	441573.6	1089364.4	-0.0	-0.00
10Y24H	13.78	1533628.6	444941.2	1088687.3	-0.0	-0.00
10Y24H	13.80	1536259.9	448253.7	1088006.2	-0.0	-0.00
10Y24H	13.82	1538871.5	451564.6	1087306.8	-0.0	-0.00
10Y24H	13.83	1541467.2	454884.4	1086582.8	-0.0	-0.00
10Y24H	13.85	1544025.2	458188.3	1085836.9	-0.0	-0.00
10Y24H	13.87	1546569.3	461508.5	1085060.9	-0.0	-0.00
10Y24H	13.88	1549085.6	464825.7	1084260.0	-0.0	-0.00
10Y24H	13.90	1551575.7	468139.7	1083436.0	-0.0	-0.00
10Y24H	13.92	1554017.3	471418.0	1082599.4	-0.0	-0.00
10Y24H	13.93	1556460.4	474724.9	1081735.5	-0.0	-0.00
10Y24H	13.95	1558883.0	478028.1	1080854.9	-0.0	-0.00
10Y24H	13.97	1561277.4	481313.9	1079963.5	-0.0	-0.00
10Y24H	13.98	1563664.9	484609.1	1079055.8	-0.0	-0.00
10Y24H	14.00	1566036.6	487900.1	1078136.5	0.0	0.00
10Y24H	14.08	1577598.2	504236.9	1073361.3	-0.0	-0.00
10Y24H	14.17	1588727.2	520471.8	1068255.4	-0.0	-0.00
10Y24H	14.25	1599471.5	536552.2	1062919.3	-0.0	-0.00
10Y24H	14.33	1609969.5	552482.8	1057486.7	-0.0	-0.00
10Y24H	14.42	1620315.5	568269.4	1052046.1	-0.0	-0.00
10Y24H	14.50	1630567.3	583917.7	1046649.7	-0.0	-0.00
10Y24H	14.58	1640581.0	599356.9	1041224.0	-0.0	-0.00
10Y24H	14.67	1650211.0	614690.3	1035520.7	-0.0	-0.00
10Y24H	14.75	1659401.6	629850.2	1029551.4	-0.0	-0.00
10Y24H	14.83	1668305.9	644860.8	1023445.0	-0.0	-0.00
10Y24H	14.92	1677023.3	659780.3	1017243.0	-0.0	-0.00
10Y24H	15.00	1685612.6	674630.9	1010981.7	-0.0	-0.00
10Y24H	15.08	1694093.1	689378.1	1004715.0	-0.0	-0.00
10Y24H	15.17	1702497.2	704034.6	998462.6	-0.0	-0.00
10Y24H	15.25	1710836.3	718590.7	992245.6	-0.0	-0.00
10Y24H	15.33	1719008.5	733065.5	985942.9	-0.0	-0.00
10Y24H	15.42	1726795.4	747402.7	979392.8	-0.0	-0.00
10Y24H	15.50	1734244.1	761666.5	972577.7	-0.0	-0.00
10Y24H	15.58	1741507.4	775826.1	965681.3	-0.0	-0.00
10Y24H	15.67	1748734.8	789845.8	958889.0	-0.0	-0.00
10Y24H	15.75	1756023.8	803791.9	952231.8	-0.0	-0.00
10Y24H	15.83	1763272.1	817616.6	945655.5	-0.0	-0.00
10Y24H	15.92	1770391.6	831348.3	939043.3	-0.0	-0.00
10Y24H	16.00	1777369.5	844980.6	932389.0	-0.0	-0.00
10Y24H	16.25	1797689.3	885184.5	912504.8	-0.0	-0.00
10Y24H	16.50	1816908.1	924443.5	892464.6	-0.0	-0.00
10Y24H	16.75	1835624.2	962691.3	872932.9	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	17.00	1852237.3	999944.3	852293.0	-0.0	-0.00
10Y24H	17.25	1865957.7	1036008.0	829949.7	-0.0	-0.00
10Y24H	17.50	1878429.9	1070853.8	807576.1	-0.0	-0.00
10Y24H	17.75	1890445.4	1104545.6	785899.8	-0.0	-0.00
10Y24H	18.00	1902378.6	1137183.9	765194.7	-0.0	-0.00
10Y24H	18.25	1913834.8	1168661.8	745172.9	-0.0	-0.00
10Y24H	18.50	1923999.4	1198965.2	725034.3	-0.0	-0.00
10Y24H	18.75	1933601.7	1227716.5	705885.2	-0.0	-0.00
10Y24H	19.00	1943754.9	1254883.7	688871.1	-0.0	-0.00
10Y24H	19.25	1953401.4	1280589.0	672812.4	-0.0	-0.00
10Y24H	19.50	1962848.9	1304870.8	657978.1	-0.0	-0.00
10Y24H	19.75	1972194.7	1327739.3	644455.4	-0.0	-0.00
10Y24H	20.00	1980965.5	1349236.3	631729.2	-0.0	-0.00
10Y24H	20.25	1989255.1	1369482.8	619772.3	-0.0	-0.00
10Y24H	20.50	1997342.1	1388581.8	608760.3	-0.0	-0.00
10Y24H	20.75	2005352.9	1406625.8	598727.2	-0.0	-0.00
10Y24H	21.00	2013361.8	1423747.6	589614.2	-0.0	-0.00
10Y24H	21.25	2021600.0	1440055.2	581544.7	-0.0	-0.00
10Y24H	21.50	2029718.9	1455649.5	574069.4	-0.0	-0.00
10Y24H	21.75	2037774.9	1470564.4	567210.5	-0.0	-0.00
10Y24H	22.00	2045802.7	1484887.8	560914.9	-0.0	-0.00
10Y24H	22.25	2053011.5	1498632.9	554378.7	-0.0	-0.00
10Y24H	22.50	2059861.1	1511751.7	548109.4	-0.0	-0.00
10Y24H	22.75	2066570.4	1524335.5	542234.8	-0.0	-0.00
10Y24H	23.00	2073463.9	1536415.1	537048.8	-0.0	-0.00
10Y24H	23.25	2080257.3	1548074.5	532182.8	-0.0	-0.00
10Y24H	23.50	2087001.8	1559309.9	527691.9	-0.0	-0.00
10Y24H	23.75	2093725.7	1570200.6	523525.1	-0.0	-0.00
10Y24H	24.00	2099625.5	1580689.6	518935.9	-0.0	-0.00
10Y24H	24.25	2103715.5	1590705.6	513009.9	-0.0	-0.00
10Y24H	24.50	2104353.1	1599967.0	504386.1	-0.0	-0.00
10Y24H	24.75	2104353.1	1608405.3	495947.8	-0.0	-0.00
10Y24H	25.00	2104353.1	1616123.8	488229.3	-0.0	-0.00
10Y24H	25.25	2104353.1	1623206.6	481146.5	-0.0	-0.00
10Y24H	25.50	2104353.1	1629720.2	474632.8	-0.0	-0.00
10Y24H	25.75	2104353.1	1635717.5	468635.5	-0.0	-0.00
10Y24H	26.00	2104353.1	1641267.9	463085.2	-0.0	-0.00
10Y24H	26.25	2104353.1	1646419.7	457933.3	-0.0	-0.00
10Y24H	26.50	2104353.1	1651223.4	453129.7	-0.0	-0.00
10Y24H	26.75	2104353.1	1655710.1	448643.0	-0.0	-0.00
10Y24H	27.00	2104353.1	1659911.9	444441.1	-0.0	-0.00
10Y24H	27.25	2104353.1	1663860.8	440492.3	-0.0	-0.00
10Y24H	27.50	2104353.1	1667574.2	436778.9	-0.0	-0.00
10Y24H	27.75	2104353.1	1671076.4	433276.7	-0.0	-0.00
10Y24H	28.00	2104353.1	1674386.5	429966.6	-0.0	-0.00
10Y24H	28.25	2104353.1	1677515.5	426837.6	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	28.50	2104353.1	1680482.6	423870.5	-0.0	-0.00
10Y24H	28.75	2104353.1	1683300.4	421052.7	-0.0	-0.00
10Y24H	29.00	2104353.1	1685979.9	418373.2	-0.0	-0.00
10Y24H	29.25	2104353.1	1688533.9	415819.1	-0.0	-0.00
10Y24H	29.50	2104353.1	1690967.8	413385.3	-0.0	-0.00
10Y24H	29.75	2104353.1	1693294.7	411058.3	-0.0	-0.00
10Y24H	30.00	2104353.1	1695518.6	408834.4	-0.0	-0.00
10Y24H	30.25	2104353.1	1697650.7	406702.3	-0.0	-0.00
10Y24H	30.50	2104353.1	1699694.0	404659.1	-0.0	-0.00
10Y24H	30.75	2104353.1	1701658.3	402694.8	-0.0	-0.00
10Y24H	31.00	2104353.1	1703545.8	400807.2	-0.0	-0.00
10Y24H	31.25	2104353.1	1705365.4	398987.7	-0.0	-0.00
10Y24H	31.50	2104353.1	1707118.6	397234.4	-0.0	-0.00
10Y24H	31.75	2104353.1	1708813.6	395539.4	-0.0	-0.00
10Y24H	32.00	2104353.1	1710451.1	393901.9	-0.0	-0.00
10Y24H	32.25	2104353.1	1712037.0	392316.1	-0.0	-0.00
10Y24H	32.50	2104353.1	1713576.3	390776.7	-0.0	-0.00
10Y24H	32.75	2104353.1	1715070.2	389282.8	-0.0	-0.00
10Y24H	33.00	2104353.1	1716524.7	387828.4	-0.0	-0.00
10Y24H	33.25	2104353.1	1717940.5	386412.5	-0.0	-0.00
10Y24H	33.50	2104353.1	1719323.4	385029.6	-0.0	-0.00
10Y24H	33.75	2104353.1	1720674.2	383678.8	-0.0	-0.00
10Y24H	34.00	2104353.1	1721997.8	382355.3	-0.0	-0.00
10Y24H	34.25	2104353.1	1723297.2	381055.9	-0.0	-0.00
10Y24H	34.50	2104353.1	1724575.3	379777.8	-0.0	-0.00
10Y24H	34.75	2104353.1	1725834.5	378518.6	-0.0	-0.00
10Y24H	35.00	2104353.1	1727081.9	377271.1	-0.0	-0.00
10Y24H	35.25	2104353.1	1728321.9	376031.2	-0.0	-0.00
10Y24H	35.50	2104353.1	1729561.7	374791.4	-0.0	-0.00
10Y24H	35.75	2104353.1	1730800.0	373553.1	-0.0	-0.00
10Y24H	36.00	2104353.1	1732035.5	372317.5	-0.0	-0.00
10Y24H	36.25	2104353.1	1733271.0	371082.1	-0.0	-0.00
10Y24H	36.50	2104353.1	1734503.6	369849.5	-0.0	-0.00
10Y24H	36.75	2104353.1	1735736.1	368617.0	-0.0	-0.00
10Y24H	37.00	2104353.1	1736967.2	367385.9	-0.0	-0.00
10Y24H	37.25	2104353.1	1738195.4	366157.6	-0.0	-0.00
10Y24H	37.50	2104353.1	1739423.6	364929.5	-0.0	-0.00
10Y24H	37.75	2104353.1	1740648.9	363704.1	-0.0	-0.00
10Y24H	38.00	2104353.1	1741874.2	362478.9	-0.0	-0.00
10Y24H	38.25	2104353.1	1743097.9	361255.1	-0.0	-0.00
10Y24H	38.50	2104353.1	1744318.9	360034.1	-0.0	-0.00
10Y24H	38.75	2104353.1	1745539.8	358813.3	-0.0	-0.00
10Y24H	39.00	2104353.1	1746757.8	357595.2	-0.0	-0.00
10Y24H	39.25	2104353.1	1747975.7	356377.3	-0.0	-0.00
10Y24H	39.50	2104353.1	1749192.2	355160.9	-0.0	-0.00
10Y24H	39.75	2104353.1	1750405.9	353947.2	-0.0	-0.00

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16A
 POST-DEVELOPMENT CONDITIONS
 MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	40.00	2104353.1	1751619.4	352733.7	-0.0	-0.00
10Y24H	40.25	2104353.1	1752830.1	351523.0	-0.0	-0.00
10Y24H	40.50	2104353.1	1754040.7	350312.4	-0.0	-0.00
10Y24H	40.75	2104353.1	1755249.8	349103.3	-0.0	-0.00
10Y24H	41.00	2104353.1	1756456.1	347896.9	-0.0	-0.00
10Y24H	41.25	2104353.1	1757661.6	346691.4	-0.0	-0.00
10Y24H	41.50	2104353.1	1758866.3	345486.7	-0.0	-0.00
10Y24H	41.75	2104353.1	1760069.2	344283.9	-0.0	-0.00
10Y24H	42.00	2104353.1	1761270.6	343082.5	-0.0	-0.00
10Y24H	42.25	2104353.1	1762469.2	341883.8	-0.0	-0.00
10Y24H	42.50	2104353.1	1763668.0	340685.1	-0.0	-0.00
10Y24H	42.75	2104353.1	1764865.0	339488.1	-0.0	-0.00
10Y24H	43.00	2104353.1	1766060.5	338292.6	-0.0	-0.00
10Y24H	43.25	2104353.1	1767254.5	337098.6	-0.0	-0.00
10Y24H	43.50	2104353.1	1768445.7	335907.3	-0.0	-0.00
10Y24H	43.75	2104353.1	1769637.1	334716.0	-0.0	-0.00
10Y24H	44.00	2104353.1	1770826.6	333526.4	0.0	0.00
10Y24H	44.25	2104353.1	1772014.7	332338.4	0.0	0.00
10Y24H	44.50	2104353.1	1773201.3	331151.8	0.0	0.00
10Y24H	44.75	2104353.1	1774385.4	329967.7	0.0	0.00
10Y24H	45.00	2104353.1	1775569.0	328784.1	0.0	0.00
10Y24H	45.25	2104353.1	1776751.1	327601.9	0.0	0.00
10Y24H	45.50	2104353.1	1777931.7	326421.3	0.0	0.00
10Y24H	45.75	2104353.1	1779109.9	325243.2	0.0	0.00
10Y24H	46.00	2104353.1	1780287.5	324065.5	-0.0	-0.00
10Y24H	46.25	2104353.1	1781463.7	322889.4	0.0	0.00
10Y24H	46.50	2104353.1	1782638.3	321714.8	0.0	0.00
10Y24H	46.75	2104353.1	1783811.8	320541.3	0.0	0.00
10Y24H	47.00	2104353.1	1784982.1	319370.9	0.0	0.00
10Y24H	47.25	2104353.1	1786152.3	318200.8	0.0	0.00
10Y24H	47.50	2104353.1	1787320.9	317032.1	0.0	0.00
10Y24H	47.75	2104353.1	1788488.0	315865.0	0.0	0.00
10Y24H	48.00	2104353.1	1789652.7	314700.3	0.0	0.00
10Y24H	48.00	2104353.1	1789652.7	314700.3	0.0	0.00

Appendix G

System 16 B

- Land-Use Tables
- Drainage Calculations
- Summary Tables
- ICPR: Pre-Development
- ICPR: Post-Development

I-95 CDC DRAINAGE CALCULATIONS

PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 16B

SHGWT EL. (ft-NAVD): 0.42

BASIN	TIME OF CONC. tc (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B16B-1A	10	2.13	2.13	0.96	0.00	1.17	0.00	0.00	0.00	0.00	6.00	5.58	8.18	69.00
B16B-1B	10	2.54	2.54	1.11	0.00	1.43	0.00	0.00	0.00	0.00	7.00	6.58	8.18	68.47
B16B-2A	10	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	12.00	11.58	8.18	100.00
B16B-2B	10	3.76	3.76	2.38	0.00	1.38	0.00	0.00	0.00	0.00	7.00	6.58	8.18	76.91
B16B-3	10	2.91	2.91	1.82	0.00	1.09	0.00	0.00	0.00	0.00	8.00	7.58	8.18	76.55
B16B-4	10	4.40	4.40	3.00	0.00	1.40	0.00	0.00	0.00	0.00	5.00	4.58	8.18	79.35
B16B-4 Offs	10	1.97	0.00	0.00	0.00	0.00	1.97	0.69	0.00	1.28	5.00	4.58	8.18	65.30
B16B-5	10	1.56	1.56	0.98	0.00	0.58	0.00	0.00	0.00	0.00	8.00	7.58	8.18	76.68
B16B-6	10	0.60	0.60	0.42	0.00	0.18	0.00	0.00	0.00	0.00	9.00	8.58	8.18	80.30
B16B-7	10	2.00	2.00	0.53	0.00	1.47	0.00	0.00	0.00	0.00	15.00	14.58	8.18	62.45
B16B-8A	10	1.37	1.37	0.77	0.00	0.60	0.00	0.00	0.00	0.00	9.00	8.58	8.18	73.62
B16B-8B	10	1.55	1.55	0.98	0.00	0.57	0.00	0.00	0.00	0.00	11.00	10.58	8.18	76.88
B16B-9A	10	0.93	0.93	0.65	0.00	0.28	0.00	0.00	0.00	0.00	6.00	5.58	8.18	80.24
B16B-9B	10	0.71	0.71	0.52	0.00	0.19	0.00	0.00	0.00	0.00	7.00	6.58	8.18	82.04
B16B-10A	10	1.13	1.13	0.21	0.00	0.92	0.00	0.00	0.00	0.00	12.00	11.58	8.18	60.02
B16B-10B	10	0.30	0.30	0.09	0.00	0.21	0.00	0.00	0.00	0.00	14.00	13.58	8.18	63.59
B16B-11	10	2.34	2.34	0.62	0.02	1.70	0.00	0.00	0.00	0.00	10.00	9.58	8.18	62.72
B16B-12A	10	1.11	1.11	1.10	0.00	0.01	0.00	0.00	0.00	0.00	30.00	29.58	8.18	99.27
B16B-12B	10	2.27	2.27	2.17	0.00	0.10	0.00	0.00	0.00	0.00	15.00	14.58	8.18	96.52
B16B-12B Offs1	10	0.69	0.00	0.00	0.00	0.00	0.69	0.54	0.00	0.15	5.00	4.58	8.18	84.90
B16B-12B Offs2	10	0.97	0.00	0.00	0.00	0.00	0.97	0.77	0.00	0.20	5.00	4.58	8.18	85.57
B16B-13A	10	2.08	2.08	0.84	0.00	1.24	0.00	0.00	0.00	0.00	7.00	6.58	8.18	67.22
B16B-13B	10	1.29	1.29	0.48	0.00	0.81	0.00	0.00	0.00	0.00	7.00	6.58	8.18	66.07
B16B-14A	10	1.91	1.91	1.18	0.00	0.73	0.00	0.00	0.00	0.00	16.00	15.58	8.18	76.18
B16B-14B	10	0.66	0.66	0.55	0.00	0.11	0.00	0.00	0.00	0.00	12.00	11.58	8.18	88.00
B16B-15	10	2.75	2.75	1.51	0.00	1.24	0.00	0.00	0.00	0.00	7.00	6.58	8.18	73.05
B16B-16	10	3.21	3.21	1.36	0.00	1.85	0.00	0.00	0.00	0.00	13.00	12.58	8.18	67.96
B16B-17	10	1.47	1.47	0.56	0.04	0.87	0.00	0.00	0.00	0.00	10.00	9.58	8.18	67.38
B16B-18	10	0.32	0.32	0.14	0.00	0.18	0.00	0.00	0.00	0.00	6.00	5.58	8.18	68.49
B16B-18 Offs	10	0.13	0.00	0.00	0.00	0.00	0.13	0.03	0.00	0.10	5.00	4.58	8.18	61.38
B16B-19	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	23.00	22.58	8.18	100.00
B16B-20	10	0.21	0.21	0.00	0.00	0.21	0.00	0.00	0.00	0.00	9.00	8.58	8.18	55.01
B16B-20 Offs	10	0.74	0.00	0.00	0.00	0.00	0.74	0.43	0.00	0.31	5.00	4.58	8.18	74.48
B16B-21	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	14.00	13.58	8.18	100.00
B16B-22	10	0.17	0.17	0.01	0.00	0.16	0.00	0.00	0.00	0.00	10.00	9.58	8.18	56.50
SYSTEM TOTALS		51.48	46.98	26.24	0.06	20.68	4.50	2.46	0.00	2.04	--	--	--	--

I-95 CDC DRAINAGE CALCULATIONS

POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 16B

SHGWT EL. (ft-NAVD): 0.42

BASIN	TIME OF CONC. tc (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER CN
B16B-14A	10	1.91	1.91	1.20	0.00	0.71	0.00	0.00	0.00	0.00	16.00	15.58	8.18	76.68
B16B-14B	10	0.66	0.66	0.60	0.00	0.06	0.00	0.00	0.00	0.00	12.00	11.58	8.18	93.08
B16B-15	10	2.78	2.78	2.05	0.00	0.73	0.00	0.00	0.00	0.00	7.00	6.58	8.18	82.32
PrFD16B-1		5.35	5.35	3.85	0.00	1.50	0.00	0.00	0.00	0.00	--	--	--	--
B16B-16	10	3.18	3.18	1.69	0.00	1.49	0.00	0.00	0.00	0.00	13.00	12.58	8.18	72.29
PrFD16B-2		3.18	3.18	1.69	0.00	1.49	0.00	0.00	0.00	0.00	--	--	--	--
B16B-2A	10	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	12.00	11.58	8.18	100.00
B16B-2B	10	4.48	4.48	3.34	0.00	1.14	0.00	0.00	0.00	0.00	7.00	6.58	8.18	82.77
B16B-9	10	0.72	0.72	0.63	0.00	0.09	0.00	0.00	0.00	0.00	6.00	5.58	8.18	90.72
PrFD16B-3		6.02	6.02	4.79	0.00	1.23	0.00	0.00	0.00	0.00	--	--	--	--
B16B-5	10	3.25	3.25	1.88	0.00	1.37	0.00	0.00	0.00	0.00	8.00	7.58	8.18	74.36
B16B-8	10	1.53	1.53	0.97	0.00	0.56	0.00	0.00	0.00	0.00	9.00	8.58	8.18	76.96
Swale 16B-1		4.78	4.78	2.85	0.00	1.93	0.00	0.00	0.00	0.00	--	--	--	--
B16B-10A	10	1.16	1.16	0.28	0.00	0.88	0.00	0.00	0.00	0.00	12.00	11.58	8.18	61.71
B16B-10B	10	0.30	0.30	0.09	0.00	0.21	0.00	0.00	0.00	0.00	14.00	13.58	8.18	63.59
Swale 16B-3		1.46	1.46	0.37	0.00	1.09	0.00	0.00	0.00	0.00	--	--	--	--
B16B-4	10	5.73	5.73	4.08	0.00	1.65	0.00	0.00	0.00	0.00	5.00	4.58	8.18	80.94
B16B-4 Offs	10	1.97	0.00	0.00	0.00	0.00	1.97	0.69	0.00	1.28	5.00	4.58	8.18	65.30
B16B-6	10	0.52	0.52	0.35	0.00	0.17	0.00	0.00	0.00	0.00	9.00	8.58	8.18	78.90
B16B-7	10	2.00	2.00	0.77	0.00	1.23	0.00	0.00	0.00	0.00	15.00	14.58	8.18	66.53
B16B-11	10	1.97	1.97	0.86	0.00	1.11	0.00	0.00	0.00	0.00	10.00	9.58	8.18	68.45
Pond 16B-1		12.19	10.22	6.06	0.00	4.16	1.97	0.69	0.00	1.28	--	--	--	--
B16B-1A	10	2.13	2.13	0.96	0.00	1.17	0.00	0.00	0.00	0.00	6.00	5.58	8.18	69.00
B16B-1B	10	2.54	2.54	1.11	0.00	1.43	0.00	0.00	0.00	0.00	7.00	6.58	8.18	68.47
B16B-3	10	2.49	2.49	1.55	0.00	0.94	0.00	0.00	0.00	0.00	8.00	7.58	8.18	76.41
Pond 16B-2		7.16	7.16	3.62	0.00	3.54	0.00	0.00	0.00	0.00	--	--	--	--
B16B-12A	10	1.11	1.11	1.10	0.00	0.01	0.00	0.00	0.00	0.00	30.00	29.58	8.18	99.27
B16B-12B	10	1.68	1.68	1.61	0.00	0.07	0.00	0.00	0.00	0.00	15.00	14.58	8.18	96.70
B16B-12B Offs1	10	0.69	0.00	0.00	0.00	0.00	0.69	0.54	0.00	0.15	5.00	4.58	8.18	84.90
B16B-12B Offs2	10	0.97	0.00	0.00	0.00	0.00	0.97	0.77	0.00	0.20	5.00	4.58	8.18	85.57
B16B-13A	10	2.08	2.08	0.82	0.00	1.26	0.00	0.00	0.00	0.00	7.00	6.58	8.18	66.87
B16B-13B	10	1.29	1.29	0.49	0.00	0.80	0.00	0.00	0.00	0.00	7.00	6.58	8.18	66.34
B16B-17	10	1.47	1.47	0.56	0.04	0.87	0.00	0.00	0.00	0.00	10.00	9.58	8.18	67.38
B16B-18	10	0.32	0.32	0.14	0.00	0.18	0.00	0.00	0.00	0.00	6.00	5.58	8.18	68.49
B16B-18 Offs	10	0.13	0.00	0.00	0.00	0.00	0.13	0.03	0.00	0.10	5.00	4.58	8.18	61.38
B16B-19	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	23.00	22.58	8.18	100.00
B16B-20	10	0.21	0.21	0.00	0.00	0.21	0.00	0.00	0.00	0.00	9.00	8.58	8.18	55.01
B16B-20 Offs	10	0.74	0.00	0.00	0.00	0.00	0.74	0.43	0.00	0.31	5.00	4.58	8.18	74.48
B16B-21	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	14.00	13.58	8.18	100.00
B16B-22	10	0.17	0.17	0.01	0.00	0.16	0.00	0.00	0.00	0.00	10.00	9.58	8.18	56.50
DS of PrCS16B-3		11.34	8.81	5.21	0.04	3.56	2.53	1.77	0.00	0.76	--	--	--	--
SYSTEM TOTALS		51.48	46.98	28.44	0.04	18.50	4.50	2.46	0.00	2.04	--	--	--	--

I-95 CDC DRAINAGE CALCULATIONS

WATER QUALITY

DRAINAGE SYSTEM: 16B

SYSTEM	SHGWT EL. (FT-NAVD)	TOTAL ONSITE AREA (Ac.) [POST-DEV]	ONSITE IMPERVIOUS AREA (Ac.) [POST-DEV]	ONSITE PERVIOUS AREA (Ac.) [POST-DEV]	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY FULL TREATMENT REQUIRED (Ac-ft)	² WATER QUALITY TREATMENT PROVIDED IN PRE (Ac-ft)	⁴ WATER QUALITY TREATMENT REQ. FOR ADDITIONAL IMP. AREA (Ac-ft)	¹ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY-/WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	² TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	³ SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
PrFD16B-1	0.42	5.35	3.85	1.50	0.45	0.80	0.80	0.00	0.13	0.13	0.00	0.00	0.00	0.29	0.29	0.17
PrFD16B-2	0.42	3.18	1.69	1.49	0.27	0.35	0.35	0.00	0.07	0.07	0.00	0.00	0.00	0.27	0.27	0.20
PrFD16B-3	0.42	6.02	4.79	1.23	0.50	1.00	1.00	0.00	0.09	0.09	0.00	0.00	0.00	0.51	0.51	0.42
POND 16B-1	0.42	10.22	6.06	4.16	0.85	1.26	1.26	0.94	0.14	1.08	1.72	0.00	0.00	0.00	1.72	0.64
POND 16B-2	0.42	7.16	3.62	3.54	0.60	0.75	0.75	0.51	0.00	0.51	0.70	0.00	0.00	0.00	0.93	0.42
SWALE 16B-1	0.42	4.78	2.85	1.93	0.40	0.59	0.59	0.00	0.03	0.03	0.00	0.00	0.57	0.00	1.14	1.11
SWALE 16B-3	0.42	1.46	0.37	1.09	0.12	0.08	0.12	0.00	0.01	0.01	0.00	0.00	0.47	0.00	0.93	0.92
SYSTEM TOTALS:		38.17	23.23	14.94	3.18	4.84	4.88	1.45	0.46	1.91	2.42	0.00	1.04	1.06	5.79	3.88

¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

³Water quality treatment provided for all onsite contributing basins with the exception of basins downstream of PrCS16B-3 and PrCS16B-FD2. Those basins are B16B-12A, B16B-12B, B16B-12B Offs1, B16B Offs2, B16B-13A, B16B-13B, B16B-17, B16B-18, B16B-18 Offs, B16B-19, B16B-20, B16B-20 Offs, B16B-21 and B16B-22, with a total onsite area of 8.81 acres.

* SUMMARY OF RESULTS USING CALCULATIONS PROVIDED IN EXAMPLE # 1 A & 1 B(COMPLETE DRAINAGE SYSTEM B)						* SUMMARY OF RESULTS USING CALCULATIONS PROVIDED IN EXAMPLE # 4 (PrFD16B-3)										
WQ Req Full Area =	4.88	Ac-ft				WQ Req Full Area =	1.00	Ac-ft								
WQ Req Partial =	1.91	Ac-ft	(Existing Treatment plus additional Imperv.= 1.45+0.46=1.91 Ac-ft)			WQ Req Partial =	0.09	Ac-ft	(Existing Treatment plus additional Imperv.= 0.00+0.09=0.09 Ac-ft)							
WQ Pov. =	5.79	Ac-ft	>	1.91	Ac-ft	Meet Criteria	Ok									
WQ Pov. =	0.51	Ac-ft	>	0.09	Ac-ft	Meet Criteria	Ok									
* SUMMARY OF RESULTS USING CALCULATIONS PROVIDED IN EXAMPLE # 2 (PrFD16B-1)						* SUMMARY OF RESULTS USING CALCULATIONS PROVIDED IN EXAMPLE # 5 (POND 16B-1)										
WQ Req Full Area =	0.80	Ac-ft				WQ Req Full Area =	1.26	Ac-ft								
WQ Req Partial =	0.13	Ac-ft	(Existing Treatment plus additional Imperv.= 0.00+0.13=0.13 Ac-ft)			WQ Req Partial =	1.08	Ac-ft	(Existing Treatment plus additional Imperv.= 0.94+0.14=1.08 Ac-ft)							
WQ Pov. =	0.29	Ac-ft	>	0.13	Ac-ft	Meet Criteria	Ok									
WQ Pov. =	1.72	Ac-ft	>	1.08	Ac-ft	Meet Criteria	Ok									
* SUMMARY OF RESULTS USING CALCULATIONS PROVIDED IN EXAMPLE # 3 (PrFD16B-2)																
WQ Req Full Area =	0.35	Ac-ft														
WQ Req Partial =	0.07	Ac-ft	(Existing Treatment plus additional Imperv.= 0+0.07=0.07 Ac-ft)													
WQ Pov. =	0.27	Ac-ft	>	0.07	Ac-ft	Meet Criteria	Ok									

POND/SWALE/FD	TYPE	WEIR EL.	VOLUME	
		(ft-NAVD)	(Ac-ft)	
POND 16B-1	DRY DETENTION	2.40	1.72	* see example # 5
POND 16B-2	DRY DETENTION	4.92	0.70	* see example # 6
SWALE 16B-1	DRY RETENTION	4.50	0.57	* see example # 7
SWALE 16B-3	DRY RETENTION	6.50	0.47	* see example # 8
PrFD16B-1	FRENCH DRAIN	3.60	0.29	* see example # 2
PrFD16B-2	FRENCH DRAIN	3.60	0.27	*see example # 3
PrFD16B-3	FRENCH DRAIN	3.60	0.51	*see example # 4



S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: S.O.
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

BASIN 16B - ADDITIONAL IMPERVIOUS AREA
WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)

II- ADDED IMPERVIOUS AREA:

Added Impervious	2.20	Ac
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Existing Impervious Area= 26.24 Ac Proposing Impervious Area= 28.44 Ac

WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.
 For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

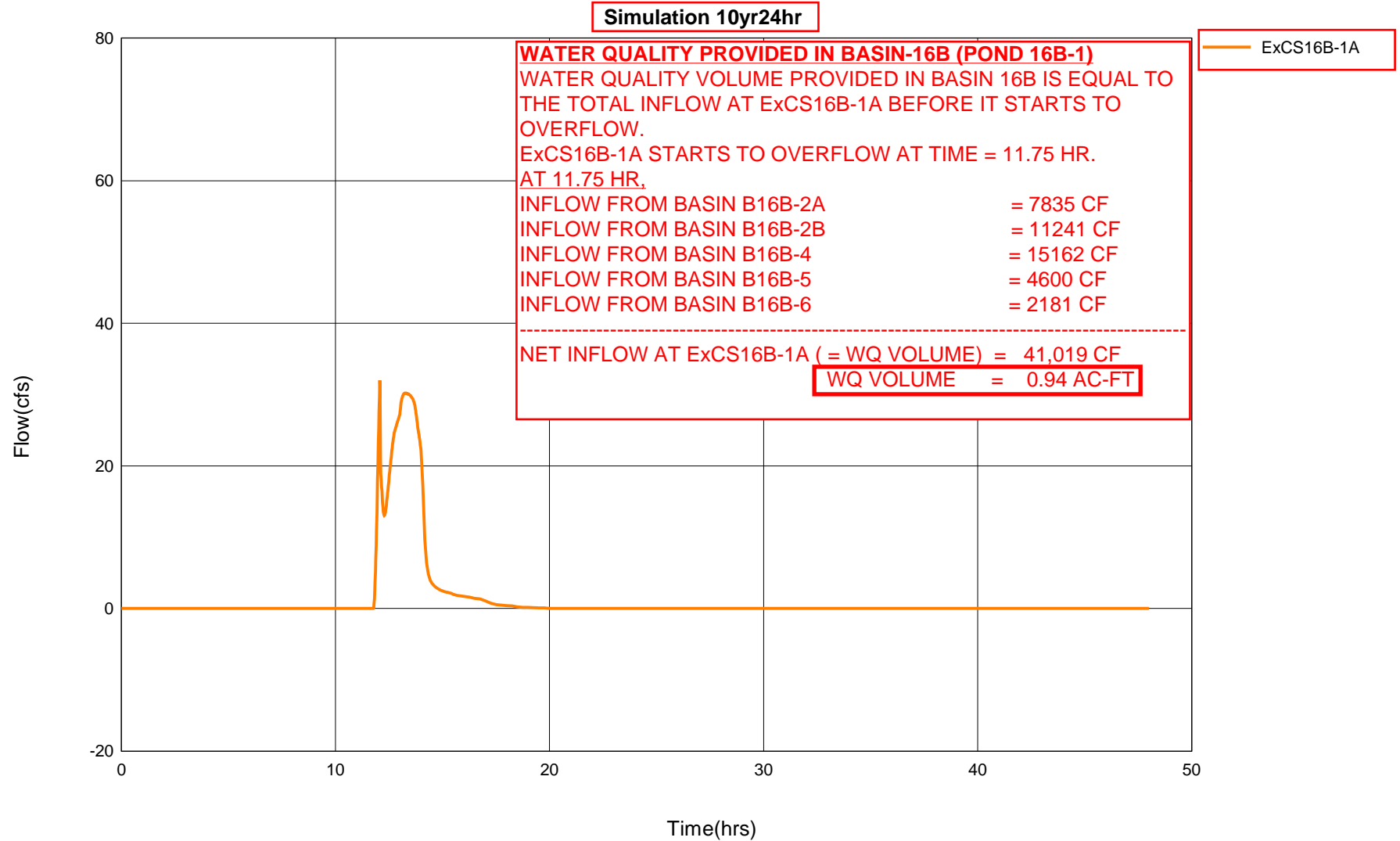
$$WQ (2.5") = \quad \mathbf{0.46} \quad \text{Ac-ft}$$

III- Existing Water Quality Volume in Pre WQp = 1.45 Ac-ft - SEE EXAMPLE #1A & 1B

IV- Water Quality Volume required in Post = Existing + additional Impervious= 1.45+0.46 =1.91 Ac-ft
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EXAMPLE #1-A (ExCS16B-1A)

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS



I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-2A	BASE	11.65	2.817	0.023	2.815	0.023	7502	2.520	0.88	0.00
10yr24hr	B16B-2A	BASE	11.67	2.839	0.023	2.838	0.023	7555	2.538	0.90	0.00
10yr24hr	B16B-2A	BASE	11.68	2.862	0.023	2.860	0.023	7610	2.556	0.91	0.00
10yr24hr	B16B-2A	BASE	11.70	2.885	0.023	2.883	0.023	7665	2.575	0.93	0.00
10yr24hr	B16B-2A	BASE	11.72	2.907	0.023	2.906	0.023	7721	2.594	0.94	0.00
10yr24hr	B16B-2A	BASE	11.73	2.930	0.023	2.928	0.023	7778	2.613	0.95	0.00
10yr24hr	B16B-2A	BASE	11.75	2.953	0.023	2.951	0.023	7835	2.632	0.97	0.00
10yr24hr	B16B-2A	BASE	11.77	3.005	0.053	3.014	0.063	7894	2.652	1.00	0.00
10yr24hr	B16B-2A	BASE	11.78	3.103	0.098	3.102	0.087	7955	2.673	1.04	0.00
10yr24hr	B16B-2A	BASE	11.80	3.201	0.098	3.199	0.098	8020	2.694	1.12	0.00
10yr24hr	B16B-2A	BASE	11.82	3.299	0.098	3.297	0.098	8091	2.718	1.25	0.00
10yr24hr	B16B-2A	BASE	11.83	3.397	0.098	3.395	0.098	8171	2.745	1.42	0.00
10yr24hr	B16B-2A	BASE	11.85	3.495	0.098	3.493	0.098	8263	2.776	1.63	0.00
10yr24hr	B16B-2A	BASE	11.87	3.592	0.098	3.591	0.098	8368	2.811	1.86	0.00
10yr24hr	B16B-2A	BASE	11.88	3.690	0.098	3.689	0.098	8486	2.851	2.08	0.00
10yr24hr	B16B-2A	BASE	11.90	3.788	0.098	3.786	0.098	8617	2.895	2.29	0.00
10yr24hr	B16B-2A	BASE	11.92	3.886	0.098	3.884	0.098	8761	2.943	2.49	0.00
10yr24hr	B16B-2A	BASE	11.93	3.984	0.098	3.982	0.098	8915	2.995	2.67	0.00
10yr24hr	B16B-2A	BASE	11.95	4.082	0.098	4.080	0.098	9081	3.051	2.83	0.00
10yr24hr	B16B-2A	BASE	11.97	4.179	0.098	4.178	0.098	9255	3.109	2.98	0.00
10yr24hr	B16B-2A	BASE	11.98	4.277	0.098	4.276	0.098	9438	3.171	3.12	0.00
10yr24hr	B16B-2A	BASE	12.00	4.375	0.098	4.373	0.098	9629	3.235	3.24	0.00
10yr24hr	B16B-2A	BASE	12.02	4.473	0.098	4.472	0.098	9826	3.301	3.35	0.00
10yr24hr	B16B-2A	BASE	12.03	4.572	0.098	4.570	0.098	10031	3.370	3.46	0.00
10yr24hr	B16B-2A	BASE	12.05	4.670	0.098	4.669	0.098	10241	3.441	3.56	0.00
10yr24hr	B16B-2A	BASE	12.07	4.769	0.098	4.767	0.098	10457	3.513	3.65	0.00
10yr24hr	B16B-2A	BASE	12.08	4.867	0.098	4.866	0.098	10679	3.588	3.73	0.00
10yr24hr	B16B-2A	BASE	12.10	4.966	0.098	4.964	0.098	10905	3.664	3.81	0.00
10yr24hr	B16B-2A	BASE	12.12	5.064	0.098	5.062	0.098	11136	3.741	3.89	0.00
10yr24hr	B16B-2A	BASE	12.13	5.162	0.098	5.161	0.098	11372	3.820	3.96	0.00
10yr24hr	B16B-2A	BASE	12.15	5.261	0.098	5.259	0.098	11611	3.901	4.02	0.00
10yr24hr	B16B-2A	BASE	12.17	5.359	0.098	5.358	0.098	11854	3.982	4.08	0.00
10yr24hr	B16B-2A	BASE	12.18	5.458	0.098	5.456	0.098	12100	4.065	4.13	0.00
10yr24hr	B16B-2A	BASE	12.20	5.556	0.098	5.555	0.098	12350	4.149	4.18	0.00
10yr24hr	B16B-2A	BASE	12.22	5.655	0.098	5.653	0.098	12603	4.234	4.23	0.00
10yr24hr	B16B-2A	BASE	12.23	5.753	0.098	5.742	0.089	12858	4.320	4.27	0.00
10yr24hr	B16B-2A	BASE	12.25	5.806	0.053	5.804	0.062	13115	4.406	4.30	0.00
10yr24hr	B16B-2A	BASE	12.27	5.828	0.022	5.826	0.022	13373	4.493	4.30	0.00
10yr24hr	B16B-2A	BASE	12.28	5.850	0.022	5.848	0.022	13630	4.579	4.26	0.00
10yr24hr	B16B-2A	BASE	12.30	5.872	0.022	5.870	0.022	13882	4.664	4.17	0.00
10yr24hr	B16B-2A	BASE	12.32	5.894	0.022	5.893	0.022	14128	4.746	4.03	0.00
10yr24hr	B16B-2A	BASE	12.33	5.916	0.022	5.915	0.022	14365	4.826	3.85	0.00
10yr24hr	B16B-2A	BASE	12.35	5.938	0.022	5.937	0.022	14590	4.902	3.66	0.00
10yr24hr	B16B-2A	BASE	12.37	5.960	0.022	5.959	0.022	14804	4.974	3.48	0.00
10yr24hr	B16B-2A	BASE	12.38	5.983	0.022	5.981	0.022	15008	5.042	3.30	0.00
10yr24hr	B16B-2A	BASE	12.40	6.005	0.022	6.003	0.022	15201	5.107	3.14	0.00
10yr24hr	B16B-2A	BASE	12.42	6.027	0.022	6.025	0.022	15385	5.168	2.99	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-2B	BASE	11.18	2.321	0.012	0.627	0.007	7187	0.527	1.40	0.00
10yr24hr	B16B-2B	BASE	11.20	2.332	0.012	0.634	0.007	7271	0.533	1.42	0.00
10yr24hr	B16B-2B	BASE	11.22	2.344	0.012	0.640	0.007	7357	0.539	1.43	0.00
10yr24hr	B16B-2B	BASE	11.23	2.355	0.012	0.647	0.007	7443	0.545	1.44	0.00
10yr24hr	B16B-2B	BASE	11.25	2.367	0.012	0.655	0.007	7529	0.552	1.45	0.00
10yr24hr	B16B-2B	BASE	11.27	2.382	0.015	0.663	0.008	7617	0.558	1.46	0.00
10yr24hr	B16B-2B	BASE	11.28	2.398	0.016	0.673	0.010	7705	0.565	1.48	0.00
10yr24hr	B16B-2B	BASE	11.30	2.415	0.016	0.683	0.010	7795	0.571	1.51	0.00
10yr24hr	B16B-2B	BASE	11.32	2.431	0.016	0.693	0.010	7886	0.578	1.54	0.00
10yr24hr	B16B-2B	BASE	11.33	2.447	0.016	0.703	0.010	7979	0.585	1.58	0.00
10yr24hr	B16B-2B	BASE	11.35	2.464	0.016	0.714	0.010	8075	0.592	1.62	0.00
10yr24hr	B16B-2B	BASE	11.37	2.480	0.016	0.724	0.010	8174	0.599	1.67	0.00
10yr24hr	B16B-2B	BASE	11.38	2.497	0.016	0.734	0.010	8276	0.606	1.72	0.00
10yr24hr	B16B-2B	BASE	11.40	2.513	0.016	0.744	0.010	8380	0.614	1.76	0.00
10yr24hr	B16B-2B	BASE	11.42	2.529	0.016	0.755	0.010	8487	0.622	1.81	0.00
10yr24hr	B16B-2B	BASE	11.43	2.546	0.016	0.765	0.010	8597	0.630	1.85	0.00
10yr24hr	B16B-2B	BASE	11.45	2.562	0.016	0.775	0.010	8709	0.638	1.88	0.00
10yr24hr	B16B-2B	BASE	11.47	2.579	0.016	0.786	0.010	8823	0.646	1.92	0.00
10yr24hr	B16B-2B	BASE	11.48	2.595	0.016	0.796	0.010	8939	0.655	1.95	0.00
10yr24hr	B16B-2B	BASE	11.50	2.613	0.018	0.809	0.012	9057	0.664	1.98	0.00
10yr24hr	B16B-2B	BASE	11.52	2.636	0.023	0.822	0.014	9177	0.672	2.02	0.00
10yr24hr	B16B-2B	BASE	11.53	2.658	0.023	0.837	0.015	9299	0.681	2.06	0.00
10yr24hr	B16B-2B	BASE	11.55	2.681	0.023	0.852	0.015	9424	0.690	2.11	0.00
10yr24hr	B16B-2B	BASE	11.57	2.704	0.023	0.866	0.015	9553	0.700	2.18	0.00
10yr24hr	B16B-2B	BASE	11.58	2.726	0.023	0.881	0.015	9686	0.710	2.25	0.00
10yr24hr	B16B-2B	BASE	11.60	2.749	0.023	0.896	0.015	9823	0.720	2.33	0.00
10yr24hr	B16B-2B	BASE	11.62	2.771	0.023	0.911	0.015	9965	0.730	2.40	0.00
10yr24hr	B16B-2B	BASE	11.63	2.794	0.023	0.926	0.015	10111	0.741	2.47	0.00
10yr24hr	B16B-2B	BASE	11.65	2.817	0.023	0.941	0.015	10262	0.752	2.54	0.00
10yr24hr	B16B-2B	BASE	11.67	2.839	0.023	0.956	0.015	10416	0.763	2.61	0.00
10yr24hr	B16B-2B	BASE	11.68	2.862	0.023	0.972	0.015	10575	0.775	2.67	0.00
10yr24hr	B16B-2B	BASE	11.70	2.885	0.023	0.987	0.015	10737	0.787	2.73	0.00
10yr24hr	B16B-2B	BASE	11.72	2.907	0.023	1.002	0.015	10902	0.799	2.78	0.00
10yr24hr	B16B-2B	BASE	11.73	2.930	0.023	1.018	0.015	11070	0.811	2.83	0.00
10yr24hr	B16B-2B	BASE	11.75	2.953	0.023	1.033	0.016	11241	0.824	2.87	0.00
10yr24hr	B16B-2B	BASE	11.77	3.005	0.053	1.077	0.044	11416	0.836	2.98	0.00
10yr24hr	B16B-2B	BASE	11.78	3.103	0.098	1.138	0.061	11600	0.850	3.14	0.00
10yr24hr	B16B-2B	BASE	11.80	3.201	0.098	1.207	0.069	11796	0.864	3.39	0.00
10yr24hr	B16B-2B	BASE	11.82	3.299	0.098	1.277	0.070	12012	0.880	3.82	0.00
10yr24hr	B16B-2B	BASE	11.83	3.397	0.098	1.349	0.071	12259	0.898	4.41	0.00
10yr24hr	B16B-2B	BASE	11.85	3.495	0.098	1.421	0.072	12544	0.919	5.10	0.00
10yr24hr	B16B-2B	BASE	11.87	3.592	0.098	1.493	0.073	12873	0.943	5.87	0.00
10yr24hr	B16B-2B	BASE	11.88	3.690	0.098	1.567	0.074	13248	0.971	6.63	0.00
10yr24hr	B16B-2B	BASE	11.90	3.788	0.098	1.642	0.074	13668	1.001	7.37	0.00
10yr24hr	B16B-2B	BASE	11.92	3.886	0.098	1.717	0.075	14132	1.035	8.07	0.00
10yr24hr	B16B-2B	BASE	11.93	3.984	0.098	1.793	0.076	14636	1.072	8.74	0.00
10yr24hr	B16B-2B	BASE	11.95	4.082	0.098	1.869	0.077	15179	1.112	9.35	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-4	BASE	11.03	2.216	0.012	0.669	0.007	9064	0.568	1.66	0.00
10yr24hr	B16B-4	BASE	11.05	2.228	0.012	0.676	0.007	9164	0.574	1.67	0.00
10yr24hr	B16B-4	BASE	11.07	2.239	0.012	0.684	0.007	9265	0.580	1.69	0.00
10yr24hr	B16B-4	BASE	11.08	2.251	0.012	0.691	0.007	9367	0.586	1.71	0.00
10yr24hr	B16B-4	BASE	11.10	2.263	0.012	0.699	0.007	9470	0.593	1.73	0.00
10yr24hr	B16B-4	BASE	11.12	2.274	0.012	0.706	0.007	9574	0.599	1.74	0.00
10yr24hr	B16B-4	BASE	11.13	2.286	0.012	0.714	0.007	9679	0.606	1.76	0.00
10yr24hr	B16B-4	BASE	11.15	2.297	0.012	0.721	0.007	9785	0.613	1.78	0.00
10yr24hr	B16B-4	BASE	11.17	2.309	0.012	0.729	0.008	9893	0.619	1.79	0.00
10yr24hr	B16B-4	BASE	11.18	2.321	0.012	0.736	0.008	10001	0.626	1.81	0.00
10yr24hr	B16B-4	BASE	11.20	2.332	0.012	0.744	0.008	10110	0.633	1.82	0.00
10yr24hr	B16B-4	BASE	11.22	2.344	0.012	0.751	0.008	10219	0.640	1.84	0.00
10yr24hr	B16B-4	BASE	11.23	2.355	0.012	0.759	0.008	10330	0.647	1.85	0.00
10yr24hr	B16B-4	BASE	11.25	2.367	0.012	0.767	0.008	10441	0.654	1.86	0.00
10yr24hr	B16B-4	BASE	11.27	2.382	0.015	0.776	0.009	10553	0.661	1.88	0.00
10yr24hr	B16B-4	BASE	11.28	2.398	0.016	0.787	0.011	10667	0.668	1.90	0.00
10yr24hr	B16B-4	BASE	11.30	2.415	0.016	0.798	0.011	10782	0.675	1.93	0.00
10yr24hr	B16B-4	BASE	11.32	2.431	0.016	0.809	0.011	10899	0.682	1.97	0.00
10yr24hr	B16B-4	BASE	11.33	2.447	0.016	0.820	0.011	11019	0.690	2.02	0.00
10yr24hr	B16B-4	BASE	11.35	2.464	0.016	0.831	0.011	11141	0.698	2.08	0.00
10yr24hr	B16B-4	BASE	11.37	2.480	0.016	0.842	0.011	11268	0.705	2.14	0.00
10yr24hr	B16B-4	BASE	11.38	2.497	0.016	0.853	0.011	11398	0.714	2.20	0.00
10yr24hr	B16B-4	BASE	11.40	2.513	0.016	0.864	0.011	11532	0.722	2.25	0.00
10yr24hr	B16B-4	BASE	11.42	2.529	0.016	0.875	0.011	11668	0.731	2.31	0.00
10yr24hr	B16B-4	BASE	11.43	2.546	0.016	0.886	0.011	11808	0.739	2.36	0.00
10yr24hr	B16B-4	BASE	11.45	2.562	0.016	0.898	0.011	11951	0.748	2.40	0.00
10yr24hr	B16B-4	BASE	11.47	2.579	0.016	0.909	0.011	12096	0.757	2.44	0.00
10yr24hr	B16B-4	BASE	11.48	2.595	0.016	0.920	0.011	12244	0.767	2.48	0.00
10yr24hr	B16B-4	BASE	11.50	2.613	0.018	0.934	0.013	12395	0.776	2.52	0.00
10yr24hr	B16B-4	BASE	11.52	2.636	0.023	0.948	0.015	12547	0.786	2.57	0.00
10yr24hr	B16B-4	BASE	11.53	2.658	0.023	0.964	0.016	12703	0.795	2.62	0.00
10yr24hr	B16B-4	BASE	11.55	2.681	0.023	0.980	0.016	12862	0.805	2.69	0.00
10yr24hr	B16B-4	BASE	11.57	2.704	0.023	0.996	0.016	13026	0.816	2.77	0.00
10yr24hr	B16B-4	BASE	11.58	2.726	0.023	1.012	0.016	13195	0.826	2.86	0.00
10yr24hr	B16B-4	BASE	11.60	2.749	0.023	1.028	0.016	13369	0.837	2.95	0.00
10yr24hr	B16B-4	BASE	11.62	2.771	0.023	1.044	0.016	13549	0.848	3.04	0.00
10yr24hr	B16B-4	BASE	11.63	2.794	0.023	1.060	0.016	13734	0.860	3.13	0.00
10yr24hr	B16B-4	BASE	11.65	2.817	0.023	1.076	0.016	13925	0.872	3.22	0.00
10yr24hr	B16B-4	BASE	11.67	2.839	0.023	1.093	0.016	14120	0.884	3.30	0.00
10yr24hr	B16B-4	BASE	11.68	2.862	0.023	1.109	0.016	14321	0.897	3.37	0.00
10yr24hr	B16B-4	BASE	11.70	2.885	0.023	1.125	0.016	14525	0.909	3.44	0.00
10yr24hr	B16B-4	BASE	11.72	2.907	0.023	1.142	0.016	14734	0.922	3.51	0.00
10yr24hr	B16B-4	BASE	11.73	2.930	0.023	1.158	0.017	14946	0.936	3.57	0.00
10yr24hr	B16B-4	BASE	11.75	2.953	0.023	1.175	0.017	15162	0.949	3.62	0.00
10yr24hr	B16B-4	BASE	11.77	3.005	0.053	1.222	0.047	15383	0.963	3.75	0.00
10yr24hr	B16B-4	BASE	11.78	3.103	0.098	1.287	0.065	15614	0.978	3.96	0.00
10yr24hr	B16B-4	BASE	11.80	3.201	0.098	1.360	0.073	15861	0.993	4.26	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-5	BASE	11.67	2.839	0.023	0.944	0.015	4260	0.752	1.07	0.00
10yr24hr	B16B-5	BASE	11.68	2.862	0.023	0.959	0.015	4326	0.764	1.10	0.00
10yr24hr	B16B-5	BASE	11.70	2.885	0.023	0.975	0.015	4392	0.776	1.12	0.00
10yr24hr	B16B-5	BASE	11.72	2.907	0.023	0.990	0.015	4460	0.788	1.14	0.00
10yr24hr	B16B-5	BASE	11.73	2.930	0.023	1.005	0.015	4529	0.800	1.16	0.00
10yr24hr	B16B-5	BASE	11.75	2.953	0.023	1.021	0.015	4600	0.812	1.18	0.00
10yr24hr	B16B-5	BASE	11.77	3.005	0.053	1.064	0.043	4672	0.825	1.23	0.00
10yr24hr	B16B-5	BASE	11.78	3.103	0.098	1.125	0.061	4748	0.838	1.29	0.00
10yr24hr	B16B-5	BASE	11.80	3.201	0.098	1.193	0.069	4828	0.853	1.40	0.00
10yr24hr	B16B-5	BASE	11.82	3.299	0.098	1.263	0.070	4918	0.868	1.57	0.00
10yr24hr	B16B-5	BASE	11.83	3.397	0.098	1.334	0.071	5019	0.886	1.82	0.00
10yr24hr	B16B-5	BASE	11.85	3.495	0.098	1.406	0.072	5137	0.907	2.10	0.00
10yr24hr	B16B-5	BASE	11.87	3.592	0.098	1.478	0.072	5273	0.931	2.42	0.00
10yr24hr	B16B-5	BASE	11.88	3.690	0.098	1.551	0.073	5427	0.958	2.73	0.00
10yr24hr	B16B-5	BASE	11.90	3.788	0.098	1.625	0.074	5600	0.989	3.04	0.00
10yr24hr	B16B-5	BASE	11.92	3.886	0.098	1.700	0.075	5791	1.023	3.33	0.00
10yr24hr	B16B-5	BASE	11.93	3.984	0.098	1.776	0.075	5999	1.059	3.61	0.00
10yr24hr	B16B-5	BASE	11.95	4.082	0.098	1.852	0.076	6223	1.099	3.86	0.00
10yr24hr	B16B-5	BASE	11.97	4.179	0.098	1.929	0.077	6462	1.141	4.09	0.00
10yr24hr	B16B-5	BASE	11.98	4.277	0.098	2.006	0.077	6714	1.186	4.31	0.00
10yr24hr	B16B-5	BASE	12.00	4.375	0.098	2.084	0.078	6979	1.232	4.52	0.00
10yr24hr	B16B-5	BASE	12.02	4.473	0.098	2.163	0.079	7255	1.281	4.71	0.00
10yr24hr	B16B-5	BASE	12.03	4.572	0.098	2.243	0.080	7544	1.332	4.89	0.00
10yr24hr	B16B-5	BASE	12.05	4.670	0.098	2.323	0.080	7843	1.385	5.07	0.00
10yr24hr	B16B-5	BASE	12.07	4.769	0.098	2.404	0.081	8152	1.440	5.24	0.00
10yr24hr	B16B-5	BASE	12.08	4.867	0.098	2.485	0.081	8471	1.496	5.40	0.00
10yr24hr	B16B-5	BASE	12.10	4.966	0.098	2.566	0.082	8800	1.554	5.55	0.00
10yr24hr	B16B-5	BASE	12.12	5.064	0.098	2.648	0.082	9137	1.614	5.70	0.00
10yr24hr	B16B-5	BASE	12.13	5.162	0.098	2.731	0.082	9483	1.675	5.84	0.00
10yr24hr	B16B-5	BASE	12.15	5.261	0.098	2.814	0.083	9837	1.737	5.97	0.00
10yr24hr	B16B-5	BASE	12.17	5.359	0.098	2.897	0.083	10199	1.801	6.09	0.00
10yr24hr	B16B-5	BASE	12.18	5.458	0.098	2.981	0.084	10567	1.866	6.21	0.00
10yr24hr	B16B-5	BASE	12.20	5.556	0.098	3.064	0.084	10943	1.932	6.32	0.00
10yr24hr	B16B-5	BASE	12.22	5.655	0.098	3.149	0.084	11325	2.000	6.42	0.00
10yr24hr	B16B-5	BASE	12.23	5.753	0.098	3.225	0.076	11714	2.069	6.52	0.00
10yr24hr	B16B-5	BASE	12.25	5.806	0.053	3.279	0.054	12107	2.138	6.59	0.00
10yr24hr	B16B-5	BASE	12.27	5.828	0.022	3.298	0.019	12504	2.208	6.62	0.00
10yr24hr	B16B-5	BASE	12.28	5.850	0.022	3.317	0.019	12900	2.278	6.58	0.00
10yr24hr	B16B-5	BASE	12.30	5.872	0.022	3.336	0.019	13291	2.347	6.46	0.00
10yr24hr	B16B-5	BASE	12.32	5.894	0.022	3.355	0.019	13672	2.414	6.26	0.00
10yr24hr	B16B-5	BASE	12.33	5.916	0.022	3.375	0.019	14040	2.479	5.99	0.00
10yr24hr	B16B-5	BASE	12.35	5.938	0.022	3.394	0.019	14391	2.541	5.70	0.00
10yr24hr	B16B-5	BASE	12.37	5.960	0.022	3.413	0.019	14724	2.600	5.42	0.00
10yr24hr	B16B-5	BASE	12.38	5.983	0.022	3.432	0.019	15041	2.656	5.15	0.00
10yr24hr	B16B-5	BASE	12.40	6.005	0.022	3.451	0.019	15342	2.709	4.89	0.00
10yr24hr	B16B-5	BASE	12.42	6.027	0.022	3.471	0.019	15629	2.760	4.67	0.00
10yr24hr	B16B-5	BASE	12.43	6.049	0.022	3.490	0.019	15904	2.808	4.47	0.00

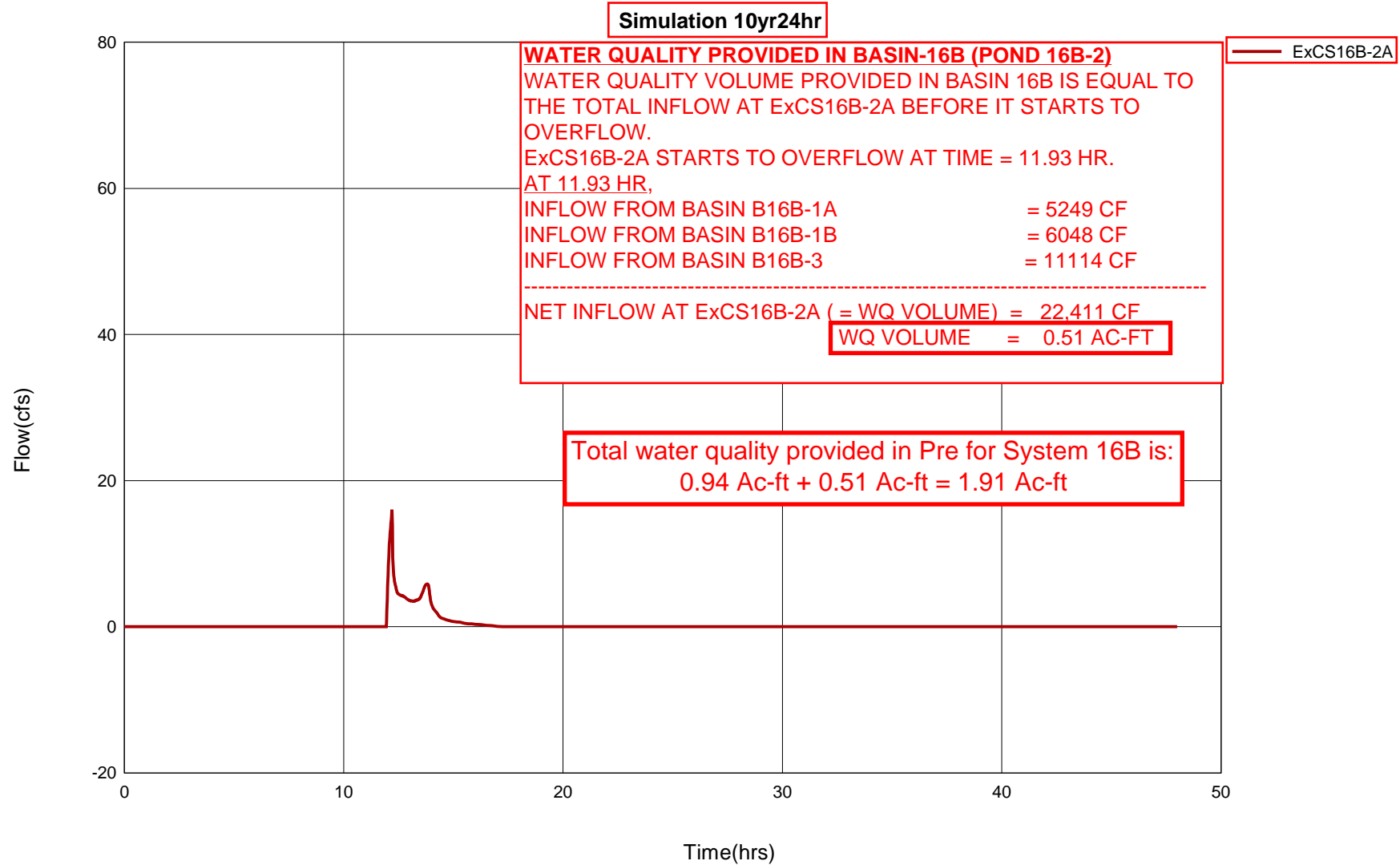
I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-6	BASE	11.20	2.332	0.012	0.790	0.008	1470	0.675	0.26	0.00
10yr24hr	B16B-6	BASE	11.22	2.344	0.012	0.797	0.008	1486	0.682	0.26	0.00
10yr24hr	B16B-6	BASE	11.23	2.355	0.012	0.805	0.008	1501	0.689	0.26	0.00
10yr24hr	B16B-6	BASE	11.25	2.367	0.012	0.814	0.008	1517	0.697	0.26	0.00
10yr24hr	B16B-6	BASE	11.27	2.382	0.015	0.823	0.009	1533	0.704	0.27	0.00
10yr24hr	B16B-6	BASE	11.28	2.398	0.016	0.834	0.011	1549	0.711	0.27	0.00
10yr24hr	B16B-6	BASE	11.30	2.415	0.016	0.846	0.011	1565	0.719	0.27	0.00
10yr24hr	B16B-6	BASE	11.32	2.431	0.016	0.857	0.011	1582	0.726	0.28	0.00
10yr24hr	B16B-6	BASE	11.33	2.447	0.016	0.868	0.011	1599	0.734	0.28	0.00
10yr24hr	B16B-6	BASE	11.35	2.464	0.016	0.880	0.011	1616	0.742	0.29	0.00
10yr24hr	B16B-6	BASE	11.37	2.480	0.016	0.891	0.011	1634	0.750	0.30	0.00
10yr24hr	B16B-6	BASE	11.38	2.497	0.016	0.902	0.011	1652	0.759	0.31	0.00
10yr24hr	B16B-6	BASE	11.40	2.513	0.016	0.914	0.011	1671	0.767	0.32	0.00
10yr24hr	B16B-6	BASE	11.42	2.529	0.016	0.925	0.012	1690	0.776	0.32	0.00
10yr24hr	B16B-6	BASE	11.43	2.546	0.016	0.937	0.012	1710	0.785	0.33	0.00
10yr24hr	B16B-6	BASE	11.45	2.562	0.016	0.948	0.012	1730	0.794	0.34	0.00
10yr24hr	B16B-6	BASE	11.47	2.579	0.016	0.960	0.012	1750	0.804	0.34	0.00
10yr24hr	B16B-6	BASE	11.48	2.595	0.016	0.972	0.012	1771	0.813	0.35	0.00
10yr24hr	B16B-6	BASE	11.50	2.613	0.018	0.985	0.014	1792	0.823	0.36	0.00
10yr24hr	B16B-6	BASE	11.52	2.636	0.023	1.001	0.015	1814	0.833	0.36	0.00
10yr24hr	B16B-6	BASE	11.53	2.658	0.023	1.017	0.016	1836	0.843	0.37	0.00
10yr24hr	B16B-6	BASE	11.55	2.681	0.023	1.033	0.016	1858	0.853	0.38	0.00
10yr24hr	B16B-6	BASE	11.57	2.704	0.023	1.049	0.016	1881	0.864	0.39	0.00
10yr24hr	B16B-6	BASE	11.58	2.726	0.023	1.066	0.016	1905	0.875	0.40	0.00
10yr24hr	B16B-6	BASE	11.60	2.749	0.023	1.082	0.016	1929	0.886	0.41	0.00
10yr24hr	B16B-6	BASE	11.62	2.771	0.023	1.099	0.017	1955	0.897	0.43	0.00
10yr24hr	B16B-6	BASE	11.63	2.794	0.023	1.115	0.017	1981	0.909	0.44	0.00
10yr24hr	B16B-6	BASE	11.65	2.817	0.023	1.132	0.017	2007	0.922	0.45	0.00
10yr24hr	B16B-6	BASE	11.67	2.839	0.023	1.149	0.017	2035	0.934	0.46	0.00
10yr24hr	B16B-6	BASE	11.68	2.862	0.023	1.166	0.017	2063	0.947	0.47	0.00
10yr24hr	B16B-6	BASE	11.70	2.885	0.023	1.182	0.017	2092	0.960	0.48	0.00
10yr24hr	B16B-6	BASE	11.72	2.907	0.023	1.199	0.017	2121	0.974	0.49	0.00
10yr24hr	B16B-6	BASE	11.73	2.930	0.023	1.216	0.017	2151	0.987	0.50	0.00
10yr24hr	B16B-6	BASE	11.75	2.953	0.023	1.233	0.017	2181	1.001	0.51	0.00
10yr24hr	B16B-6	BASE	11.77	3.005	0.053	1.281	0.048	2212	1.016	0.53	0.00
10yr24hr	B16B-6	BASE	11.78	3.103	0.098	1.347	0.067	2244	1.030	0.55	0.00
10yr24hr	B16B-6	BASE	11.80	3.201	0.098	1.423	0.075	2279	1.046	0.60	0.00
10yr24hr	B16B-6	BASE	11.82	3.299	0.098	1.499	0.076	2317	1.064	0.67	0.00
10yr24hr	B16B-6	BASE	11.83	3.397	0.098	1.576	0.077	2360	1.084	0.77	0.00
10yr24hr	B16B-6	BASE	11.85	3.495	0.098	1.654	0.078	2410	1.107	0.89	0.00
10yr24hr	B16B-6	BASE	11.87	3.592	0.098	1.732	0.078	2468	1.133	1.02	0.00
10yr24hr	B16B-6	BASE	11.88	3.690	0.098	1.811	0.079	2533	1.163	1.16	0.00
10yr24hr	B16B-6	BASE	11.90	3.788	0.098	1.891	0.080	2606	1.197	1.28	0.00
10yr24hr	B16B-6	BASE	11.92	3.886	0.098	1.971	0.080	2687	1.234	1.40	0.00
10yr24hr	B16B-6	BASE	11.93	3.984	0.098	2.052	0.081	2774	1.274	1.51	0.00
10yr24hr	B16B-6	BASE	11.95	4.082	0.098	2.133	0.082	2868	1.317	1.62	0.00
10yr24hr	B16B-6	BASE	11.97	4.179	0.098	2.215	0.082	2968	1.363	1.71	0.00

EXAMPLE #1-B (ExCS16B-2A)

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B

PRE-DEVELOPMENT CONDITIONS



I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-1A	BASE	11.32	2.431	0.016	0.390	0.007	2383	0.308	0.61	0.00
10yr24hr	B16B-1A	BASE	11.33	2.447	0.016	0.397	0.007	2420	0.313	0.63	0.00
10yr24hr	B16B-1A	BASE	11.35	2.464	0.016	0.404	0.007	2458	0.318	0.65	0.00
10yr24hr	B16B-1A	BASE	11.37	2.480	0.016	0.412	0.007	2497	0.323	0.67	0.00
10yr24hr	B16B-1A	BASE	11.38	2.497	0.016	0.419	0.007	2538	0.328	0.69	0.00
10yr24hr	B16B-1A	BASE	11.40	2.513	0.016	0.427	0.007	2580	0.334	0.71	0.00
10yr24hr	B16B-1A	BASE	11.42	2.529	0.016	0.434	0.008	2623	0.339	0.73	0.00
10yr24hr	B16B-1A	BASE	11.43	2.546	0.016	0.442	0.008	2667	0.345	0.75	0.00
10yr24hr	B16B-1A	BASE	11.45	2.562	0.016	0.450	0.008	2713	0.351	0.76	0.00
10yr24hr	B16B-1A	BASE	11.47	2.579	0.016	0.457	0.008	2759	0.357	0.78	0.00
10yr24hr	B16B-1A	BASE	11.48	2.595	0.016	0.465	0.008	2806	0.363	0.79	0.00
10yr24hr	B16B-1A	BASE	11.50	2.613	0.018	0.474	0.009	2854	0.369	0.81	0.00
10yr24hr	B16B-1A	BASE	11.52	2.636	0.023	0.484	0.010	2903	0.375	0.82	0.00
10yr24hr	B16B-1A	BASE	11.53	2.658	0.023	0.495	0.011	2953	0.382	0.84	0.00
10yr24hr	B16B-1A	BASE	11.55	2.681	0.023	0.506	0.011	3004	0.389	0.87	0.00
10yr24hr	B16B-1A	BASE	11.57	2.704	0.023	0.517	0.011	3057	0.395	0.90	0.00
10yr24hr	B16B-1A	BASE	11.58	2.726	0.023	0.528	0.011	3112	0.402	0.93	0.00
10yr24hr	B16B-1A	BASE	11.60	2.749	0.023	0.540	0.011	3169	0.410	0.96	0.00
10yr24hr	B16B-1A	BASE	11.62	2.771	0.023	0.551	0.011	3227	0.417	1.00	0.00
10yr24hr	B16B-1A	BASE	11.63	2.794	0.023	0.562	0.011	3288	0.425	1.03	0.00
10yr24hr	B16B-1A	BASE	11.65	2.817	0.023	0.574	0.011	3351	0.433	1.06	0.00
10yr24hr	B16B-1A	BASE	11.67	2.839	0.023	0.586	0.012	3416	0.442	1.09	0.00
10yr24hr	B16B-1A	BASE	11.68	2.862	0.023	0.597	0.012	3482	0.450	1.12	0.00
10yr24hr	B16B-1A	BASE	11.70	2.885	0.023	0.609	0.012	3550	0.459	1.15	0.00
10yr24hr	B16B-1A	BASE	11.72	2.907	0.023	0.621	0.012	3619	0.468	1.17	0.00
10yr24hr	B16B-1A	BASE	11.73	2.930	0.023	0.633	0.012	3690	0.477	1.19	0.00
10yr24hr	B16B-1A	BASE	11.75	2.953	0.023	0.644	0.012	3763	0.487	1.22	0.00
10yr24hr	B16B-1A	BASE	11.77	3.005	0.053	0.678	0.034	3837	0.496	1.26	0.00
10yr24hr	B16B-1A	BASE	11.78	3.103	0.098	0.726	0.048	3915	0.506	1.34	0.00
10yr24hr	B16B-1A	BASE	11.80	3.201	0.098	0.780	0.054	3999	0.517	1.45	0.00
10yr24hr	B16B-1A	BASE	11.82	3.299	0.098	0.836	0.056	4092	0.529	1.65	0.00
10yr24hr	B16B-1A	BASE	11.83	3.397	0.098	0.893	0.057	4198	0.543	1.91	0.00
10yr24hr	B16B-1A	BASE	11.85	3.495	0.098	0.951	0.058	4323	0.559	2.23	0.00
10yr24hr	B16B-1A	BASE	11.87	3.592	0.098	1.010	0.059	4466	0.578	2.57	0.00
10yr24hr	B16B-1A	BASE	11.88	3.690	0.098	1.070	0.060	4631	0.599	2.93	0.00
10yr24hr	B16B-1A	BASE	11.90	3.788	0.098	1.131	0.061	4817	0.623	3.27	0.00
10yr24hr	B16B-1A	BASE	11.92	3.886	0.098	1.193	0.062	5023	0.650	3.60	0.00
10yr24hr	B16B-1A	BASE	11.93	3.984	0.098	1.256	0.063	5249	0.679	3.92	0.00
10yr24hr	B16B-1A	BASE	11.95	4.082	0.098	1.320	0.064	5493	0.710	4.21	0.00
10yr24hr	B16B-1A	BASE	11.97	4.179	0.098	1.385	0.065	5754	0.744	4.49	0.00
10yr24hr	B16B-1A	BASE	11.98	4.277	0.098	1.450	0.066	6031	0.780	4.75	0.00
10yr24hr	B16B-1A	BASE	12.00	4.375	0.098	1.517	0.066	6324	0.818	5.00	0.00
10yr24hr	B16B-1A	BASE	12.02	4.473	0.098	1.584	0.068	6631	0.858	5.24	0.00
10yr24hr	B16B-1A	BASE	12.03	4.572	0.098	1.653	0.068	6952	0.899	5.47	0.00
10yr24hr	B16B-1A	BASE	12.05	4.670	0.098	1.721	0.069	7287	0.942	5.69	0.00
10yr24hr	B16B-1A	BASE	12.07	4.769	0.098	1.791	0.070	7635	0.987	5.90	0.00
10yr24hr	B16B-1A	BASE	12.08	4.867	0.098	1.862	0.070	7995	1.034	6.11	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-1B	BASE	11.63	2.794	0.023	0.542	0.011	3758	0.408	1.20	0.00
10yr24hr	B16B-1B	BASE	11.65	2.817	0.023	0.553	0.011	3831	0.416	1.24	0.00
10yr24hr	B16B-1B	BASE	11.67	2.839	0.023	0.564	0.011	3906	0.424	1.27	0.00
10yr24hr	B16B-1B	BASE	11.68	2.862	0.023	0.576	0.011	3984	0.432	1.30	0.00
10yr24hr	B16B-1B	BASE	11.70	2.885	0.023	0.587	0.011	4063	0.441	1.33	0.00
10yr24hr	B16B-1B	BASE	11.72	2.907	0.023	0.599	0.012	4144	0.449	1.36	0.00
10yr24hr	B16B-1B	BASE	11.73	2.930	0.023	0.610	0.012	4227	0.458	1.39	0.00
10yr24hr	B16B-1B	BASE	11.75	2.953	0.023	0.622	0.012	4311	0.468	1.42	0.00
10yr24hr	B16B-1B	BASE	11.77	3.005	0.053	0.655	0.033	4398	0.477	1.47	0.00
10yr24hr	B16B-1B	BASE	11.78	3.103	0.098	0.702	0.047	4489	0.487	1.56	0.00
10yr24hr	B16B-1B	BASE	11.80	3.201	0.098	0.755	0.053	4586	0.497	1.69	0.00
10yr24hr	B16B-1B	BASE	11.82	3.299	0.098	0.810	0.055	4695	0.509	1.92	0.00
10yr24hr	B16B-1B	BASE	11.83	3.397	0.098	0.866	0.056	4819	0.523	2.23	0.00
10yr24hr	B16B-1B	BASE	11.85	3.495	0.098	0.923	0.057	4964	0.538	2.60	0.00
10yr24hr	B16B-1B	BASE	11.87	3.592	0.098	0.981	0.058	5133	0.557	3.01	0.00
10yr24hr	B16B-1B	BASE	11.88	3.690	0.098	1.040	0.059	5326	0.578	3.42	0.00
10yr24hr	B16B-1B	BASE	11.90	3.788	0.098	1.100	0.060	5543	0.601	3.82	0.00
10yr24hr	B16B-1B	BASE	11.92	3.886	0.098	1.161	0.061	5784	0.627	4.21	0.00
10yr24hr	B16B-1B	BASE	11.93	3.984	0.098	1.223	0.062	6048	0.656	4.59	0.00
10yr24hr	B16B-1B	BASE	11.95	4.082	0.098	1.286	0.063	6334	0.687	4.93	0.00
10yr24hr	B16B-1B	BASE	11.97	4.179	0.098	1.350	0.064	6640	0.720	5.26	0.00
10yr24hr	B16B-1B	BASE	11.98	4.277	0.098	1.415	0.065	6965	0.755	5.57	0.00
10yr24hr	B16B-1B	BASE	12.00	4.375	0.098	1.480	0.065	7308	0.793	5.87	0.00
10yr24hr	B16B-1B	BASE	12.02	4.473	0.098	1.547	0.067	7668	0.832	6.15	0.00
10yr24hr	B16B-1B	BASE	12.03	4.572	0.098	1.615	0.067	8045	0.873	6.42	0.00
10yr24hr	B16B-1B	BASE	12.05	4.670	0.098	1.683	0.068	8438	0.915	6.68	0.00
10yr24hr	B16B-1B	BASE	12.07	4.769	0.098	1.752	0.069	8847	0.959	6.93	0.00
10yr24hr	B16B-1B	BASE	12.08	4.867	0.098	1.821	0.070	9270	1.005	7.17	0.00
10yr24hr	B16B-1B	BASE	12.10	4.966	0.098	1.891	0.070	9707	1.053	7.41	0.00
10yr24hr	B16B-1B	BASE	12.12	5.064	0.098	1.962	0.071	10159	1.102	7.63	0.00
10yr24hr	B16B-1B	BASE	12.13	5.162	0.098	2.034	0.071	10623	1.152	7.85	0.00
10yr24hr	B16B-1B	BASE	12.15	5.261	0.098	2.106	0.072	11100	1.204	8.06	0.00
10yr24hr	B16B-1B	BASE	12.17	5.359	0.098	2.178	0.073	11590	1.257	8.26	0.00
10yr24hr	B16B-1B	BASE	12.18	5.458	0.098	2.252	0.073	12091	1.311	8.45	0.00
10yr24hr	B16B-1B	BASE	12.20	5.556	0.098	2.325	0.074	12603	1.367	8.63	0.00
10yr24hr	B16B-1B	BASE	12.22	5.655	0.098	2.400	0.074	13126	1.424	8.81	0.00
10yr24hr	B16B-1B	BASE	12.23	5.753	0.098	2.467	0.067	13660	1.481	8.97	0.00
10yr24hr	B16B-1B	BASE	12.25	5.806	0.053	2.514	0.048	14202	1.540	9.10	0.00
10yr24hr	B16B-1B	BASE	12.27	5.828	0.022	2.531	0.017	14749	1.600	9.16	0.00
10yr24hr	B16B-1B	BASE	12.28	5.850	0.022	2.548	0.017	15298	1.659	9.12	0.00
10yr24hr	B16B-1B	BASE	12.30	5.872	0.022	2.565	0.017	15841	1.718	8.97	0.00
10yr24hr	B16B-1B	BASE	12.32	5.894	0.022	2.582	0.017	16371	1.776	8.71	0.00
10yr24hr	B16B-1B	BASE	12.33	5.916	0.022	2.599	0.017	16883	1.831	8.35	0.00
10yr24hr	B16B-1B	BASE	12.35	5.938	0.022	2.616	0.017	17372	1.884	7.95	0.00
10yr24hr	B16B-1B	BASE	12.37	5.960	0.022	2.633	0.017	17837	1.935	7.56	0.00
10yr24hr	B16B-1B	BASE	12.38	5.983	0.022	2.650	0.017	18279	1.983	7.18	0.00
10yr24hr	B16B-1B	BASE	12.40	6.005	0.022	2.667	0.017	18700	2.028	6.83	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10yr24hr	B16B-3	BASE	11.50	2.613	0.018	0.791	0.012	6844	0.648	1.51	0.00
10yr24hr	B16B-3	BASE	11.52	2.636	0.023	0.805	0.014	6935	0.657	1.54	0.00
10yr24hr	B16B-3	BASE	11.53	2.658	0.023	0.819	0.014	7029	0.665	1.57	0.00
10yr24hr	B16B-3	BASE	11.55	2.681	0.023	0.834	0.015	7125	0.674	1.62	0.00
10yr24hr	B16B-3	BASE	11.57	2.704	0.023	0.848	0.015	7223	0.684	1.66	0.00
10yr24hr	B16B-3	BASE	11.58	2.726	0.023	0.863	0.015	7325	0.693	1.72	0.00
10yr24hr	B16B-3	BASE	11.60	2.749	0.023	0.878	0.015	7429	0.703	1.78	0.00
10yr24hr	B16B-3	BASE	11.62	2.771	0.023	0.892	0.015	7538	0.714	1.84	0.00
10yr24hr	B16B-3	BASE	11.63	2.794	0.023	0.907	0.015	7650	0.724	1.89	0.00
10yr24hr	B16B-3	BASE	11.65	2.817	0.023	0.922	0.015	7765	0.735	1.94	0.00
10yr24hr	B16B-3	BASE	11.67	2.839	0.023	0.937	0.015	7883	0.746	2.00	0.00
10yr24hr	B16B-3	BASE	11.68	2.862	0.023	0.952	0.015	8004	0.758	2.04	0.00
10yr24hr	B16B-3	BASE	11.70	2.885	0.023	0.968	0.015	8128	0.769	2.08	0.00
10yr24hr	B16B-3	BASE	11.72	2.907	0.023	0.983	0.015	8254	0.781	2.12	0.00
10yr24hr	B16B-3	BASE	11.73	2.930	0.023	0.998	0.015	8383	0.794	2.16	0.00
10yr24hr	B16B-3	BASE	11.75	2.953	0.023	1.013	0.015	8514	0.806	2.20	0.00
10yr24hr	B16B-3	BASE	11.77	3.005	0.053	1.057	0.043	8648	0.819	2.28	0.00
10yr24hr	B16B-3	BASE	11.78	3.103	0.098	1.117	0.060	8788	0.832	2.41	0.00
10yr24hr	B16B-3	BASE	11.80	3.201	0.098	1.185	0.068	8938	0.846	2.60	0.00
10yr24hr	B16B-3	BASE	11.82	3.299	0.098	1.255	0.070	9104	0.862	2.92	0.00
10yr24hr	B16B-3	BASE	11.83	3.397	0.098	1.326	0.071	9293	0.880	3.37	0.00
10yr24hr	B16B-3	BASE	11.85	3.495	0.098	1.397	0.071	9511	0.900	3.91	0.00
10yr24hr	B16B-3	BASE	11.87	3.592	0.098	1.469	0.072	9763	0.924	4.49	0.00
10yr24hr	B16B-3	BASE	11.88	3.690	0.098	1.542	0.073	10051	0.951	5.08	0.00
10yr24hr	B16B-3	BASE	11.90	3.788	0.098	1.616	0.074	10373	0.982	5.65	0.00
10yr24hr	B16B-3	BASE	11.92	3.886	0.098	1.691	0.075	10728	1.016	6.19	0.00
10yr24hr	B16B-3	BASE	11.93	3.984	0.098	1.766	0.075	11114	1.052	6.70	0.00
10yr24hr	B16B-3	BASE	11.95	4.082	0.098	1.842	0.076	11531	1.092	7.17	0.00
10yr24hr	B16B-3	BASE	11.97	4.179	0.098	1.919	0.077	11974	1.134	7.61	0.00
10yr24hr	B16B-3	BASE	11.98	4.277	0.098	1.996	0.077	12443	1.178	8.02	0.00
10yr24hr	B16B-3	BASE	12.00	4.375	0.098	2.074	0.078	12935	1.225	8.40	0.00
10yr24hr	B16B-3	BASE	12.02	4.473	0.098	2.153	0.079	13450	1.273	8.76	0.00
10yr24hr	B16B-3	BASE	12.03	4.572	0.098	2.232	0.079	13986	1.324	9.10	0.00
10yr24hr	B16B-3	BASE	12.05	4.670	0.098	2.312	0.080	14542	1.377	9.43	0.00
10yr24hr	B16B-3	BASE	12.07	4.769	0.098	2.393	0.080	15118	1.431	9.75	0.00
10yr24hr	B16B-3	BASE	12.08	4.867	0.098	2.474	0.081	15711	1.487	10.04	0.00
10yr24hr	B16B-3	BASE	12.10	4.966	0.098	2.555	0.081	16322	1.545	10.33	0.00
10yr24hr	B16B-3	BASE	12.12	5.064	0.098	2.637	0.082	16950	1.605	10.60	0.00
10yr24hr	B16B-3	BASE	12.13	5.162	0.098	2.719	0.082	17594	1.666	10.86	0.00
10yr24hr	B16B-3	BASE	12.15	5.261	0.098	2.802	0.083	18252	1.728	11.10	0.00
10yr24hr	B16B-3	BASE	12.17	5.359	0.098	2.885	0.083	18925	1.792	11.33	0.00
10yr24hr	B16B-3	BASE	12.18	5.458	0.098	2.968	0.083	19612	1.857	11.55	0.00
10yr24hr	B16B-3	BASE	12.20	5.556	0.098	3.052	0.084	20311	1.923	11.76	0.00
10yr24hr	B16B-3	BASE	12.22	5.655	0.098	3.136	0.084	21022	1.990	11.96	0.00
10yr24hr	B16B-3	BASE	12.23	5.753	0.098	3.213	0.076	21745	2.059	12.14	0.00
10yr24hr	B16B-3	BASE	12.25	5.806	0.053	3.266	0.054	22477	2.128	12.27	0.00
10yr24hr	B16B-3	BASE	12.27	5.828	0.022	3.285	0.019	23215	2.198	12.32	0.00



Prepared by: S.O
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

BASIN 16B - ADDITIONAL IMPERVIOUS AREA
WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)

EXAMPLE #2 PrFD16B-1

I- ADDED IMPERVIOUS AREA:

PRE	
B-16B-14A	1.18 Ac
B-16B-14B	0.55 Ac
B-16B-15	1.51 Ac

POST	
B-16B-14A	1.20 Ac
B-16B-14B	0.60 Ac
B-16B-15	2.05 Ac

Existing Impervious Area= 3.24 Ac
Proposing Impervious Area= 3.85 Ac

Added Impervious	0.61	Ac
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WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.
 For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \mathbf{0.13} \text{ Ac-ft}$$

2-) Existing Water Quality Volume in Pre

In pre-development condition, the water is flowing directly into the North Fork New River, therefore no water quality treatment is provided.

$$WQ_{\text{prov}} = \mathbf{0.00} \text{ Ac-ft}$$

Water Quality Volume required in Post = Existing + additional Impervious=	0.00+0.13=0.13 Ac-ft
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3-) Water Quality Volume in Post

The water quality volume provide in post is:

PrFD16B-1 =	0.29	Ac-ft
Total =	0.29	Ac-ft

-See F.D. Calculations (PrFD16B-1)

Water Quality Volume provided in Post = 0.29 Ac-ft > 0.13 Ac-ft (Criteria Met)
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S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: S.O.
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

BASIN 16B - ADDITIONAL IMPERVIOUS AREA
WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)

EXAMPLE #3 PrFD16B-2

I- ADDED IMPERVIOUS AREA:

PRE	
B-16B-16	1.36 Ac

POST	
B-16B-16	1.69 Ac

Existing Impervious Area= 1.36 Ac Proposing Impervious Area= 1.69 Ac

Added Impervious	0.33	Ac
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WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.
 For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \quad \quad \quad \mathbf{0.07} \quad \text{Ac-ft}$$

2-) Existing Water Quality Volume in Pre

In pre-development condition, the water is flowing directly into the North Fork New River, therefore no water quality treatment is provided.

$$WQ_{\text{prov}} = \quad \quad \quad \mathbf{0.00} \quad \text{Ac-ft}$$

Water Quality Volume required in Post = Existing + additional Impervious= 0.00+0.07=0.07 Ac-ft

3-) Water Quality Volume in Post

The water quality volume provide in post is:

PrFD16B-2 =	0.27	Ac-ft
Total =	0.27	Ac-ft

-See F.D. Calculations (PrFD16B-2)

Water Quality Volume provided in Post = 0.27 Ac-ft > 0.07 Ac-ft (Criteria Met)



S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: S.O.
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

**BASIN 16B - ADDITIONAL IMPERVIOUS AREA
 WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)**

EXAMPLE #4 PrFD16B-3

I- ADDED IMPERVIOUS AREA:

PRE	
B-16B-2A	0.82 Ac
B-16B-2B	2.38 Ac
B-16B-9A	0.65 Ac
B-16B-9B	0.52 Ac

POST	
B-16B-2A	0.82 Ac
B-16B-2B	3.34 Ac
B-16B-9	0.63 Ac

Existing Impervious Area= 4.37 Ac
 Proposing Impervious Area= 4.79 Ac

Added Impervious

0.42	Ac
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WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.
 For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \quad \quad \quad \mathbf{0.09} \quad \text{Ac-ft}$$

2-) Existing Water Quality Volume in Pre

In pre-development condition, the water is flowing directly into the North Fork New River, therefore no water quality treatment is provided.

$$WQ_{\text{prov}} = \quad \quad \quad \mathbf{0.00} \quad \text{Ac-ft}$$

Water Quality Volume required in Post = Existing + additional Impervious= 0.00+0.09=0.09 Ac-ft

3-) Water Quality Volume in Post

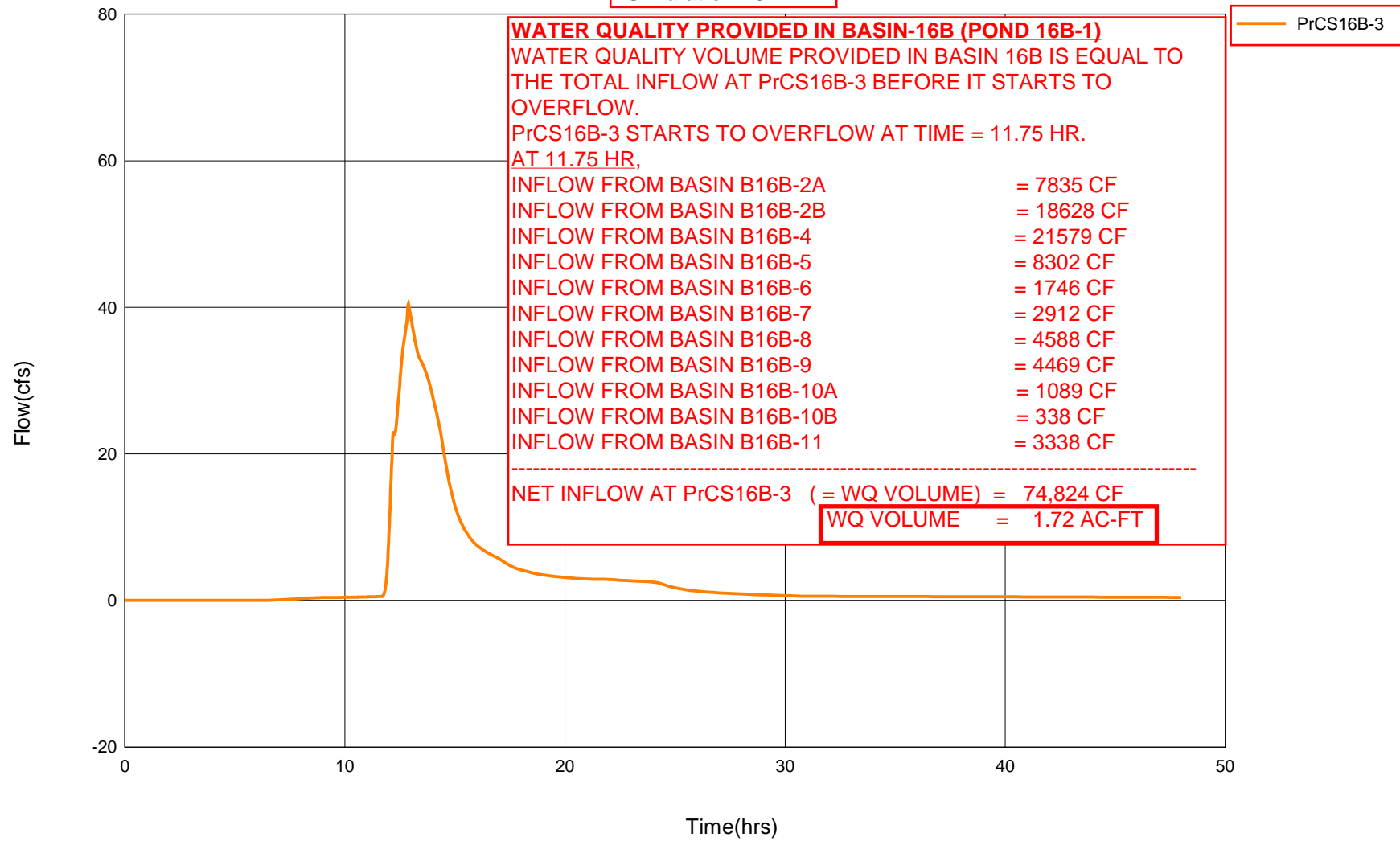
The water quality volume provide in post is:

PrFD16B-3 =	0.51	Ac-ft	-See F.D. Calculations (PrFD16B-3)
Total =	0.51	Ac-ft	

Water Quality Volume provided in Post = 0.51 Ac-ft > 0.09 Ac-ft (Criteria Met)

EXAMPLE #5 (PrCS16B-3) Pond 16B-1

Simulation 10Y24H



I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-2A	BASE	11.65	2.817	0.023	2.815	0.023	7502	2.520	0.88	0.00
10Y24H	B16B-2A	BASE	11.67	2.839	0.023	2.838	0.023	7555	2.538	0.90	0.00
10Y24H	B16B-2A	BASE	11.68	2.862	0.023	2.860	0.023	7610	2.556	0.91	0.00
10Y24H	B16B-2A	BASE	11.70	2.885	0.023	2.883	0.023	7665	2.575	0.93	0.00
10Y24H	B16B-2A	BASE	11.72	2.907	0.023	2.906	0.023	7721	2.594	0.94	0.00
10Y24H	B16B-2A	BASE	11.73	2.930	0.023	2.928	0.023	7778	2.613	0.95	0.00
10Y24H	B16B-2A	BASE	11.75	2.953	0.023	2.951	0.023	7835	2.632	0.97	0.00
10Y24H	B16B-2A	BASE	11.77	3.005	0.053	3.014	0.063	7894	2.652	1.00	0.00
10Y24H	B16B-2A	BASE	11.78	3.103	0.098	3.102	0.087	7955	2.673	1.04	0.00
10Y24H	B16B-2A	BASE	11.80	3.201	0.098	3.199	0.098	8020	2.694	1.12	0.00
10Y24H	B16B-2A	BASE	11.82	3.299	0.098	3.297	0.098	8091	2.718	1.25	0.00
10Y24H	B16B-2A	BASE	11.83	3.397	0.098	3.395	0.098	8171	2.745	1.42	0.00
10Y24H	B16B-2A	BASE	11.85	3.495	0.098	3.493	0.098	8263	2.776	1.63	0.00
10Y24H	B16B-2A	BASE	11.87	3.592	0.098	3.591	0.098	8368	2.811	1.86	0.00
10Y24H	B16B-2A	BASE	11.88	3.690	0.098	3.689	0.098	8486	2.851	2.08	0.00
10Y24H	B16B-2A	BASE	11.90	3.788	0.098	3.786	0.098	8617	2.895	2.29	0.00
10Y24H	B16B-2A	BASE	11.92	3.886	0.098	3.884	0.098	8761	2.943	2.49	0.00
10Y24H	B16B-2A	BASE	11.93	3.984	0.098	3.982	0.098	8915	2.995	2.67	0.00
10Y24H	B16B-2A	BASE	11.95	4.082	0.098	4.080	0.098	9081	3.051	2.83	0.00
10Y24H	B16B-2A	BASE	11.97	4.179	0.098	4.178	0.098	9255	3.109	2.98	0.00
10Y24H	B16B-2A	BASE	11.98	4.277	0.098	4.276	0.098	9438	3.171	3.12	0.00
10Y24H	B16B-2A	BASE	12.00	4.375	0.098	4.373	0.098	9629	3.235	3.24	0.00
10Y24H	B16B-2A	BASE	12.02	4.473	0.098	4.472	0.098	9826	3.301	3.35	0.00
10Y24H	B16B-2A	BASE	12.03	4.572	0.098	4.570	0.098	10031	3.370	3.46	0.00
10Y24H	B16B-2A	BASE	12.05	4.670	0.098	4.669	0.098	10241	3.441	3.56	0.00
10Y24H	B16B-2A	BASE	12.07	4.769	0.098	4.767	0.098	10457	3.513	3.65	0.00
10Y24H	B16B-2A	BASE	12.08	4.867	0.098	4.866	0.098	10679	3.588	3.73	0.00
10Y24H	B16B-2A	BASE	12.10	4.966	0.098	4.964	0.098	10905	3.664	3.81	0.00
10Y24H	B16B-2A	BASE	12.12	5.064	0.098	5.062	0.098	11136	3.741	3.89	0.00
10Y24H	B16B-2A	BASE	12.13	5.162	0.098	5.161	0.098	11372	3.820	3.96	0.00
10Y24H	B16B-2A	BASE	12.15	5.261	0.098	5.259	0.098	11611	3.901	4.02	0.00
10Y24H	B16B-2A	BASE	12.17	5.359	0.098	5.358	0.098	11854	3.982	4.08	0.00
10Y24H	B16B-2A	BASE	12.18	5.458	0.098	5.456	0.098	12100	4.065	4.13	0.00
10Y24H	B16B-2A	BASE	12.20	5.556	0.098	5.555	0.098	12350	4.149	4.18	0.00
10Y24H	B16B-2A	BASE	12.22	5.655	0.098	5.653	0.098	12603	4.234	4.23	0.00
10Y24H	B16B-2A	BASE	12.23	5.753	0.098	5.742	0.089	12858	4.320	4.27	0.00
10Y24H	B16B-2A	BASE	12.25	5.806	0.053	5.804	0.062	13115	4.406	4.30	0.00
10Y24H	B16B-2A	BASE	12.27	5.828	0.022	5.826	0.022	13373	4.493	4.30	0.00
10Y24H	B16B-2A	BASE	12.28	5.850	0.022	5.848	0.022	13630	4.579	4.26	0.00
10Y24H	B16B-2A	BASE	12.30	5.872	0.022	5.870	0.022	13882	4.664	4.17	0.00
10Y24H	B16B-2A	BASE	12.32	5.894	0.022	5.893	0.022	14128	4.746	4.03	0.00
10Y24H	B16B-2A	BASE	12.33	5.916	0.022	5.915	0.022	14365	4.826	3.85	0.00
10Y24H	B16B-2A	BASE	12.35	5.938	0.022	5.937	0.022	14590	4.902	3.66	0.00
10Y24H	B16B-2A	BASE	12.37	5.960	0.022	5.959	0.022	14804	4.974	3.48	0.00
10Y24H	B16B-2A	BASE	12.38	5.983	0.022	5.981	0.022	15008	5.042	3.30	0.00
10Y24H	B16B-2A	BASE	12.40	6.005	0.022	6.003	0.022	15201	5.107	3.14	0.00
10Y24H	B16B-2A	BASE	12.42	6.027	0.022	6.025	0.022	15385	5.168	2.99	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-2B	BASE	11.18	2.321	0.012	0.910	0.008	12781	0.786	2.08	0.00
10Y24H	B16B-2B	BASE	11.20	2.332	0.012	0.918	0.008	12906	0.794	2.09	0.00
10Y24H	B16B-2B	BASE	11.22	2.344	0.012	0.927	0.008	13032	0.801	2.11	0.00
10Y24H	B16B-2B	BASE	11.23	2.355	0.012	0.935	0.008	13159	0.809	2.12	0.00
10Y24H	B16B-2B	BASE	11.25	2.367	0.012	0.944	0.009	13286	0.817	2.14	0.00
10Y24H	B16B-2B	BASE	11.27	2.382	0.015	0.954	0.010	13415	0.825	2.15	0.00
10Y24H	B16B-2B	BASE	11.28	2.398	0.016	0.967	0.012	13545	0.833	2.18	0.00
10Y24H	B16B-2B	BASE	11.30	2.415	0.016	0.979	0.012	13677	0.841	2.21	0.00
10Y24H	B16B-2B	BASE	11.32	2.431	0.016	0.991	0.012	13810	0.849	2.25	0.00
10Y24H	B16B-2B	BASE	11.33	2.447	0.016	1.003	0.012	13947	0.858	2.31	0.00
10Y24H	B16B-2B	BASE	11.35	2.464	0.016	1.015	0.012	14088	0.866	2.37	0.00
10Y24H	B16B-2B	BASE	11.37	2.480	0.016	1.027	0.012	14232	0.875	2.44	0.00
10Y24H	B16B-2B	BASE	11.38	2.497	0.016	1.040	0.012	14380	0.884	2.50	0.00
10Y24H	B16B-2B	BASE	11.40	2.513	0.016	1.052	0.012	14532	0.894	2.57	0.00
10Y24H	B16B-2B	BASE	11.42	2.529	0.016	1.064	0.012	14688	0.903	2.62	0.00
10Y24H	B16B-2B	BASE	11.43	2.546	0.016	1.077	0.012	14847	0.913	2.68	0.00
10Y24H	B16B-2B	BASE	11.45	2.562	0.016	1.089	0.012	15009	0.923	2.73	0.00
10Y24H	B16B-2B	BASE	11.47	2.579	0.016	1.102	0.012	15175	0.933	2.78	0.00
10Y24H	B16B-2B	BASE	11.48	2.595	0.016	1.114	0.012	15342	0.943	2.82	0.00
10Y24H	B16B-2B	BASE	11.50	2.613	0.018	1.129	0.015	15513	0.954	2.86	0.00
10Y24H	B16B-2B	BASE	11.52	2.636	0.023	1.145	0.016	15686	0.965	2.91	0.00
10Y24H	B16B-2B	BASE	11.53	2.658	0.023	1.162	0.017	15862	0.975	2.97	0.00
10Y24H	B16B-2B	BASE	11.55	2.681	0.023	1.180	0.017	16042	0.986	3.04	0.00
10Y24H	B16B-2B	BASE	11.57	2.704	0.023	1.197	0.017	16227	0.998	3.13	0.00
10Y24H	B16B-2B	BASE	11.58	2.726	0.023	1.215	0.018	16418	1.010	3.22	0.00
10Y24H	B16B-2B	BASE	11.60	2.749	0.023	1.233	0.018	16614	1.022	3.33	0.00
10Y24H	B16B-2B	BASE	11.62	2.771	0.023	1.250	0.018	16817	1.034	3.43	0.00
10Y24H	B16B-2B	BASE	11.63	2.794	0.023	1.268	0.018	17026	1.047	3.53	0.00
10Y24H	B16B-2B	BASE	11.65	2.817	0.023	1.286	0.018	17240	1.060	3.62	0.00
10Y24H	B16B-2B	BASE	11.67	2.839	0.023	1.303	0.018	17460	1.074	3.71	0.00
10Y24H	B16B-2B	BASE	11.68	2.862	0.023	1.321	0.018	17685	1.087	3.79	0.00
10Y24H	B16B-2B	BASE	11.70	2.885	0.023	1.339	0.018	17915	1.102	3.86	0.00
10Y24H	B16B-2B	BASE	11.72	2.907	0.023	1.357	0.018	18149	1.116	3.93	0.00
10Y24H	B16B-2B	BASE	11.73	2.930	0.023	1.375	0.018	18387	1.131	4.00	0.00
10Y24H	B16B-2B	BASE	11.75	2.953	0.023	1.393	0.018	18628	1.145	4.06	0.00
10Y24H	B16B-2B	BASE	11.77	3.005	0.053	1.444	0.051	18876	1.161	4.19	0.00
10Y24H	B16B-2B	BASE	11.78	3.103	0.098	1.514	0.070	19134	1.177	4.42	0.00
10Y24H	B16B-2B	BASE	11.80	3.201	0.098	1.594	0.079	19409	1.194	4.76	0.00
10Y24H	B16B-2B	BASE	11.82	3.299	0.098	1.674	0.080	19712	1.212	5.34	0.00
10Y24H	B16B-2B	BASE	11.83	3.397	0.098	1.755	0.081	20056	1.233	6.13	0.00
10Y24H	B16B-2B	BASE	11.85	3.495	0.098	1.836	0.082	20453	1.258	7.08	0.00
10Y24H	B16B-2B	BASE	11.87	3.592	0.098	1.919	0.082	20908	1.286	8.11	0.00
10Y24H	B16B-2B	BASE	11.88	3.690	0.098	2.001	0.083	21426	1.317	9.13	0.00
10Y24H	B16B-2B	BASE	11.90	3.788	0.098	2.085	0.083	22003	1.353	10.12	0.00
10Y24H	B16B-2B	BASE	11.92	3.886	0.098	2.169	0.084	22638	1.392	11.05	0.00
10Y24H	B16B-2B	BASE	11.93	3.984	0.098	2.253	0.084	23327	1.434	11.93	0.00
10Y24H	B16B-2B	BASE	11.95	4.082	0.098	2.338	0.085	24067	1.480	12.72	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-4	BASE	11.03	2.216	0.012	0.743	0.008	13209	0.635	2.29	0.00
10Y24H	B16B-4	BASE	11.05	2.228	0.012	0.751	0.008	13347	0.642	2.31	0.00
10Y24H	B16B-4	BASE	11.07	2.239	0.012	0.759	0.008	13487	0.648	2.34	0.00
10Y24H	B16B-4	BASE	11.08	2.251	0.012	0.766	0.008	13628	0.655	2.36	0.00
10Y24H	B16B-4	BASE	11.10	2.263	0.012	0.774	0.008	13771	0.662	2.39	0.00
10Y24H	B16B-4	BASE	11.12	2.274	0.012	0.782	0.008	13915	0.669	2.41	0.00
10Y24H	B16B-4	BASE	11.13	2.286	0.012	0.790	0.008	14060	0.676	2.43	0.00
10Y24H	B16B-4	BASE	11.15	2.297	0.012	0.798	0.008	14207	0.683	2.46	0.00
10Y24H	B16B-4	BASE	11.17	2.309	0.012	0.806	0.008	14355	0.690	2.48	0.00
10Y24H	B16B-4	BASE	11.18	2.321	0.012	0.814	0.008	14504	0.697	2.50	0.00
10Y24H	B16B-4	BASE	11.20	2.332	0.012	0.822	0.008	14654	0.705	2.52	0.00
10Y24H	B16B-4	BASE	11.22	2.344	0.012	0.830	0.008	14806	0.712	2.53	0.00
10Y24H	B16B-4	BASE	11.23	2.355	0.012	0.838	0.008	14958	0.719	2.55	0.00
10Y24H	B16B-4	BASE	11.25	2.367	0.012	0.846	0.009	15112	0.727	2.57	0.00
10Y24H	B16B-4	BASE	11.27	2.382	0.015	0.856	0.010	15266	0.734	2.59	0.00
10Y24H	B16B-4	BASE	11.28	2.398	0.016	0.867	0.011	15423	0.741	2.62	0.00
10Y24H	B16B-4	BASE	11.30	2.415	0.016	0.879	0.011	15581	0.749	2.66	0.00
10Y24H	B16B-4	BASE	11.32	2.431	0.016	0.890	0.011	15742	0.757	2.71	0.00
10Y24H	B16B-4	BASE	11.33	2.447	0.016	0.902	0.012	15907	0.765	2.78	0.00
10Y24H	B16B-4	BASE	11.35	2.464	0.016	0.913	0.012	16076	0.773	2.86	0.00
10Y24H	B16B-4	BASE	11.37	2.480	0.016	0.925	0.012	16250	0.781	2.94	0.00
10Y24H	B16B-4	BASE	11.38	2.497	0.016	0.937	0.012	16429	0.790	3.02	0.00
10Y24H	B16B-4	BASE	11.40	2.513	0.016	0.948	0.012	16612	0.799	3.10	0.00
10Y24H	B16B-4	BASE	11.42	2.529	0.016	0.960	0.012	16800	0.808	3.17	0.00
10Y24H	B16B-4	BASE	11.43	2.546	0.016	0.972	0.012	16992	0.817	3.23	0.00
10Y24H	B16B-4	BASE	11.45	2.562	0.016	0.984	0.012	17188	0.826	3.30	0.00
10Y24H	B16B-4	BASE	11.47	2.579	0.016	0.995	0.012	17388	0.836	3.35	0.00
10Y24H	B16B-4	BASE	11.48	2.595	0.016	1.007	0.012	17591	0.846	3.41	0.00
10Y24H	B16B-4	BASE	11.50	2.613	0.018	1.021	0.014	17797	0.856	3.46	0.00
10Y24H	B16B-4	BASE	11.52	2.636	0.023	1.037	0.015	18006	0.866	3.52	0.00
10Y24H	B16B-4	BASE	11.53	2.658	0.023	1.053	0.017	18220	0.876	3.59	0.00
10Y24H	B16B-4	BASE	11.55	2.681	0.023	1.070	0.017	18438	0.886	3.68	0.00
10Y24H	B16B-4	BASE	11.57	2.704	0.023	1.087	0.017	18662	0.897	3.79	0.00
10Y24H	B16B-4	BASE	11.58	2.726	0.023	1.103	0.017	18893	0.908	3.91	0.00
10Y24H	B16B-4	BASE	11.60	2.749	0.023	1.120	0.017	19131	0.920	4.04	0.00
10Y24H	B16B-4	BASE	11.62	2.771	0.023	1.137	0.017	19377	0.932	4.16	0.00
10Y24H	B16B-4	BASE	11.63	2.794	0.023	1.154	0.017	19630	0.944	4.28	0.00
10Y24H	B16B-4	BASE	11.65	2.817	0.023	1.171	0.017	19891	0.956	4.40	0.00
10Y24H	B16B-4	BASE	11.67	2.839	0.023	1.188	0.017	20158	0.969	4.51	0.00
10Y24H	B16B-4	BASE	11.68	2.862	0.023	1.205	0.017	20432	0.982	4.61	0.00
10Y24H	B16B-4	BASE	11.70	2.885	0.023	1.222	0.017	20711	0.996	4.70	0.00
10Y24H	B16B-4	BASE	11.72	2.907	0.023	1.239	0.017	20995	1.009	4.78	0.00
10Y24H	B16B-4	BASE	11.73	2.930	0.023	1.256	0.017	21285	1.023	4.86	0.00
10Y24H	B16B-4	BASE	11.75	2.953	0.023	1.273	0.017	21579	1.037	4.94	0.00
10Y24H	B16B-4	BASE	11.77	3.005	0.053	1.322	0.048	21880	1.052	5.11	0.00
10Y24H	B16B-4	BASE	11.78	3.103	0.098	1.389	0.068	22195	1.067	5.39	0.00
10Y24H	B16B-4	BASE	11.80	3.201	0.098	1.466	0.076	22531	1.083	5.80	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-5	BASE	11.67	2.839	0.023	0.826	0.014	7649	0.648	2.06	0.00
10Y24H	B16B-5	BASE	11.68	2.862	0.023	0.840	0.014	7774	0.659	2.11	0.00
10Y24H	B16B-5	BASE	11.70	2.885	0.023	0.854	0.014	7903	0.670	2.16	0.00
10Y24H	B16B-5	BASE	11.72	2.907	0.023	0.868	0.014	8033	0.681	2.20	0.00
10Y24H	B16B-5	BASE	11.73	2.930	0.023	0.882	0.014	8167	0.692	2.24	0.00
10Y24H	B16B-5	BASE	11.75	2.953	0.023	0.897	0.014	8302	0.704	2.28	0.00
10Y24H	B16B-5	BASE	11.77	3.005	0.053	0.937	0.041	8442	0.716	2.36	0.00
10Y24H	B16B-5	BASE	11.78	3.103	0.098	0.994	0.057	8588	0.728	2.50	0.00
10Y24H	B16B-5	BASE	11.80	3.201	0.098	1.058	0.064	8744	0.741	2.70	0.00
10Y24H	B16B-5	BASE	11.82	3.299	0.098	1.124	0.066	8916	0.756	3.05	0.00
10Y24H	B16B-5	BASE	11.83	3.397	0.098	1.191	0.067	9113	0.772	3.52	0.00
10Y24H	B16B-5	BASE	11.85	3.495	0.098	1.258	0.068	9341	0.792	4.09	0.00
10Y24H	B16B-5	BASE	11.87	3.592	0.098	1.327	0.068	9605	0.814	4.70	0.00
10Y24H	B16B-5	BASE	11.88	3.690	0.098	1.396	0.070	9906	0.840	5.33	0.00
10Y24H	B16B-5	BASE	11.90	3.788	0.098	1.467	0.070	10244	0.868	5.93	0.00
10Y24H	B16B-5	BASE	11.92	3.886	0.098	1.538	0.071	10617	0.900	6.51	0.00
10Y24H	B16B-5	BASE	11.93	3.984	0.098	1.609	0.072	11024	0.934	7.05	0.00
10Y24H	B16B-5	BASE	11.95	4.082	0.098	1.682	0.073	11462	0.972	7.56	0.00
10Y24H	B16B-5	BASE	11.97	4.179	0.098	1.755	0.073	11930	1.011	8.03	0.00
10Y24H	B16B-5	BASE	11.98	4.277	0.098	1.829	0.074	12424	1.053	8.47	0.00
10Y24H	B16B-5	BASE	12.00	4.375	0.098	1.904	0.075	12945	1.097	8.88	0.00
10Y24H	B16B-5	BASE	12.02	4.473	0.098	1.980	0.076	13490	1.143	9.28	0.00
10Y24H	B16B-5	BASE	12.03	4.572	0.098	2.056	0.076	14058	1.192	9.65	0.00
10Y24H	B16B-5	BASE	12.05	4.670	0.098	2.133	0.077	14648	1.242	10.01	0.00
10Y24H	B16B-5	BASE	12.07	4.769	0.098	2.211	0.077	15259	1.293	10.36	0.00
10Y24H	B16B-5	BASE	12.08	4.867	0.098	2.289	0.078	15890	1.347	10.68	0.00
10Y24H	B16B-5	BASE	12.10	4.966	0.098	2.367	0.079	16540	1.402	11.00	0.00
10Y24H	B16B-5	BASE	12.12	5.064	0.098	2.446	0.079	17209	1.459	11.30	0.00
10Y24H	B16B-5	BASE	12.13	5.162	0.098	2.526	0.079	17895	1.517	11.58	0.00
10Y24H	B16B-5	BASE	12.15	5.261	0.098	2.606	0.080	18599	1.576	11.85	0.00
10Y24H	B16B-5	BASE	12.17	5.359	0.098	2.686	0.080	19318	1.637	12.11	0.00
10Y24H	B16B-5	BASE	12.18	5.458	0.098	2.767	0.081	20051	1.700	12.35	0.00
10Y24H	B16B-5	BASE	12.20	5.556	0.098	2.848	0.081	20800	1.763	12.59	0.00
10Y24H	B16B-5	BASE	12.22	5.655	0.098	2.930	0.082	21562	1.828	12.81	0.00
10Y24H	B16B-5	BASE	12.23	5.753	0.098	3.004	0.074	22337	1.893	13.02	0.00
10Y24H	B16B-5	BASE	12.25	5.806	0.053	3.056	0.052	23123	1.960	13.17	0.00
10Y24H	B16B-5	BASE	12.27	5.828	0.022	3.075	0.019	23915	2.027	13.24	0.00
10Y24H	B16B-5	BASE	12.28	5.850	0.022	3.093	0.019	24707	2.094	13.16	0.00
10Y24H	B16B-5	BASE	12.30	5.872	0.022	3.112	0.019	25489	2.161	12.92	0.00
10Y24H	B16B-5	BASE	12.32	5.894	0.022	3.131	0.019	26253	2.225	12.54	0.00
10Y24H	B16B-5	BASE	12.33	5.916	0.022	3.149	0.019	26989	2.288	12.00	0.00
10Y24H	B16B-5	BASE	12.35	5.938	0.022	3.168	0.019	27692	2.347	11.42	0.00
10Y24H	B16B-5	BASE	12.37	5.960	0.022	3.186	0.019	28361	2.404	10.86	0.00
10Y24H	B16B-5	BASE	12.38	5.983	0.022	3.205	0.019	28996	2.458	10.32	0.00
10Y24H	B16B-5	BASE	12.40	6.005	0.022	3.224	0.019	29600	2.509	9.81	0.00
10Y24H	B16B-5	BASE	12.42	6.027	0.022	3.242	0.019	30175	2.558	9.36	0.00
10Y24H	B16B-5	BASE	12.43	6.049	0.022	3.261	0.019	30725	2.604	8.96	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-6	BASE	11.20	2.332	0.012	0.722	0.007	1158	0.614	0.21	0.00
10Y24H	B16B-6	BASE	11.22	2.344	0.012	0.730	0.007	1171	0.620	0.21	0.00
10Y24H	B16B-6	BASE	11.23	2.355	0.012	0.737	0.007	1184	0.627	0.21	0.00
10Y24H	B16B-6	BASE	11.25	2.367	0.012	0.745	0.008	1197	0.634	0.22	0.00
10Y24H	B16B-6	BASE	11.27	2.382	0.015	0.754	0.009	1210	0.641	0.22	0.00
10Y24H	B16B-6	BASE	11.28	2.398	0.016	0.765	0.011	1223	0.648	0.22	0.00
10Y24H	B16B-6	BASE	11.30	2.415	0.016	0.776	0.011	1236	0.655	0.22	0.00
10Y24H	B16B-6	BASE	11.32	2.431	0.016	0.787	0.011	1250	0.662	0.23	0.00
10Y24H	B16B-6	BASE	11.33	2.447	0.016	0.797	0.011	1264	0.670	0.23	0.00
10Y24H	B16B-6	BASE	11.35	2.464	0.016	0.808	0.011	1278	0.677	0.24	0.00
10Y24H	B16B-6	BASE	11.37	2.480	0.016	0.819	0.011	1293	0.685	0.25	0.00
10Y24H	B16B-6	BASE	11.38	2.497	0.016	0.830	0.011	1308	0.693	0.26	0.00
10Y24H	B16B-6	BASE	11.40	2.513	0.016	0.841	0.011	1324	0.701	0.26	0.00
10Y24H	B16B-6	BASE	11.42	2.529	0.016	0.852	0.011	1340	0.710	0.27	0.00
10Y24H	B16B-6	BASE	11.43	2.546	0.016	0.863	0.011	1356	0.718	0.27	0.00
10Y24H	B16B-6	BASE	11.45	2.562	0.016	0.874	0.011	1372	0.727	0.28	0.00
10Y24H	B16B-6	BASE	11.47	2.579	0.016	0.885	0.011	1389	0.736	0.28	0.00
10Y24H	B16B-6	BASE	11.48	2.595	0.016	0.896	0.011	1407	0.745	0.29	0.00
10Y24H	B16B-6	BASE	11.50	2.613	0.018	0.910	0.013	1424	0.754	0.29	0.00
10Y24H	B16B-6	BASE	11.52	2.636	0.023	0.924	0.015	1442	0.764	0.30	0.00
10Y24H	B16B-6	BASE	11.53	2.658	0.023	0.940	0.016	1460	0.773	0.31	0.00
10Y24H	B16B-6	BASE	11.55	2.681	0.023	0.955	0.016	1479	0.783	0.31	0.00
10Y24H	B16B-6	BASE	11.57	2.704	0.023	0.971	0.016	1498	0.793	0.32	0.00
10Y24H	B16B-6	BASE	11.58	2.726	0.023	0.987	0.016	1517	0.804	0.33	0.00
10Y24H	B16B-6	BASE	11.60	2.749	0.023	1.003	0.016	1537	0.815	0.34	0.00
10Y24H	B16B-6	BASE	11.62	2.771	0.023	1.019	0.016	1558	0.826	0.35	0.00
10Y24H	B16B-6	BASE	11.63	2.794	0.023	1.035	0.016	1580	0.837	0.37	0.00
10Y24H	B16B-6	BASE	11.65	2.817	0.023	1.051	0.016	1602	0.849	0.38	0.00
10Y24H	B16B-6	BASE	11.67	2.839	0.023	1.067	0.016	1625	0.861	0.38	0.00
10Y24H	B16B-6	BASE	11.68	2.862	0.023	1.083	0.016	1648	0.873	0.39	0.00
10Y24H	B16B-6	BASE	11.70	2.885	0.023	1.099	0.016	1672	0.886	0.40	0.00
10Y24H	B16B-6	BASE	11.72	2.907	0.023	1.115	0.016	1697	0.899	0.41	0.00
10Y24H	B16B-6	BASE	11.73	2.930	0.023	1.132	0.016	1721	0.912	0.42	0.00
10Y24H	B16B-6	BASE	11.75	2.953	0.023	1.148	0.016	1746	0.925	0.42	0.00
10Y24H	B16B-6	BASE	11.77	3.005	0.053	1.194	0.046	1772	0.939	0.44	0.00
10Y24H	B16B-6	BASE	11.78	3.103	0.098	1.258	0.064	1799	0.953	0.46	0.00
10Y24H	B16B-6	BASE	11.80	3.201	0.098	1.331	0.073	1828	0.968	0.50	0.00
10Y24H	B16B-6	BASE	11.82	3.299	0.098	1.405	0.074	1860	0.985	0.56	0.00
10Y24H	B16B-6	BASE	11.83	3.397	0.098	1.480	0.075	1896	1.004	0.64	0.00
10Y24H	B16B-6	BASE	11.85	3.495	0.098	1.555	0.075	1938	1.027	0.75	0.00
10Y24H	B16B-6	BASE	11.87	3.592	0.098	1.631	0.076	1986	1.052	0.86	0.00
10Y24H	B16B-6	BASE	11.88	3.690	0.098	1.708	0.077	2040	1.081	0.97	0.00
10Y24H	B16B-6	BASE	11.90	3.788	0.098	1.786	0.078	2102	1.113	1.07	0.00
10Y24H	B16B-6	BASE	11.92	3.886	0.098	1.864	0.078	2169	1.149	1.17	0.00
10Y24H	B16B-6	BASE	11.93	3.984	0.098	1.943	0.079	2242	1.188	1.27	0.00
10Y24H	B16B-6	BASE	11.95	4.082	0.098	2.022	0.080	2321	1.230	1.36	0.00
10Y24H	B16B-6	BASE	11.97	4.179	0.098	2.102	0.080	2405	1.274	1.44	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-7	BASE	11.52	2.636	0.023	0.399	0.009	2193	0.302	0.68	0.00
10Y24H	B16B-7	BASE	11.53	2.658	0.023	0.408	0.010	2234	0.308	0.70	0.00
10Y24H	B16B-7	BASE	11.55	2.681	0.023	0.418	0.010	2277	0.314	0.72	0.00
10Y24H	B16B-7	BASE	11.57	2.704	0.023	0.428	0.010	2321	0.320	0.75	0.00
10Y24H	B16B-7	BASE	11.58	2.726	0.023	0.438	0.010	2367	0.326	0.77	0.00
10Y24H	B16B-7	BASE	11.60	2.749	0.023	0.448	0.010	2414	0.332	0.80	0.00
10Y24H	B16B-7	BASE	11.62	2.771	0.023	0.459	0.010	2463	0.339	0.83	0.00
10Y24H	B16B-7	BASE	11.63	2.794	0.023	0.469	0.010	2514	0.346	0.86	0.00
10Y24H	B16B-7	BASE	11.65	2.817	0.023	0.479	0.010	2566	0.353	0.89	0.00
10Y24H	B16B-7	BASE	11.67	2.839	0.023	0.490	0.010	2620	0.361	0.91	0.00
10Y24H	B16B-7	BASE	11.68	2.862	0.023	0.500	0.011	2676	0.369	0.94	0.00
10Y24H	B16B-7	BASE	11.70	2.885	0.023	0.511	0.011	2733	0.376	0.96	0.00
10Y24H	B16B-7	BASE	11.72	2.907	0.023	0.521	0.011	2791	0.384	0.98	0.00
10Y24H	B16B-7	BASE	11.73	2.930	0.023	0.532	0.011	2851	0.393	1.00	0.00
10Y24H	B16B-7	BASE	11.75	2.953	0.023	0.543	0.011	2912	0.401	1.02	0.00
10Y24H	B16B-7	BASE	11.77	3.005	0.053	0.574	0.031	2974	0.410	1.06	0.00
10Y24H	B16B-7	BASE	11.78	3.103	0.098	0.617	0.043	3040	0.419	1.13	0.00
10Y24H	B16B-7	BASE	11.80	3.201	0.098	0.667	0.050	3111	0.429	1.23	0.00
10Y24H	B16B-7	BASE	11.82	3.299	0.098	0.718	0.051	3190	0.439	1.39	0.00
10Y24H	B16B-7	BASE	11.83	3.397	0.098	0.770	0.052	3280	0.452	1.62	0.00
10Y24H	B16B-7	BASE	11.85	3.495	0.098	0.824	0.053	3386	0.466	1.89	0.00
10Y24H	B16B-7	BASE	11.87	3.592	0.098	0.878	0.054	3508	0.483	2.20	0.00
10Y24H	B16B-7	BASE	11.88	3.690	0.098	0.934	0.056	3649	0.503	2.50	0.00
10Y24H	B16B-7	BASE	11.90	3.788	0.098	0.991	0.057	3808	0.525	2.80	0.00
10Y24H	B16B-7	BASE	11.92	3.886	0.098	1.048	0.058	3985	0.549	3.09	0.00
10Y24H	B16B-7	BASE	11.93	3.984	0.098	1.107	0.059	4179	0.576	3.37	0.00
10Y24H	B16B-7	BASE	11.95	4.082	0.098	1.167	0.060	4389	0.605	3.63	0.00
10Y24H	B16B-7	BASE	11.97	4.179	0.098	1.228	0.061	4614	0.636	3.88	0.00
10Y24H	B16B-7	BASE	11.98	4.277	0.098	1.289	0.061	4854	0.669	4.11	0.00
10Y24H	B16B-7	BASE	12.00	4.375	0.098	1.351	0.062	5107	0.703	4.33	0.00
10Y24H	B16B-7	BASE	12.02	4.473	0.098	1.415	0.064	5374	0.740	4.55	0.00
10Y24H	B16B-7	BASE	12.03	4.572	0.098	1.479	0.064	5653	0.779	4.76	0.00
10Y24H	B16B-7	BASE	12.05	4.670	0.098	1.544	0.065	5944	0.819	4.96	0.00
10Y24H	B16B-7	BASE	12.07	4.769	0.098	1.610	0.066	6247	0.860	5.15	0.00
10Y24H	B16B-7	BASE	12.08	4.867	0.098	1.677	0.067	6562	0.904	5.34	0.00
10Y24H	B16B-7	BASE	12.10	4.966	0.098	1.744	0.067	6887	0.949	5.52	0.00
10Y24H	B16B-7	BASE	12.12	5.064	0.098	1.812	0.068	7223	0.995	5.69	0.00
10Y24H	B16B-7	BASE	12.13	5.162	0.098	1.880	0.068	7570	1.043	5.86	0.00
10Y24H	B16B-7	BASE	12.15	5.261	0.098	1.950	0.069	7926	1.092	6.02	0.00
10Y24H	B16B-7	BASE	12.17	5.359	0.098	2.020	0.070	8292	1.142	6.17	0.00
10Y24H	B16B-7	BASE	12.18	5.458	0.098	2.090	0.070	8667	1.194	6.32	0.00
10Y24H	B16B-7	BASE	12.20	5.556	0.098	2.161	0.071	9050	1.247	6.47	0.00
10Y24H	B16B-7	BASE	12.22	5.655	0.098	2.233	0.072	9443	1.301	6.61	0.00
10Y24H	B16B-7	BASE	12.23	5.753	0.098	2.298	0.065	9843	1.356	6.73	0.00
10Y24H	B16B-7	BASE	12.25	5.806	0.053	2.343	0.046	10250	1.412	6.83	0.00
10Y24H	B16B-7	BASE	12.27	5.828	0.022	2.360	0.016	10662	1.469	6.89	0.00
10Y24H	B16B-7	BASE	12.28	5.850	0.022	2.376	0.016	11074	1.525	6.86	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-8	BASE	11.05	2.228	0.012	0.574	0.007	2671	0.481	0.53	0.00
10Y24H	B16B-8	BASE	11.07	2.239	0.012	0.581	0.007	2703	0.487	0.53	0.00
10Y24H	B16B-8	BASE	11.08	2.251	0.012	0.588	0.007	2735	0.492	0.54	0.00
10Y24H	B16B-8	BASE	11.10	2.263	0.012	0.594	0.007	2767	0.498	0.55	0.00
10Y24H	B16B-8	BASE	11.12	2.274	0.012	0.601	0.007	2800	0.504	0.55	0.00
10Y24H	B16B-8	BASE	11.13	2.286	0.012	0.608	0.007	2833	0.510	0.56	0.00
10Y24H	B16B-8	BASE	11.15	2.297	0.012	0.615	0.007	2867	0.516	0.56	0.00
10Y24H	B16B-8	BASE	11.17	2.309	0.012	0.622	0.007	2901	0.522	0.57	0.00
10Y24H	B16B-8	BASE	11.18	2.321	0.012	0.629	0.007	2935	0.528	0.57	0.00
10Y24H	B16B-8	BASE	11.20	2.332	0.012	0.636	0.007	2970	0.535	0.58	0.00
10Y24H	B16B-8	BASE	11.22	2.344	0.012	0.643	0.007	3004	0.541	0.58	0.00
10Y24H	B16B-8	BASE	11.23	2.355	0.012	0.650	0.007	3039	0.547	0.59	0.00
10Y24H	B16B-8	BASE	11.25	2.367	0.012	0.657	0.007	3075	0.554	0.59	0.00
10Y24H	B16B-8	BASE	11.27	2.382	0.015	0.666	0.008	3110	0.560	0.60	0.00
10Y24H	B16B-8	BASE	11.28	2.398	0.016	0.676	0.010	3146	0.567	0.60	0.00
10Y24H	B16B-8	BASE	11.30	2.415	0.016	0.686	0.010	3183	0.573	0.61	0.00
10Y24H	B16B-8	BASE	11.32	2.431	0.016	0.696	0.010	3220	0.580	0.63	0.00
10Y24H	B16B-8	BASE	11.33	2.447	0.016	0.706	0.010	3258	0.587	0.64	0.00
10Y24H	B16B-8	BASE	11.35	2.464	0.016	0.716	0.010	3297	0.594	0.66	0.00
10Y24H	B16B-8	BASE	11.37	2.480	0.016	0.726	0.010	3338	0.601	0.68	0.00
10Y24H	B16B-8	BASE	11.38	2.497	0.016	0.736	0.010	3379	0.608	0.70	0.00
10Y24H	B16B-8	BASE	11.40	2.513	0.016	0.747	0.010	3422	0.616	0.72	0.00
10Y24H	B16B-8	BASE	11.42	2.529	0.016	0.757	0.010	3465	0.624	0.74	0.00
10Y24H	B16B-8	BASE	11.43	2.546	0.016	0.767	0.010	3510	0.632	0.75	0.00
10Y24H	B16B-8	BASE	11.45	2.562	0.016	0.778	0.010	3556	0.640	0.77	0.00
10Y24H	B16B-8	BASE	11.47	2.579	0.016	0.788	0.010	3602	0.649	0.78	0.00
10Y24H	B16B-8	BASE	11.48	2.595	0.016	0.799	0.010	3649	0.657	0.79	0.00
10Y24H	B16B-8	BASE	11.50	2.613	0.018	0.811	0.012	3697	0.666	0.81	0.00
10Y24H	B16B-8	BASE	11.52	2.636	0.023	0.825	0.014	3746	0.675	0.82	0.00
10Y24H	B16B-8	BASE	11.53	2.658	0.023	0.839	0.015	3796	0.684	0.84	0.00
10Y24H	B16B-8	BASE	11.55	2.681	0.023	0.854	0.015	3847	0.693	0.86	0.00
10Y24H	B16B-8	BASE	11.57	2.704	0.023	0.869	0.015	3900	0.702	0.89	0.00
10Y24H	B16B-8	BASE	11.58	2.726	0.023	0.884	0.015	3954	0.712	0.92	0.00
10Y24H	B16B-8	BASE	11.60	2.749	0.023	0.899	0.015	4010	0.722	0.95	0.00
10Y24H	B16B-8	BASE	11.62	2.771	0.023	0.914	0.015	4068	0.732	0.98	0.00
10Y24H	B16B-8	BASE	11.63	2.794	0.023	0.929	0.015	4127	0.743	1.01	0.00
10Y24H	B16B-8	BASE	11.65	2.817	0.023	0.944	0.015	4189	0.754	1.04	0.00
10Y24H	B16B-8	BASE	11.67	2.839	0.023	0.959	0.015	4252	0.766	1.06	0.00
10Y24H	B16B-8	BASE	11.68	2.862	0.023	0.974	0.015	4316	0.777	1.09	0.00
10Y24H	B16B-8	BASE	11.70	2.885	0.023	0.990	0.015	4382	0.789	1.11	0.00
10Y24H	B16B-8	BASE	11.72	2.907	0.023	1.005	0.015	4450	0.801	1.13	0.00
10Y24H	B16B-8	BASE	11.73	2.930	0.023	1.021	0.015	4518	0.813	1.15	0.00
10Y24H	B16B-8	BASE	11.75	2.953	0.023	1.036	0.016	4588	0.826	1.17	0.00
10Y24H	B16B-8	BASE	11.77	3.005	0.053	1.080	0.044	4659	0.839	1.21	0.00
10Y24H	B16B-8	BASE	11.78	3.103	0.098	1.141	0.061	4734	0.852	1.28	0.00
10Y24H	B16B-8	BASE	11.80	3.201	0.098	1.210	0.069	4814	0.867	1.38	0.00
10Y24H	B16B-8	BASE	11.82	3.299	0.098	1.281	0.070	4902	0.883	1.56	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-9	BASE	11.37	2.480	0.016	1.570	0.015	3614	1.383	0.48	0.00
10Y24H	B16B-9	BASE	11.38	2.497	0.016	1.585	0.015	3643	1.394	0.50	0.00
10Y24H	B16B-9	BASE	11.40	2.513	0.016	1.600	0.015	3674	1.406	0.51	0.00
10Y24H	B16B-9	BASE	11.42	2.529	0.016	1.614	0.015	3704	1.417	0.52	0.00
10Y24H	B16B-9	BASE	11.43	2.546	0.016	1.629	0.015	3736	1.429	0.53	0.00
10Y24H	B16B-9	BASE	11.45	2.562	0.016	1.644	0.015	3768	1.442	0.54	0.00
10Y24H	B16B-9	BASE	11.47	2.579	0.016	1.659	0.015	3800	1.454	0.55	0.00
10Y24H	B16B-9	BASE	11.48	2.595	0.016	1.674	0.015	3833	1.467	0.55	0.00
10Y24H	B16B-9	BASE	11.50	2.613	0.018	1.692	0.018	3866	1.479	0.56	0.00
10Y24H	B16B-9	BASE	11.52	2.636	0.023	1.711	0.019	3900	1.492	0.57	0.00
10Y24H	B16B-9	BASE	11.53	2.658	0.023	1.732	0.021	3935	1.506	0.58	0.00
10Y24H	B16B-9	BASE	11.55	2.681	0.023	1.752	0.021	3970	1.519	0.59	0.00
10Y24H	B16B-9	BASE	11.57	2.704	0.023	1.773	0.021	4006	1.533	0.61	0.00
10Y24H	B16B-9	BASE	11.58	2.726	0.023	1.794	0.021	4043	1.547	0.63	0.00
10Y24H	B16B-9	BASE	11.60	2.749	0.023	1.815	0.021	4081	1.562	0.65	0.00
10Y24H	B16B-9	BASE	11.62	2.771	0.023	1.835	0.021	4120	1.577	0.66	0.00
10Y24H	B16B-9	BASE	11.63	2.794	0.023	1.856	0.021	4161	1.592	0.68	0.00
10Y24H	B16B-9	BASE	11.65	2.817	0.023	1.877	0.021	4202	1.608	0.70	0.00
10Y24H	B16B-9	BASE	11.67	2.839	0.023	1.898	0.021	4245	1.624	0.71	0.00
10Y24H	B16B-9	BASE	11.68	2.862	0.023	1.919	0.021	4288	1.641	0.73	0.00
10Y24H	B16B-9	BASE	11.70	2.885	0.023	1.940	0.021	4332	1.658	0.74	0.00
10Y24H	B16B-9	BASE	11.72	2.907	0.023	1.961	0.021	4377	1.675	0.75	0.00
10Y24H	B16B-9	BASE	11.73	2.930	0.023	1.982	0.021	4422	1.692	0.76	0.00
10Y24H	B16B-9	BASE	11.75	2.953	0.023	2.003	0.021	4469	1.710	0.77	0.00
10Y24H	B16B-9	BASE	11.77	3.005	0.053	2.061	0.059	4516	1.728	0.80	0.00
10Y24H	B16B-9	BASE	11.78	3.103	0.098	2.143	0.081	4565	1.747	0.84	0.00
10Y24H	B16B-9	BASE	11.80	3.201	0.098	2.234	0.091	4617	1.767	0.90	0.00
10Y24H	B16B-9	BASE	11.82	3.299	0.098	2.326	0.092	4675	1.789	1.01	0.00
10Y24H	B16B-9	BASE	11.83	3.397	0.098	2.417	0.092	4739	1.813	1.15	0.00
10Y24H	B16B-9	BASE	11.85	3.495	0.098	2.510	0.092	4814	1.842	1.33	0.00
10Y24H	B16B-9	BASE	11.87	3.592	0.098	2.602	0.092	4899	1.874	1.51	0.00
10Y24H	B16B-9	BASE	11.88	3.690	0.098	2.695	0.093	4995	1.911	1.70	0.00
10Y24H	B16B-9	BASE	11.90	3.788	0.098	2.788	0.093	5102	1.952	1.87	0.00
10Y24H	B16B-9	BASE	11.92	3.886	0.098	2.881	0.093	5220	1.997	2.04	0.00
10Y24H	B16B-9	BASE	11.93	3.984	0.098	2.974	0.093	5347	2.046	2.19	0.00
10Y24H	B16B-9	BASE	11.95	4.082	0.098	3.068	0.094	5483	2.098	2.33	0.00
10Y24H	B16B-9	BASE	11.97	4.179	0.098	3.161	0.094	5626	2.153	2.46	0.00
10Y24H	B16B-9	BASE	11.98	4.277	0.098	3.255	0.094	5777	2.210	2.57	0.00
10Y24H	B16B-9	BASE	12.00	4.375	0.098	3.349	0.094	5935	2.271	2.68	0.00
10Y24H	B16B-9	BASE	12.02	4.473	0.098	3.444	0.095	6098	2.333	2.78	0.00
10Y24H	B16B-9	BASE	12.03	4.572	0.098	3.539	0.095	6268	2.398	2.87	0.00
10Y24H	B16B-9	BASE	12.05	4.670	0.098	3.633	0.095	6443	2.465	2.96	0.00
10Y24H	B16B-9	BASE	12.07	4.769	0.098	3.729	0.095	6622	2.534	3.04	0.00
10Y24H	B16B-9	BASE	12.08	4.867	0.098	3.824	0.095	6807	2.604	3.11	0.00
10Y24H	B16B-9	BASE	12.10	4.966	0.098	3.919	0.095	6996	2.677	3.18	0.00
10Y24H	B16B-9	BASE	12.12	5.064	0.098	4.014	0.095	7189	2.751	3.25	0.00
10Y24H	B16B-9	BASE	12.13	5.162	0.098	4.110	0.095	7386	2.826	3.31	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-10A	BASE	11.42	2.529	0.016	0.222	0.005	669	0.159	0.26	0.00
10Y24H	B16B-10A	BASE	11.43	2.546	0.016	0.227	0.005	685	0.163	0.26	0.00
10Y24H	B16B-10A	BASE	11.45	2.562	0.016	0.232	0.005	701	0.167	0.27	0.00
10Y24H	B16B-10A	BASE	11.47	2.579	0.016	0.237	0.005	718	0.170	0.28	0.00
10Y24H	B16B-10A	BASE	11.48	2.595	0.016	0.243	0.005	735	0.174	0.28	0.00
10Y24H	B16B-10A	BASE	11.50	2.613	0.018	0.249	0.006	752	0.179	0.29	0.00
10Y24H	B16B-10A	BASE	11.52	2.636	0.023	0.256	0.007	770	0.183	0.30	0.00
10Y24H	B16B-10A	BASE	11.53	2.658	0.023	0.264	0.008	788	0.187	0.31	0.00
10Y24H	B16B-10A	BASE	11.55	2.681	0.023	0.271	0.008	806	0.192	0.32	0.00
10Y24H	B16B-10A	BASE	11.57	2.704	0.023	0.279	0.008	826	0.196	0.33	0.00
10Y24H	B16B-10A	BASE	11.58	2.726	0.023	0.287	0.008	846	0.201	0.34	0.00
10Y24H	B16B-10A	BASE	11.60	2.749	0.023	0.295	0.008	867	0.206	0.35	0.00
10Y24H	B16B-10A	BASE	11.62	2.771	0.023	0.303	0.008	888	0.211	0.37	0.00
10Y24H	B16B-10A	BASE	11.63	2.794	0.023	0.311	0.008	911	0.216	0.38	0.00
10Y24H	B16B-10A	BASE	11.65	2.817	0.023	0.319	0.008	934	0.222	0.40	0.00
10Y24H	B16B-10A	BASE	11.67	2.839	0.023	0.327	0.008	958	0.228	0.41	0.00
10Y24H	B16B-10A	BASE	11.68	2.862	0.023	0.336	0.008	983	0.234	0.42	0.00
10Y24H	B16B-10A	BASE	11.70	2.885	0.023	0.344	0.008	1009	0.240	0.43	0.00
10Y24H	B16B-10A	BASE	11.72	2.907	0.023	0.353	0.009	1035	0.246	0.44	0.00
10Y24H	B16B-10A	BASE	11.73	2.930	0.023	0.361	0.009	1062	0.252	0.45	0.00
10Y24H	B16B-10A	BASE	11.75	2.953	0.023	0.370	0.009	1089	0.259	0.46	0.00
10Y24H	B16B-10A	BASE	11.77	3.005	0.053	0.395	0.025	1118	0.265	0.48	0.00
10Y24H	B16B-10A	BASE	11.78	3.103	0.098	0.430	0.035	1148	0.273	0.51	0.00
10Y24H	B16B-10A	BASE	11.80	3.201	0.098	0.471	0.040	1180	0.280	0.56	0.00
10Y24H	B16B-10A	BASE	11.82	3.299	0.098	0.513	0.042	1216	0.289	0.64	0.00
10Y24H	B16B-10A	BASE	11.83	3.397	0.098	0.556	0.043	1258	0.299	0.75	0.00
10Y24H	B16B-10A	BASE	11.85	3.495	0.098	0.601	0.044	1307	0.310	0.88	0.00
10Y24H	B16B-10A	BASE	11.87	3.592	0.098	0.646	0.046	1364	0.324	1.03	0.00
10Y24H	B16B-10A	BASE	11.88	3.690	0.098	0.693	0.047	1430	0.340	1.18	0.00
10Y24H	B16B-10A	BASE	11.90	3.788	0.098	0.742	0.048	1505	0.357	1.32	0.00
10Y24H	B16B-10A	BASE	11.92	3.886	0.098	0.791	0.049	1589	0.377	1.47	0.00
10Y24H	B16B-10A	BASE	11.93	3.984	0.098	0.841	0.050	1681	0.399	1.61	0.00
10Y24H	B16B-10A	BASE	11.95	4.082	0.098	0.892	0.051	1781	0.423	1.74	0.00
10Y24H	B16B-10A	BASE	11.97	4.179	0.098	0.945	0.052	1889	0.449	1.86	0.00
10Y24H	B16B-10A	BASE	11.98	4.277	0.098	0.998	0.053	2005	0.476	1.98	0.00
10Y24H	B16B-10A	BASE	12.00	4.375	0.098	1.052	0.054	2127	0.505	2.10	0.00
10Y24H	B16B-10A	BASE	12.02	4.473	0.098	1.107	0.056	2257	0.536	2.21	0.00
10Y24H	B16B-10A	BASE	12.03	4.572	0.098	1.164	0.056	2393	0.568	2.32	0.00
10Y24H	B16B-10A	BASE	12.05	4.670	0.098	1.221	0.057	2535	0.602	2.43	0.00
10Y24H	B16B-10A	BASE	12.07	4.769	0.098	1.279	0.058	2684	0.637	2.53	0.00
10Y24H	B16B-10A	BASE	12.08	4.867	0.098	1.338	0.059	2839	0.674	2.63	0.00
10Y24H	B16B-10A	BASE	12.10	4.966	0.098	1.397	0.060	3000	0.712	2.73	0.00
10Y24H	B16B-10A	BASE	12.12	5.064	0.098	1.458	0.060	3167	0.752	2.83	0.00
10Y24H	B16B-10A	BASE	12.13	5.162	0.098	1.519	0.061	3339	0.793	2.92	0.00
10Y24H	B16B-10A	BASE	12.15	5.261	0.098	1.581	0.062	3517	0.835	3.01	0.00
10Y24H	B16B-10A	BASE	12.17	5.359	0.098	1.643	0.063	3700	0.879	3.10	0.00
10Y24H	B16B-10A	BASE	12.18	5.458	0.098	1.706	0.063	3889	0.924	3.18	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-10B	BASE	11.73	2.930	0.023	0.424	0.009	330	0.303	0.13	0.00
10Y24H	B16B-10B	BASE	11.75	2.953	0.023	0.434	0.010	338	0.310	0.13	0.00
10Y24H	B16B-10B	BASE	11.77	3.005	0.053	0.461	0.027	346	0.318	0.14	0.00
10Y24H	B16B-10B	BASE	11.78	3.103	0.098	0.499	0.038	355	0.326	0.15	0.00
10Y24H	B16B-10B	BASE	11.80	3.201	0.098	0.543	0.044	364	0.334	0.16	0.00
10Y24H	B16B-10B	BASE	11.82	3.299	0.098	0.589	0.046	374	0.344	0.18	0.00
10Y24H	B16B-10B	BASE	11.83	3.397	0.098	0.636	0.047	386	0.355	0.21	0.00
10Y24H	B16B-10B	BASE	11.85	3.495	0.098	0.684	0.048	400	0.367	0.25	0.00
10Y24H	B16B-10B	BASE	11.87	3.592	0.098	0.733	0.049	416	0.382	0.29	0.00
10Y24H	B16B-10B	BASE	11.88	3.690	0.098	0.783	0.051	435	0.399	0.33	0.00
10Y24H	B16B-10B	BASE	11.90	3.788	0.098	0.835	0.052	456	0.419	0.37	0.00
10Y24H	B16B-10B	BASE	11.92	3.886	0.098	0.887	0.053	480	0.440	0.41	0.00
10Y24H	B16B-10B	BASE	11.93	3.984	0.098	0.941	0.053	505	0.464	0.45	0.00
10Y24H	B16B-10B	BASE	11.95	4.082	0.098	0.996	0.055	534	0.490	0.49	0.00
10Y24H	B16B-10B	BASE	11.97	4.179	0.098	1.051	0.056	564	0.518	0.52	0.00
10Y24H	B16B-10B	BASE	11.98	4.277	0.098	1.108	0.056	596	0.547	0.55	0.00
10Y24H	B16B-10B	BASE	12.00	4.375	0.098	1.165	0.057	630	0.579	0.59	0.00
10Y24H	B16B-10B	BASE	12.02	4.473	0.098	1.224	0.059	666	0.612	0.62	0.00
10Y24H	B16B-10B	BASE	12.03	4.572	0.098	1.283	0.060	704	0.646	0.64	0.00
10Y24H	B16B-10B	BASE	12.05	4.670	0.098	1.343	0.060	744	0.683	0.67	0.00
10Y24H	B16B-10B	BASE	12.07	4.769	0.098	1.404	0.061	785	0.721	0.70	0.00
10Y24H	B16B-10B	BASE	12.08	4.867	0.098	1.466	0.062	828	0.760	0.73	0.00
10Y24H	B16B-10B	BASE	12.10	4.966	0.098	1.529	0.063	872	0.801	0.75	0.00
10Y24H	B16B-10B	BASE	12.12	5.064	0.098	1.592	0.063	918	0.843	0.78	0.00
10Y24H	B16B-10B	BASE	12.13	5.162	0.098	1.656	0.064	966	0.887	0.80	0.00
10Y24H	B16B-10B	BASE	12.15	5.261	0.098	1.721	0.065	1015	0.932	0.83	0.00
10Y24H	B16B-10B	BASE	12.17	5.359	0.098	1.787	0.065	1065	0.978	0.85	0.00
10Y24H	B16B-10B	BASE	12.18	5.458	0.098	1.853	0.066	1117	1.025	0.87	0.00
10Y24H	B16B-10B	BASE	12.20	5.556	0.098	1.920	0.067	1170	1.074	0.89	0.00
10Y24H	B16B-10B	BASE	12.22	5.655	0.098	1.987	0.067	1224	1.124	0.91	0.00
10Y24H	B16B-10B	BASE	12.23	5.753	0.098	2.048	0.061	1279	1.175	0.93	0.00
10Y24H	B16B-10B	BASE	12.25	5.806	0.053	2.091	0.043	1336	1.226	0.95	0.00
10Y24H	B16B-10B	BASE	12.27	5.828	0.022	2.107	0.015	1393	1.279	0.96	0.00
10Y24H	B16B-10B	BASE	12.28	5.850	0.022	2.122	0.015	1450	1.332	0.95	0.00
10Y24H	B16B-10B	BASE	12.30	5.872	0.022	2.138	0.015	1507	1.384	0.94	0.00
10Y24H	B16B-10B	BASE	12.32	5.894	0.022	2.153	0.015	1563	1.435	0.91	0.00
10Y24H	B16B-10B	BASE	12.33	5.916	0.022	2.169	0.016	1616	1.484	0.88	0.00
10Y24H	B16B-10B	BASE	12.35	5.938	0.022	2.184	0.016	1668	1.531	0.83	0.00
10Y24H	B16B-10B	BASE	12.37	5.960	0.022	2.200	0.016	1717	1.576	0.79	0.00
10Y24H	B16B-10B	BASE	12.38	5.983	0.022	2.215	0.016	1763	1.619	0.76	0.00
10Y24H	B16B-10B	BASE	12.40	6.005	0.022	2.231	0.016	1807	1.660	0.72	0.00
10Y24H	B16B-10B	BASE	12.42	6.027	0.022	2.247	0.016	1849	1.698	0.69	0.00
10Y24H	B16B-10B	BASE	12.43	6.049	0.022	2.262	0.016	1890	1.735	0.66	0.00
10Y24H	B16B-10B	BASE	12.45	6.071	0.022	2.278	0.016	1929	1.771	0.63	0.00
10Y24H	B16B-10B	BASE	12.47	6.093	0.022	2.294	0.016	1966	1.805	0.61	0.00
10Y24H	B16B-10B	BASE	12.48	6.115	0.022	2.309	0.016	2002	1.838	0.59	0.00
10Y24H	B16B-10B	BASE	12.50	6.137	0.022	2.324	0.015	2036	1.870	0.57	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS

Simulation	Basin	Group	Time hrs	Sum Rain in	Inc Rain in	SumExcess Rain in	IncExcess Rain in	Volume ft3	Volume in	Rate cfs	Velocity fps
10Y24H	B16B-11	BASE	11.27	2.382	0.015	0.351	0.006	1999	0.280	0.52	0.00
10Y24H	B16B-11	BASE	11.28	2.398	0.016	0.358	0.007	2030	0.284	0.53	0.00
10Y24H	B16B-11	BASE	11.30	2.415	0.016	0.365	0.007	2062	0.288	0.54	0.00
10Y24H	B16B-11	BASE	11.32	2.431	0.016	0.372	0.007	2095	0.293	0.55	0.00
10Y24H	B16B-11	BASE	11.33	2.447	0.016	0.379	0.007	2128	0.298	0.56	0.00
10Y24H	B16B-11	BASE	11.35	2.464	0.016	0.387	0.007	2162	0.302	0.58	0.00
10Y24H	B16B-11	BASE	11.37	2.480	0.016	0.394	0.007	2198	0.307	0.60	0.00
10Y24H	B16B-11	BASE	11.38	2.497	0.016	0.401	0.007	2234	0.312	0.62	0.00
10Y24H	B16B-11	BASE	11.40	2.513	0.016	0.408	0.007	2272	0.318	0.64	0.00
10Y24H	B16B-11	BASE	11.42	2.529	0.016	0.416	0.007	2311	0.323	0.65	0.00
10Y24H	B16B-11	BASE	11.43	2.546	0.016	0.423	0.007	2351	0.329	0.67	0.00
10Y24H	B16B-11	BASE	11.45	2.562	0.016	0.431	0.007	2391	0.334	0.69	0.00
10Y24H	B16B-11	BASE	11.47	2.579	0.016	0.438	0.007	2433	0.340	0.70	0.00
10Y24H	B16B-11	BASE	11.48	2.595	0.016	0.446	0.008	2475	0.346	0.71	0.00
10Y24H	B16B-11	BASE	11.50	2.613	0.018	0.455	0.009	2519	0.352	0.73	0.00
10Y24H	B16B-11	BASE	11.52	2.636	0.023	0.465	0.010	2563	0.358	0.74	0.00
10Y24H	B16B-11	BASE	11.53	2.658	0.023	0.475	0.011	2608	0.365	0.76	0.00
10Y24H	B16B-11	BASE	11.55	2.681	0.023	0.486	0.011	2654	0.371	0.78	0.00
10Y24H	B16B-11	BASE	11.57	2.704	0.023	0.497	0.011	2702	0.378	0.81	0.00
10Y24H	B16B-11	BASE	11.58	2.726	0.023	0.508	0.011	2751	0.385	0.84	0.00
10Y24H	B16B-11	BASE	11.60	2.749	0.023	0.519	0.011	2802	0.392	0.87	0.00
10Y24H	B16B-11	BASE	11.62	2.771	0.023	0.530	0.011	2855	0.399	0.90	0.00
10Y24H	B16B-11	BASE	11.63	2.794	0.023	0.541	0.011	2910	0.407	0.93	0.00
10Y24H	B16B-11	BASE	11.65	2.817	0.023	0.552	0.011	2967	0.415	0.96	0.00
10Y24H	B16B-11	BASE	11.67	2.839	0.023	0.563	0.011	3025	0.423	0.98	0.00
10Y24H	B16B-11	BASE	11.68	2.862	0.023	0.575	0.011	3085	0.431	1.01	0.00
10Y24H	B16B-11	BASE	11.70	2.885	0.023	0.586	0.011	3146	0.440	1.03	0.00
10Y24H	B16B-11	BASE	11.72	2.907	0.023	0.598	0.012	3209	0.449	1.06	0.00
10Y24H	B16B-11	BASE	11.73	2.930	0.023	0.609	0.012	3273	0.458	1.08	0.00
10Y24H	B16B-11	BASE	11.75	2.953	0.023	0.621	0.012	3338	0.467	1.10	0.00
10Y24H	B16B-11	BASE	11.77	3.005	0.053	0.654	0.033	3406	0.476	1.14	0.00
10Y24H	B16B-11	BASE	11.78	3.103	0.098	0.701	0.047	3476	0.486	1.21	0.00
10Y24H	B16B-11	BASE	11.80	3.201	0.098	0.754	0.053	3552	0.497	1.31	0.00
10Y24H	B16B-11	BASE	11.82	3.299	0.098	0.809	0.055	3636	0.508	1.49	0.00
10Y24H	B16B-11	BASE	11.83	3.397	0.098	0.865	0.056	3732	0.522	1.73	0.00
10Y24H	B16B-11	BASE	11.85	3.495	0.098	0.922	0.057	3845	0.538	2.02	0.00
10Y24H	B16B-11	BASE	11.87	3.592	0.098	0.980	0.058	3975	0.556	2.33	0.00
10Y24H	B16B-11	BASE	11.88	3.690	0.098	1.039	0.059	4125	0.577	2.65	0.00
10Y24H	B16B-11	BASE	11.90	3.788	0.098	1.099	0.060	4293	0.600	2.96	0.00
10Y24H	B16B-11	BASE	11.92	3.886	0.098	1.160	0.061	4480	0.626	3.27	0.00
10Y24H	B16B-11	BASE	11.93	3.984	0.098	1.222	0.062	4685	0.655	3.56	0.00
10Y24H	B16B-11	BASE	11.95	4.082	0.098	1.285	0.063	4906	0.686	3.82	0.00
10Y24H	B16B-11	BASE	11.97	4.179	0.098	1.349	0.064	5143	0.719	4.08	0.00
10Y24H	B16B-11	BASE	11.98	4.277	0.098	1.414	0.065	5395	0.754	4.32	0.00
10Y24H	B16B-11	BASE	12.00	4.375	0.098	1.479	0.065	5661	0.792	4.55	0.00
10Y24H	B16B-11	BASE	12.02	4.473	0.098	1.546	0.067	5941	0.831	4.76	0.00
10Y24H	B16B-11	BASE	12.03	4.572	0.098	1.613	0.067	6233	0.872	4.98	0.00



S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: S.O.
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

**BASIN 16B - ADDITIONAL IMPERVIOUS AREA
 WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)**

EXAMPLE #5 POND16B-1

I- ADDED IMPERVIOUS AREA:

Added Impervious	0.65	Ac
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WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

2.5 inches times the impervious area or

1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.

For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \quad \mathbf{0.14} \quad \text{Ac-ft}$$

2-) Existing Water Quality Volume in Pre

The control structure providing treatment in Pond 16B-1 is ExCS16B-1A.

The existing water quality volume provide in pre is:

ExCS16B-1A =	0.94	Ac-ft	-SEE EXAMPLE #1A
Total =	0.94	Ac-ft	

Water Quality Volume required in Post = Existing + additional Impervious= 0.94+0.14 =1.08 Ac-ft

3-) Water Quality Volume in Post

The control structure providing treatment in Pond 16B-1 is PrCS16B-3.

The water quality volume provide in post is:

PrCS16B-3 =	1.72	Ac-ft	-SEE EXAMPLE #5
Total =	1.72	Ac-ft	

Water Quality Volume provided in Post = 1.72 Ac-ft > 1.08 Ac-ft (Criteria Met)



S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: S.O.
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

BASIN 16B - ADDITIONAL IMPERVIOUS AREA
WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)

EXAMPLE #6 POND16B-2

I- ADDED IMPERVIOUS AREA:

Added Impervious	0.00	Ac
------------------	-------------	----

WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.

For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \quad \mathbf{0.00} \quad \text{Ac-ft}$$

2-) Existing Water Quality Volume in Pre

The control structure providing treatment in Pond 16B-2 is ExCS16B-2A.

The existing water quality volume provide in pre is:

ExCS16B-2A =	0.51	Ac-ft	-SEE EXAMPLE #1B
Total =	0.51	Ac-ft	

Water Quality Volume required in Post = Existing + additional Impervious= 0.51+0.00 =0.51 Ac-ft

3-) Water Quality Volume in Post

The water quality volume provide in post for Pond 16B-2 is:

$$WQ = \quad \mathbf{0.93} \quad \text{Ac-ft}$$

Water Quality Volume provided in Post =0.93 Ac-ft > 0.51 Ac-ft (Criteria Met)



S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: S.O.
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

BASIN 16B - ADDITIONAL IMPERVIOUS AREA
WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)

EXAMPLE #7 SWALE 16B-1

I- ADDED IMPERVIOUS AREA:

PRE	
B-16B-5	0.98 Ac
B-16B-8A	0.77 Ac
B-16B-8B	0.98 Ac

POST	
B-16B-5	1.88 Ac
B-16B-8	0.97 Ac

Existing Impervious Area= 2.73 Ac
 Proposing Impervious Area= 2.85 Ac

Added Impervious

0.12	Ac
-------------	----

WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.
 For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \mathbf{0.03} \text{ Ac-ft}$$

2-) Existing Water Quality Volume in Pre

In pre-development condition, the water is flowing directly into the North Fork New River, therefore no water quality treatment is provided.

$$WQ_{\text{prov}} = \mathbf{0.00} \text{ Ac-ft}$$

Water Quality Volume required in Post = Existing + additional Impervious= 0.00+0.03=0.03 Ac-ft

3-) Water Quality Volume in Post

The water quality volume provide in post is:

$$WQ_{\text{prov}} = \mathbf{1.14} \text{ Ac-ft}$$

Water Quality Volume provided in Post = 1.14 Ac-ft > 0.13 Ac-ft (Criteria Met)



S.R 9/I-95 SEGMENT - 3A-1
 FINANCIAL PROJECT ID:
 433108-4-52-01

Prepared by: S.O.
 Check by: A.R.
 Approved by: R.G.

Date: 9/2/2016
 Date: 9/2/2016
 Date: 9/2/2016

BASIN 16B - ADDITIONAL IMPERVIOUS AREA
WATER QUALITY ANALYSIS (POST DEVELOPMENT CONDITIONS)

EXAMPLE #8 SWALE 16B-3

I- ADDED IMPERVIOUS AREA:

PRE	
B-16B-10A	0.21 Ac
B-16B-10B	0.09 Ac

POST	
B-16B-10A	0.28 Ac
B-16B-10B	0.09 Ac

Existing Impervious Area=0.30 Ac
 Proposing Impervious Area= 0.37 Ac

Added Impervious

0.07	Ac
-------------	----

WATER QUALITY REQUIREMENTS:

SFWMD CRITERIA:

- 2.5 inches times the impervious area or
- 1.0 inch times the total project area

For proposed treatment system with dry retention, 50% of the above values apply.
 For proposed treatment system with dry detention, 75% of the above values apply.

1-) 2.5 inches times the percentage of imperviousness:

WQ Required (2.5")

$$WQ (2.5") = (A\text{-imp} \times 2.5" \times 1"/12')$$

$$WQ (2.5") = \quad \mathbf{0.01} \quad \text{Ac-ft}$$

2-) Existing Water Quality Volume in Pre

In pre-development condition, the water is flowing directly into the North Fork New River, therefore no water quality treatment is provided.

$$WQ_{\text{prov}} = \quad \mathbf{0.00} \quad \text{Ac-ft}$$

Water Quality Volume required in Post = Existing + additional Impervious= 0.00+0.01=0.01 Ac-ft

3-) Water Quality Volume in Post

The water quality volume provide in post is:

$$WQ_{\text{prov}} = \quad \mathbf{0.93} \quad \text{Ac-ft}$$

Water Quality Volume provided in Post = 0.93 Ac-ft > 0.01 Ac-ft (Criteria Met)

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
Post-Development Conditions
BCC Engineering

Prepared by: S.O
 Checked by: H.S.M.
 Approved by: R.G.

Date: 3/23/2016
 Date: 3/23/2016
 Date: 3/23/2016

POND 16B-1

DRY DETENTION

Receiving River Basin: **North Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac/Ft)	Remark
1.42	0.5472	0.000	0.000	
2.00	0.6787	0.356	0.356	
2.40	0.7761	0.291	0.646	Weir El. (PrCS16B-3)
3.00	0.9223	1.161	1.161	
6.50	2.5276	7.214	7.570	

POND 16B-2

DRY DETENTION

Receiving River Basin: **North Fork of the New River**

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac/Ft)	Remark
2.00	0.0859	0.000	0.000	
2.75	0.1677	0.095	0.095	
4.17	0.3101	0.339	0.434	
4.92	0.3937	0.264	0.698	Weir El. (ExCS16B-2A/B)
6.50	0.5844	0.773	1.471	
7.50	0.7766	0.681	2.151	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
Post-Development Conditions
BCC Engineering

Prepared by: S.O
 Checked by: H.S.M.
 Approved by: R.G.

Date: 3/23/2016
 Date: 3/23/2016
 Date: 3/23/2016

SWALE 16B-1

DRY RETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac/Ft)	Remark
3.00	0.2119	0.000	0.000	
3.25	0.2652	0.060	0.060	
3.50	0.3199	0.073	0.133	
3.75	0.3790	0.087	0.220	
4.50	0.5488	0.348	0.568	Weir El. (S-16B-15 & 19)
5.02	0.6650	0.316	0.884	
5.28	0.7466	0.861	1.081	
7.00	2.1024	3.314	3.882	

SWALE 16B-3

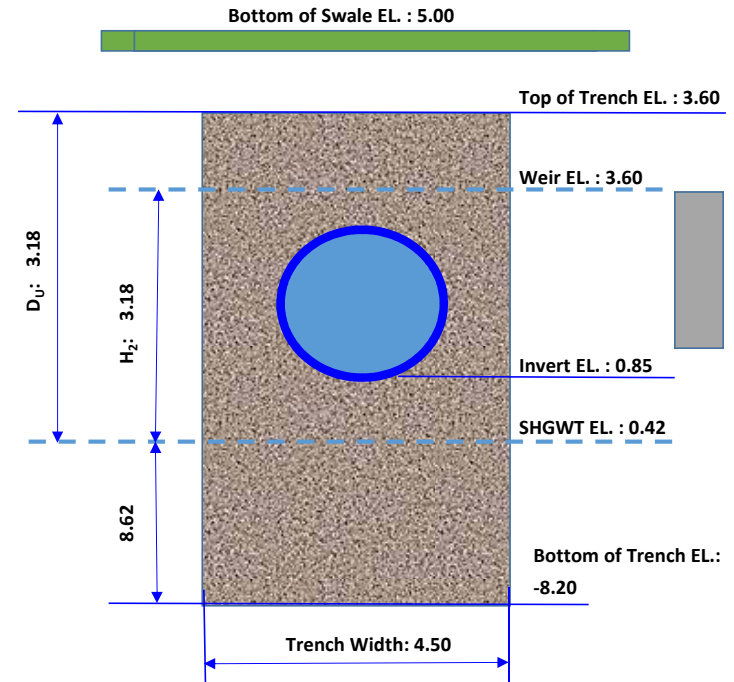
DRY RETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac/Ft)	Remark
5.00	0.2565	0.000	0.000	
6.50	0.3663	0.467	0.467	Weir El. (S-16B-22)
7.96	0.4650	0.607	1.074	

**I-95 CDC DRAINAGE CALCULATIONS
 FRENCH DRAIN DESIGN & TREATMENT VOLUMES**

Drainage System:	16B	
French Drain (ICPR Link Name):	PrFD16B-1	**
Existing/Proposed:	Proposed	
SHGWT EL. (ft-NAVD):	0.42	
Pipe Size (in):	24	
Length of French Drain, L (LF):	550	
Pipe Thickness (in):	3	
Pipe Invert EL. (ft-NAVD):	0.85	
Top of Trench EL. (ft-NAVD):	3.60	
Bottom of Trench EL. (ft-NAVD):	-8.20	
Trench Height, H T (ft):	11.8	
Weir EL. (ft-NAVD):	3.60	
Trench Width, W (ft):	4.50	
(P-10), (P-2042) Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	6.750E-05	
Depth to Water Table, H ₂ (ft):	3.18	
Non-Saturated Trench Depth, D _u (ft):	3.18	
Saturated Trench Depth, D _s (ft):	8.62	
$V = L(K_{10}(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.34	
$V = L(K_{10}(2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.29	
D _u > D _s and W < 2H _T (Yes/No):	No	
Treatment Volume Provided, V (Ac-ft):	0.29	



** INCLUDED IN DRAINAGE DETAIL_PrCS16B-FD1	
(P-10) Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	3.500E-05
(P-2042) Hydraulic Conductivity, K15 (cfs/ft ² /ft-head):	1.000E-04
(P-2042) (P-10) Average Hydraulic Conductivity, K15 (cfs/ft²/ft-head):	6.750E-05

I-95 CDC DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System:	16B		Pipe Invert EL. (ft-NAVD):	0.85
French Drain (ICPR Link Name):	PrFD16B-1	**	Top of Trench EL. (ft-NAVD):	3.60
Pipe Size (in):	24		Bottom of Trench EL. (ft-NAVD):	-8.20
Length of French Drain, L (LF):	275	(FS=2.00)	Maximum Ground Water Elevation (ft-NAVD):	1.42
Trench Height, H T (ft):	11.80		Maximum Possible Stage (ft-NAVD):	8.07
Trench Width, W (ft):	4.50		SHGWT EL. (ft-NAVD):	0.42
Weir EL. (ft-NAVD):	3.60		(P-10), (P-2042) Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	6.750E-05

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	d _u (ft)	d _s (ft)	Head d _p (ft)	Exfiltration E (cfs/ft)	Discharge Q (cfs)	Equations	Comments
0.42	0.42	--	--	0.00	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.60	3.18	8.62	3.18	0.00438	1.205	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	8.07	3.18	8.62	7.65	0.03091	8.500	$E = 2K_{15} (d_u (d_p - d_u / 2) + d_s d_p)$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage
1.42	1.42	--	--	--	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
1.42	3.60	2.18	9.62	--	0.00315	0.867	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Swale
1.42	8.07	2.18	9.62	6.65	0.01027	2.825	$E = 2K_{10} [D_u (D_p - D_u / 2) + D_s D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage

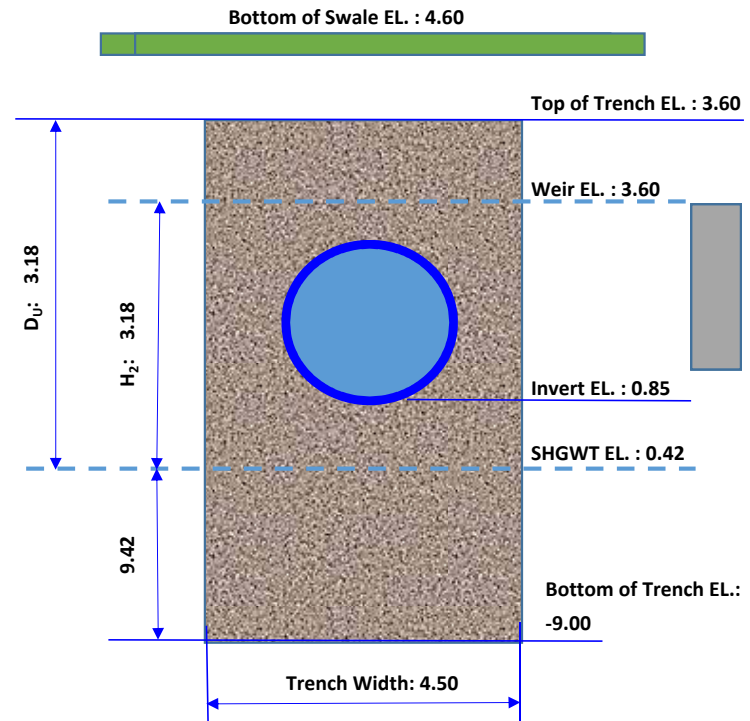
** INCLUDED IN DRAINAGE DETAIL _PrCS16B-FD1

FRENCH DRAIN NODE: STAGE AREA DATA			
STAGE (ft-NAVD)		AREA (Ac)	
Bottom of Trench EL.	-8.20	Area within Trench x 50% (0.5 x L x W x FS)	0.0284
Top of Trench EL.	3.60	Area within Trench x 50% (0.5 x L x W x FS)	0.0284
0.1' Above Top of Trench EL.	3.61	Area within Drainage Structure(s)	0.0007
Structure Rim/Grate EL.	5.00	Area within Drainage Structure(s)	0.0007
Bottom of Swale 16-B4 EL.	5.01	Area within Swale	0.0835
Swale 16-B4 EL.	6.00	Area within Swale	0.2181
Swale 16-B4 EL.	7.57	Area within Swale	0.4221

**I-95 CDC DRAINAGE CALCULATIONS
 FRENCH DRAIN DESIGN & TREATMENT VOLUMES**

Drainage System:	16B	
French Drain (ICPR Link Name):	PrFD16B-2	**
Existing/Proposed:	Proposed	
SHGWT EL. (ft-NAVD):	0.42	
Pipe Size (in):	24	
Length of French Drain, L (LF):	475	
Pipe Thickness (in):	3	
Pipe Invert EL. (ft-NAVD):	0.85	
Top of Trench EL. (ft-NAVD):	3.60	
Bottom of Trench EL. (ft-NAVD):	-9.00	
Trench Height, H T (ft):	12.6	
Weir EL. (ft-NAVD):	3.60	
Trench Width, W (ft):	4.50	
(P-10), (P-2042) Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	6.750E-05	
Depth to Water Table, H ₂ (ft):	3.18	
Non-Saturated Trench Depth, D _u (ft):	3.18	
Saturated Trench Depth, D _s (ft):	9.42	
$V = L(K_{10}(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.30	
$V = L(K_{10}(2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4}WD_u))$	0.27	
D _u > D _s and W < 2H _T (Yes/No):	No	
Treatment Volume Provided, V (Ac-ft):	0.27	

** INCLUDED IN DRAINAGE DETAIL _PrCS16B-FD2	
(P-10) Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	3.500E-05
(P-2042) Hydraulic Conductivity, K15 (cfs/ft ² /ft-head):	1.000E-04
(P-2042) (P-10) Average Hydraulic Conductivity, K15 (cfs/ft²/ft-head)	6.750E-05



I-95 CDC DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System:	16B		Pipe Invert EL. (ft-NAVD):	0.85
French Drain (ICPR Link Name):	PrFD16B-2	**	Top of Trench EL. (ft-NAVD):	3.60
Pipe Size (in):	24		Bottom of Trench EL. (ft-NAVD):	-9.00
Length of French Drain, L (LF):	238	(FS=2.00)	Maximum Ground Water Elevation (ft-NAVD):	1.42
Trench Height, H T (ft):	12.60		Maximum Possible Stage (ft-NAVD):	7.30
Trench Width, W (ft):	4.50		SHGWT EL. (ft-NAVD):	0.42
Weir EL. (ft-NAVD):	3.60		(P-10), (P-2042) Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	6.750E-05

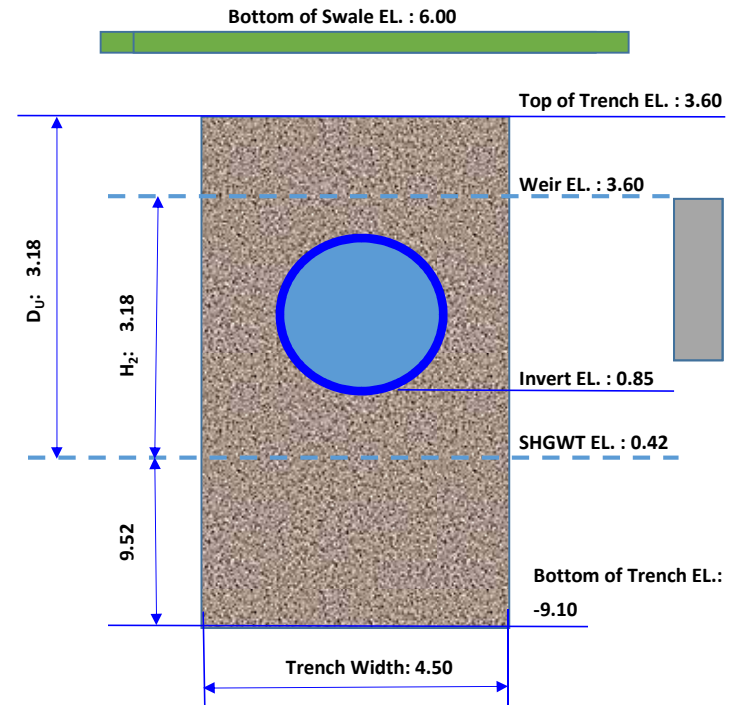
Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	d _u (ft)	d _s (ft)	Head d _p (ft)	Exfiltration E (cfs/ft)	Discharge Q (cfs)	Equations	Comments
0.42	0.42	--	--	0.00	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.60	3.18	9.42	3.18	0.00473	1.125	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	7.30	3.18	9.42	6.88	0.03009	7.162	$E = 2K_{15} (d_u (d_p \cdot d_u / 2) + d_s d_p)$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage
1.42	1.42	--	--	--	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
1.42	3.60	2.18	10.42	--	0.00339	0.806	$E = 2K_{15} d_u (d_u / 2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Swale
1.42	7.30	2.18	10.42	5.88	0.00968	2.304	$E = 2K_{10} [D_u (D_p - D_u / 2) + D_s D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage

** INCLUDED IN DRAINAGE DETAIL _PrCS16B-FD2

FRENCH DRAIN NODE: STAGE AREA DATA			
STAGE (ft-NAVD)		AREA (Ac)	
Bottom of Trench EL.	-9.00	Area within Trench x 50% (0.5 x L x W x FS)	0.0246
Top of Trench EL.	3.60	Area within Trench x 50% (0.5 x L x W x FS)	0.0246
0.1' Above Top of Trench EL.	3.61	Area within Drainage Structure(s)	0.0007
Structure Rim/Grate EL.	4.60	Area within Drainage Structure(s)	0.0007
Bottom of Swale 16B-5 EL.	4.61	Area within Swale	0.1187
Swale 16B-5 EL.	6.50	Area within Swale	0.1628
Swale 16B-5 EL.	6.51	Area within Swale	0.1801
Swale 16B-5 EL.	7.00	Area within Swale	0.1875

**I-95 CDC DRAINAGE CALCULATIONS
 FRENCH DRAIN DESIGN & TREATMENT VOLUMES**

Drainage System:	16B	
French Drain (ICPR Link Name):	PrFD16B-3	**
Existing/Proposed:	Proposed	
SHGWT EL. (ft-NAVD):	0.42	
Pipe Size (in):	24	
Length of French Drain, L (LF):	900	
Pipe Thickness (in):	3	
Pipe Invert EL. (ft-NAVD):	0.85	
Top of Trench EL. (ft-NAVD):	3.60	
Bottom of Trench EL. (ft-NAVD):	-9.10	
Trench Height, H T (ft):	12.7	
Weir EL. (ft-NAVD):	3.60	
Trench Width, W (ft):	4.50	
(P-10)(P-2042)Average Hydraulic Conductivity, K 15 (cfs/ft2/ft-head):	6.750E-05	
Depth to Water Table, H ₂ (ft):	3.18	
Non-Saturated Trench Depth, D _U (ft):	3.18	
Saturated Trench Depth, D _S (ft):	9.52	
$V = L(K_{10}(H_2W + 2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4}WD_U))$	0.58	
$V = L(K_{10}(2H_2D_U - D_U^2 + 2H_2D_S) + (1.39 \times 10^{-4}WD_U))$	0.51	
D _U > D _S and W < 2H _T (Yes/No):	No	
Treatment Volume Provided, V (Ac-ft):	0.51	



**** INCLUDED IN DRAINAGE DETAIL _PrCS16B-FD3A AND PrCS16B-FD3B**

(P-10) Hydraulic Conductivity, K 15 (cfs/ft2/ft-head):	3.500E-05
(P-2042) Hydraulic Conductivity, K15 (cfs/ft2/ft-head):	1.000E-04
(P-2042) (P-10) AverageHydraulic Conductivity, K15 (cfs/ft2/ft-head):	6.750E-05

I-95 CDC DRAINAGE CALCULATIONS
FRENCH DRAIN OPERATING TABLE/DISCHARGE CALCULATIONS

Drainage System:	16B			Pipe Invert EL. (ft-NAVD):	0.85
French Drain (ICPR Link Name):	PrFD16B-3	**		Top of Trench EL. (ft-NAVD):	3.60
Pipe Size (in):	24			Bottom of Trench EL. (ft-NAVD):	-9.10
Length of French Drain, L (LF):	450	(FS=2.00)		Maximum Ground Water Elevation (ft-NAVD):	1.42
Trench Height, H T (ft):	12.70			Maximum Possible Stage (ft-NAVD):	7.50
Trench Width, W (ft):	4.50			SHGWT EL. (ft-NAVD):	0.42
Weir EL. (ft-NAVD):	3.60			(P-10)(P-2042)Average Hydraulic Conductivity, K 15 (cfs/ft ² /ft-head):	6.750E-05

Tailwater EL. (ft-NAVD)	Headwater EL. (ft-NAVD)	d _u (ft)	d _s (ft)	Head d _p (ft)	Exfiltration E (cfs/ft)	Discharge Q (cfs)	Equations	Comments
0.42	0.42	--	--	0.00	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
0.42	3.60	3.18	9.52	3.18	0.00477	2.146	$E = 2K_{15} d_u (d_u/2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Top of Trench EL.
0.42	7.50	3.18	9.52	7.08	0.03129	14.082	$E = 2K_{15} (d_u (d_p \cdot d_u/2) + d_s d_p)$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage
1.42	1.42	--	--	--	0.00000	0.000	(No exfiltration)	TW = SHGWT EL. HW = SHGWT EL.
1.42	3.60	2.18	10.52	--	0.00342	1.538	$E = 2K_{15} d_u (d_u/2 + d_s)$ $Q = E \times L$	TW = SHGWT EL. HW = Stage within Swale
1.42	7.50	2.18	10.52	6.08	0.01010	4.547	$E = 2K_{10} [D_u (D_p - D_u/2) + D_s D_p]$ $Q = E \times L$	TW = SHGWT EL. HW = max. possible stage

** INCLUDED IN DRAINAGE DETAIL_PrCS16B-FD3A AND PrCS16B-FD3B

FRENCH DRAIN NODE: STAGE AREA DATA			
STAGE (ft-NAVD)		AREA (Ac)	
Bottom of Trench EL.	-9.10	Area within Trench x 50% (0.5 x L x W x FS)	0.0465
Top of Trench EL.	3.60	Area within Trench x 50% (0.5 x L x W x FS)	0.0465
0.1' Above Top of Trench EL.	3.61	Area within Drainage Structure(s)	0.0013
Structure Rim/Grate EL.	6.00	Area within Drainage Structure(s)	0.0013
Bottom of Swale 16B-2 EL.	6.10	Area within Swale	0.2850
Swale 16B-2	7.20	Area within Swale	0.5600

Basin: **16B** Pond : **16B-1** Control Structure : **PrCS16B-3**

-Design for Detention Type.....	Dry Detention
-Seasonal high groundwater elevation at the proposed basin.....	0.42 ft
-Flow line of the orifice.....	0.42 ft
-Contributing Area :.....	25.6 Ac
-Detention Volume, 1" x Total Area	2.13 Ac-ft
-Weir elevation	2.40 ft
-One-half the treatment volume	1.07 ac-ft
-Elevation at one-half.....	1.41 ft

Trial #1

From Equation 25-3

$$h = \frac{(h_1 + h_2)}{2}$$

where:

h1 = Depth of water between the top of the treatment volume and the flow line of the orifice **1.98 ft**

h2 = Depth of water between the stage when half the treatment volume has been released and the flow line of the orifice **0.99 ft**

h= 1.49 ft

The average flow rate (Q) required to drawdown one-half the treatment volume between 24 and 30 hours is found from Equation 25-2:

$$Q = \frac{TV}{2tCF}$$

where:

TV = Treatment Volume **92928.00 ft3**
 t = Recovery time..... **24 hrs**
 CF = Conversion Factor **3600 sec/hr**

Q_{1/2} = 0.538 cfs
Q_{used} = 0.480 cfs < Q_{1/2}"

Find the area (A) of the orifice utilizing Equation 25-4:

$$A = \frac{Q}{C\sqrt{2gh}}$$

Given:

G = Gravitational constant **32.17 ft/sec²**
C = Orifice coefficient (usually assumed = 0.6)..... **0.60**

A= 0.082 ft²

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.323 ft

D= 3.87 inches

Trial #2

Adjust h₁, h₂, and the orifice diameter (D) to the flow line of the orifice.

Flow line elevation = 0.58 ft

h₁ = 1.82 ft

h₂ = 0.83 ft

From Equation 25-3

$$h = \frac{(h_1 + h_2)}{2}$$

h= 1.32 ft

Find the area (A) of the orifice utilizing Equation 25-4:

$$A = \frac{Q}{C\sqrt{2gh}}$$

Given:

G = Gravitational constant **32.17 ft/sec²**
C = Orifice coefficient (usually assumed = 0.6)..... **0.60**

A= 0.087 ft²

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.332 ft

D= 3.99 inches

Adjusted flow line elev. = 0.59 ft

Difference FLE. 0.00 ft*

D= 4.00 inches**

* This trial is acceptable because there is no difference between the Flow Line Elevations (FLE).

** The diameter may be rounded up to 1.0 inch for construction purposes

Contributing Basin Areas	
B16B-5	3.25
B16B-8	1.53
Subtotal @ Swale 16B-1	4.78
B16B-10A	1.16
B16B-10B	0.30
Subtotal @ Swale 16B-3	1.46
B16B-4	5.73
B16B-4 Offs	1.97
B16B-6	0.52
B16B-7	2.00
B16B-11	1.97
Subtotal @ Pond 16B-1	12.19
B16B-1A	2.13
B16B-1B	2.54
B16B-3	2.49
Subtotal @ Pond 16B-2	7.16
Total Cont. Area @ PrCS16B-3	25.59

I-95 CDC DRAINAGE CALCULATIONS
DRAINAGE SYSTEM SUMMARY TABLES
DRAINAGE SYSTEM: 16B

Summary of Peak Discharges								
Receiving Waterbody: North Fork of the New River								
PRE-DEVELOPMENT								
ICPR Link	Outfall Description	Flow Area (ft ²)	10yr-24hr Peak-Flow rate* (cfs)	10yr-24hr Peak-Flow Velocity (fps)	25yr-72hr Peak-Flow rate* (cfs)	25yr-72hr Peak-Flow Velocity (fps)	100yr-24hr Peak-Flow rate* (cfs)	100yr-24hr Peak-Flow Velocity (fps)
ExPipe 16B-13	54" Pipe	15.90	73.88	4.65	78.07	4.91	81.32	5.11
B16B-13A	Basin (Sheet Flow)	--	7.29	--	11.09	--	13.46	--
B16B-13B	Basin (Sheet Flow)	--	4.39	--	6.79	--	8.21	--
B16B-22	Basin (Sheet Flow)	--	0.43	--	0.79	--	0.91	--
PRE-DEVELOPMENT TOTALS:		--	--	--	96.74	--	--	--
POST-DEVELOPMENT								
ICPR Link	Outfall Description	Flow Area (ft ²)	10yr-24hr Peak-Flow rate* (cfs)	10yr-24hr Peak-Flow Velocity (fps)	25yr-72hr Peak-Flow rate* (cfs)	25yr-72hr Peak-Flow Velocity (fps)	100yr-24hr Peak-Flow rate* (cfs)	100yr-24hr Peak-Flow Velocity (fps)
ExPipe 16B-13	54" Pipe	15.90	72.48	4.56	82.58	5.19	86.32	5.43
B16B-13A	Basin (Sheet Flow)	--	7.23	--	11.05	--	13.39	--
B16B-13B	Basin (Sheet Flow)	--	4.42	--	6.81	--	8.24	--
B16B-22	Basin (Sheet Flow)	--	0.43	--	0.79	--	0.91	--
POST-DEVELOPMENT TOTALS:		--	--	--	101.23	--	--	--

* Peak flows at respective ICPR Links occur at different times.
For Pre Dev. Condition, Maximum Inflow (cfs) at North Fork New River (at 60.33 hrs) = 96.33
For Post Dev. Condition, Maximum Inflow (cfs) at North Fork New River (at 60.05 hrs) = 100.37

SEE EXAMPLE #1 AFTER
DRAINAGE SYSTEM SUMMARY TABLE
OF BASIN 16A

PRE-POST 25yr-72hr Peak Discharge Reduction (cfs): -4.04**

**Increase in discharge will be compensated in Basin 17.

Note: Link max condition and basin max condition was used as peak discharge.

Summary of Peak Stages									
Pond/Swale/FD #	Type: [Wet/Dry, Det./Ret., FD]	Disposition [Exist./Prop./Modified]	Warning EL [Min. Berm/Min. EOS] (ft-NAVD)	PRE-DEVELOPMENT			POST-DEVELOPMENT		
				Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)	Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)
POND 16B-1	Dry Det.	Modified	5.00	5.20	5.87	6.25	4.61	5.44 ⁵	5.86 ⁵
POND 16B-2	Dry Det.	Modified	7.80	5.91	6.70	7.10	5.55	6.63	7.08
POND 16B-3 ¹	Dry Det.	Modified	5.00	4.36	5.00	5.37	--	--	--
SWALE 16B-1 ^{2,1}	Dry Ret.	Modified	5.28	5.84	6.62	7.03	5.15	6.08 ^{2,2}	6.46 ^{2,3}
SWALE 16B-3 ³	Dry Ret.	Modified	8.48	7.76/5.69	7.79/6.17	7.81/6.59	6.52	6.71	6.65
PrFD16B-1 ⁴	FD	Proposed	7.57	--	--	--	6.07	7.03	7.78 ⁴
PrFD16B-2	FD	Proposed	7.29	--	--	--	5.13	6.25	6.95
PrFD16B-3	FD	Proposed	7.20	--	--	--	4.95	5.87	6.24

¹ POND 16B-3 (Dry Retention in Pre-development condition) is merged with POND 16B-1 in post-development condition.

^{2,1} Minimum EOP elevation in SWALE 16B-1 is 5.78' in post development condition.

^{2,2} Post-development elevation is lower than pre-development condition and less than half of a lane is flooded between Sta 2033+00 and 2040+00.

^{2,3} Post-development elevation is lower than pre-development condition and less than one and a half of a lane is flooded between Sta 2032+00 and 2042+00.

³ SWALE 16B-3 is divided in two parts (SWALE 16B-3A / SWALE 16B-3B) in pre-development condition.

⁴ Minimum EOP elevation in PrFD16B-1 is 8.29' in post development condition.

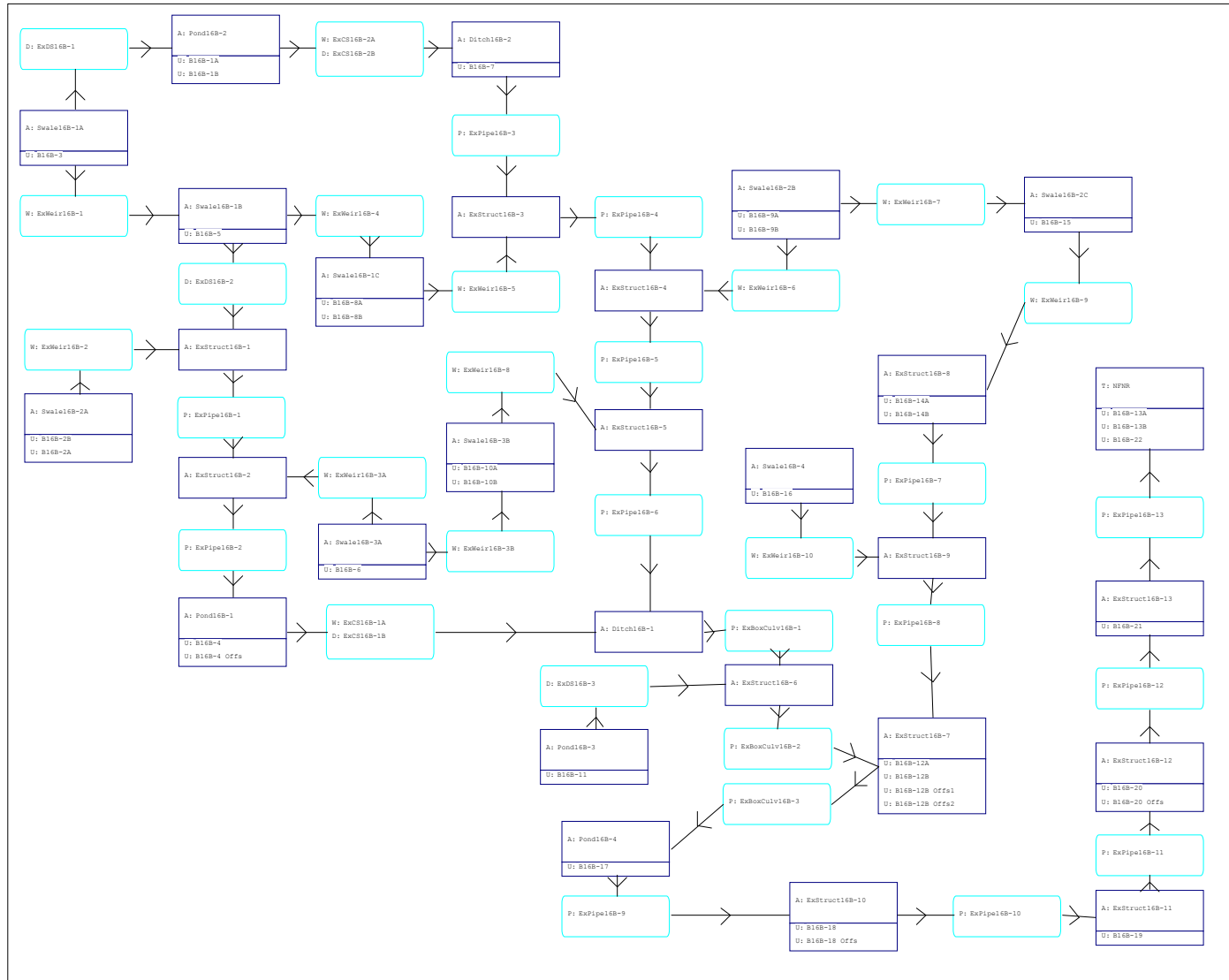
⁵ Post-development elevation is lower than pre-development condition and does not impact any travel lane.

Control Structure Summary Table- Proposed Conditions					
Control Structure	Disposition [Exist./Prop./Modified]	Weir Type/Geometry	Weir EL (ft-NAVD)	Bleeder Type/Geometry	Bleeder Invert EL (ft-NAVD)
PrCS16B-FD1	Proposed	Internal Weir Wall	3.60	--	--
PrCS16B-FD2	Proposed	Internal Weir Wall	3.60	--	--
PrCS16B-FD3A	Proposed	Internal Weir Wall	3.60	--	--
PrCS16B-FD3B	Proposed	Internal Weir Wall	3.60	--	--
S-16B-15	Proposed	Raised DBI "Type E"	4.50	--	--
S-16B-19	Proposed	Raised DBI "Type E"	4.50	--	--
S-16B-22	Proposed	Raised DBI "Type E"	6.50	--	--
ExCS16B-2A/2B	Existing	Berm+Bleed-down Structure	4.92	2-4" Circular Orifice	1.72
PrCS16B-3	Proposed	Raised DBI "Type H"+Bleed-down Structure	2.40	4" Circular Orifice	0.42

ICPR: Pre-Development

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 NODE-LINK DIAGRAM

- Nodes**
 A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole
- Basins**
 O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA
- Links**
 P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Ditch16B-1	BASE	100yr24hr	13.10	6.24	4.00	0.0047	27129	11.93	53.56	14.29	52.85
Ditch16B-2	BASE	100yr24hr	13.02	7.10	7.00	-0.0038	22925	12.02	29.72	16.65	13.34
ExStruct16B-1	BASE	100yr24hr	12.85	6.81	7.00	-0.0078	123	11.99	24.07	11.99	23.91
ExStruct16B-10	BASE	100yr24hr	12.50	3.61	3.42	0.0032	155	12.68	75.41	12.68	75.43
ExStruct16B-11	BASE	100yr24hr	12.43	2.82	3.22	0.0042	156	12.63	76.21	12.63	76.23
ExStruct16B-12	BASE	100yr24hr	12.35	2.02	3.42	0.0046	158	12.39	79.73	12.39	79.73
ExStruct16B-13	BASE	100yr24hr	12.34	1.41	4.52	-0.0053	180	12.34	81.32	12.34	81.32
ExStruct16B-2	BASE	100yr24hr	12.97	6.51	9.00	0.0088	130	12.23	27.33	12.24	27.20
ExStruct16B-3	BASE	100yr24hr	12.90	7.02	5.00	-0.0062	131	14.89	17.05	16.57	15.70
ExStruct16B-4	BASE	100yr24hr	12.68	6.95	6.00	-0.0066	130	12.37	24.40	12.37	24.34
ExStruct16B-5	BASE	100yr24hr	12.81	6.58	7.96	-0.0094	134	12.28	31.35	12.29	31.23
ExStruct16B-6	BASE	100yr24hr	12.73	5.49	7.00	0.0099	198	14.36	56.50	14.36	56.53
ExStruct16B-7	BASE	100yr24hr	12.43	5.14	8.00	0.0176	164	12.27	76.27	12.28	76.15
ExStruct16B-8	BASE	100yr24hr	12.43	7.13	7.00	0.0050	119	11.87	13.51	11.87	12.74
ExStruct16B-9	BASE	100yr24hr	12.33	7.14	7.00	0.0063	132	11.89	17.77	12.06	17.66
NFNR	BASE	100yr24hr	0.00	0.42	0.43	0.0000	150	12.28	103.34	0.00	0.00
Pond16B-1	BASE	100yr24hr	13.11	6.25	5.00	-0.0010	99938	12.27	72.21	11.93	33.67
Pond16B-2	BASE	100yr24hr	13.03	7.10	7.80	0.0007	53193	12.27	31.13	12.02	21.43
Pond16B-3	BASE	100yr24hr	13.56	5.37	5.00	0.0009	32943	12.27	14.11	17.12	9.35
Pond16B-4	BASE	100yr24hr	12.55	4.35	3.00	0.0028	28991	12.27	85.67	12.90	74.48
Swale16B-1A	BASE	100yr24hr	12.91	7.03	6.00	0.0007	16174	12.27	21.05	12.05	15.68
Swale16B-1B	BASE	100yr24hr	12.91	7.03	5.50	-0.0022	34774	12.27	23.92	13.32	11.28
Swale16B-1C	BASE	100yr24hr	12.91	7.03	5.50	-0.0023	40036	12.04	22.66	14.63	7.71
Swale16B-2A	BASE	100yr24hr	12.84	6.83	7.00	-0.0011	28548	12.27	33.92	12.04	20.82
Swale16B-2B	BASE	100yr24hr	12.47	7.07	7.00	0.0015	20400	12.27	12.33	11.98	8.27
Swale16B-2C	BASE	100yr24hr	12.43	7.12	7.00	0.0032	17732	11.98	12.60	13.32	7.58
Swale16B-3A	BASE	100yr24hr	12.27	7.81	9.00	0.0001	156	12.27	4.49	12.27	4.49
Swale16B-3B	BASE	100yr24hr	12.80	6.59	8.50	0.0006	2435	12.27	8.32	12.24	8.03
Swale16B-4	BASE	100yr24hr	12.34	7.16	7.50	-0.0068	10246	12.27	20.99	12.34	18.81
Ditch16B-1	BASE	10yr24hr	12.80	5.18	4.00	0.0074	15752	12.08	52.38	13.27	48.85
Ditch16B-2	BASE	10yr24hr	12.73	5.90	7.00	0.0042	16936	12.20	23.15	14.25	13.51
ExStruct16B-1	BASE	10yr24hr	12.62	5.67	7.00	0.0063	123	12.12	22.76	12.12	22.65
ExStruct16B-10	BASE	10yr24hr	12.39	2.89	3.42	0.0028	155	12.48	69.45	12.48	69.47
ExStruct16B-11	BASE	10yr24hr	12.37	2.22	3.22	0.0037	156	12.45	70.24	12.45	70.25
ExStruct16B-12	BASE	10yr24hr	12.35	1.66	3.42	-0.0040	184	12.37	72.83	12.37	72.83
ExStruct16B-13	BASE	10yr24hr	12.35	1.23	4.52	-0.0049	290	12.35	73.88	12.35	73.88
ExStruct16B-2	BASE	10yr24hr	12.70	5.42	9.00	0.0103	130	12.14	25.04	12.14	24.93
ExStruct16B-3	BASE	10yr24hr	12.65	5.82	5.00	-0.0072	131	14.17	15.44	14.18	15.67
ExStruct16B-4	BASE	10yr24hr	12.49	5.66	6.00	0.0062	130	12.33	21.19	12.34	21.11
ExStruct16B-5	BASE	10yr24hr	12.60	5.39	7.96	-0.0095	134	12.30	25.13	12.30	25.02
ExStruct16B-6	BASE	10yr24hr	12.57	4.53	7.00	0.0204	198	13.46	52.11	13.46	52.16
ExStruct16B-7	BASE	10yr24hr	12.39	4.22	8.00	0.0448	164	12.28	66.27	12.28	66.15
ExStruct16B-8	BASE	10yr24hr	12.33	6.79	7.00	0.0058	119	11.97	13.70	11.99	13.09
ExStruct16B-9	BASE	10yr24hr	12.37	6.45	7.00	0.0056	132	12.00	18.09	12.36	17.71
NFNR	BASE	10yr24hr	0.00	0.42	0.43	0.0000	150	12.30	85.48	0.00	0.00
Pond16B-1	BASE	10yr24hr	12.80	5.20	5.00	0.0010	60955	12.27	50.37	12.08	34.74
Pond16B-2	BASE	10yr24hr	12.73	5.91	7.80	0.0013	17496	12.23	19.80	12.20	17.37
Pond16B-3	BASE	10yr24hr	13.04	4.36	5.00	0.0009	23709	12.27	7.29	14.46	8.28
Pond16B-4	BASE	10yr24hr	12.41	3.53	3.00	0.0028	11379	12.28	71.30	12.52	68.54

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Swale16B-1A	BASE	10yr24hr	12.65	5.84	6.00	0.0026	5166	12.27	12.32	12.26	11.82
Swale16B-1B	BASE	10yr24hr	12.66	5.83	5.50	0.0019	15088	12.27	15.95	12.74	9.89
Swale16B-1C	BASE	10yr24hr	12.65	5.83	5.50	-0.0023	17333	12.22	16.14	12.01	8.22
Swale16B-2A	BASE	10yr24hr	12.60	5.69	7.00	-0.0010	8336	12.27	20.32	12.22	17.57
Swale16B-2B	BASE	10yr24hr	12.45	5.70	7.00	0.0009	2236	12.27	7.44	12.16	6.77
Swale16B-2C	BASE	10yr24hr	12.33	6.79	7.00	-0.0047	11826	12.16	9.86	12.86	7.54
Swale16B-3A	BASE	10yr24hr	12.27	7.76	9.00	0.0002	113	12.27	2.70	12.27	2.70
Swale16B-3B	BASE	10yr24hr	12.27	5.69	8.50	0.0002	113	12.27	4.21	12.27	4.21
Swale16B-4	BASE	10yr24hr	12.37	6.45	7.50	-0.0046	5595	12.27	11.44	12.54	6.95
Ditch16B-1	BASE	25yr72hr	60.72	5.85	4.00	0.0059	22191	59.73	55.74	61.42	52.16
Ditch16B-2	BASE	25yr72hr	60.66	6.70	7.00	0.0040	20943	59.82	28.98	63.18	13.78
ExStruct16B-1	BASE	25yr72hr	60.57	6.40	7.00	-0.0053	123	59.77	23.81	59.77	23.67
ExStruct16B-10	BASE	25yr72hr	60.19	3.30	3.42	0.0031	155	60.40	73.13	60.40	73.15
ExStruct16B-11	BASE	25yr72hr	60.13	2.57	3.22	0.0039	156	60.35	73.81	60.35	73.83
ExStruct16B-12	BASE	25yr72hr	60.10	1.84	3.42	-0.0042	158	60.14	76.81	60.14	76.81
ExStruct16B-13	BASE	25yr72hr	60.09	1.34	4.52	-0.0049	180	60.09	78.08	60.09	78.07
ExStruct16B-2	BASE	25yr72hr	60.63	6.12	9.00	0.0070	130	59.79	26.44	59.79	26.30
ExStruct16B-3	BASE	25yr72hr	60.57	6.61	5.00	0.0087	131	61.62	16.58	63.11	15.80
ExStruct16B-4	BASE	25yr72hr	60.34	6.52	6.00	0.0059	130	60.16	23.30	60.22	23.29
ExStruct16B-5	BASE	25yr72hr	60.47	6.16	7.96	-0.0099	134	60.05	29.42	60.05	29.30
ExStruct16B-6	BASE	25yr72hr	60.49	5.11	7.00	0.0121	198	61.77	55.61	61.77	55.65
ExStruct16B-7	BASE	25yr72hr	60.15	4.74	8.00	0.0208	164	60.05	71.19	60.05	71.09
ExStruct16B-8	BASE	25yr72hr	60.08	6.99	7.00	0.0094	119	59.64	13.97	59.66	13.03
ExStruct16B-9	BASE	25yr72hr	60.11	6.94	7.00	0.0106	132	59.67	18.65	59.68	18.14
NFNR	BASE	25yr72hr	0.00	0.42	0.43	0.0000	150	60.03	96.33	0.00	0.00
Pond16B-1	BASE	25yr72hr	60.73	5.87	5.00	-0.0010	85364	60.02	62.13	59.73	35.36
Pond16B-2	BASE	25yr72hr	60.66	6.70	7.80	-0.0007	40418	59.98	25.15	59.82	20.86
Pond16B-3	BASE	25yr72hr	61.03	5.00	5.00	0.0011	29558	60.02	11.83	63.54	9.22
Pond16B-4	BASE	25yr72hr	60.24	4.00	3.00	0.0028	26352	60.03	78.87	60.49	72.15
Swale16B-1A	BASE	25yr72hr	60.58	6.62	6.00	0.0007	11400	60.02	16.79	59.86	13.99
Swale16B-1B	BASE	25yr72hr	60.59	6.62	5.50	-0.0025	27585	60.02	20.48	60.81	10.94
Swale16B-1C	BASE	25yr72hr	60.58	6.62	5.50	-0.0021	31007	59.83	19.38	59.65	8.09
Swale16B-2A	BASE	25yr72hr	60.56	6.42	7.00	-0.0012	20635	60.02	26.84	59.83	19.12
Swale16B-2B	BASE	25yr72hr	60.27	6.60	7.00	0.0012	10212	60.02	9.72	59.77	7.39
Swale16B-2C	BASE	25yr72hr	60.08	6.97	7.00	-0.0035	15139	59.77	11.75	59.64	7.02
Swale16B-3A	BASE	25yr72hr	60.02	7.79	9.00	0.0002	133	60.02	3.54	60.02	3.54
Swale16B-3B	BASE	25yr72hr	60.46	6.17	8.50	0.0003	689	60.02	7.04	60.02	7.00
Swale16B-4	BASE	25yr72hr	60.11	6.96	7.50	-0.0054	8584	60.02	17.23	60.13	14.57

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExBoxCulv16B-1	BASE	100yr24hr	14.29	52.85	-2.751	13.10	6.24	12.73	5.49
ExBoxCulv16B-2	BASE	100yr24hr	14.36	56.53	3.582	12.73	5.49	12.43	5.14
ExBoxCulv16B-3	BASE	100yr24hr	12.28	76.15	19.842	12.43	5.14	12.55	4.35
ExCS16B-1A	BASE	100yr24hr	14.28	32.57	-0.194	13.11	6.25	13.10	6.24
ExCS16B-1B	BASE	100yr24hr	11.83	3.17	-0.124	13.11	6.25	13.10	6.24
ExCS16B-2A	BASE	100yr24hr	12.02	20.13	-0.100	13.03	7.10	13.02	7.10
ExCS16B-2B	BASE	100yr24hr	11.93	2.69	0.128	13.03	7.10	13.02	7.10
ExDS16B-1	BASE	100yr24hr	11.96	3.68	0.010	12.91	7.03	13.03	7.10
ExDS16B-2	BASE	100yr24hr	14.98	11.85	0.783	12.91	7.03	12.85	6.81
ExDS16B-3	BASE	100yr24hr	17.12	9.35	-0.032	13.56	5.37	12.73	5.49
ExPipe16B-1	BASE	100yr24hr	11.99	23.91	5.333	12.85	6.81	12.97	6.51
ExPipe16B-10	BASE	100yr24hr	12.68	75.43	-8.742	12.50	3.61	12.43	2.82
ExPipe16B-11	BASE	100yr24hr	12.63	76.23	-9.159	12.43	2.82	12.35	2.02
ExPipe16B-12	BASE	100yr24hr	12.39	79.73	12.107	12.35	2.02	12.34	1.41
ExPipe16B-13	BASE	100yr24hr	12.34	81.32	-7.931	12.34	1.41	0.00	0.42
ExPipe16B-2	BASE	100yr24hr	12.24	27.20	4.906	12.97	6.51	13.11	6.25
ExPipe16B-3	BASE	100yr24hr	16.65	13.34	2.227	13.02	7.10	12.90	7.02
ExPipe16B-4	BASE	100yr24hr	16.57	15.70	-1.943	12.90	7.02	12.68	6.95
ExPipe16B-5	BASE	100yr24hr	12.37	24.34	-1.539	12.68	6.95	12.81	6.58
ExPipe16B-6	BASE	100yr24hr	12.29	31.23	4.134	12.81	6.58	13.10	6.24
ExPipe16B-7	BASE	100yr24hr	11.87	12.74	-0.391	12.43	7.13	12.33	7.14
ExPipe16B-8	BASE	100yr24hr	12.06	17.66	-1.187	12.33	7.14	12.43	5.14
ExPipe16B-9	BASE	100yr24hr	12.90	74.48	-7.398	12.55	4.35	12.50	3.61
ExWeir16B-1	BASE	100yr24hr	12.06	12.71	0.012	12.91	7.03	12.91	7.03
ExWeir16B-10	BASE	100yr24hr	12.34	18.81	-3.351	12.34	7.16	12.33	7.14
ExWeir16B-2	BASE	100yr24hr	12.04	20.82	0.020	12.84	6.83	12.85	6.81
ExWeir16B-3A	BASE	100yr24hr	12.27	4.49	0.003	12.27	7.81	12.97	6.51
ExWeir16B-3B	BASE	100yr24hr	0.00	0.00	0.000	12.27	7.81	12.80	6.59
ExWeir16B-4	BASE	100yr24hr	12.03	6.63	-0.190	12.91	7.03	12.91	7.03
ExWeir16B-5	BASE	100yr24hr	14.63	7.71	-2.879	12.91	7.03	12.90	7.02
ExWeir16B-6	BASE	100yr24hr	12.35	33.47	0.271	12.47	7.07	12.68	6.95
ExWeir16B-7	BASE	100yr24hr	13.28	2.35	0.035	12.47	7.07	12.43	7.12
ExWeir16B-8	BASE	100yr24hr	12.24	8.03	-0.035	12.80	6.59	12.81	6.58
ExWeir16B-9	BASE	100yr24hr	13.32	7.58	-1.889	12.43	7.12	12.43	7.13
ExBoxCulv16B-1	BASE	10yr24hr	13.27	48.85	-2.666	12.80	5.18	12.57	4.53
ExBoxCulv16B-2	BASE	10yr24hr	13.46	52.16	-4.191	12.57	4.53	12.39	4.22
ExBoxCulv16B-3	BASE	10yr24hr	12.28	66.15	19.862	12.39	4.22	12.41	3.53
ExCS16B-1A	BASE	10yr24hr	12.08	33.28	-0.177	12.80	5.20	12.80	5.18
ExCS16B-1B	BASE	10yr24hr	11.99	3.64	0.131	12.80	5.20	12.80	5.18
ExCS16B-2A	BASE	10yr24hr	12.20	16.17	-0.063	12.73	5.91	12.73	5.90
ExCS16B-2B	BASE	10yr24hr	12.10	2.56	0.122	12.73	5.91	12.73	5.90
ExDS16B-1	BASE	10yr24hr	11.92	4.26	0.012	12.65	5.84	12.73	5.91
ExDS16B-2	BASE	10yr24hr	13.41	10.42	0.508	12.66	5.83	12.62	5.67
ExDS16B-3	BASE	10yr24hr	14.46	8.28	-0.092	13.04	4.36	12.57	4.53
ExPipe16B-1	BASE	10yr24hr	12.12	22.65	6.348	12.62	5.67	12.70	5.42
ExPipe16B-10	BASE	10yr24hr	12.48	69.47	-8.009	12.39	2.89	12.37	2.22
ExPipe16B-11	BASE	10yr24hr	12.45	70.25	-9.219	12.37	2.22	12.35	1.66
ExPipe16B-12	BASE	10yr24hr	12.37	72.83	9.520	12.35	1.66	12.35	1.23
ExPipe16B-13	BASE	10yr24hr	12.35	73.88	-7.677	12.35	1.23	0.00	0.42

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExPipe16B-2	BASE	10yr24hr	12.14	24.93	5.336	12.70	5.42	12.80	5.20
ExPipe16B-3	BASE	10yr24hr	14.25	13.51	2.372	12.73	5.90	12.65	5.82
ExPipe16B-4	BASE	10yr24hr	14.18	15.67	1.476	12.65	5.82	12.49	5.66
ExPipe16B-5	BASE	10yr24hr	12.34	21.11	-1.342	12.49	5.66	12.60	5.39
ExPipe16B-6	BASE	10yr24hr	12.30	25.02	4.176	12.60	5.39	12.80	5.18
ExPipe16B-7	BASE	10yr24hr	11.99	13.09	0.101	12.33	6.79	12.37	6.45
ExPipe16B-8	BASE	10yr24hr	12.36	17.71	0.415	12.37	6.45	12.39	4.22
ExPipe16B-9	BASE	10yr24hr	12.52	68.54	-7.094	12.41	3.53	12.39	2.89
ExWeir16B-1	BASE	10yr24hr	12.27	9.35	-0.007	12.65	5.84	12.66	5.83
ExWeir16B-10	BASE	10yr24hr	12.54	6.95	-3.459	12.37	6.45	12.37	6.45
ExWeir16B-2	BASE	10yr24hr	12.22	17.57	0.029	12.60	5.69	12.62	5.67
ExWeir16B-3A	BASE	10yr24hr	12.27	2.70	0.004	12.27	7.76	12.70	5.42
ExWeir16B-3B	BASE	10yr24hr	0.00	0.00	0.000	12.27	7.76	12.27	5.69
ExWeir16B-4	BASE	10yr24hr	12.21	4.44	-0.037	12.66	5.83	12.65	5.83
ExWeir16B-5	BASE	10yr24hr	12.01	8.22	2.856	12.65	5.83	12.65	5.82
ExWeir16B-6	BASE	10yr24hr	12.32	17.10	0.240	12.45	5.70	12.49	5.66
ExWeir16B-7	BASE	10yr24hr	0.00	0.00	-0.018	12.45	5.70	12.33	6.79
ExWeir16B-8	BASE	10yr24hr	12.27	4.21	0.005	12.27	5.69	12.60	5.39
ExWeir16B-9	BASE	10yr24hr	12.86	7.54	0.180	12.33	6.79	12.33	6.79
ExBoxCulv16B-1	BASE	25yr72hr	61.42	52.16	-3.010	60.72	5.85	60.49	5.11
ExBoxCulv16B-2	BASE	25yr72hr	61.77	55.65	3.636	60.49	5.11	60.15	4.74
ExBoxCulv16B-3	BASE	25yr72hr	60.05	71.09	20.159	60.15	4.74	60.24	4.00
ExCS16B-1A	BASE	25yr72hr	59.73	33.90	-0.215	60.73	5.87	60.72	5.85
ExCS16B-1B	BASE	25yr72hr	59.65	3.43	0.128	60.73	5.87	60.72	5.85
ExCS16B-2A	BASE	25yr72hr	59.82	19.56	-0.090	60.66	6.70	60.66	6.70
ExCS16B-2B	BASE	25yr72hr	59.72	2.82	0.127	60.66	6.70	60.66	6.70
ExDS16B-1	BASE	25yr72hr	59.73	3.55	-0.010	60.58	6.62	60.66	6.70
ExDS16B-2	BASE	25yr72hr	61.79	11.57	1.135	60.59	6.62	60.57	6.40
ExDS16B-3	BASE	25yr72hr	63.54	9.22	-0.085	61.03	5.00	60.49	5.11
ExPipe16B-1	BASE	25yr72hr	59.77	23.67	-4.116	60.57	6.40	60.63	6.12
ExPipe16B-10	BASE	25yr72hr	60.40	73.15	-8.687	60.19	3.30	60.13	2.57
ExPipe16B-11	BASE	25yr72hr	60.35	73.83	-9.202	60.13	2.57	60.10	1.84
ExPipe16B-12	BASE	25yr72hr	60.14	76.81	-9.607	60.10	1.84	60.09	1.34
ExPipe16B-13	BASE	25yr72hr	60.09	78.07	-7.794	60.09	1.34	0.00	0.42
ExPipe16B-2	BASE	25yr72hr	59.79	26.30	3.969	60.63	6.12	60.73	5.87
ExPipe16B-3	BASE	25yr72hr	63.18	13.78	2.369	60.66	6.70	60.57	6.61
ExPipe16B-4	BASE	25yr72hr	63.11	15.80	-1.924	60.57	6.61	60.34	6.52
ExPipe16B-5	BASE	25yr72hr	60.22	23.29	-1.094	60.34	6.52	60.47	6.16
ExPipe16B-6	BASE	25yr72hr	60.05	29.30	4.259	60.47	6.16	60.72	5.85
ExPipe16B-7	BASE	25yr72hr	59.66	13.03	-0.199	60.08	6.99	60.11	6.94
ExPipe16B-8	BASE	25yr72hr	59.68	18.14	-1.447	60.11	6.94	60.15	4.74
ExPipe16B-9	BASE	25yr72hr	60.49	72.15	-7.347	60.24	4.00	60.19	3.30
ExWeir16B-1	BASE	25yr72hr	59.87	11.51	0.010	60.58	6.62	60.59	6.62
ExWeir16B-10	BASE	25yr72hr	60.13	14.57	-3.293	60.11	6.96	60.11	6.94
ExWeir16B-2	BASE	25yr72hr	59.83	19.12	0.032	60.56	6.42	60.57	6.40
ExWeir16B-3A	BASE	25yr72hr	60.02	3.54	0.004	60.02	7.79	60.63	6.12
ExWeir16B-3B	BASE	25yr72hr	0.00	0.00	0.000	60.02	7.79	60.46	6.17
ExWeir16B-4	BASE	25yr72hr	59.83	5.32	0.125	60.59	6.62	60.58	6.62
ExWeir16B-5	BASE	25yr72hr	59.65	8.09	-2.738	60.58	6.62	60.57	6.61

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExWeir16B-6	BASE	25yr72hr	60.10	28.03	0.257	60.27	6.60	60.34	6.52
ExWeir16B-7	BASE	25yr72hr	0.00	0.00	-0.028	60.27	6.60	60.08	6.97
ExWeir16B-8	BASE	25yr72hr	60.02	7.00	-0.024	60.46	6.17	60.47	6.16
ExWeir16B-9	BASE	25yr72hr	59.64	7.02	1.141	60.08	6.97	60.08	6.99

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100yr24hr	B16B-10A	BASE	12.27	6.49	7.861	32243
100yr24hr	B16B-10B	BASE	12.27	1.84	8.439	9191
100yr24hr	B16B-11	BASE	12.27	14.11	8.300	70501
100yr24hr	B16B-12A	BASE	12.27	8.98	13.408	54023
100yr24hr	B16B-12B	BASE	12.27	18.32	13.072	107718
100yr24hr	B16B-12B Offs1	BASE	12.27	5.33	11.574	28989
100yr24hr	B16B-12B Offs2	BASE	12.27	7.52	11.664	41070
100yr24hr	B16B-13A	BASE	12.27	13.46	9.012	68042
100yr24hr	B16B-13B	BASE	12.27	8.21	8.832	41359
100yr24hr	B16B-14A	BASE	12.27	13.77	10.355	71797
100yr24hr	B16B-14B	BASE	12.27	5.19	11.987	28719
100yr24hr	B16B-15	BASE	12.27	19.18	9.897	98796
100yr24hr	B16B-16	BASE	12.27	20.99	9.126	106343
100yr24hr	B16B-17	BASE	12.27	9.54	9.037	48220
100yr24hr	B16B-18	BASE	12.27	2.11	9.208	10696
100yr24hr	B16B-18 Offs	BASE	12.27	0.77	8.083	3814
100yr24hr	B16B-19	BASE	12.27	1.94	13.495	11757
100yr24hr	B16B-1A	BASE	12.27	14.13	9.286	71801
100yr24hr	B16B-1B	BASE	12.27	16.73	9.205	84872
100yr24hr	B16B-20	BASE	12.27	1.08	7.021	5352
100yr24hr	B16B-20 Offs	BASE	12.27	5.24	10.108	27151
100yr24hr	B16B-21	BASE	12.27	1.94	13.495	11757
100yr24hr	B16B-22	BASE	12.27	0.91	7.274	4489
100yr24hr	B16B-2A	BASE	12.27	6.64	13.495	40171
100yr24hr	B16B-2B	BASE	12.27	27.29	10.461	142775
100yr24hr	B16B-3	BASE	12.27	21.05	10.409	109951
100yr24hr	B16B-4	BASE	12.27	32.65	10.808	172627
100yr24hr	B16B-4 Offs	BASE	12.27	12.39	8.711	62294
100yr24hr	B16B-5	BASE	12.27	11.30	10.428	59049
100yr24hr	B16B-6	BASE	12.27	4.49	10.942	23831
100yr24hr	B16B-7	BASE	12.27	12.00	8.256	59941
100yr24hr	B16B-8A	BASE	12.27	9.61	9.981	49638
100yr24hr	B16B-8B	BASE	12.27	11.25	10.456	58832
100yr24hr	B16B-9A	BASE	12.27	6.95	10.933	36909
100yr24hr	B16B-9B	BASE	12.27	5.38	11.183	28823
10yr24hr	B16B-10A	BASE	12.27	3.25	3.907	16026
10yr24hr	B16B-10B	BASE	12.27	0.96	4.337	4723
10yr24hr	B16B-11	BASE	12.27	7.29	4.232	35947
10yr24hr	B16B-12A	BASE	12.27	5.82	8.659	34892
10yr24hr	B16B-12B	BASE	12.27	11.84	8.329	68631
10yr24hr	B16B-12B Offs1	BASE	12.27	3.29	6.924	17343
10yr24hr	B16B-12B Offs2	BASE	12.27	4.66	7.006	24667
10yr24hr	B16B-13A	BASE	12.27	7.29	4.776	36063
10yr24hr	B16B-13B	BASE	12.27	4.39	4.637	21713
10yr24hr	B16B-14A	BASE	12.27	8.04	5.865	40662
10yr24hr	B16B-14B	BASE	12.27	3.26	7.300	17490
10yr24hr	B16B-15	BASE	12.27	10.93	5.484	54746
10yr24hr	B16B-16	BASE	12.27	11.44	4.866	56700
10yr24hr	B16B-17	BASE	12.27	5.17	4.796	25590
10yr24hr	B16B-18	BASE	12.27	1.15	4.930	5727
10yr24hr	B16B-18 Offs	BASE	12.27	0.39	4.070	1921
10yr24hr	B16B-19	BASE	12.27	1.26	8.747	7620
10yr24hr	B16B-1A	BASE	12.27	7.78	4.992	38599
10yr24hr	B16B-1B	BASE	12.27	9.16	4.928	45436
10yr24hr	B16B-20	BASE	12.29	0.51	3.308	2522
10yr24hr	B16B-20 Offs	BASE	12.27	3.02	5.658	15199
10yr24hr	B16B-21	BASE	12.27	1.26	8.747	7620
10yr24hr	B16B-22	BASE	12.29	0.43	3.486	2151
10yr24hr	B16B-2A	BASE	12.27	4.30	8.747	26037
10yr24hr	B16B-2B	BASE	12.27	16.02	5.954	81259
10yr24hr	B16B-3	BASE	12.27	12.33	5.910	62427
10yr24hr	B16B-4	BASE	12.27	19.50	6.250	99829
10yr24hr	B16B-4 Offs	BASE	12.27	6.58	4.544	32492
10yr24hr	B16B-5	BASE	12.27	6.62	5.926	33556
10yr24hr	B16B-6	BASE	12.27	2.70	6.366	13865
10yr24hr	B16B-7	BASE	12.27	6.18	4.199	30487
10yr24hr	B16B-8A	BASE	12.27	5.50	5.554	27618
10yr24hr	B16B-8B	BASE	12.27	6.60	5.950	33477
10yr24hr	B16B-9A	BASE	12.27	4.18	6.358	21465
10yr24hr	B16B-9B	BASE	12.27	3.27	6.577	16951
25yr72hr	B16B-10A	BASE	60.02	5.51	8.299	34043
25yr72hr	B16B-10B	BASE	60.02	1.54	8.890	9682
25yr72hr	B16B-11	BASE	60.02	11.84	8.748	74307
25yr72hr	B16B-12A	BASE	60.02	6.90	13.907	56037
25yr72hr	B16B-12B	BASE	60.02	14.09	13.572	111832

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
25yr72hr	B16B-12B Offs1	BASE	60.02	4.17	12.067	30223
25yr72hr	B16B-12B Offs2	BASE	60.02	5.87	12.157	42808
25yr72hr	B16B-13A	BASE	60.02	11.09	9.473	71527
25yr72hr	B16B-13B	BASE	60.02	6.79	9.291	43505
25yr72hr	B16B-14A	BASE	60.02	11.00	10.837	75133
25yr72hr	B16B-14B	BASE	60.02	4.03	12.483	29906
25yr72hr	B16B-15	BASE	60.02	15.47	10.372	103540
25yr72hr	B16B-16	BASE	60.02	17.25	9.590	111744
25yr72hr	B16B-17	BASE	60.02	7.85	9.499	50685
25yr72hr	B16B-18	BASE	60.02	1.73	9.673	11236
25yr72hr	B16B-18 Offs	BASE	60.02	0.65	8.527	4024
25yr72hr	B16B-19	BASE	60.02	1.49	13.995	12193
25yr72hr	B16B-1A	BASE	60.02	11.56	9.753	75405
25yr72hr	B16B-1B	BASE	60.02	13.72	9.670	89158
25yr72hr	B16B-20	BASE	60.02	0.95	7.439	5671
25yr72hr	B16B-20 Offs	BASE	60.02	4.21	10.586	28436
25yr72hr	B16B-21	BASE	60.02	1.49	13.995	12193
25yr72hr	B16B-22	BASE	60.02	0.79	7.699	4751
25yr72hr	B16B-2A	BASE	60.02	5.10	13.995	41658
25yr72hr	B16B-2B	BASE	60.02	21.76	10.943	149359
25yr72hr	B16B-3	BASE	60.02	16.80	10.891	115041
25yr72hr	B16B-4	BASE	60.02	25.85	11.294	180393
25yr72hr	B16B-4 Offs	BASE	60.02	10.29	9.167	65556
25yr72hr	B16B-5	BASE	60.02	9.01	10.910	61779
25yr72hr	B16B-6	BASE	60.02	3.54	11.429	24893
25yr72hr	B16B-7	BASE	60.02	10.09	8.704	63188
25yr72hr	B16B-8A	BASE	60.02	7.74	10.458	52007
25yr72hr	B16B-8B	BASE	60.02	8.97	10.939	61546
25yr72hr	B16B-9A	BASE	60.02	5.49	11.421	38555
25yr72hr	B16B-9B	BASE	60.02	4.23	11.673	30085

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
LINK CONNECTIVITY REPORT

Name	Group	From Node	To Node	Type	U/S Geometry	D/S Geometry	Flow Dir	Count
ExBoxCulv16B-1	BASE	Ditch16B-1	ExStruct16B-6	Pipe	Rectangular	Rectangular	Both	1
ExBoxCulv16B-2	BASE	ExStruct16B-6	ExStruct16B-7	Pipe	Rectangular	Rectangular	Both	1
ExBoxCulv16B-3	BASE	ExStruct16B-7	Pond16B-4	Pipe	Rectangular	Rectangular	Both	1
ExPipe16B-1	BASE	ExStruct16B-1	ExStruct16B-2	Pipe	Circular	Circular	Both	1
ExPipe16B-10	BASE	ExStruct16B-10	ExStruct16B-11	Pipe	Circular	Circular	Both	1
ExPipe16B-11	BASE	ExStruct16B-11	ExStruct16B-12	Pipe	Circular	Circular	Both	1
ExPipe16B-12	BASE	ExStruct16B-12	ExStruct16B-13	Pipe	Circular	Circular	Both	1
ExPipe16B-13	BASE	ExStruct16B-13	NFNR	Pipe	Circular	Circular	Both	1
ExPipe16B-2	BASE	ExStruct16B-2	Pond16B-1	Pipe	Circular	Circular	Both	1
ExPipe16B-3	BASE	Ditch16B-2	ExStruct16B-3	Pipe	Circular	Circular	Both	1
ExPipe16B-4	BASE	ExStruct16B-3	ExStruct16B-4	Pipe	Circular	Circular	Both	1
ExPipe16B-5	BASE	ExStruct16B-4	ExStruct16B-5	Pipe	Circular	Circular	Both	1
ExPipe16B-6	BASE	ExStruct16B-5	Ditch16B-1	Pipe	Horz Ellipse	Horz Ellipse	Both	1
ExPipe16B-7	BASE	ExStruct16B-8	ExStruct16B-9	Pipe	Circular	Circular	Both	1
ExPipe16B-8	BASE	ExStruct16B-9	ExStruct16B-7	Pipe	Circular	Circular	Both	1
ExPipe16B-9	BASE	Pond16B-4	ExStruct16B-10	Pipe	Circular	Circular	Both	1
ExCS16B-1A	BASE	Pond16B-1	Ditch16B-1	Vertical WGO Fread	Trapezoidal		Both	1
ExCS16B-2A	BASE	Pond16B-2	Ditch16B-2	Vertical WGO Fread	Trapezoidal		Both	1
ExWeir16B-1	BASE	Swale16B-1A	Swale16B-1B	Vertical WGO Fread	Trapezoidal		Both	1
ExWeir16B-10	BASE	Swale16B-4	ExStruct16B-9	Horizontal WGO	Rectangular		Both	2
ExWeir16B-2	BASE	Swale16B-2A	ExStruct16B-1	Horizontal WGO	Rectangular		Both	1
ExWeir16B-3A	BASE	Swale16B-3A	ExStruct16B-2	Horizontal WGO	Rectangular		Both	1
ExWeir16B-3B	BASE	Swale16B-3A	Swale16B-3B	Vertical WGO Fread	Trapezoidal		Both	1
ExWeir16B-4	BASE	Swale16B-1B	Swale16B-1C	Vertical WGO Fread	Trapezoidal		Both	1
ExWeir16B-5	BASE	Swale16B-1C	ExStruct16B-3	Horizontal WGO	Rectangular		Both	1
ExWeir16B-6	BASE	Swale16B-2B	ExStruct16B-4	Horizontal WGO	Rectangular		Both	1
ExWeir16B-7	BASE	Swale16B-2B	Swale16B-2C	Vertical WGO Fread	Trapezoidal		Both	1
ExWeir16B-8	BASE	Swale16B-3B	ExStruct16B-5	Horizontal WGO	Rectangular		Both	1
ExWeir16B-9	BASE	Swale16B-2C	ExStruct16B-8	Horizontal WGO	Rectangular		Both	2
ExCS16B-1B	BASE	Pond16B-1	Ditch16B-1	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Pond16B-1	Ditch16B-1	Vertical WGO Mavis	Circular		Both	2
--> slot	BASE	Pond16B-1	Ditch16B-1	Vertical WGO Mavis	Rectangular		Both	1
ExCS16B-2B	BASE	Pond16B-2	Ditch16B-2	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Pond16B-2	Ditch16B-2	Vertical WGO Mavis	Circular		Both	2
--> slot	BASE	Pond16B-2	Ditch16B-2	Vertical WGO Mavis	Rectangular		Both	1
ExDS16B-1	BASE	Swale16B-1A	Pond16B-2	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Swale16B-1A	Pond16B-2	Horizontal WGO	Rectangular		Both	1
ExDS16B-2	BASE	Swale16B-1B	ExStruct16B-1	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Swale16B-1B	ExStruct16B-1	Horizontal WGO	Rectangular		Both	1
ExDS16B-3	BASE	Pond16B-3	ExStruct16B-6	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Pond16B-3	ExStruct16B-6	Horizontal WGO	Rectangular		Both	1

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

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Basins

Name: B16B-10A	Node: Swale16B-3B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.130	Time Shift(hrs): 0.00	
Curve Number: 60.02	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-10B	Node: Swale16B-3B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.300	Time Shift(hrs): 0.00	
Curve Number: 63.59	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-11	Node: Pond16B-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.340	Time Shift(hrs): 0.00	
Curve Number: 62.72	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-12A	Node: ExStruct16B-7	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.110	Time Shift(hrs): 0.00	
Curve Number: 99.27	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-12B	Node: ExStruct16B-7	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.270	Time Shift(hrs): 0.00	
Curve Number: 96.52	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-12B Offs1	Node: ExStruct16B-7	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.690	Time Shift(hrs): 0.00	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Curve Number: 84.90 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-12B Offs2 Node: ExStruct16B-7 Status: Offsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.970 Time Shift(hrs): 0.00
Curve Number: 85.57 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-13A Node: NFNR Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.080 Time Shift(hrs): 0.00
Curve Number: 67.22 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-13B Node: NFNR Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.290 Time Shift(hrs): 0.00
Curve Number: 66.07 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-14A Node: ExStruct16B-8 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.910 Time Shift(hrs): 0.00
Curve Number: 76.18 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-14B Node: ExStruct16B-8 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.660 Time Shift(hrs): 0.00
Curve Number: 88.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-15 Node: Swale16B-2C Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Area(ac): 2.750 Time Shift(hrs): 0.00
Curve Number: 73.05 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-16 Node: Swale16B-4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.210 Time Shift(hrs): 0.00
Curve Number: 67.96 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-17 Node: Pond16B-4 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.470 Time Shift(hrs): 0.00
Curve Number: 67.38 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-18 Node: ExStruct16B-10 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.320 Time Shift(hrs): 0.00
Curve Number: 68.49 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-18 Offs Node: ExStruct16B-10 Status: Offsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.130 Time Shift(hrs): 0.00
Curve Number: 61.38 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-19 Node: ExStruct16B-11 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.240 Time Shift(hrs): 0.00
Curve Number: 100.00 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-1A Node: Pond16B-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.130	Time Shift(hrs): 0.00
Curve Number: 69.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-1B	Node: Pond16B-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.540	Time Shift(hrs): 0.00	
Curve Number: 68.47	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-20	Node: ExStruct16B-12	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.210	Time Shift(hrs): 0.00	
Curve Number: 55.01	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-20 Offs	Node: ExStruct16B-12	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.740	Time Shift(hrs): 0.00	
Curve Number: 74.48	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-21	Node: ExStruct16B-13	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.240	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-22	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.170	Time Shift(hrs): 0.00	
Curve Number: 56.50	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-2A	Node: Swale16B-2A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.820	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-2B	Node: Swale16B-2A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 3.760	Time Shift(hrs): 0.00	
Curve Number: 76.91	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-3	Node: Swale16B-1A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.910	Time Shift(hrs): 0.00	
Curve Number: 76.55	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-4	Node: Pond16B-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 4.400	Time Shift(hrs): 0.00	
Curve Number: 79.35	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-4 Offs	Node: Pond16B-1	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.970	Time Shift(hrs): 0.00	
Curve Number: 65.30	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-5	Node: Swale16B-1B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.560	Time Shift(hrs): 0.00	
Curve Number: 76.68	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-6	Node: Swale16B-3A	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.600	Time Shift(hrs): 0.00
Curve Number: 80.30	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-7	Node: Ditch16B-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.000	Time Shift(hrs): 0.00	
Curve Number: 62.45	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-8A	Node: Swale16B-1C	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.370	Time Shift(hrs): 0.00	
Curve Number: 73.62	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-8B	Node: Swale16B-1C	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 1.550	Time Shift(hrs): 0.00	
Curve Number: 76.88	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-9A	Node: Swale16B-2B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.930	Time Shift(hrs): 0.00	
Curve Number: 80.24	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-9B	Node: Swale16B-2B	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.710	Time Shift(hrs): 0.00	
Curve Number: 82.04	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

==== Nodes =====

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Stage (ft)	Area (ac)
-4.000	0.0006
3.420	0.0006

Name: ExStruct16B-13 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 4.520
 Type: Stage/Area

Stage (ft)	Area (ac)
-4.000	0.0006
4.520	0.0006

Name: ExStruct16B-2 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 9.000
 Type: Stage/Area

Stage (ft)	Area (ac)
-1.000	0.0004
7.620	0.0004

Name: ExStruct16B-3 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

Stage (ft)	Area (ac)
-0.500	0.0004
3.620	0.0004

Name: ExStruct16B-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 6.000
 Type: Stage/Area

Stage (ft)	Area (ac)
-0.500	0.0004
4.620	0.0004

Name: ExStruct16B-5 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.960
 Type: Stage/Area

Stage (ft)	Area (ac)
-1.000	0.0004
5.500	0.0004

Name: ExStruct16B-6 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.000
 Type: Stage/Area

Stage (ft)	Area (ac)
------------	-----------

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

-1.500 0.0010
 7.000 0.0010

 Name: ExStruct16B-7 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 8.000
 Type: Stage/Area

 Stage(ft) Area(ac)

 -2.000 0.0010
 8.000 0.0010

 Name: ExStruct16B-8 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.000
 Type: Stage/Area

 Stage(ft) Area(ac)

 0.000 0.0008
 5.000 0.0008

 Name: ExStruct16B-9 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.000
 Type: Stage/Area

 Stage(ft) Area(ac)

 0.000 0.0008
 3.500 0.0008

 Name: NFNR Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.430
 Type: Time/Stage

 Time(hrs) Stage(ft)

 0.00 0.420
 100.00 0.420

 Name: Pond16B-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

 Stage(ft) Area(ac)

 -1.000 0.0003
 0.420 0.0010
 1.000 0.0100
 1.420 0.0540
 2.000 0.1570
 3.000 0.3720
 4.000 0.6760
 5.000 1.2330
 6.000 2.0720
 7.000 2.9440

 Name: Pond16B-2 Base Flow(cfs): 0.000 Init Stage(ft): 1.720
 Group: BASE Warn Stage(ft): 7.800
 Type: Stage/Area

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Stage (ft)	Area (ac)
1.720	0.0010
2.000	0.0055
3.000	0.0210
4.000	0.1080
5.000	0.2980
6.000	0.4120
7.000	1.1480

Name: Pond16B-3 Base Flow(cfs): 0.000 Init Stage(ft): 2.000
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

Stage (ft)	Area (ac)
2.000	0.0510
3.000	0.2600

Name: Pond16B-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 3.000
 Type: Stage/Area

Stage (ft)	Area (ac)
-3.000	0.0190
0.000	0.0380
0.420	0.0430
1.000	0.0550
1.420	0.0620
2.000	0.0730
3.000	0.0940
3.500	0.2350
4.000	0.6050
5.000	0.7750

Name: Swale16B-1A Base Flow(cfs): 0.000 Init Stage(ft): 4.500
 Group: BASE Warn Stage(ft): 6.000
 Type: Stage/Area

Stage (ft)	Area (ac)
4.500	0.0010
5.000	0.0110
5.500	0.0710
6.000	0.1400
6.500	0.2290
7.000	0.3630

Name: Swale16B-1B Base Flow(cfs): 0.000 Init Stage(ft): 3.500
 Group: BASE Warn Stage(ft): 5.500
 Type: Stage/Area

Stage (ft)	Area (ac)
3.500	0.0000
4.000	0.0040
4.500	0.0350
5.000	0.1320
5.500	0.2580
6.000	0.3910
6.500	0.5860
7.000	0.7870

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

9.000 0.1750

Name: Swale16B-3B Base Flow(cfs): 0.000 Init Stage(ft): 5.500
Group: BASE Warn Stage(ft): 8.500
Type: Stage/Area

Stage(ft)	Area(ac)
5.500	0.0000
6.000	0.0040
6.500	0.0390
7.000	0.1360
7.500	0.2230
8.000	0.3170
8.500	0.4540

Name: Swale16B-4 Base Flow(cfs): 0.000 Init Stage(ft): 3.500
Group: BASE Warn Stage(ft): 7.500
Type: Stage/Area

Stage(ft)	Area(ac)
3.500	0.0000
4.000	0.0040
5.000	0.0170
6.000	0.0680
7.000	0.2030
8.000	0.4010

=====
Pipes =====
=====

Name: ExBoxCulv16B-1 From Node: Ditch16B-1 Length(ft): 389.00
Group: BASE To Node: ExStruct16B-6 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive

UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Rectangular	Rectangular	Entrance Loss Coef: 0.50
Span(in): 60.00	60.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): -1.080	-1.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
Rectangular Box: 30° to 75° wingwall flares

Name: ExBoxCulv16B-2 From Node: ExStruct16B-6 Length(ft): 291.00
Group: BASE To Node: ExStruct16B-7 Count: 1
Friction Equation: Automatic
Solution Algorithm: Most Restrictive

UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Rectangular	Rectangular	Entrance Loss Coef: 0.50
Span(in): 60.00	60.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): -1.080	-1.080	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

```

-----
      Name: ExBoxCulv16B-3      From Node: ExStruct16B-7      Length(ft): 23.00
      Group: BASE                To Node: Pond16B-4                Count: 1
                                  Friction Equation: Automatic
                                  Solution Algorithm: Most Restrictive
                                  Flow: Both
      UPSTREAM                    DOWNSTREAM
      Geometry: Rectangular      Rectangular
      Span(in): 60.00            60.00
      Rise(in): 30.00            30.00
      Invert(ft): -1.080         -1.580
      Manning's N: 0.013000      0.013000
      Top Clip(in): 0.000         0.000
      Bot Clip(in): 0.000         0.000
                                  Entrance Loss Coef: 0.50
                                  Exit Loss Coef: 0.00
                                  Bend Loss Coef: 0.00
                                  Outlet Ctrl Spec: Use dc or tw
                                  Inlet Ctrl Spec: Use dc
                                  Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

```

-----
      Name: ExPipe16B-1          From Node: ExStruct16B-1      Length(ft): 138.00
      Group: BASE                To Node: ExStruct16B-2      Count: 1
                                  Friction Equation: Automatic
                                  Solution Algorithm: Most Restrictive
                                  Flow: Both
      UPSTREAM                    DOWNSTREAM
      Geometry: Circular          Circular
      Span(in): 36.00            36.00
      Rise(in): 36.00            36.00
      Invert(ft): -0.280         -0.580
      Manning's N: 0.013000      0.013000
      Top Clip(in): 0.000         0.000
      Bot Clip(in): 0.000         0.000
                                  Entrance Loss Coef: 0.50
                                  Exit Loss Coef: 0.00
                                  Bend Loss Coef: 0.00
                                  Outlet Ctrl Spec: Use dc or tw
                                  Inlet Ctrl Spec: Use dc
                                  Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
      Name: ExPipe16B-10         From Node: ExStruct16B-10     Length(ft): 190.00
      Group: BASE                To Node: ExStruct16B-11     Count: 1
                                  Friction Equation: Automatic
                                  Solution Algorithm: Most Restrictive
                                  Flow: Both
      UPSTREAM                    DOWNSTREAM
      Geometry: Circular          Circular
      Span(in): 54.00            54.00
      Rise(in): 54.00            54.00
      Invert(ft): -2.780         -2.980
      Manning's N: 0.013000      0.013000
      Top Clip(in): 0.000         0.000
      Bot Clip(in): 0.000         0.000
                                  Entrance Loss Coef: 0.50
                                  Exit Loss Coef: 0.00
                                  Bend Loss Coef: 0.00
                                  Outlet Ctrl Spec: Use dc or tw
                                  Inlet Ctrl Spec: Use dc
                                  Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Name: ExPipe16B-11	From Node: ExStruct16B-11	Length(ft): 196.00
Group: BASE	To Node: ExStruct16B-12	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 54.00	54.00	54.00
Rise(in): 54.00	54.00	54.00
Invert(ft): -2.980	-3.080	-3.080
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
	Friction Equation: Automatic	Solution Algorithm: Most Restrictive
	Flow: Both	Entrance Loss Coef: 0.50
	Exit Loss Coef: 0.00	Bend Loss Coef: 0.00
	Outlet Ctrl Spec: Use dc or tw	Inlet Ctrl Spec: Use dc
	Stabilizer Option: None	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-12	From Node: ExStruct16B-12	Length(ft): 202.00
Group: BASE	To Node: ExStruct16B-13	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 54.00	54.00	54.00
Rise(in): 54.00	54.00	54.00
Invert(ft): -3.080	-3.180	-3.180
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
	Friction Equation: Automatic	Solution Algorithm: Most Restrictive
	Flow: Both	Entrance Loss Coef: 0.50
	Exit Loss Coef: 0.00	Bend Loss Coef: 0.00
	Outlet Ctrl Spec: Use dc or tw	Inlet Ctrl Spec: Use dc
	Stabilizer Option: None	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-13	From Node: ExStruct16B-13	Length(ft): 86.00
Group: BASE	To Node: NFNR	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 54.00	54.00	54.00
Rise(in): 54.00	54.00	54.00
Invert(ft): -3.180	-3.280	-3.280
Manning's N: 0.013000	0.013000	0.013000
Top Clip(in): 0.000	0.000	0.000
Bot Clip(in): 0.000	0.000	0.000
	Friction Equation: Automatic	Solution Algorithm: Most Restrictive
	Flow: Both	Entrance Loss Coef: 0.50
	Exit Loss Coef: 1.00	Bend Loss Coef: 0.00
	Outlet Ctrl Spec: Use dc or tw	Inlet Ctrl Spec: Use dc
	Stabilizer Option: None	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-2	From Node: ExStruct16B-2	Length(ft): 86.00
Group: BASE	To Node: Pond16B-1	Count: 1
	UPSTREAM	DOWNSTREAM
Geometry: Circular	Circular	Circular
Span(in): 36.00	36.00	36.00
Rise(in): 36.00	36.00	36.00
Invert(ft): -0.580	-0.880	-0.880
	Friction Equation: Automatic	Solution Algorithm: Most Restrictive
	Flow: Both	Entrance Loss Coef: 0.50
	Exit Loss Coef: 0.00	Bend Loss Coef: 0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-3	From Node: Ditch16B-2	Length(ft): 175.00
Group: BASE	To Node: ExStruct16B-3	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 30.00	30.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): 0.920	0.420	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-4	From Node: ExStruct16B-3	Length(ft): 111.00
Group: BASE	To Node: ExStruct16B-4	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 30.00	30.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): 0.420	0.120	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-5	From Node: ExStruct16B-4	Length(ft): 130.00
Group: BASE	To Node: ExStruct16B-5	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 36.00	36.00	Exit Loss Coef: 0.00
Rise(in): 36.00	36.00	Bend Loss Coef: 0.00
Invert(ft): -0.380	-0.580	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
      Name: ExPipe16B-6      From Node: ExStruct16B-5      Length(ft): 125.00
      Group: BASE            To Node: Ditch16B-1          Count: 1
                               Friction Equation: Automatic
                               Solution Algorithm: Most Restrictive
                               Flow: Both
      UPSTREAM                DOWNSTREAM
      Geometry: Horz Ellipse   Horz Ellipse
      Span(in): 45.00          45.00
      Rise(in): 29.00          29.00
      Invert(ft): -0.580       -1.080
      Manning's N: 0.013000    0.013000
      Top Clip(in): 0.000      0.000
      Bot Clip(in): 0.000      0.000
      Entrance Loss Coef: 0.50
      Exit Loss Coef: 0.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dc
      Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
 Horizontal Ellipse Concrete: Square edge with headwall

```

-----
      Name: ExPipe16B-7      From Node: ExStruct16B-8      Length(ft): 127.00
      Group: BASE            To Node: ExStruct16B-9          Count: 1
                               Friction Equation: Automatic
                               Solution Algorithm: Most Restrictive
                               Flow: Both
      UPSTREAM                DOWNSTREAM
      Geometry: Circular       Circular
      Span(in): 24.00          24.00
      Rise(in): 24.00          24.00
      Invert(ft): 0.420        0.420
      Manning's N: 0.013000    0.013000
      Top Clip(in): 0.000      0.000
      Bot Clip(in): 0.000      0.000
      Entrance Loss Coef: 0.50
      Exit Loss Coef: 0.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dc
      Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
      Name: ExPipe16B-8      From Node: ExStruct16B-9      Length(ft): 243.00
      Group: BASE            To Node: ExStruct16B-7          Count: 1
                               Friction Equation: Automatic
                               Solution Algorithm: Most Restrictive
                               Flow: Both
      UPSTREAM                DOWNSTREAM
      Geometry: Circular       Circular
      Span(in): 24.00          24.00
      Rise(in): 24.00          24.00
      Invert(ft): 0.420        -1.080
      Manning's N: 0.013000    0.013000
      Top Clip(in): 0.000      0.000
      Bot Clip(in): 0.000      0.000
      Entrance Loss Coef: 0.50
      Exit Loss Coef: 0.00
      Bend Loss Coef: 0.00
      Outlet Ctrl Spec: Use dc or tw
      Inlet Ctrl Spec: Use dc
      Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
      Name: ExPipe16B-9      From Node: Pond16B-4          Length(ft): 180.00
  
```

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Group: BASE	To Node: ExStruct16B-10	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 54.00	54.00	Flow: Both
Rise(in): 54.00	54.00	Entrance Loss Coef: 0.50
Invert(ft): -2.580	-2.780	Exit Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Bend Loss Coef: 0.00
Top Clip(in): 0.000	0.000	Outlet Ctrl Spec: Use dc or tw
Bot Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
		Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

==== Drop Structures =====

Name: ExCS16B-1B	From Node: Pond16B-1	Length(ft): 46.00
Group: BASE	To Node: Ditch16B-1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 15.00	15.00	Flow: Both
Rise(in): 15.00	15.00	Entrance Loss Coef: 0.500
Invert(ft): -0.880	-0.880	Exit Loss Coef: 0.000
Manning's N: 0.024000	0.024000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure ExCS16B-1B ***

Count: 2	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 4.00	Invert(ft): -0.080	
Rise(in): 4.00	Control Elev(ft): -0.080	

*** Weir 2 of 2 for Drop Structure ExCS16B-1B ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 3.520	
Rise(in): 8.80	Control Elev(ft): 3.520	

Name: ExCS16B-2B	From Node: Pond16B-2	Length(ft): 40.00
Group: BASE	To Node: Ditch16B-2	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 15.00	15.00	Flow: Both
Rise(in): 15.00	15.00	Entrance Loss Coef: 0.500
Invert(ft): 1.120	0.920	Exit Loss Coef: 0.000
Manning's N: 0.024000	0.024000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc

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 DRAINAGE SYSTEM 16B
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 INPUT REPORT

Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure ExCS16B-2B ***

TABLE

Count: 2 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Circular Orifice Disc Coef: 0.600

 Span(in): 4.00 Invert(ft): 1.720
 Rise(in): 4.00 Control Elev(ft): 1.720

*** Weir 2 of 2 for Drop Structure ExCS16B-2B ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

 Span(in): 54.00 Invert(ft): 4.920
 Rise(in): 8.80 Control Elev(ft): 4.920

Name: ExDS16B-1 From Node: Swale16B-1A Length(ft): 106.00
 Group: BASE To Node: Pond16B-2 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.500
Invert(ft): 2.100	2.000	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16B-1 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Horizontal Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

 Span(in): 54.00 Invert(ft): 4.500
 Rise(in): 36.00 Control Elev(ft): 4.500

Name: ExDS16B-2 From Node: Swale16B-1B Length(ft): 132.00
 Group: BASE To Node: ExStruct16B-1 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.500
Invert(ft): 0.420	0.220	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:

Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16B-2 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 50.00	Invert(ft): 3.500
Rise(in): 48.00	Control Elev(ft): 3.500

Name: ExDS16B-3	From Node: Pond16B-3	Length(ft): 81.00
Group: BASE	To Node: ExStruct16B-6	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 15.00	15.00	Flow: Both
Rise(in): 15.00	15.00	Entrance Loss Coef: 0.500
Invert(ft): -0.580	-0.480	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure ExDS16B-3 ***

TABLE

Count: 1	Bottom Clip(in): 0.000
Type: Horizontal	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Rectangular	Orifice Disc Coef: 0.600
Span(in): 54.00	Invert(ft): 2.120
Rise(in): 36.00	Control Elev(ft): 2.120

==== Weirs =====

Name: ExCS16B-1A	From Node: Pond16B-1
Group: BASE	To Node: Ditch16B-1
Flow: Both	Count: 1
Type: Vertical: Fread	Geometry: Trapezoidal
Bottom Width(ft): 28.60	
Left Side Slope(h/v): 4.00	
Right Side Slope(h/v): 2.00	
Invert(ft): 3.520	
Control Elevation(ft): 3.520	
Struct Opening Dim(ft): 9999.00	
	TABLE
Bottom Clip(ft): 0.000	
Top Clip(ft): 0.000	
Weir Discharge Coef: 3.200	
Orifice Discharge Coef: 0.600	

Name: ExCS16B-2A	From Node: Pond16B-2
Group: BASE	To Node: Ditch16B-2
Flow: Both	Count: 1

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Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 25.00
Left Side Slope(h/v): 2.00
Right Side Slope(h/v): 3.00
 Invert(ft): 4.920
Control Elevation(ft): 4.920
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-1 From Node: Swale16B-1A
Group: BASE To Node: Swale16B-1B
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 0.00
Left Side Slope(h/v): 20.00
Right Side Slope(h/v): 20.00
 Invert(ft): 5.000
Control Elevation(ft): 5.000
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-10 From Node: Swale16B-4
Group: BASE To Node: ExStruct16B-9
Flow: Both Count: 2
Type: Horizontal Geometry: Rectangular

Span(in): 54.00
Rise(in): 36.00
 Invert(ft): 3.500
Control Elevation(ft): 3.500

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-2 From Node: Swale16B-2A
Group: BASE To Node: ExStruct16B-1
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 50.00
Rise(in): 48.00
 Invert(ft): 4.520
Control Elevation(ft): 4.520

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-3A From Node: Swale16B-3A
Group: BASE To Node: ExStruct16B-2
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

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DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Span(in): 50.00
Rise(in): 48.00
Invert(ft): 7.620
Control Elevation(ft): 7.620

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-3B From Node: Swale16B-3A
Group: BASE To Node: Swale16B-3B
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 13.00
Left Side Slope(h/v): 10.00
Right Side Slope(h/v): 10.00
Invert(ft): 8.500
Control Elevation(ft): 8.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-4 From Node: Swale16B-1B
Group: BASE To Node: Swale16B-1C
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 0.00
Left Side Slope(h/v): 2.00
Right Side Slope(h/v): 6.00
Invert(ft): 4.500
Control Elevation(ft): 4.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-5 From Node: Swale16B-1C
Group: BASE To Node: ExStruct16B-3
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 50.00
Rise(in): 48.00
Invert(ft): 3.620
Control Elevation(ft): 3.620

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-6 From Node: Swale16B-2B
Group: BASE To Node: ExStruct16B-4
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

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DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

Span(in): 54.00
Rise(in): 36.00
Invert(ft): 4.620
Control Elevation(ft): 4.620

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-7 From Node: Swale16B-2B
Group: BASE To Node: Swale16B-2C
Flow: Both Count: 1
Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 20.00
Left Side Slope(h/v): 10.00
Right Side Slope(h/v): 10.00
Invert(ft): 6.500
Control Elevation(ft): 6.500
Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
Top Clip(ft): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-8 From Node: Swale16B-3B
Group: BASE To Node: ExStruct16B-5
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 50.00
Rise(in): 48.00
Invert(ft): 5.500
Control Elevation(ft): 5.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: ExWeir16B-9 From Node: Swale16B-2C
Group: BASE To Node: ExStruct16B-8
Flow: Both Count: 2
Type: Horizontal Geometry: Rectangular

Span(in): 54.00
Rise(in): 36.00
Invert(ft): 5.000
Control Elevation(ft): 5.000

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

==== Hydrology Simulations =====

Name: 100yr24hr
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16B_ICPR Pre\100yr24hr.R
Override Defaults: Yes
Storm Duration(hrs): 24.00

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Rainfall File: Scsiii
 Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16B_ICPR Pre\10yr24hr.R3

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 25yr72hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16B_ICPR Pre\25yr72hr.R3

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

==== Routing Simulations =====

Name: 100yr24hr Hydrology Sim: 100yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16B_ICPR Pre\100yr24hr.I

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.50000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

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 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

 Name: 10yr24hr Hydrology Sim: 10yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16B_ICPR Pre\10yr24hr.I3

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

 Name: 25yr72hr Hydrology Sim: 25yr72hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System16B_ICPR Pre\25yr72hr.I3

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 96.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
BASE	Yes

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	0.00	0.0	0.0	0.0	0.0	0.00
100yr24hr	0.25	41.6	40.8	0.8	-0.0	-0.00
100yr24hr	0.50	180.0	165.9	14.0	0.0	0.00
100yr24hr	0.75	387.4	362.4	25.0	0.0	0.00
100yr24hr	1.00	655.6	618.3	37.3	0.0	0.00
100yr24hr	1.25	971.3	936.1	35.2	-0.0	-0.00
100yr24hr	1.50	1328.6	1288.3	40.3	0.0	0.00
100yr24hr	1.75	1716.6	1678.0	38.6	-0.0	-0.00
100yr24hr	2.00	2145.4	2098.4	46.9	-0.0	-0.00
100yr24hr	2.25	2640.7	2587.9	52.8	0.0	0.00
100yr24hr	2.50	3178.9	3117.3	61.6	-0.0	-0.00
100yr24hr	2.75	3690.5	3633.5	57.0	0.0	0.00
100yr24hr	3.00	4199.8	4128.6	71.2	0.0	0.00
100yr24hr	3.25	4796.3	4705.1	91.2	0.0	0.00
100yr24hr	3.50	5431.9	5329.7	102.2	-0.0	-0.00
100yr24hr	3.75	6100.8	5984.4	116.4	-0.0	-0.00
100yr24hr	4.00	6802.8	6670.5	132.3	-0.0	-0.00
100yr24hr	4.25	7630.8	7460.1	170.7	-0.0	-0.00
100yr24hr	4.50	8557.8	8358.2	199.6	-0.0	-0.00
100yr24hr	4.75	9499.1	9254.1	245.0	-0.0	-0.00
100yr24hr	5.00	10634.5	10279.4	355.1	-0.0	-0.00
100yr24hr	5.25	11881.7	11462.7	419.0	-0.0	-0.00
100yr24hr	5.50	13259.0	12740.0	519.0	0.0	0.00
100yr24hr	5.75	14877.4	14236.0	641.4	0.0	0.00
100yr24hr	6.00	16690.1	15906.4	783.8	0.0	0.00
100yr24hr	6.25	18736.4	17788.5	947.9	0.0	0.00
100yr24hr	6.50	20917.9	19827.6	1090.3	0.0	0.00
100yr24hr	6.75	23445.3	22108.4	1336.9	0.0	0.00
100yr24hr	7.00	26218.9	24653.8	1565.0	0.0	0.00
100yr24hr	7.25	29229.2	27355.1	1874.1	0.0	0.00
100yr24hr	7.50	32882.7	30500.1	2382.6	0.0	0.00
100yr24hr	7.75	37501.1	34261.5	3239.6	0.0	0.00
100yr24hr	8.00	43457.8	38885.4	4572.4	0.0	0.00
100yr24hr	8.25	50126.9	44140.3	5986.6	0.0	0.00
100yr24hr	8.33	52356.5	45911.4	6445.1	0.0	0.00
100yr24hr	8.42	54708.5	47735.4	6973.1	0.0	0.00
100yr24hr	8.50	57222.4	49654.3	7568.1	0.0	0.00
100yr24hr	8.58	59861.0	51656.9	8204.1	0.0	0.00
100yr24hr	8.67	62608.5	53736.9	8871.6	0.0	0.00
100yr24hr	8.75	65453.5	55901.6	9551.9	0.0	0.00
100yr24hr	8.83	68396.4	58141.2	10255.2	0.0	0.00
100yr24hr	8.92	71484.6	60469.7	11014.9	0.0	0.00
100yr24hr	9.00	74728.9	62898.8	11830.1	0.0	0.00
100yr24hr	9.08	78094.0	65412.6	12681.4	0.0	0.00
100yr24hr	9.17	81559.6	67998.3	13561.3	0.0	0.00
100yr24hr	9.25	85119.8	70652.2	14467.6	0.0	0.00
100yr24hr	9.33	88759.3	73361.0	15398.3	0.0	0.00
100yr24hr	9.42	92480.9	76125.4	16355.5	0.0	0.00
100yr24hr	9.50	96278.0	78941.7	17336.3	0.0	0.00
100yr24hr	9.58	100195.9	81817.2	18378.8	0.0	0.00
100yr24hr	9.67	104359.6	84805.1	19554.5	0.0	0.00
100yr24hr	9.75	108789.0	87945.2	20843.8	0.0	0.00
100yr24hr	9.83	113366.0	91203.0	22163.0	0.0	0.00
100yr24hr	9.92	118012.1	94543.2	23468.9	0.0	0.00
100yr24hr	10.00	122683.0	97917.4	24765.6	0.0	0.00
100yr24hr	10.02	123616.3	98591.2	25025.1	0.0	0.00
100yr24hr	10.03	124556.2	99268.0	25288.2	0.0	0.00
100yr24hr	10.05	125502.6	99946.6	25556.0	0.0	0.00
100yr24hr	10.07	126472.4	100638.0	25834.4	0.0	0.00
100yr24hr	10.08	127441.2	101322.7	26118.5	0.0	0.00
100yr24hr	10.10	128427.4	102012.7	26414.7	0.0	0.00
100yr24hr	10.12	129441.7	102715.7	26726.0	0.0	0.00
100yr24hr	10.13	130458.9	103415.1	27043.8	0.0	0.00
100yr24hr	10.15	131512.8	104135.5	27377.3	0.0	0.00
100yr24hr	10.17	132566.8	104853.0	27713.8	0.0	0.00
100yr24hr	10.18	133649.8	105588.3	28061.6	0.0	0.00
100yr24hr	10.20	134758.4	106339.6	28418.7	0.0	0.00
100yr24hr	10.22	135861.8	107087.1	28774.7	0.0	0.00
100yr24hr	10.23	136981.5	107845.7	29135.8	0.0	0.00
100yr24hr	10.25	138117.3	108615.4	29501.8	0.0	0.00
100yr24hr	10.27	139256.2	109387.6	29868.5	0.0	0.00
100yr24hr	10.28	140416.0	110174.5	30241.5	0.0	0.00
100yr24hr	10.30	141591.4	110972.7	30618.7	0.0	0.00
100yr24hr	10.32	142756.5	111764.6	30991.9	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	10.33	143941.9	112571.1	31370.7	0.0	0.00
100yr24hr	10.35	145143.0	113389.3	31753.7	0.0	0.00
100yr24hr	10.37	146319.3	114191.3	32127.9	0.0	0.00
100yr24hr	10.38	147525.7	115014.6	32511.1	0.0	0.00
100yr24hr	10.40	148739.7	115843.5	32896.2	0.0	0.00
100yr24hr	10.42	149957.2	116675.3	33282.0	0.0	0.00
100yr24hr	10.43	151179.9	117510.9	33669.0	0.0	0.00
100yr24hr	10.45	152403.4	118347.4	34056.0	0.0	0.00
100yr24hr	10.47	153636.1	119190.3	34445.8	0.0	0.00
100yr24hr	10.48	154864.8	120030.5	34834.3	0.0	0.00
100yr24hr	10.50	156120.9	120889.4	35231.5	0.0	0.00
100yr24hr	10.52	157356.4	121733.8	35622.6	0.0	0.00
100yr24hr	10.53	158629.4	122602.5	36026.8	0.0	0.00
100yr24hr	10.55	159890.6	123460.6	36430.0	0.0	0.00
100yr24hr	10.57	161166.2	124325.8	36840.4	0.0	0.00
100yr24hr	10.58	162455.7	125199.8	37255.9	0.0	0.00
100yr24hr	10.60	163764.2	126087.8	37676.4	0.0	0.00
100yr24hr	10.62	165107.2	127002.9	38104.3	0.0	0.00
100yr24hr	10.63	166481.7	127946.2	38535.5	0.0	0.00
100yr24hr	10.65	167861.1	128902.6	38958.5	0.0	0.00
100yr24hr	10.67	169281.0	129899.1	39381.9	0.0	0.00
100yr24hr	10.68	170713.4	130918.3	39795.1	0.0	0.00
100yr24hr	10.70	172168.6	131969.0	40199.6	0.0	0.00
100yr24hr	10.72	173660.3	133062.2	40598.1	0.0	0.00
100yr24hr	10.73	175133.4	134157.6	40975.8	0.0	0.00
100yr24hr	10.75	176643.2	135296.3	41346.9	0.0	0.00
100yr24hr	10.77	178181.3	136471.7	41709.6	0.0	0.00
100yr24hr	10.78	179706.0	137650.0	42055.9	0.0	0.00
100yr24hr	10.80	181287.9	138884.5	42403.3	0.0	0.00
100yr24hr	10.82	182854.2	140116.1	42738.0	0.0	0.00
100yr24hr	10.83	184438.6	141368.7	43069.9	0.0	0.00
100yr24hr	10.85	186067.6	142661.8	43405.8	0.0	0.00
100yr24hr	10.87	187705.4	143966.4	43739.0	0.0	0.00
100yr24hr	10.88	189400.4	145321.4	44078.9	0.0	0.00
100yr24hr	10.90	191075.0	146665.6	44409.4	0.0	0.00
100yr24hr	10.92	192781.3	148041.0	44740.3	0.0	0.00
100yr24hr	10.93	194522.3	149450.7	45071.6	0.0	0.00
100yr24hr	10.95	196281.7	150882.1	45399.6	0.0	0.00
100yr24hr	10.97	198048.6	152326.7	45721.9	0.0	0.00
100yr24hr	10.98	199838.5	153797.1	46041.4	0.0	0.00
100yr24hr	11.00	201618.4	155265.7	46352.6	0.0	0.00
100yr24hr	11.02	203459.7	156791.0	46668.7	0.0	0.00
100yr24hr	11.03	205284.9	158307.7	46977.2	0.0	0.00
100yr24hr	11.05	207137.2	159850.5	47286.8	0.0	0.00
100yr24hr	11.07	208994.2	161399.6	47594.7	0.0	0.00
100yr24hr	11.08	210886.4	162979.2	47907.2	0.0	0.00
100yr24hr	11.10	212768.3	164551.0	48217.2	0.0	0.00
100yr24hr	11.12	214729.7	166190.2	48539.5	0.0	0.00
100yr24hr	11.13	216660.4	167804.9	48855.5	0.0	0.00
100yr24hr	11.15	218586.6	169417.7	49169.0	0.0	0.00
100yr24hr	11.17	220556.5	171069.4	49487.1	0.0	0.00
100yr24hr	11.18	222554.7	172748.3	49806.4	0.0	0.00
100yr24hr	11.20	224544.6	174425.1	50119.5	0.0	0.00
100yr24hr	11.22	226592.3	176158.0	50434.3	0.0	0.00
100yr24hr	11.23	228632.8	177894.6	50738.2	0.0	0.00
100yr24hr	11.25	230659.5	179630.8	51028.7	0.0	0.00
100yr24hr	11.27	232718.1	181405.7	51312.4	0.0	0.00
100yr24hr	11.28	234786.1	183196.9	51589.2	0.0	0.00
100yr24hr	11.30	236871.9	185006.2	51865.7	0.0	0.00
100yr24hr	11.32	239036.9	186880.8	52156.1	0.0	0.00
100yr24hr	11.33	241234.3	188773.1	52461.1	0.0	0.00
100yr24hr	11.35	243446.2	190661.3	52784.9	0.0	0.00
100yr24hr	11.37	245827.7	192673.4	53154.3	0.0	0.00
100yr24hr	11.38	248164.9	194631.2	53533.8	0.0	0.00
100yr24hr	11.40	250569.8	196634.2	53935.7	0.0	0.00
100yr24hr	11.42	253055.4	198698.3	54357.2	0.0	0.00
100yr24hr	11.43	255618.1	200825.5	54792.5	0.0	0.00
100yr24hr	11.45	258207.5	202978.4	55229.1	0.0	0.00
100yr24hr	11.47	260875.9	205203.8	55672.1	0.0	0.00
100yr24hr	11.48	263592.5	207480.1	56112.4	0.0	0.00
100yr24hr	11.50	266298.3	209758.2	56540.1	0.0	0.00
100yr24hr	11.52	269112.5	212134.4	56978.1	0.0	0.00
100yr24hr	11.53	271913.9	214500.6	57413.2	0.0	0.00
100yr24hr	11.55	274782.8	216920.5	57862.3	0.0	0.00

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PRE-DEVELOPMENT CONDITIONS
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	11.57	277702.8	219369.9	58332.9	0.0	0.00
100yr24hr	11.58	280738.9	221889.0	58849.9	0.0	0.00
100yr24hr	11.60	283872.4	224464.4	59408.0	0.0	0.00
100yr24hr	11.62	287127.7	227116.2	60011.5	0.0	0.00
100yr24hr	11.63	290447.5	229749.0	60698.5	0.0	0.00
100yr24hr	11.65	293869.0	232429.4	61439.6	0.0	0.00
100yr24hr	11.67	297449.4	235225.9	62223.6	0.0	0.00
100yr24hr	11.68	301020.4	238018.2	63002.2	0.0	0.00
100yr24hr	11.70	304675.8	240885.6	63790.2	0.0	0.00
100yr24hr	11.72	308415.4	243828.3	64587.0	0.0	0.00
100yr24hr	11.73	312262.1	246859.1	65403.0	0.0	0.00
100yr24hr	11.75	316081.3	249874.5	66206.8	0.0	0.00
100yr24hr	11.77	320111.6	253031.8	67079.9	0.0	0.00
100yr24hr	11.78	324216.4	256159.3	68057.1	0.0	0.00
100yr24hr	11.80	328593.0	259342.8	69250.2	0.0	0.00
100yr24hr	11.82	333438.7	262611.8	70826.9	0.0	0.00
100yr24hr	11.83	338976.3	265981.7	72994.7	0.0	0.00
100yr24hr	11.85	345332.1	269445.4	75886.7	0.0	0.00
100yr24hr	11.87	352638.9	273027.8	79611.1	0.0	0.00
100yr24hr	11.88	360916.7	276712.4	84204.3	0.0	0.00
100yr24hr	11.90	370157.7	280498.1	89659.7	0.0	0.00
100yr24hr	11.92	380391.0	284406.7	95984.3	0.0	0.00
100yr24hr	11.93	391469.6	288388.5	103081.1	0.0	0.00
100yr24hr	11.95	403312.3	292440.0	110872.3	0.0	0.00
100yr24hr	11.97	415889.4	296577.0	119312.4	0.0	0.00
100yr24hr	11.98	429117.1	300777.8	128339.3	0.0	0.00
100yr24hr	12.00	443091.6	305079.7	138011.9	0.0	0.00
100yr24hr	12.02	457599.9	309425.0	148174.9	0.0	0.00
100yr24hr	12.03	472696.0	313833.4	158862.5	0.0	0.00
100yr24hr	12.05	488189.9	318253.5	169936.3	0.0	0.00
100yr24hr	12.07	504281.7	322746.4	181535.3	0.0	0.00
100yr24hr	12.08	520846.0	327281.3	193564.7	0.0	0.00
100yr24hr	12.10	537854.6	331851.7	206002.9	0.0	0.00
100yr24hr	12.12	555287.0	336453.9	218833.1	0.0	0.00
100yr24hr	12.13	573122.9	341085.3	232037.6	0.0	0.00
100yr24hr	12.15	591337.3	345742.8	245594.4	0.0	0.00
100yr24hr	12.17	609904.1	350424.0	259480.1	0.0	0.00
100yr24hr	12.18	628803.4	355127.6	273675.8	0.0	0.00
100yr24hr	12.20	648098.7	359873.1	288225.7	0.0	0.00
100yr24hr	12.22	667614.4	364624.9	302989.5	0.0	0.00
100yr24hr	12.23	687365.8	369393.2	317972.6	0.0	0.00
100yr24hr	12.25	707464.8	374216.2	333248.6	0.0	0.00
100yr24hr	12.27	727476.6	379011.9	348464.7	0.0	0.00
100yr24hr	12.28	747565.2	383857.5	363707.8	0.0	0.00
100yr24hr	12.30	767411.4	388726.3	378685.2	0.0	0.00
100yr24hr	12.32	786698.8	393590.7	393108.1	0.0	0.00
100yr24hr	12.33	805369.2	398486.4	406882.8	0.0	0.00
100yr24hr	12.35	823079.0	403355.5	419723.5	0.0	0.00
100yr24hr	12.37	839984.1	408243.7	431740.4	0.0	0.00
100yr24hr	12.38	855975.5	413108.8	442866.6	0.0	0.00
100yr24hr	12.40	871201.2	417980.3	453220.8	0.0	0.00
100yr24hr	12.42	885698.8	422847.5	462851.3	0.0	0.00
100yr24hr	12.43	899544.0	427710.1	471833.9	0.0	0.00
100yr24hr	12.45	912877.5	432598.5	480279.0	0.0	0.00
100yr24hr	12.47	925489.6	437411.3	488078.4	0.0	0.00
100yr24hr	12.48	937809.8	442290.1	495519.7	0.0	0.00
100yr24hr	12.50	949615.4	447133.8	502481.5	0.0	0.00
100yr24hr	12.52	960957.4	451952.3	509005.1	0.0	0.00
100yr24hr	12.53	971949.5	456785.5	515164.0	0.0	0.00
100yr24hr	12.55	982559.8	461612.9	520946.9	0.0	0.00
100yr24hr	12.57	992799.0	466434.2	526364.8	0.0	0.00
100yr24hr	12.58	1002672.5	471248.8	531423.6	0.0	0.00
100yr24hr	12.60	1012184.6	476056.4	536128.1	0.0	0.00
100yr24hr	12.62	1021348.6	480856.7	540491.9	0.0	0.00
100yr24hr	12.63	1030186.4	485649.4	544537.0	0.0	0.00
100yr24hr	12.65	1038718.9	490434.6	548284.3	0.0	0.00
100yr24hr	12.67	1046966.8	495212.2	551754.7	0.0	0.00
100yr24hr	12.68	1054951.4	499982.2	554969.2	0.0	0.00
100yr24hr	12.70	1062687.2	504744.6	557942.6	0.0	0.00
100yr24hr	12.72	1070182.7	509499.3	560683.5	0.0	0.00
100yr24hr	12.73	1077446.0	514246.1	563199.9	0.0	0.00
100yr24hr	12.75	1084481.7	518985.0	565496.7	0.0	0.00
100yr24hr	12.77	1091290.9	523715.7	567575.2	0.0	0.00
100yr24hr	12.78	1097874.0	528438.1	569435.9	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	12.80	1104230.7	533151.7	571079.0	0.0	0.00
100yr24hr	12.82	1110357.9	537857.5	572500.5	0.0	0.00
100yr24hr	12.83	1116252.8	542556.3	573696.5	0.0	0.00
100yr24hr	12.85	1121917.7	547248.1	574669.6	0.0	0.00
100yr24hr	12.87	1127358.6	551932.8	575425.8	0.0	0.00
100yr24hr	12.88	1132587.3	556610.2	575977.1	0.0	0.00
100yr24hr	12.90	1137618.2	561280.4	576337.8	0.0	0.00
100yr24hr	12.92	1142463.5	565943.3	576520.2	0.0	0.00
100yr24hr	12.93	1147135.5	570599.0	576536.5	0.0	0.00
100yr24hr	12.95	1151649.0	575247.6	576401.4	0.0	0.00
100yr24hr	12.97	1156018.4	579888.9	576129.5	0.0	0.00
100yr24hr	12.98	1160254.4	584522.5	575731.9	0.0	0.00
100yr24hr	13.00	1164367.1	589148.5	575218.6	0.0	0.00
100yr24hr	13.02	1168367.5	593767.1	574600.5	0.0	0.00
100yr24hr	13.03	1172265.4	598378.3	573887.2	-0.0	-0.00
100yr24hr	13.05	1176066.8	602982.2	573084.5	0.0	0.00
100yr24hr	13.07	1179775.2	607578.9	572196.3	0.0	0.00
100yr24hr	13.08	1183393.6	612168.5	571225.1	0.0	0.00
100yr24hr	13.10	1186924.9	616750.9	570174.0	0.0	0.00
100yr24hr	13.12	1190372.9	621326.2	569046.7	0.0	0.00
100yr24hr	13.13	1193742.6	625894.6	567848.1	0.0	0.00
100yr24hr	13.15	1197041.2	630456.0	566585.2	0.0	0.00
100yr24hr	13.17	1200296.4	635039.1	565257.3	0.0	0.00
100yr24hr	13.18	1203447.9	639549.2	563898.7	0.0	0.00
100yr24hr	13.20	1206587.8	644109.3	562478.5	0.0	0.00
100yr24hr	13.22	1209671.2	648643.5	561027.7	0.0	0.00
100yr24hr	13.23	1212707.2	653151.8	559555.4	0.0	0.00
100yr24hr	13.25	1215752.0	657709.9	558042.1	0.0	0.00
100yr24hr	13.27	1218718.8	662186.2	556532.7	0.0	0.00
100yr24hr	13.28	1221693.1	666712.2	554980.8	0.0	0.00
100yr24hr	13.30	1224615.4	671203.7	553411.7	0.0	0.00
100yr24hr	13.32	1227512.1	675707.6	551804.5	0.0	0.00
100yr24hr	13.33	1230348.0	680177.1	550170.9	0.0	0.00
100yr24hr	13.35	1233149.3	684659.1	548490.3	0.0	0.00
100yr24hr	13.37	1235909.6	689144.0	546765.6	0.0	0.00
100yr24hr	13.38	1238619.1	693613.4	545005.7	0.0	0.00
100yr24hr	13.40	1241291.4	698085.9	543205.6	0.0	0.00
100yr24hr	13.42	1243919.0	702542.9	541376.1	0.0	0.00
100yr24hr	13.43	1246511.1	706993.7	539517.4	0.0	0.00
100yr24hr	13.45	1249070.6	711438.4	537632.2	0.0	0.00
100yr24hr	13.47	1251600.3	715877.1	535723.3	0.0	0.00
100yr24hr	13.48	1254103.6	720309.7	533794.0	0.0	0.00
100yr24hr	13.50	1256583.2	724736.2	531847.0	0.0	0.00
100yr24hr	13.52	1259040.6	729156.6	529884.0	0.0	0.00
100yr24hr	13.53	1261472.1	733561.6	527910.5	0.0	0.00
100yr24hr	13.55	1263888.9	737969.6	525919.2	0.0	0.00
100yr24hr	13.57	1266286.5	742371.4	523915.1	0.0	0.00
100yr24hr	13.58	1268660.3	746757.6	521902.6	0.0	0.00
100yr24hr	13.60	1271042.0	751187.7	519854.3	0.0	0.00
100yr24hr	13.62	1273370.9	755547.1	517823.8	0.0	0.00
100yr24hr	13.63	1275706.6	759945.3	515761.3	0.0	0.00
100yr24hr	13.65	1277994.6	764277.1	513717.5	0.0	0.00
100yr24hr	13.67	1280299.7	768662.6	511637.2	0.0	0.00
100yr24hr	13.68	1282576.7	773012.2	509564.5	0.0	0.00
100yr24hr	13.70	1284855.5	777379.6	507475.9	0.0	0.00
100yr24hr	13.72	1287099.1	781690.6	505408.5	0.0	0.00
100yr24hr	13.73	1289338.4	786001.7	503336.7	0.0	0.00
100yr24hr	13.75	1291589.9	790342.0	501247.9	0.0	0.00
100yr24hr	13.77	1293795.7	794600.2	499195.6	0.0	0.00
100yr24hr	13.78	1295994.2	798853.0	497141.2	0.0	0.00
100yr24hr	13.80	1298200.0	803132.6	495067.4	0.0	0.00
100yr24hr	13.82	1300385.1	807391.5	492993.6	0.0	0.00
100yr24hr	13.83	1302533.7	811606.7	490927.1	0.0	0.00
100yr24hr	13.85	1304690.0	815870.1	488819.9	0.0	0.00
100yr24hr	13.87	1306790.3	820058.4	486731.9	0.0	0.00
100yr24hr	13.88	1308884.5	824269.9	484614.6	0.0	0.00
100yr24hr	13.90	1310951.1	828459.4	482491.7	0.0	0.00
100yr24hr	13.92	1313004.0	832652.6	480351.3	0.0	0.00
100yr24hr	13.93	1315034.2	836828.6	478205.6	-0.0	-0.00
100yr24hr	13.95	1317047.2	840995.6	476051.6	-0.0	-0.00
100yr24hr	13.97	1319045.0	845155.9	473889.1	-0.0	-0.00
100yr24hr	13.98	1321024.6	849301.4	471723.2	-0.0	-0.00
100yr24hr	14.00	1322996.0	853451.3	469544.6	-0.0	-0.00
100yr24hr	14.08	1332627.4	874104.0	458523.4	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	14.17	1341880.5	894627.7	447252.8	-0.0	-0.00
100yr24hr	14.25	1350822.9	915045.9	435777.0	-0.0	-0.00
100yr24hr	14.33	1359567.6	935382.2	424185.5	0.0	0.00
100yr24hr	14.42	1368147.9	955554.7	412593.2	0.0	0.00
100yr24hr	14.50	1376661.8	975705.2	400956.7	-0.0	-0.00
100yr24hr	14.58	1385006.3	995791.0	389215.3	-0.0	-0.00
100yr24hr	14.67	1392982.6	1015740.1	377242.5	-0.0	-0.00
100yr24hr	14.75	1400617.4	1035613.1	365004.3	-0.0	-0.00
100yr24hr	14.83	1408017.4	1055373.7	352643.7	-0.0	-0.00
100yr24hr	14.92	1415287.4	1075125.1	340162.3	-0.0	-0.00
100yr24hr	15.00	1422395.3	1094663.3	327732.0	-0.0	-0.00
100yr24hr	15.08	1429429.1	1114159.0	315270.1	-0.0	-0.00
100yr24hr	15.17	1436420.0	1133645.2	302774.8	-0.0	-0.00
100yr24hr	15.25	1443343.3	1153006.7	290336.6	-0.0	-0.00
100yr24hr	15.33	1450103.4	1172235.4	277868.1	-0.0	-0.00
100yr24hr	15.42	1456581.9	1191429.3	265152.6	-0.0	-0.00
100yr24hr	15.50	1462760.4	1210500.7	252259.6	-0.0	-0.00
100yr24hr	15.58	1468779.2	1229443.8	239335.4	-0.0	-0.00
100yr24hr	15.67	1474804.4	1248344.8	226459.6	-0.0	-0.00
100yr24hr	15.75	1480825.9	1267011.3	213814.6	-0.0	-0.00
100yr24hr	15.83	1486836.0	1285614.5	201221.5	-0.0	-0.00
100yr24hr	15.92	1492750.8	1304148.7	188602.1	-0.0	-0.00
100yr24hr	16.00	1498532.2	1322504.2	176028.0	-0.0	-0.00
100yr24hr	16.25	1515385.7	1376582.8	138802.9	-0.0	-0.00
100yr24hr	16.50	1531295.4	1428226.9	103068.5	-0.0	-0.00
100yr24hr	16.75	1546814.0	1472450.2	74363.8	-0.0	-0.00
100yr24hr	17.00	1560573.1	1499694.6	60878.5	-0.0	-0.00
100yr24hr	17.25	1571930.6	1520257.0	51673.6	-0.0	-0.00
100yr24hr	17.50	1582259.9	1538542.3	43717.6	-0.0	-0.00
100yr24hr	17.75	1592205.2	1549701.8	42503.5	-0.0	-0.00
100yr24hr	18.00	1602076.2	1559721.3	42354.8	-0.0	-0.00
100yr24hr	18.25	1611563.2	1569381.2	42182.1	-0.0	-0.00
100yr24hr	18.50	1619975.2	1578391.6	41583.6	-0.0	-0.00
100yr24hr	18.75	1627916.6	1586493.2	41423.4	-0.0	-0.00
100yr24hr	19.00	1636317.9	1594829.1	41488.8	-0.0	-0.00
100yr24hr	19.25	1644298.5	1603026.6	41271.8	-0.0	-0.00
100yr24hr	19.50	1652111.0	1610923.2	41187.8	-0.0	-0.00
100yr24hr	19.75	1659836.1	1618835.1	41000.9	-0.0	-0.00
100yr24hr	20.00	1667090.6	1626389.6	40701.0	-0.0	-0.00
100yr24hr	20.25	1673944.8	1633628.6	40316.2	-0.0	-0.00
100yr24hr	20.50	1680625.6	1640608.8	40016.8	-0.0	-0.00
100yr24hr	20.75	1687250.6	1647543.0	39707.6	-0.0	-0.00
100yr24hr	21.00	1693868.4	1654396.0	39472.4	-0.0	-0.00
100yr24hr	21.25	1700676.6	1661368.4	39308.2	-0.0	-0.00
100yr24hr	21.50	1707382.1	1668342.5	39039.6	-0.0	-0.00
100yr24hr	21.75	1714039.7	1675220.8	38819.0	-0.0	-0.00
100yr24hr	22.00	1720673.5	1682118.0	38555.4	-0.0	-0.00
100yr24hr	22.25	1726625.2	1688653.4	37971.9	-0.0	-0.00
100yr24hr	22.50	1732284.9	1694749.8	37535.1	-0.0	-0.00
100yr24hr	22.75	1737826.9	1700803.7	37023.1	-0.0	-0.00
100yr24hr	23.00	1743518.0	1706744.7	36773.2	-0.0	-0.00
100yr24hr	23.25	1749129.4	1712831.1	36298.2	-0.0	-0.00
100yr24hr	23.50	1754696.5	1718671.3	36025.2	-0.0	-0.00
100yr24hr	23.75	1760248.2	1724677.5	35570.7	-0.0	-0.00
100yr24hr	24.00	1765118.9	1730176.5	34942.3	-0.0	-0.00
100yr24hr	24.25	1768496.1	1734903.6	33592.4	-0.0	-0.00
100yr24hr	24.50	1769022.7	1737921.3	31101.4	-0.0	-0.00
100yr24hr	24.75	1769022.7	1740341.7	28681.0	-0.0	-0.00
100yr24hr	25.00	1769022.7	1742695.6	26327.0	-0.0	-0.00
100yr24hr	25.25	1769022.7	1744958.4	24064.3	-0.0	-0.00
100yr24hr	25.50	1769022.7	1747091.7	21930.9	-0.0	-0.00
100yr24hr	25.75	1769022.7	1748886.8	20135.8	-0.0	-0.00
100yr24hr	26.00	1769022.7	1750201.2	18821.5	-0.0	-0.00
100yr24hr	26.25	1769022.7	1751406.3	17616.4	-0.0	-0.00
100yr24hr	26.50	1769022.7	1752588.1	16434.6	-0.0	-0.00
100yr24hr	26.75	1769022.7	1753751.0	15271.6	-0.0	-0.00
100yr24hr	27.00	1769022.7	1754895.5	14127.2	-0.0	-0.00
100yr24hr	27.25	1769022.7	1756021.1	13001.6	-0.0	-0.00
100yr24hr	27.50	1769022.7	1757127.2	11895.5	-0.0	-0.00
100yr24hr	27.75	1769022.7	1758212.8	10809.9	-0.0	-0.00
100yr24hr	28.00	1769022.7	1759276.7	9745.9	-0.0	-0.00
100yr24hr	28.25	1769022.7	1760317.6	8705.1	-0.0	-0.00
100yr24hr	28.50	1769022.7	1761333.7	7688.9	-0.0	-0.00
100yr24hr	28.75	1769022.7	1762323.1	6699.5	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	29.00	1769022.7	1763282.6	5740.0	-0.0	-0.00
100yr24hr	29.25	1769022.7	1764209.8	4812.8	-0.0	-0.00
100yr24hr	29.50	1769022.7	1765099.5	3923.1	-0.0	-0.00
100yr24hr	29.75	1769022.7	1765946.5	3076.2	-0.0	-0.00
100yr24hr	30.00	1769022.7	1766740.3	2282.3	-0.0	-0.00
100yr24hr	30.25	1769022.7	1767462.2	1560.4	-0.0	-0.00
100yr24hr	30.50	1769022.7	1768072.3	950.3	-0.0	-0.00
100yr24hr	30.75	1769022.7	1768485.1	537.6	-0.0	-0.00
100yr24hr	31.00	1769022.7	1768640.3	382.4	-0.0	-0.00
100yr24hr	31.25	1769022.7	1768641.9	380.8	-0.0	-0.00
100yr24hr	31.50	1769022.7	1768642.0	380.7	-0.0	-0.00
100yr24hr	31.75	1769022.7	1768642.1	380.5	-0.0	-0.00
100yr24hr	32.00	1769022.7	1768642.2	380.4	-0.0	-0.00
100yr24hr	32.25	1769022.7	1768642.3	380.3	-0.0	-0.00
100yr24hr	32.50	1769022.7	1768642.4	380.3	-0.0	-0.00
100yr24hr	32.75	1769022.7	1768642.4	380.2	-0.0	-0.00
100yr24hr	33.00	1769022.7	1768642.3	380.4	-0.0	-0.00
100yr24hr	33.25	1769022.7	1768642.6	380.1	-0.0	-0.00
100yr24hr	33.50	1769022.7	1768642.6	380.0	-0.0	-0.00
100yr24hr	33.75	1769022.7	1768642.6	380.0	-0.0	-0.00
100yr24hr	34.00	1769022.7	1768642.7	380.0	-0.0	-0.00
100yr24hr	34.25	1769022.7	1768642.7	380.0	-0.0	-0.00
100yr24hr	34.50	1769022.7	1768642.7	380.0	-0.0	-0.00
100yr24hr	34.75	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	35.00	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	35.25	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	35.50	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	35.75	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	36.00	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	36.25	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	36.50	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	36.75	1769022.7	1768642.7	379.9	-0.0	-0.00
100yr24hr	37.00	1769022.7	1768642.4	380.2	-0.0	-0.00
100yr24hr	37.25	1769022.7	1768642.4	380.2	-0.0	-0.00
100yr24hr	37.50	1769022.7	1768642.7	380.0	-0.0	-0.00
100yr24hr	37.75	1769022.7	1768642.6	380.0	-0.0	-0.00
100yr24hr	38.00	1769022.7	1768642.6	380.0	-0.0	-0.00
100yr24hr	38.25	1769022.7	1768642.6	380.0	-0.0	-0.00
100yr24hr	38.50	1769022.7	1768642.6	380.1	-0.0	-0.00
100yr24hr	38.75	1769022.7	1768642.6	380.1	-0.0	-0.00
100yr24hr	39.00	1769022.7	1768642.6	380.1	-0.0	-0.00
100yr24hr	39.25	1769022.7	1768642.5	380.1	-0.0	-0.00
100yr24hr	39.50	1769022.7	1768642.5	380.1	-0.0	-0.00
100yr24hr	39.75	1769022.7	1768642.5	380.2	-0.0	-0.00
100yr24hr	40.00	1769022.7	1768642.5	380.2	-0.0	-0.00
100yr24hr	40.25	1769022.7	1768642.4	380.2	-0.0	-0.00
100yr24hr	40.50	1769022.7	1768642.4	380.2	-0.0	-0.00
100yr24hr	40.75	1769022.7	1768642.4	380.3	-0.0	-0.00
100yr24hr	41.00	1769022.7	1768642.1	380.6	-0.0	-0.00
100yr24hr	41.25	1769022.7	1768642.1	380.6	-0.0	-0.00
100yr24hr	41.50	1769022.7	1768642.3	380.4	-0.0	-0.00
100yr24hr	41.75	1769022.7	1768642.2	380.4	-0.0	-0.00
100yr24hr	42.00	1769022.7	1768642.2	380.4	-0.0	-0.00
100yr24hr	42.25	1769022.7	1768642.2	380.5	-0.0	-0.00
100yr24hr	42.50	1769022.7	1768642.2	380.5	-0.0	-0.00
100yr24hr	42.75	1769022.7	1768642.1	380.5	-0.0	-0.00
100yr24hr	43.00	1769022.7	1768642.1	380.6	-0.0	-0.00
100yr24hr	43.25	1769022.7	1768642.1	380.6	-0.0	-0.00
100yr24hr	43.50	1769022.7	1768642.0	380.6	-0.0	-0.00
100yr24hr	43.75	1769022.7	1768642.0	380.7	-0.0	-0.00
100yr24hr	44.00	1769022.7	1768641.9	380.7	-0.0	-0.00
100yr24hr	44.25	1769022.7	1768641.9	380.7	-0.0	-0.00
100yr24hr	44.50	1769022.7	1768641.9	380.8	-0.0	-0.00
100yr24hr	44.75	1769022.7	1768641.8	380.8	-0.0	-0.00
100yr24hr	45.00	1769022.7	1768641.8	380.9	-0.0	-0.00
100yr24hr	45.25	1769022.7	1768641.5	381.2	-0.0	-0.00
100yr24hr	45.50	1769022.7	1768641.7	381.0	-0.0	-0.00
100yr24hr	45.75	1769022.7	1768641.7	381.0	-0.0	-0.00
100yr24hr	46.00	1769022.7	1768641.6	381.0	-0.0	-0.00
100yr24hr	46.25	1769022.7	1768641.6	381.1	-0.0	-0.00
100yr24hr	46.50	1769022.7	1768641.5	381.1	-0.0	-0.00
100yr24hr	46.75	1769022.7	1768641.5	381.2	-0.0	-0.00
100yr24hr	47.00	1769022.7	1768641.5	381.2	-0.0	-0.00
100yr24hr	47.25	1769022.7	1768641.4	381.2	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	47.50	1769022.7	1768641.4	381.3	-0.0	-0.00
100yr24hr	47.75	1769022.7	1768641.3	381.3	-0.0	-0.00
100yr24hr	48.00	1769022.7	1768641.3	381.4	-0.0	-0.00
10yr24hr	0.00	0.0	0.0	0.0	0.0	0.00
10yr24hr	0.25	25.9	29.7	-3.8	-0.0	0.00
10yr24hr	0.50	107.8	104.2	3.6	-0.0	-0.00
10yr24hr	0.75	227.1	220.8	6.3	-0.0	-0.00
10yr24hr	1.00	374.0	363.6	10.4	-0.0	-0.00
10yr24hr	1.25	540.9	530.7	10.2	-0.0	-0.00
10yr24hr	1.50	730.9	716.9	14.0	-0.0	-0.00
10yr24hr	1.75	940.1	927.4	12.7	-0.0	-0.00
10yr24hr	2.00	1175.8	1157.4	18.4	-0.0	-0.00
10yr24hr	2.25	1452.3	1430.7	21.6	-0.0	-0.00
10yr24hr	2.50	1755.8	1731.0	24.8	0.0	0.00
10yr24hr	2.75	2044.7	2025.8	18.9	0.0	0.00
10yr24hr	3.00	2330.8	2307.9	22.9	0.0	0.00
10yr24hr	3.25	2662.5	2635.3	27.2	0.0	0.00
10yr24hr	3.50	3012.5	2983.3	29.2	0.0	0.00
10yr24hr	3.75	3376.0	3341.7	34.3	0.0	0.00
10yr24hr	4.00	3749.6	3710.5	39.1	0.0	0.00
10yr24hr	4.25	4174.7	4118.4	56.3	0.0	0.00
10yr24hr	4.50	4630.3	4568.4	61.8	0.0	0.00
10yr24hr	4.75	5064.9	4999.3	65.6	0.0	0.00
10yr24hr	5.00	5552.2	5472.3	79.9	0.0	0.00
10yr24hr	5.25	6056.9	5974.8	82.1	0.0	0.00
10yr24hr	5.50	6583.8	6483.7	100.1	0.0	0.00
10yr24hr	5.75	7180.0	7065.9	114.1	0.0	0.00
10yr24hr	6.00	7829.4	7698.4	131.0	0.0	0.00
10yr24hr	6.25	8552.6	8394.8	157.7	0.0	0.00
10yr24hr	6.50	9321.5	9131.0	190.4	0.0	0.00
10yr24hr	6.75	10216.5	9949.7	266.8	0.0	0.00
10yr24hr	7.00	11204.5	10890.5	314.0	0.0	0.00
10yr24hr	7.25	12288.2	11907.7	380.5	0.0	0.00
10yr24hr	7.50	13614.8	13126.0	488.9	0.0	0.00
10yr24hr	7.75	15304.2	14636.6	667.6	0.0	0.00
10yr24hr	8.00	17512.4	16595.7	916.8	0.0	0.00
10yr24hr	8.25	20027.3	18849.9	1177.4	0.0	0.00
10yr24hr	8.33	20881.3	19629.3	1252.0	0.0	0.00
10yr24hr	8.42	21789.3	20453.6	1335.7	0.0	0.00
10yr24hr	8.50	22767.9	21314.3	1453.6	0.0	0.00
10yr24hr	8.58	23802.8	22221.2	1581.6	0.0	0.00
10yr24hr	8.67	24891.8	23179.6	1712.2	0.0	0.00
10yr24hr	8.75	26026.6	24171.4	1855.2	0.0	0.00
10yr24hr	8.83	27212.6	25199.1	2013.4	0.0	0.00
10yr24hr	8.92	28466.0	26278.8	2187.2	0.0	0.00
10yr24hr	9.00	29795.5	27413.5	2382.0	0.0	0.00
10yr24hr	9.08	31187.9	28590.9	2597.0	0.0	0.00
10yr24hr	9.17	32635.4	29809.7	2825.7	0.0	0.00
10yr24hr	9.25	34130.9	31064.6	3066.4	0.0	0.00
10yr24hr	9.33	35678.3	32362.4	3315.9	-0.0	-0.00
10yr24hr	9.42	37270.7	33690.5	3580.2	-0.0	-0.00
10yr24hr	9.50	38911.4	35054.8	3856.6	-0.0	-0.00
10yr24hr	9.58	40619.9	36459.3	4160.6	-0.0	-0.00
10yr24hr	9.67	42446.9	37927.6	4519.3	-0.0	-0.00
10yr24hr	9.75	44406.3	39479.5	4926.8	-0.0	-0.00
10yr24hr	9.83	46455.1	41102.3	5352.7	-0.0	-0.00
10yr24hr	9.92	48545.1	42769.9	5775.3	-0.0	-0.00
10yr24hr	10.00	50659.4	44463.6	6195.9	-0.0	-0.00
10yr24hr	10.02	51086.2	44805.3	6280.9	-0.0	-0.00
10yr24hr	10.03	51515.6	45148.4	6367.3	-0.0	-0.00
10yr24hr	10.05	51948.7	45493.0	6455.7	-0.0	-0.00
10yr24hr	10.07	52389.3	45841.7	6547.6	-0.0	-0.00
10yr24hr	10.08	52831.2	46188.8	6642.5	-0.0	-0.00
10yr24hr	10.10	53286.3	46542.8	6743.5	-0.0	-0.00
10yr24hr	10.12	53746.9	46898.1	6848.8	-0.0	-0.00
10yr24hr	10.13	54221.9	47261.7	6960.2	-0.0	-0.00
10yr24hr	10.15	54701.3	47626.5	7074.8	-0.0	-0.00
10yr24hr	10.17	55190.6	47997.2	7193.4	-0.0	-0.00
10yr24hr	10.18	55690.5	48374.7	7315.8	-0.0	-0.00
10yr24hr	10.20	56199.4	48758.0	7441.4	-0.0	-0.00
10yr24hr	10.22	56711.6	49143.1	7568.5	-0.0	-0.00
10yr24hr	10.23	57234.8	49536.1	7698.7	-0.0	-0.00
10yr24hr	10.25	57760.2	49930.3	7829.8	-0.0	-0.00
10yr24hr	10.27	58293.8	50330.5	7963.3	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	10.28	58833.0	50734.7	8098.3	-0.0	-0.00
10yr24hr	10.30	59379.8	51144.5	8235.3	-0.0	-0.00
10yr24hr	10.32	59926.9	51554.5	8372.4	-0.0	-0.00
10yr24hr	10.33	60481.9	51970.5	8511.4	-0.0	-0.00
10yr24hr	10.35	61041.1	52389.9	8651.2	-0.0	-0.00
10yr24hr	10.37	61600.7	52810.1	8790.6	-0.0	-0.00
10yr24hr	10.38	62166.4	53235.5	8930.9	-0.0	-0.00
10yr24hr	10.40	62735.7	53664.4	9071.3	-0.0	-0.00
10yr24hr	10.42	63308.5	54096.8	9211.8	0.0	0.00
10yr24hr	10.43	63884.7	54532.5	9352.3	0.0	0.00
10yr24hr	10.45	64465.4	54972.3	9493.1	0.0	0.00
10yr24hr	10.47	65045.8	55412.6	9633.2	0.0	0.00
10yr24hr	10.48	65634.2	55859.5	9774.7	0.0	0.00
10yr24hr	10.50	66223.4	56307.6	9915.9	0.0	0.00
10yr24hr	10.52	66816.1	56758.4	10057.7	0.0	0.00
10yr24hr	10.53	67412.9	57212.1	10200.8	0.0	0.00
10yr24hr	10.55	68015.1	57668.8	10346.2	0.0	0.00
10yr24hr	10.57	68624.4	58128.9	10495.5	0.0	0.00
10yr24hr	10.58	69242.7	58593.0	10649.8	0.0	0.00
10yr24hr	10.60	69872.2	59061.7	10810.5	0.0	0.00
10yr24hr	10.62	70514.2	59536.0	10978.2	-0.0	-0.00
10yr24hr	10.63	71166.4	60014.5	11151.8	-0.0	-0.00
10yr24hr	10.65	71838.1	60504.8	11333.3	0.0	0.00
10yr24hr	10.67	72515.0	60996.9	11518.0	0.0	0.00
10yr24hr	10.68	73206.2	61498.1	11708.0	0.0	0.00
10yr24hr	10.70	73906.6	62005.2	11901.4	0.0	0.00
10yr24hr	10.72	74620.1	62521.1	12099.0	0.0	0.00
10yr24hr	10.73	75343.1	63043.5	12299.6	0.0	0.00
10yr24hr	10.75	76075.0	63572.1	12502.9	-0.0	-0.00
10yr24hr	10.77	76809.5	64102.2	12707.3	0.0	0.00
10yr24hr	10.78	77559.3	64642.5	12916.8	0.0	0.00
10yr24hr	10.80	78317.1	65187.4	13129.7	0.0	0.00
10yr24hr	10.82	79085.5	65738.2	13347.3	0.0	0.00
10yr24hr	10.83	79865.5	66295.0	13570.6	0.0	0.00
10yr24hr	10.85	80658.1	66858.2	13799.9	0.0	0.00
10yr24hr	10.87	81468.5	67431.7	14036.8	0.0	0.00
10yr24hr	10.88	82281.2	68005.0	14276.2	0.0	0.00
10yr24hr	10.90	83112.8	68590.3	14522.5	0.0	0.00
10yr24hr	10.92	83955.8	69182.6	14773.2	0.0	0.00
10yr24hr	10.93	84804.3	69778.1	15026.2	0.0	0.00
10yr24hr	10.95	85666.6	70383.0	15283.6	0.0	0.00
10yr24hr	10.97	86538.3	70994.3	15544.0	0.0	0.00
10yr24hr	10.98	87421.1	71613.2	15807.8	0.0	0.00
10yr24hr	11.00	88310.8	72236.9	16073.9	0.0	0.00
10yr24hr	11.02	89208.6	72865.8	16342.8	0.0	0.00
10yr24hr	11.03	90119.2	73503.0	16616.1	0.0	0.00
10yr24hr	11.05	91033.5	74142.0	16891.5	0.0	0.00
10yr24hr	11.07	91962.7	74790.1	17172.6	0.0	0.00
10yr24hr	11.08	92901.3	75443.3	17458.0	0.0	0.00
10yr24hr	11.10	93842.9	76097.1	17745.8	0.0	0.00
10yr24hr	11.12	94808.3	76766.2	18042.1	0.0	0.00
10yr24hr	11.13	95783.2	77440.9	18342.3	0.0	0.00
10yr24hr	11.15	96750.6	78109.7	18640.8	0.0	0.00
10yr24hr	11.17	97735.7	78790.4	18945.3	0.0	0.00
10yr24hr	11.18	98740.9	79484.7	19256.2	0.0	0.00
10yr24hr	11.20	99739.4	80174.1	19565.3	0.0	0.00
10yr24hr	11.22	100751.9	80873.2	19878.7	0.0	0.00
10yr24hr	11.23	101778.0	81581.6	20196.4	0.0	0.00
10yr24hr	11.25	102802.0	82288.4	20513.6	0.0	0.00
10yr24hr	11.27	103842.1	83005.4	20836.7	0.0	0.00
10yr24hr	11.28	104889.9	83725.1	21164.7	0.0	0.00
10yr24hr	11.30	105966.6	84460.0	21506.6	0.0	0.00
10yr24hr	11.32	107047.1	85190.9	21856.2	0.0	0.00
10yr24hr	11.33	108155.0	85931.8	22223.2	0.0	0.00
10yr24hr	11.35	109294.8	86683.8	22611.0	0.0	0.00
10yr24hr	11.37	110471.1	87450.1	23021.1	0.0	0.00
10yr24hr	11.38	111679.7	88229.5	23450.2	0.0	0.00
10yr24hr	11.40	112932.7	89031.7	23901.1	0.0	0.00
10yr24hr	11.42	114188.6	89832.0	24356.6	0.0	0.00
10yr24hr	11.43	115504.8	90668.8	24836.0	0.0	0.00
10yr24hr	11.45	116834.5	91513.2	25321.2	0.0	0.00
10yr24hr	11.47	118174.5	92364.2	25810.4	0.0	0.00
10yr24hr	11.48	119553.2	93240.3	26312.9	0.0	0.00
10yr24hr	11.50	120990.9	94154.3	26836.7	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	11.52	122402.3	95050.1	27352.2	0.0	0.00
10yr24hr	11.53	123847.1	95963.9	27883.2	0.0	0.00
10yr24hr	11.55	125351.8	96909.1	28442.8	0.0	0.00
10yr24hr	11.57	126870.7	97853.2	29017.6	0.0	0.00
10yr24hr	11.58	128478.2	98840.0	29638.2	0.0	0.00
10yr24hr	11.60	130095.1	99820.6	30274.5	0.0	0.00
10yr24hr	11.62	131792.9	100839.7	30953.3	0.0	0.00
10yr24hr	11.63	133519.5	101868.4	31651.1	-0.0	-0.00
10yr24hr	11.65	135296.1	102922.1	32374.0	-0.0	-0.00
10yr24hr	11.67	137155.5	104022.1	33133.4	-0.0	-0.00
10yr24hr	11.68	139048.6	105141.6	33907.0	0.0	0.00
10yr24hr	11.70	140946.5	106264.9	34681.6	0.0	0.00
10yr24hr	11.72	142935.4	107443.9	35491.5	0.0	0.00
10yr24hr	11.73	144916.5	108620.6	36295.9	0.0	0.00
10yr24hr	11.75	146954.2	109833.5	37120.6	0.0	0.00
10yr24hr	11.77	149049.3	111071.6	37977.7	0.0	0.00
10yr24hr	11.78	151254.6	112342.2	38912.3	0.0	0.00
10yr24hr	11.80	153595.4	113637.3	39958.1	0.0	0.00
10yr24hr	11.82	156208.3	114995.8	41212.5	0.0	0.00
10yr24hr	11.83	159116.3	116396.3	42720.0	0.0	0.00
10yr24hr	11.85	162496.3	117915.2	44581.1	0.0	0.00
10yr24hr	11.87	166456.5	119605.7	46850.8	0.0	0.00
10yr24hr	11.88	170964.2	121476.2	49488.0	-0.0	-0.00
10yr24hr	11.90	175970.9	123535.9	52435.0	0.0	0.00
10yr24hr	11.92	181498.6	125821.5	55677.1	0.0	0.00
10yr24hr	11.93	187538.3	128354.8	59183.5	0.0	0.00
10yr24hr	11.95	194040.3	131120.4	62919.9	0.0	0.00
10yr24hr	11.97	200969.5	134143.4	66826.1	-0.0	-0.00
10yr24hr	11.98	208297.4	137400.7	70896.7	-0.0	-0.00
10yr24hr	12.00	215999.1	140853.6	75145.5	-0.0	-0.00
10yr24hr	12.02	224052.8	144462.3	79590.5	-0.0	-0.00
10yr24hr	12.03	232387.3	148157.4	84229.9	-0.0	-0.00
10yr24hr	12.05	241144.0	151986.1	89157.9	-0.0	-0.00
10yr24hr	12.07	250191.8	155884.8	94307.0	-0.0	-0.00
10yr24hr	12.08	259429.5	159804.6	99624.9	-0.0	-0.00
10yr24hr	12.10	268990.4	163801.2	105189.2	-0.0	-0.00
10yr24hr	12.12	278888.7	167886.9	111001.8	-0.0	-0.00
10yr24hr	12.13	288991.4	172002.4	116989.0	-0.0	-0.00
10yr24hr	12.15	299313.7	176152.4	123161.3	-0.0	-0.00
10yr24hr	12.17	309862.5	180338.5	129524.0	-0.0	-0.00
10yr24hr	12.18	320672.4	184572.3	136100.0	-0.0	-0.00
10yr24hr	12.20	331667.1	188830.3	142836.8	0.0	0.00
10yr24hr	12.22	342883.9	193128.9	149755.1	0.0	0.00
10yr24hr	12.23	354239.1	197438.7	156800.4	0.0	0.00
10yr24hr	12.25	365747.0	201775.4	163971.7	0.0	0.00
10yr24hr	12.27	377445.5	206173.0	171272.5	0.0	0.00
10yr24hr	12.28	389038.3	210555.5	178482.7	0.0	0.00
10yr24hr	12.30	400536.5	214973.7	185562.9	0.0	0.00
10yr24hr	12.32	411734.0	219395.3	192338.7	0.0	0.00
10yr24hr	12.33	422525.3	223824.6	198700.7	0.0	0.00
10yr24hr	12.35	432826.1	228257.0	204569.0	0.0	0.00
10yr24hr	12.37	442622.1	232689.2	209932.8	0.0	0.00
10yr24hr	12.38	451931.3	237118.8	214812.5	0.0	0.00
10yr24hr	12.40	460779.7	241544.0	219235.7	0.0	0.00
10yr24hr	12.42	469208.9	245963.5	223245.4	0.0	0.00
10yr24hr	12.43	477263.0	250376.8	226886.2	0.0	0.00
10yr24hr	12.45	484976.6	254783.1	230193.5	0.0	0.00
10yr24hr	12.47	492384.6	259182.2	233202.4	0.0	0.00
10yr24hr	12.48	499520.9	263573.8	235947.1	0.0	0.00
10yr24hr	12.50	506407.8	267957.7	238450.1	0.0	0.00
10yr24hr	12.52	513056.5	272333.6	240722.9	0.0	0.00
10yr24hr	12.53	519438.3	276673.8	242764.5	0.0	0.00
10yr24hr	12.55	525680.9	281059.8	244621.1	0.0	0.00
10yr24hr	12.57	531635.1	285382.4	246252.6	0.0	0.00
10yr24hr	12.58	537465.2	289759.1	247706.1	0.0	0.00
10yr24hr	12.60	543004.8	294062.7	248942.0	0.0	0.00
10yr24hr	12.62	548368.9	298374.5	249994.5	0.0	0.00
10yr24hr	12.63	553567.7	302693.9	250873.8	-0.0	-0.00
10yr24hr	12.65	558580.4	306994.0	251586.4	-0.0	-0.00
10yr24hr	12.67	563430.0	311283.6	252146.4	-0.0	-0.00
10yr24hr	12.68	568128.8	315562.7	252566.1	-0.0	-0.00
10yr24hr	12.70	572704.0	319849.2	252854.9	-0.0	-0.00
10yr24hr	12.72	577104.3	324089.6	253014.7	-0.0	-0.00
10yr24hr	12.73	581390.5	328337.3	253053.2	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	12.75	585537.9	332565.6	252972.3	-0.0	-0.00
10yr24hr	12.77	589564.3	336792.1	252772.2	-0.0	-0.00
10yr24hr	12.78	593476.8	341025.3	252451.5	-0.0	-0.00
10yr24hr	12.80	597227.0	345212.5	252014.5	-0.0	-0.00
10yr24hr	12.82	600860.5	349406.0	251454.4	-0.0	-0.00
10yr24hr	12.83	604359.1	353588.0	250771.1	-0.0	-0.00
10yr24hr	12.85	607751.5	357794.0	249957.5	-0.0	-0.00
10yr24hr	12.87	610960.1	361923.5	249036.6	-0.0	-0.00
10yr24hr	12.88	614077.1	366084.6	247992.4	-0.0	-0.00
10yr24hr	12.90	617082.7	370242.5	246840.3	-0.0	-0.00
10yr24hr	12.92	619949.8	374347.2	245602.6	-0.0	-0.00
10yr24hr	12.93	622734.1	378467.5	244266.6	-0.0	-0.00
10yr24hr	12.95	625432.8	382588.0	242844.8	-0.0	-0.00
10yr24hr	12.97	628053.5	386708.1	241345.4	-0.0	-0.00
10yr24hr	12.98	630583.8	390797.3	239786.5	0.0	0.00
10yr24hr	13.00	633042.1	394873.0	238169.2	0.0	0.00
10yr24hr	13.02	635434.8	398931.1	236503.7	0.0	0.00
10yr24hr	13.03	637765.0	402962.9	234802.1	-0.0	-0.00
10yr24hr	13.05	640031.6	406957.6	233074.1	-0.0	-0.00
10yr24hr	13.07	642256.7	410950.0	231306.7	-0.0	-0.00
10yr24hr	13.08	644448.6	414955.9	229492.7	-0.0	-0.00
10yr24hr	13.10	646554.1	418876.1	227678.0	-0.0	-0.00
10yr24hr	13.12	648644.4	422841.3	225803.1	-0.0	-0.00
10yr24hr	13.13	650665.2	426749.2	223916.1	-0.0	-0.00
10yr24hr	13.15	652644.3	430645.8	221998.5	0.0	0.00
10yr24hr	13.17	654550.6	434459.9	220090.6	0.0	0.00
10yr24hr	13.18	656493.7	438405.0	218088.7	0.0	0.00
10yr24hr	13.20	658346.9	442217.5	216129.3	0.0	0.00
10yr24hr	13.22	660227.7	446130.7	214096.9	0.0	0.00
10yr24hr	13.23	662041.8	449938.4	212103.3	0.0	0.00
10yr24hr	13.25	663862.1	453786.8	210075.3	0.0	0.00
10yr24hr	13.27	665658.1	457610.9	208047.2	0.0	0.00
10yr24hr	13.28	667444.6	461445.5	205999.1	0.0	0.00
10yr24hr	13.30	669195.3	465238.3	203957.0	0.0	0.00
10yr24hr	13.32	670950.1	469082.5	201867.6	0.0	0.00
10yr24hr	13.33	672677.0	472915.4	199761.6	0.0	0.00
10yr24hr	13.35	674345.2	476672.0	197673.2	0.0	0.00
10yr24hr	13.37	676009.6	480475.6	195534.0	0.0	0.00
10yr24hr	13.38	677615.2	484197.5	193417.7	0.0	0.00
10yr24hr	13.40	679238.5	488012.4	191226.1	-0.0	-0.00
10yr24hr	13.42	680805.7	491742.3	189063.4	-0.0	-0.00
10yr24hr	13.43	682366.3	495499.0	186867.3	-0.0	-0.00
10yr24hr	13.45	683913.7	499263.5	184650.2	-0.0	-0.00
10yr24hr	13.47	685440.2	503012.9	182427.3	-0.0	-0.00
10yr24hr	13.48	686947.7	506747.2	180200.6	-0.0	-0.00
10yr24hr	13.50	688438.1	510466.6	177971.5	-0.0	-0.00
10yr24hr	13.52	689930.9	514217.8	175713.1	-0.0	-0.00
10yr24hr	13.53	691393.7	517917.9	173475.8	-0.0	-0.00
10yr24hr	13.55	692869.0	521672.6	171196.4	-0.0	-0.00
10yr24hr	13.57	694310.0	525362.1	168947.9	-0.0	-0.00
10yr24hr	13.58	695756.4	529087.3	166669.1	0.0	0.00
10yr24hr	13.60	697164.3	532735.0	164429.2	-0.0	-0.00
10yr24hr	13.62	698564.7	536384.6	162180.1	-0.0	-0.00
10yr24hr	13.63	699969.9	540066.5	159903.4	-0.0	-0.00
10yr24hr	13.65	701367.3	543746.3	157621.0	-0.0	-0.00
10yr24hr	13.67	702746.7	547395.2	155351.4	-0.0	-0.00
10yr24hr	13.68	704124.5	551054.4	153070.1	0.0	0.00
10yr24hr	13.70	705486.9	554685.2	150801.8	0.0	0.00
10yr24hr	13.72	706852.0	558334.0	148518.0	0.0	0.00
10yr24hr	13.73	708226.5	562017.5	146209.0	-0.0	-0.00
10yr24hr	13.75	709559.9	565599.0	143960.9	0.0	0.00
10yr24hr	13.77	710930.5	569289.3	141641.3	0.0	0.00
10yr24hr	13.78	712234.8	572811.3	139423.5	0.0	0.00
10yr24hr	13.80	713563.5	576412.1	137151.4	0.0	0.00
10yr24hr	13.82	714888.9	580021.6	134867.2	0.0	0.00
10yr24hr	13.83	716190.9	583591.5	132599.5	0.0	0.00
10yr24hr	13.85	717485.2	587167.3	130317.9	0.0	0.00
10yr24hr	13.87	718776.6	590764.6	128012.0	0.0	0.00
10yr24hr	13.88	720031.5	594287.6	125743.9	0.0	0.00
10yr24hr	13.90	721285.4	597832.7	123452.6	0.0	0.00
10yr24hr	13.92	722511.3	601320.0	121191.3	0.0	0.00
10yr24hr	13.93	723738.5	604829.5	118909.0	0.0	0.00
10yr24hr	13.95	724967.3	608358.8	116608.5	0.0	0.00
10yr24hr	13.97	726169.9	611824.5	114345.4	0.0	0.00

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DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	13.98	727364.7	615277.6	112087.1	0.0	0.00
10yr24hr	14.00	728560.4	618740.8	109819.5	0.0	0.00
10yr24hr	14.08	734400.6	635792.7	98607.9	0.0	0.00
10yr24hr	14.17	739999.4	652243.2	87756.2	0.0	0.00
10yr24hr	14.25	745402.9	667630.3	77772.6	0.0	0.00
10yr24hr	14.33	750705.0	681133.5	69571.5	0.0	0.00
10yr24hr	14.42	755915.5	692390.0	63525.5	0.0	0.00
10yr24hr	14.50	761075.3	701585.2	59490.1	0.0	0.00
10yr24hr	14.58	766143.9	709716.5	56427.4	0.0	0.00
10yr24hr	14.67	770982.9	717300.8	53682.1	0.0	0.00
10yr24hr	14.75	775623.1	724596.1	51027.0	0.0	0.00
10yr24hr	14.83	780123.2	731641.5	48481.7	0.0	0.00
10yr24hr	14.92	784520.7	738409.5	46111.3	0.0	0.00
10yr24hr	15.00	788859.6	744207.7	44651.9	0.0	0.00
10yr24hr	15.08	793135.2	749007.7	44127.5	0.0	0.00
10yr24hr	15.17	797380.2	753445.7	43934.5	0.0	0.00
10yr24hr	15.25	801596.8	757757.1	43839.7	0.0	0.00
10yr24hr	15.33	805723.0	761996.6	43726.4	0.0	0.00
10yr24hr	15.42	809665.3	766135.6	43529.7	0.0	0.00
10yr24hr	15.50	813426.9	770125.5	43301.4	0.0	0.00
10yr24hr	15.58	817092.7	773971.6	43121.0	0.0	0.00
10yr24hr	15.67	820749.8	777725.0	43024.8	0.0	0.00
10yr24hr	15.75	824437.6	781448.3	42989.3	0.0	0.00
10yr24hr	15.83	828106.1	785152.0	42954.1	0.0	0.00
10yr24hr	15.92	831706.5	788823.5	42883.0	0.0	0.00
10yr24hr	16.00	835232.1	792437.7	42794.4	0.0	0.00
10yr24hr	16.25	845519.5	802960.9	42558.7	0.0	0.00
10yr24hr	16.50	855239.4	812981.2	42258.2	0.0	0.00
10yr24hr	16.75	864720.5	822562.1	42158.4	0.0	0.00
10yr24hr	17.00	873134.0	831620.1	41513.8	0.0	0.00
10yr24hr	17.25	880085.2	839243.7	40841.5	0.0	0.00
10yr24hr	17.50	886407.2	846172.5	40234.7	0.0	0.00
10yr24hr	17.75	892496.7	852707.9	39788.8	0.0	0.00
10yr24hr	18.00	898542.9	859181.3	39361.6	0.0	0.00
10yr24hr	18.25	904356.1	865459.5	38896.5	0.0	0.00
10yr24hr	18.50	909512.1	871367.6	38144.5	0.0	0.00
10yr24hr	18.75	914381.2	876832.2	37549.1	0.0	0.00
10yr24hr	19.00	919533.9	882432.0	37101.9	0.0	0.00
10yr24hr	19.25	924429.9	887919.3	36510.7	-0.0	-0.00
10yr24hr	19.50	929224.3	893236.0	35988.3	-0.0	-0.00
10yr24hr	19.75	933966.2	898539.3	35426.8	0.0	0.00
10yr24hr	20.00	938420.4	903627.4	34793.0	-0.0	-0.00
10yr24hr	20.25	942629.9	908532.6	34097.3	-0.0	-0.00
10yr24hr	20.50	946733.9	913315.3	33418.6	-0.0	-0.00
10yr24hr	20.75	950804.5	918076.0	32728.5	-0.0	-0.00
10yr24hr	21.00	954871.6	922792.8	32078.8	-0.0	-0.00
10yr24hr	21.25	959056.7	927556.4	31500.3	0.0	0.00
10yr24hr	21.50	963179.7	932287.5	30892.1	0.0	0.00
10yr24hr	21.75	967274.0	936954.1	30319.9	0.0	0.00
10yr24hr	22.00	971354.6	941605.8	29748.8	0.0	0.00
10yr24hr	22.25	975016.4	946038.0	28978.4	0.0	0.00
10yr24hr	22.50	978499.2	950260.3	28238.8	0.0	0.00
10yr24hr	22.75	981910.1	954441.4	27468.8	0.0	0.00
10yr24hr	23.00	985413.6	958545.3	26868.2	0.0	0.00
10yr24hr	23.25	988868.5	962649.4	26219.1	0.0	0.00
10yr24hr	23.50	992296.9	966551.4	25745.5	0.0	0.00
10yr24hr	23.75	995716.3	970447.4	25268.9	0.0	0.00
10yr24hr	24.00	998716.7	974003.2	24713.5	0.0	0.00
10yr24hr	24.25	1000797.4	977061.2	23736.2	0.0	0.00
10yr24hr	24.50	1001121.8	978815.5	22306.3	0.0	0.00
10yr24hr	24.75	1001121.8	980106.8	21015.0	0.0	0.00
10yr24hr	25.00	1001121.8	981344.1	19777.8	0.0	0.00
10yr24hr	25.25	1001121.8	982557.8	18564.0	0.0	0.00
10yr24hr	25.50	1001121.8	983752.8	17369.1	0.0	0.00
10yr24hr	25.75	1001121.8	984929.9	16192.0	0.0	0.00
10yr24hr	26.00	1001121.8	986089.2	15032.6	0.0	0.00
10yr24hr	26.25	1001121.8	987230.3	13891.5	0.0	0.00
10yr24hr	26.50	1001121.8	988352.7	12769.2	0.0	0.00
10yr24hr	26.75	1001121.8	989455.3	11666.5	0.0	0.00
10yr24hr	27.00	1001121.8	990537.3	10584.6	0.0	0.00
10yr24hr	27.25	1001121.8	991597.3	9524.5	0.0	0.00
10yr24hr	27.50	1001121.8	992634.1	8487.8	0.0	0.00
10yr24hr	27.75	1001121.8	993645.7	7476.1	0.0	0.00
10yr24hr	28.00	1001121.8	994630.2	6491.6	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	28.25	1001121.8	995584.5	5537.4	0.0	0.00
10yr24hr	28.50	1001121.8	996505.3	4616.5	0.0	0.00
10yr24hr	28.75	1001121.8	997388.0	3733.9	0.0	0.00
10yr24hr	29.00	1001121.8	998226.6	2895.2	0.0	0.00
10yr24hr	29.25	1001121.8	999009.7	2112.1	0.0	0.00
10yr24hr	29.50	1001121.8	999716.0	1405.9	0.0	0.00
10yr24hr	29.75	1001121.8	1000298.3	823.5	0.0	0.00
10yr24hr	30.00	1001121.8	1000669.5	452.4	0.0	0.00
10yr24hr	30.25	1001121.8	1000779.5	342.3	0.0	0.00
10yr24hr	30.50	1001121.8	1000779.8	342.1	0.0	0.00
10yr24hr	30.75	1001121.8	1000779.9	341.9	0.0	0.00
10yr24hr	31.00	1001121.8	1000780.1	341.8	0.0	0.00
10yr24hr	31.25	1001121.8	1000779.9	341.9	0.0	0.00
10yr24hr	31.50	1001121.8	1000780.3	341.6	0.0	0.00
10yr24hr	31.75	1001121.8	1000780.3	341.5	0.0	0.00
10yr24hr	32.00	1001121.8	1000780.4	341.4	0.0	0.00
10yr24hr	32.25	1001121.8	1000780.5	341.3	0.0	0.00
10yr24hr	32.50	1001121.8	1000780.6	341.2	0.0	0.00
10yr24hr	32.75	1001121.8	1000780.6	341.2	0.0	0.00
10yr24hr	33.00	1001121.8	1000780.7	341.2	0.0	0.00
10yr24hr	33.25	1001121.8	1000780.7	341.1	0.0	0.00
10yr24hr	33.50	1001121.8	1000780.7	341.1	0.0	0.00
10yr24hr	33.75	1001121.8	1000780.8	341.1	0.0	0.00
10yr24hr	34.00	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	34.25	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	34.50	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	34.75	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	35.00	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	35.25	1001121.8	1000780.6	341.3	0.0	0.00
10yr24hr	35.50	1001121.8	1000780.6	341.3	0.0	0.00
10yr24hr	35.75	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	36.00	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	36.25	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	36.50	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	36.75	1001121.8	1000780.8	341.0	0.0	0.00
10yr24hr	37.00	1001121.8	1000780.8	341.1	0.0	0.00
10yr24hr	37.25	1001121.8	1000780.8	341.1	0.0	0.00
10yr24hr	37.50	1001121.8	1000780.8	341.1	0.0	0.00
10yr24hr	37.75	1001121.8	1000780.7	341.1	0.0	0.00
10yr24hr	38.00	1001121.8	1000780.7	341.1	0.0	0.00
10yr24hr	38.25	1001121.8	1000780.7	341.1	0.0	0.00
10yr24hr	38.50	1001121.8	1000780.7	341.1	0.0	0.00
10yr24hr	38.75	1001121.8	1000780.7	341.2	0.0	0.00
10yr24hr	39.00	1001121.8	1000780.6	341.2	0.0	0.00
10yr24hr	39.25	1001121.8	1000780.3	341.5	0.0	0.00
10yr24hr	39.50	1001121.8	1000780.3	341.5	0.0	0.00
10yr24hr	39.75	1001121.8	1000780.5	341.3	0.0	0.00
10yr24hr	40.00	1001121.8	1000780.5	341.3	0.0	0.00
10yr24hr	40.25	1001121.8	1000780.5	341.3	0.0	0.00
10yr24hr	40.50	1001121.8	1000780.5	341.4	0.0	0.00
10yr24hr	40.75	1001121.8	1000780.4	341.4	0.0	0.00
10yr24hr	41.00	1001121.8	1000780.4	341.4	0.0	0.00
10yr24hr	41.25	1001121.8	1000780.4	341.4	0.0	0.00
10yr24hr	41.50	1001121.8	1000780.4	341.5	0.0	0.00
10yr24hr	41.75	1001121.8	1000780.3	341.5	0.0	0.00
10yr24hr	42.00	1001121.8	1000780.3	341.5	0.0	0.00
10yr24hr	42.25	1001121.8	1000780.3	341.6	0.0	0.00
10yr24hr	42.50	1001121.8	1000780.2	341.6	0.0	0.00
10yr24hr	42.75	1001121.8	1000780.2	341.6	0.0	0.00
10yr24hr	43.00	1001121.8	1000780.2	341.7	0.0	0.00
10yr24hr	43.25	1001121.8	1000780.1	341.7	0.0	0.00
10yr24hr	43.50	1001121.8	1000779.8	342.0	0.0	0.00
10yr24hr	43.75	1001121.8	1000780.0	341.8	0.0	0.00
10yr24hr	44.00	1001121.8	1000780.0	341.8	0.0	0.00
10yr24hr	44.25	1001121.8	1000780.0	341.9	0.0	0.00
10yr24hr	44.50	1001121.8	1000779.9	341.9	0.0	0.00
10yr24hr	44.75	1001121.8	1000779.9	341.9	0.0	0.00
10yr24hr	45.00	1001121.8	1000779.8	342.0	0.0	0.00
10yr24hr	45.25	1001121.8	1000779.8	342.0	0.0	0.00
10yr24hr	45.50	1001121.8	1000779.8	342.1	0.0	0.00
10yr24hr	45.75	1001121.8	1000779.7	342.1	0.0	0.00
10yr24hr	46.00	1001121.8	1000779.7	342.1	0.0	0.00
10yr24hr	46.25	1001121.8	1000779.7	342.2	0.0	0.00
10yr24hr	46.50	1001121.8	1000779.6	342.2	0.0	0.00

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DRAINAGE SYSTEM 16B
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	46.75	1001121.8	1000779.6	342.3	0.0	0.00
10yr24hr	47.00	1001121.8	1000779.5	342.3	0.0	0.00
10yr24hr	47.25	1001121.8	1000779.5	342.3	0.0	0.00
10yr24hr	47.50	1001121.8	1000779.2	342.6	0.0	0.00
10yr24hr	47.75	1001121.8	1000779.1	342.7	0.0	0.00
10yr24hr	48.00	1001121.8	1000779.3	342.5	0.0	0.00
25yr72hr	0.00	0.0	0.0	0.0	0.0	0.00
25yr72hr	0.25	22.1	25.5	-3.4	0.0	-0.00
25yr72hr	0.50	79.7	79.7	-0.0	0.0	-0.00
25yr72hr	0.75	160.9	158.3	2.6	0.0	0.00
25yr72hr	1.00	259.2	255.1	4.1	-0.0	-0.00
25yr72hr	1.25	368.0	364.4	3.6	0.0	0.00
25yr72hr	1.50	486.4	484.4	2.0	0.0	0.00
25yr72hr	1.75	616.3	616.9	-0.6	0.0	-0.00
25yr72hr	2.00	757.8	761.5	-3.7	0.0	-0.00
25yr72hr	2.25	909.9	911.0	-1.1	0.0	-0.00
25yr72hr	2.50	1071.3	1070.1	1.2	0.0	0.00
25yr72hr	2.75	1240.9	1236.3	4.5	0.0	0.00
25yr72hr	3.00	1417.7	1405.2	12.5	0.0	0.00
25yr72hr	3.25	1600.7	1580.4	20.3	0.0	0.00
25yr72hr	3.50	1789.4	1761.8	27.6	0.0	0.00
25yr72hr	3.75	1983.1	1953.1	30.1	0.0	0.00
25yr72hr	4.00	2181.6	2147.2	34.4	0.0	0.00
25yr72hr	4.25	2384.0	2344.8	39.2	0.0	0.00
25yr72hr	4.50	2590.3	2546.8	43.4	0.0	0.00
25yr72hr	4.75	2800.2	2751.3	48.9	0.0	0.00
25yr72hr	5.00	3014.0	2964.0	50.0	0.0	0.00
25yr72hr	5.25	3231.3	3179.2	52.1	0.0	0.00
25yr72hr	5.50	3452.1	3397.3	54.8	0.0	0.00
25yr72hr	5.75	3676.5	3618.3	58.2	0.0	0.00
25yr72hr	6.00	3904.6	3842.4	62.2	0.0	0.00
25yr72hr	6.25	4136.9	4070.7	66.2	0.0	0.00
25yr72hr	6.50	4373.3	4303.6	69.7	0.0	0.00
25yr72hr	6.75	4613.9	4541.4	72.5	0.0	0.00
25yr72hr	7.00	4858.2	4783.6	74.7	0.0	0.00
25yr72hr	7.25	5106.4	5029.8	76.6	0.0	0.00
25yr72hr	7.50	5358.3	5279.9	78.5	0.0	0.00
25yr72hr	7.75	5614.3	5533.6	80.7	0.0	0.00
25yr72hr	8.00	5874.0	5790.7	83.3	0.0	0.00
25yr72hr	8.25	6137.7	6051.0	86.7	0.0	0.00
25yr72hr	8.50	6406.0	6314.9	91.1	0.0	0.00
25yr72hr	8.75	6680.1	6583.1	96.9	0.0	0.00
25yr72hr	9.00	6960.7	6860.0	100.6	0.0	0.00
25yr72hr	9.25	7248.2	7146.0	102.2	0.0	0.00
25yr72hr	9.50	7542.8	7438.8	104.0	0.0	0.00
25yr72hr	9.75	7844.2	7738.3	105.9	0.0	0.00
25yr72hr	10.00	8153.8	8045.1	108.7	0.0	0.00
25yr72hr	10.25	8473.7	8360.1	113.5	0.0	0.00
25yr72hr	10.50	8805.6	8684.5	121.1	0.0	0.00
25yr72hr	10.75	9149.9	9018.4	131.5	0.0	0.00
25yr72hr	11.00	9506.6	9362.2	144.4	0.0	0.00
25yr72hr	11.25	9875.8	9717.4	158.3	0.0	0.00
25yr72hr	11.50	10257.5	10086.7	170.8	0.0	0.00
25yr72hr	11.75	10651.3	10472.6	178.7	0.0	0.00
25yr72hr	12.00	11057.7	10872.2	185.5	0.0	0.00
25yr72hr	12.25	11477.2	11284.7	192.4	0.0	0.00
25yr72hr	12.50	11910.2	11710.5	199.7	0.0	0.00
25yr72hr	12.75	12356.3	12149.5	206.8	0.0	0.00
25yr72hr	13.00	12815.5	12601.7	213.8	0.0	0.00
25yr72hr	13.25	13287.9	13067.5	220.4	0.0	0.00
25yr72hr	13.50	13772.6	13546.1	226.6	0.0	0.00
25yr72hr	13.75	14270.0	14037.1	232.9	0.0	0.00
25yr72hr	14.00	14779.7	14540.5	239.2	0.0	0.00
25yr72hr	14.25	15301.7	15056.5	245.3	0.0	0.00
25yr72hr	14.50	15835.5	15584.1	251.3	0.0	0.00
25yr72hr	14.75	16381.3	16123.8	257.5	0.0	0.00
25yr72hr	15.00	16939.5	16675.4	264.0	0.0	0.00
25yr72hr	15.25	17510.9	17239.7	271.2	0.0	0.00
25yr72hr	15.50	18095.5	17816.9	278.6	0.0	0.00
25yr72hr	15.75	18694.1	18407.8	286.2	0.0	0.00
25yr72hr	16.00	19306.8	19012.9	293.9	0.0	0.00
25yr72hr	16.25	19934.1	19632.5	301.6	0.0	0.00
25yr72hr	16.50	20575.1	20265.7	309.4	0.0	0.00
25yr72hr	16.75	21229.9	20913.2	316.8	0.0	0.00

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DRAINAGE SYSTEM 16B
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	17.00	21898.5	21574.3	324.2	0.0	0.00
25yr72hr	17.25	22581.1	22249.7	331.4	0.0	0.00
25yr72hr	17.50	23276.9	22938.6	338.3	0.0	0.00
25yr72hr	17.75	23986.5	23640.9	345.7	0.0	0.00
25yr72hr	18.00	24710.2	24357.1	353.1	0.0	0.00
25yr72hr	18.25	25446.9	25086.4	360.4	0.0	0.00
25yr72hr	18.50	26196.8	25829.1	367.8	0.0	0.00
25yr72hr	18.75	26960.0	26584.9	375.1	0.0	0.00
25yr72hr	19.00	27736.6	27354.3	382.3	0.0	0.00
25yr72hr	19.25	28525.7	28136.1	389.6	0.0	0.00
25yr72hr	19.50	29328.1	28930.7	397.4	0.0	0.00
25yr72hr	19.75	30144.0	29738.2	405.8	0.0	0.00
25yr72hr	20.00	30973.9	30559.0	414.9	0.0	0.00
25yr72hr	20.25	31816.9	31392.2	424.7	0.0	0.00
25yr72hr	20.50	32673.2	32238.2	435.0	0.0	0.00
25yr72hr	20.75	33542.7	33096.7	446.0	0.0	0.00
25yr72hr	21.00	34425.8	33968.3	457.6	-0.0	-0.00
25yr72hr	21.25	35321.4	34851.3	470.1	-0.0	-0.00
25yr72hr	21.50	36229.6	35747.0	482.6	-0.0	-0.00
25yr72hr	21.75	37151.2	36655.1	496.1	-0.0	-0.00
25yr72hr	22.00	38085.1	37574.8	510.2	-0.0	-0.00
25yr72hr	22.25	39031.5	38506.6	525.0	-0.0	-0.00
25yr72hr	22.50	39990.5	39450.2	540.3	-0.0	-0.00
25yr72hr	22.75	40962.4	40406.1	556.2	-0.0	-0.00
25yr72hr	23.00	41945.9	41373.1	572.8	-0.0	-0.00
25yr72hr	23.25	42941.5	42351.6	589.9	-0.0	-0.00
25yr72hr	23.50	43949.1	43341.4	607.6	-0.0	-0.00
25yr72hr	23.75	44969.0	44343.1	625.9	-0.0	-0.00
25yr72hr	24.00	46000.4	45355.4	645.0	-0.0	-0.00
25yr72hr	24.25	47188.0	46453.3	734.8	-0.0	-0.00
25yr72hr	24.50	48598.0	47749.7	848.3	-0.0	-0.00
25yr72hr	24.75	50118.3	49173.6	944.6	-0.0	-0.00
25yr72hr	25.00	51692.9	50670.7	1022.3	-0.0	-0.00
25yr72hr	25.25	53297.0	52210.7	1086.2	-0.0	-0.00
25yr72hr	25.50	54924.6	53782.3	1142.3	-0.0	-0.00
25yr72hr	25.75	56573.3	55379.2	1194.1	-0.0	-0.00
25yr72hr	26.00	58244.4	56999.8	1244.6	-0.0	-0.00
25yr72hr	26.25	59937.1	58642.9	1294.3	-0.0	-0.00
25yr72hr	26.50	61652.3	60312.9	1339.3	-0.0	-0.00
25yr72hr	26.75	63387.5	62020.0	1367.6	-0.0	-0.00
25yr72hr	27.00	65143.6	63754.5	1389.1	-0.0	-0.00
25yr72hr	27.25	66920.1	65511.1	1409.0	-0.0	-0.00
25yr72hr	27.50	68717.8	67289.5	1428.3	-0.0	-0.00
25yr72hr	27.75	70534.4	69087.0	1447.4	-0.0	-0.00
25yr72hr	28.00	72370.5	70904.3	1466.2	-0.0	-0.00
25yr72hr	28.25	74226.0	72741.0	1485.0	-0.0	-0.00
25yr72hr	28.50	76101.6	74598.1	1503.5	-0.0	-0.00
25yr72hr	28.75	77995.0	76472.7	1522.2	-0.0	-0.00
25yr72hr	29.00	79906.8	78366.1	1540.7	-0.0	-0.00
25yr72hr	29.25	81836.9	80277.4	1559.5	-0.0	-0.00
25yr72hr	29.50	83786.0	82207.8	1578.2	-0.0	-0.00
25yr72hr	29.75	85751.6	84155.1	1596.5	-0.0	-0.00
25yr72hr	30.00	87734.9	86119.0	1615.9	-0.0	-0.00
25yr72hr	30.25	89736.6	88101.6	1635.1	-0.0	-0.00
25yr72hr	30.50	91754.3	90099.4	1654.9	-0.0	-0.00
25yr72hr	30.75	93789.0	92115.3	1673.7	-0.0	-0.00
25yr72hr	31.00	95839.5	94148.6	1690.9	-0.0	-0.00
25yr72hr	31.25	97907.1	96198.1	1708.9	-0.0	-0.00
25yr72hr	31.50	99990.9	98254.9	1736.0	-0.0	-0.00
25yr72hr	31.75	102091.4	100337.4	1753.9	-0.0	-0.00
25yr72hr	32.00	104207.2	102434.7	1772.5	-0.0	-0.00
25yr72hr	32.25	106337.5	104540.1	1797.4	-0.0	-0.00
25yr72hr	32.50	108483.7	106680.8	1802.9	-0.0	-0.00
25yr72hr	32.75	110645.4	108813.7	1831.7	-0.0	-0.00
25yr72hr	33.00	112821.3	110974.4	1847.0	-0.0	-0.00
25yr72hr	33.25	115011.6	113139.7	1871.9	-0.0	-0.00
25yr72hr	33.50	117217.5	115319.6	1897.9	-0.0	-0.00
25yr72hr	33.75	119436.6	117511.1	1925.5	-0.0	-0.00
25yr72hr	34.00	121671.2	119728.5	1942.7	-0.0	-0.00
25yr72hr	34.25	123918.4	121955.2	1963.2	-0.0	-0.00
25yr72hr	34.50	126181.3	124193.0	1988.2	-0.0	-0.00
25yr72hr	34.75	128455.6	126442.5	2013.0	-0.0	-0.00
25yr72hr	35.00	130744.4	128722.8	2021.6	-0.0	-0.00
25yr72hr	35.25	133046.9	130988.8	2058.1	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	35.50	135362.2	133280.8	2081.4	-0.0	-0.00
25yr72hr	35.75	137690.0	135595.1	2094.9	-0.0	-0.00
25yr72hr	36.00	140031.6	137917.0	2114.6	-0.0	-0.00
25yr72hr	36.25	142392.7	140248.9	2143.8	-0.0	-0.00
25yr72hr	36.50	144776.3	142591.8	2184.6	-0.0	-0.00
25yr72hr	36.75	147177.8	144965.3	2212.5	-0.0	-0.00
25yr72hr	37.00	149593.0	147354.0	2239.0	-0.0	-0.00
25yr72hr	37.25	152021.1	149752.4	2268.8	-0.0	-0.00
25yr72hr	37.50	154460.8	152165.9	2294.9	-0.0	-0.00
25yr72hr	37.75	156912.6	154600.2	2312.5	-0.0	-0.00
25yr72hr	38.00	159375.9	157023.7	2352.2	-0.0	-0.00
25yr72hr	38.25	161851.3	159468.4	2382.9	-0.0	-0.00
25yr72hr	38.50	164338.4	161936.0	2402.4	-0.0	-0.00
25yr72hr	38.75	166837.5	164400.2	2437.3	-0.0	-0.00
25yr72hr	39.00	169347.1	166883.6	2463.6	-0.0	-0.00
25yr72hr	39.25	171869.4	169386.1	2483.3	-0.0	-0.00
25yr72hr	39.50	174401.6	171887.3	2514.3	-0.0	-0.00
25yr72hr	39.75	176944.1	174414.7	2529.4	-0.0	-0.00
25yr72hr	40.00	179499.4	176941.6	2557.7	-0.0	-0.00
25yr72hr	40.25	182063.5	179471.6	2592.0	-0.0	-0.00
25yr72hr	40.50	184637.4	182021.8	2615.6	-0.0	-0.00
25yr72hr	40.75	187223.5	184574.6	2649.0	-0.0	-0.00
25yr72hr	41.00	189818.7	187148.0	2670.7	-0.0	-0.00
25yr72hr	41.25	192425.4	189726.0	2699.4	-0.0	-0.00
25yr72hr	41.50	195042.2	192321.0	2721.2	-0.0	-0.00
25yr72hr	41.75	197668.3	194920.7	2747.6	-0.0	-0.00
25yr72hr	42.00	200304.6	197533.6	2771.0	-0.0	-0.00
25yr72hr	42.25	202950.4	200142.7	2807.7	-0.0	-0.00
25yr72hr	42.50	205605.4	202775.3	2830.2	-0.0	-0.00
25yr72hr	42.75	208271.3	205415.4	2855.9	-0.0	-0.00
25yr72hr	43.00	210945.1	208052.2	2892.9	-0.0	-0.00
25yr72hr	43.25	213629.2	210724.6	2904.6	-0.0	-0.00
25yr72hr	43.50	216321.1	213378.2	2942.9	-0.0	-0.00
25yr72hr	43.75	219023.9	216052.5	2971.4	-0.0	-0.00
25yr72hr	44.00	221735.8	218747.0	2988.8	-0.0	-0.00
25yr72hr	44.25	224455.8	221435.2	3020.6	-0.0	-0.00
25yr72hr	44.50	227183.6	224137.7	3045.9	-0.0	-0.00
25yr72hr	44.75	229921.3	226839.2	3082.0	-0.0	-0.00
25yr72hr	45.00	232668.1	229560.6	3107.6	-0.0	-0.00
25yr72hr	45.25	235424.2	232295.8	3128.4	-0.0	-0.00
25yr72hr	45.50	238186.2	235019.2	3167.1	-0.0	-0.00
25yr72hr	45.75	240959.1	237773.0	3186.1	-0.0	-0.00
25yr72hr	46.00	243739.0	240514.1	3224.9	-0.0	-0.00
25yr72hr	46.25	246526.5	243273.5	3253.1	-0.0	-0.00
25yr72hr	46.50	249324.5	246048.9	3275.6	-0.0	-0.00
25yr72hr	46.75	252128.4	248820.5	3307.9	-0.0	-0.00
25yr72hr	47.00	254941.0	251605.3	3335.7	-0.0	-0.00
25yr72hr	47.25	257761.0	254397.1	3363.9	-0.0	-0.00
25yr72hr	47.50	260590.5	257205.8	3384.6	-0.0	-0.00
25yr72hr	47.75	263425.2	260009.3	3416.0	-0.0	-0.00
25yr72hr	48.00	266269.5	262828.8	3440.8	-0.0	-0.00
25yr72hr	48.25	269208.8	265684.8	3524.0	-0.0	-0.00
25yr72hr	48.33	270230.6	266668.0	3562.6	-0.0	-0.00
25yr72hr	48.42	271264.5	267668.3	3596.2	-0.0	-0.00
25yr72hr	48.50	272306.0	268666.9	3639.1	0.0	0.00
25yr72hr	48.58	273354.7	269672.5	3682.2	0.0	0.00
25yr72hr	48.67	274408.5	270692.4	3716.1	0.0	0.00
25yr72hr	48.75	275468.4	271715.7	3752.7	0.0	0.00
25yr72hr	48.83	276529.7	272732.1	3797.6	-0.0	-0.00
25yr72hr	48.92	277594.3	273759.6	3834.7	0.0	0.00
25yr72hr	49.00	278658.9	274789.6	3869.2	0.0	0.00
25yr72hr	49.08	279728.0	275817.1	3910.9	-0.0	-0.00
25yr72hr	49.17	280801.1	276858.2	3942.9	-0.0	-0.00
25yr72hr	49.25	281880.4	277891.6	3988.8	0.0	0.00
25yr72hr	49.33	282965.3	278935.8	4029.5	-0.0	-0.00
25yr72hr	49.42	284053.7	279986.9	4066.8	-0.0	-0.00
25yr72hr	49.50	285143.7	281038.9	4104.8	-0.0	-0.00
25yr72hr	49.58	286236.8	282102.8	4134.1	-0.0	-0.00
25yr72hr	49.67	287331.5	283157.5	4174.0	-0.0	-0.00
25yr72hr	49.75	288428.4	284213.3	4215.1	-0.0	-0.00
25yr72hr	49.83	289526.0	285276.3	4249.7	-0.0	-0.00
25yr72hr	49.92	290625.1	286336.3	4288.8	-0.0	-0.00
25yr72hr	50.00	291725.9	287401.2	4324.6	-0.0	-0.00
25yr72hr	50.08	292842.2	288469.9	4372.3	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	50.17	294001.6	289557.8	4443.9	0.0	0.00
25yr72hr	50.25	295209.6	290676.6	4533.0	0.0	0.00
25yr72hr	50.33	296446.8	291819.1	4627.7	0.0	0.00
25yr72hr	50.42	297704.6	292980.6	4724.0	0.0	0.00
25yr72hr	50.50	298977.7	294157.4	4820.3	-0.0	-0.00
25yr72hr	50.58	300262.7	295346.5	4916.2	-0.0	-0.00
25yr72hr	50.67	301560.1	296548.3	5011.8	-0.0	-0.00
25yr72hr	50.75	302862.2	297756.1	5106.1	-0.0	-0.00
25yr72hr	50.83	304170.9	298971.9	5198.9	-0.0	-0.00
25yr72hr	50.92	305482.7	300192.7	5290.0	-0.0	-0.00
25yr72hr	51.00	306797.1	301418.0	5379.1	-0.0	-0.00
25yr72hr	51.08	308122.1	302649.1	5473.0	-0.0	-0.00
25yr72hr	51.17	309473.6	303893.6	5580.0	-0.0	-0.00
25yr72hr	51.25	310853.7	305157.0	5696.8	-0.0	-0.00
25yr72hr	51.33	312253.4	306436.8	5816.6	-0.0	-0.00
25yr72hr	51.42	313666.6	307729.6	5937.0	-0.0	-0.00
25yr72hr	51.50	315089.7	309032.7	6057.0	-0.0	-0.00
25yr72hr	51.58	316520.7	310344.4	6176.3	-0.0	-0.00
25yr72hr	51.67	317957.1	311662.5	6294.6	-0.0	-0.00
25yr72hr	51.75	319400.4	312988.5	6411.9	-0.0	-0.00
25yr72hr	51.83	320847.7	314319.9	6527.8	-0.0	-0.00
25yr72hr	51.92	322295.5	315653.7	6641.8	-0.0	-0.00
25yr72hr	52.00	323748.1	316993.5	6754.5	-0.0	-0.00
25yr72hr	52.08	325234.5	318345.1	6889.4	-0.0	-0.00
25yr72hr	52.17	326814.9	319737.0	7077.9	-0.0	-0.00
25yr72hr	52.25	328494.5	321187.9	7306.6	-0.0	-0.00
25yr72hr	52.33	330246.2	322694.6	7551.6	-0.0	-0.00
25yr72hr	52.42	332043.3	324240.3	7803.0	0.0	0.00
25yr72hr	52.50	333873.7	325816.6	8057.1	-0.0	-0.00
25yr72hr	52.58	335729.9	327417.4	8312.5	-0.0	-0.00
25yr72hr	52.67	337607.0	329038.7	8568.3	-0.0	-0.00
25yr72hr	52.75	339500.2	330677.3	8822.9	-0.0	-0.00
25yr72hr	52.83	341404.6	332329.8	9074.8	-0.0	-0.00
25yr72hr	52.92	343316.7	333993.4	9323.3	-0.0	-0.00
25yr72hr	53.00	345233.9	335665.9	9568.0	0.0	0.00
25yr72hr	53.08	347186.3	337353.3	9833.0	-0.0	-0.00
25yr72hr	53.17	349234.3	339083.0	10151.3	-0.0	-0.00
25yr72hr	53.25	351387.1	340876.1	10511.0	-0.0	-0.00
25yr72hr	53.33	353610.7	342722.8	10887.9	-0.0	-0.00
25yr72hr	53.42	355882.9	344609.5	11273.3	-0.0	-0.00
25yr72hr	53.50	358189.9	346526.3	11663.6	-0.0	-0.00
25yr72hr	53.58	360524.2	348467.0	12057.2	-0.0	-0.00
25yr72hr	53.67	362880.6	350427.6	12453.0	-0.0	-0.00
25yr72hr	53.75	365254.3	352405.1	12849.2	-0.0	-0.00
25yr72hr	53.83	367640.4	354396.4	13244.0	-0.0	-0.00
25yr72hr	53.92	370035.2	356398.7	13636.5	-0.0	-0.00
25yr72hr	54.00	372436.2	358410.1	14026.2	-0.0	-0.00
25yr72hr	54.08	374874.4	360436.5	14437.9	-0.0	-0.00
25yr72hr	54.17	377413.5	362506.1	14907.4	-0.0	-0.00
25yr72hr	54.25	380063.9	364641.7	15422.3	-0.0	-0.00
25yr72hr	54.33	382790.0	366833.4	15956.6	-0.0	-0.00
25yr72hr	54.42	385568.3	369066.9	16501.3	-0.0	-0.00
25yr72hr	54.50	388384.2	371331.7	17052.5	-0.0	-0.00
25yr72hr	54.58	391229.6	373621.2	17608.4	-0.0	-0.00
25yr72hr	54.67	394099.2	375931.6	18167.7	-0.0	-0.00
25yr72hr	54.75	396988.0	378259.6	18728.4	-0.0	-0.00
25yr72hr	54.83	399890.6	380602.2	19288.5	-0.0	-0.00
25yr72hr	54.92	402803.4	382956.6	19846.8	-0.0	-0.00
25yr72hr	55.00	405723.4	385320.8	20402.6	-0.0	-0.00
25yr72hr	55.08	408681.7	387700.3	20981.4	-0.0	-0.00
25yr72hr	55.17	411743.1	390122.9	21620.2	-0.0	-0.00
25yr72hr	55.25	414919.1	392612.6	22306.5	-0.0	-0.00
25yr72hr	55.33	418173.3	395160.1	23013.1	-0.0	-0.00
25yr72hr	55.42	421481.7	397750.6	23731.1	-0.0	-0.00
25yr72hr	55.50	424830.9	400374.3	24456.6	-0.0	-0.00
25yr72hr	55.58	428208.4	403021.2	25187.2	-0.0	-0.00
25yr72hr	55.67	431615.7	405692.8	25922.9	-0.0	-0.00
25yr72hr	55.75	435034.8	408375.8	26659.1	-0.0	-0.00
25yr72hr	55.83	438474.8	411078.2	27396.5	-0.0	-0.00
25yr72hr	55.92	441928.8	413795.2	28133.6	-0.0	-0.00
25yr72hr	56.00	445388.3	416520.0	28868.3	-0.0	-0.00
25yr72hr	56.02	446078.6	417063.8	29014.8	-0.0	-0.00
25yr72hr	56.03	446776.2	417612.6	29163.6	-0.0	-0.00
25yr72hr	56.05	447473.4	418159.8	29313.7	-0.0	-0.00

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DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	56.07	448171.5	418705.7	29465.7	-0.0	-0.00
25yr72hr	56.08	448880.7	419257.7	29623.0	-0.0	-0.00
25yr72hr	56.10	449595.2	419810.6	29784.6	-0.0	-0.00
25yr72hr	56.12	450316.7	420366.1	29950.6	-0.0	-0.00
25yr72hr	56.13	451039.1	420920.0	30119.1	-0.0	-0.00
25yr72hr	56.15	451777.3	421484.2	30293.1	-0.0	-0.00
25yr72hr	56.17	452510.9	422043.7	30467.2	-0.0	-0.00
25yr72hr	56.18	453256.4	422611.5	30644.9	-0.0	-0.00
25yr72hr	56.20	454007.2	423182.7	30824.5	-0.0	-0.00
25yr72hr	56.22	454767.4	423760.9	31006.6	-0.0	-0.00
25yr72hr	56.23	455522.5	424335.0	31187.4	-0.0	-0.00
25yr72hr	56.25	456286.2	424915.8	31370.4	-0.0	-0.00
25yr72hr	56.27	457053.6	425499.3	31554.3	-0.0	-0.00
25yr72hr	56.28	457829.3	426089.1	31740.2	-0.0	-0.00
25yr72hr	56.30	458600.1	426675.2	31924.9	-0.0	-0.00
25yr72hr	56.32	459378.8	427267.3	32111.5	-0.0	-0.00
25yr72hr	56.33	460160.3	427861.5	32298.7	-0.0	-0.00
25yr72hr	56.35	460942.7	428456.6	32486.1	-0.0	-0.00
25yr72hr	56.37	461722.7	429049.8	32672.9	-0.0	-0.00
25yr72hr	56.38	462513.1	429650.9	32862.2	-0.0	-0.00
25yr72hr	56.40	463298.7	430248.5	33050.2	-0.0	-0.00
25yr72hr	56.42	464096.6	430855.5	33241.1	-0.0	-0.00
25yr72hr	56.43	464888.1	431457.7	33430.4	-0.0	-0.00
25yr72hr	56.45	465683.3	432062.9	33620.5	-0.0	-0.00
25yr72hr	56.47	466474.9	432665.3	33809.6	-0.0	-0.00
25yr72hr	56.48	467274.7	433274.0	34000.7	-0.0	-0.00
25yr72hr	56.50	468079.0	433886.1	34192.9	-0.0	-0.00
25yr72hr	56.52	468880.2	434495.9	34384.3	-0.0	-0.00
25yr72hr	56.53	469676.3	435101.8	34574.4	-0.0	-0.00
25yr72hr	56.55	470482.0	435715.8	34766.3	-0.0	-0.00
25yr72hr	56.57	471285.0	436329.7	34955.3	-0.0	-0.00
25yr72hr	56.58	472099.3	436956.0	35143.3	-0.0	-0.00
25yr72hr	56.60	472904.0	437579.9	35324.1	-0.0	-0.00
25yr72hr	56.62	473716.2	438215.4	35500.8	-0.0	-0.00
25yr72hr	56.63	474523.2	438853.4	35669.8	-0.0	-0.00
25yr72hr	56.65	475338.1	439504.6	35833.5	-0.0	-0.00
25yr72hr	56.67	476145.5	440156.8	35988.7	-0.0	-0.00
25yr72hr	56.68	476962.5	440824.0	36138.5	-0.0	-0.00
25yr72hr	56.70	477772.7	441492.7	36280.0	-0.0	-0.00
25yr72hr	56.72	478589.8	442174.0	36415.8	-0.0	-0.00
25yr72hr	56.73	479409.4	442864.1	36545.3	-0.0	-0.00
25yr72hr	56.75	480223.0	443555.6	36667.4	-0.0	-0.00
25yr72hr	56.77	481044.1	444259.6	36784.5	-0.0	-0.00
25yr72hr	56.78	481859.1	444964.1	36894.9	-0.0	-0.00
25yr72hr	56.80	482681.5	445680.6	37000.9	-0.0	-0.00
25yr72hr	56.82	483497.7	446396.7	37101.1	-0.0	-0.00
25yr72hr	56.83	484320.5	447123.2	37197.2	-0.0	-0.00
25yr72hr	56.85	485136.9	447848.6	37288.3	-0.0	-0.00
25yr72hr	56.87	485961.1	448585.0	37376.2	-0.0	-0.00
25yr72hr	56.88	486788.9	449328.3	37460.6	-0.0	-0.00
25yr72hr	56.90	487606.3	450065.8	37540.5	-0.0	-0.00
25yr72hr	56.92	488430.2	450812.3	37617.9	-0.0	-0.00
25yr72hr	56.93	489252.8	451560.6	37692.2	-0.0	-0.00
25yr72hr	56.95	490074.5	452310.7	37763.8	-0.0	-0.00
25yr72hr	56.97	490895.7	453062.7	37832.9	-0.0	-0.00
25yr72hr	56.98	491722.7	453822.5	37900.2	-0.0	-0.00
25yr72hr	57.00	492543.7	454578.6	37965.1	-0.0	-0.00
25yr72hr	57.02	493368.9	455340.1	38028.9	-0.0	-0.00
25yr72hr	57.03	494194.4	456102.1	38092.4	-0.0	-0.00
25yr72hr	57.05	495030.0	456872.6	38157.4	-0.0	-0.00
25yr72hr	57.07	495864.3	457640.0	38224.3	-0.0	-0.00
25yr72hr	57.08	496708.6	458413.1	38295.4	-0.0	-0.00
25yr72hr	57.10	497561.5	459189.8	38371.7	-0.0	-0.00
25yr72hr	57.12	498418.5	459966.2	38452.4	-0.0	-0.00
25yr72hr	57.13	499285.6	460748.2	38537.4	-0.0	-0.00
25yr72hr	57.15	500160.8	461535.1	38625.7	-0.0	-0.00
25yr72hr	57.17	501047.3	462330.6	38716.8	-0.0	-0.00
25yr72hr	57.18	501941.3	463131.9	38809.4	-0.0	-0.00
25yr72hr	57.20	502837.1	463934.6	38902.5	-0.0	-0.00
25yr72hr	57.22	503745.8	464749.3	38996.5	-0.0	-0.00
25yr72hr	57.23	504664.6	465573.7	39090.8	-0.0	-0.00
25yr72hr	57.25	505576.1	466392.7	39183.4	-0.0	-0.00
25yr72hr	57.27	506502.0	467225.5	39276.4	-0.0	-0.00
25yr72hr	57.28	507427.8	468059.4	39368.3	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	57.30	508364.7	468904.6	39460.2	-0.0	-0.00
25yr72hr	57.32	509291.3	469741.5	39549.8	-0.0	-0.00
25yr72hr	57.33	510227.5	470588.3	39639.2	-0.0	-0.00
25yr72hr	57.35	511166.5	471438.8	39727.7	-0.0	-0.00
25yr72hr	57.37	512109.0	472293.6	39815.4	-0.0	-0.00
25yr72hr	57.38	513057.0	473154.5	39902.5	-0.0	-0.00
25yr72hr	57.40	514006.5	474017.9	39988.6	-0.0	-0.00
25yr72hr	57.42	514962.2	474888.1	40074.1	-0.0	-0.00
25yr72hr	57.43	515922.6	475763.6	40159.0	-0.0	-0.00
25yr72hr	57.45	516874.0	476631.9	40242.1	-0.0	-0.00
25yr72hr	57.47	517839.2	477513.8	40325.4	-0.0	-0.00
25yr72hr	57.48	518795.8	478388.7	40407.1	-0.0	-0.00
25yr72hr	57.50	519765.1	479275.9	40489.2	-0.0	-0.00
25yr72hr	57.52	520731.0	480160.3	40570.7	-0.0	-0.00
25yr72hr	57.53	521704.2	481051.2	40653.0	-0.0	-0.00
25yr72hr	57.55	522666.1	481931.0	40735.1	-0.0	-0.00
25yr72hr	57.57	523643.7	482823.7	40820.0	-0.0	-0.00
25yr72hr	57.58	524633.2	483725.1	40908.2	-0.0	-0.00
25yr72hr	57.60	525622.1	484623.4	40998.7	-0.0	-0.00
25yr72hr	57.62	526611.7	485520.1	41091.6	-0.0	-0.00
25yr72hr	57.63	527622.4	486433.9	41188.4	-0.0	-0.00
25yr72hr	57.65	528622.0	487336.5	41285.5	-0.0	-0.00
25yr72hr	57.67	529636.3	488251.5	41384.8	-0.0	-0.00
25yr72hr	57.68	530658.6	489173.3	41485.3	-0.0	-0.00
25yr72hr	57.70	531685.9	490099.7	41586.2	-0.0	-0.00
25yr72hr	57.72	532711.3	491024.8	41686.5	-0.0	-0.00
25yr72hr	57.73	533745.6	491958.6	41787.1	-0.0	-0.00
25yr72hr	57.75	534784.1	492896.8	41887.3	-0.0	-0.00
25yr72hr	57.77	535829.5	493842.2	41987.3	-0.0	-0.00
25yr72hr	57.78	536864.5	494779.0	42085.4	-0.0	-0.00
25yr72hr	57.80	537910.7	495727.0	42183.7	-0.0	-0.00
25yr72hr	57.82	538963.0	496681.4	42281.6	-0.0	-0.00
25yr72hr	57.83	540007.0	497629.2	42377.8	-0.0	-0.00
25yr72hr	57.85	541065.9	498591.5	42474.4	-0.0	-0.00
25yr72hr	57.87	542115.8	499546.5	42569.3	-0.0	-0.00
25yr72hr	57.88	543176.2	500511.8	42664.3	-0.0	-0.00
25yr72hr	57.90	544242.9	501483.9	42759.0	-0.0	-0.00
25yr72hr	57.92	545301.9	502449.7	42852.1	-0.0	-0.00
25yr72hr	57.93	546366.7	503421.7	42945.0	-0.0	-0.00
25yr72hr	57.95	547430.3	504393.4	43036.9	-0.0	-0.00
25yr72hr	57.97	548504.2	505375.3	43128.9	-0.0	-0.00
25yr72hr	57.98	549569.2	506349.7	43219.5	-0.0	-0.00
25yr72hr	58.00	550636.9	507327.3	43309.6	-0.0	-0.00
25yr72hr	58.02	551700.2	508301.0	43399.2	-0.0	-0.00
25yr72hr	58.03	552785.2	509294.2	43491.0	-0.0	-0.00
25yr72hr	58.05	553859.1	510275.9	43583.2	-0.0	-0.00
25yr72hr	58.07	554934.8	511257.2	43677.5	-0.0	-0.00
25yr72hr	58.08	556029.5	512252.8	43776.8	-0.0	-0.00
25yr72hr	58.10	557120.1	513240.6	43879.5	-0.0	-0.00
25yr72hr	58.12	558230.3	514242.5	43987.9	-0.0	-0.00
25yr72hr	58.13	559332.9	515234.3	44098.6	-0.0	-0.00
25yr72hr	58.15	560455.5	516241.8	44213.7	-0.0	-0.00
25yr72hr	58.17	561585.6	517254.3	44331.3	-0.0	-0.00
25yr72hr	58.18	562709.0	518259.9	44449.1	-0.0	-0.00
25yr72hr	58.20	563858.3	519288.3	44570.1	-0.0	-0.00
25yr72hr	58.22	564998.6	520308.7	44689.9	-0.0	-0.00
25yr72hr	58.23	566144.5	521334.7	44809.8	-0.0	-0.00
25yr72hr	58.25	567295.8	522366.5	44929.2	-0.0	-0.00
25yr72hr	58.27	568460.5	523412.2	45048.3	-0.0	-0.00
25yr72hr	58.28	569613.7	524450.2	45163.5	-0.0	-0.00
25yr72hr	58.30	570779.0	525502.8	45276.2	-0.0	-0.00
25yr72hr	58.32	571956.6	526571.1	45385.5	-0.0	-0.00
25yr72hr	58.33	573121.3	527633.1	45488.2	-0.0	-0.00
25yr72hr	58.35	574294.5	528708.6	45585.8	-0.0	-0.00
25yr72hr	58.37	575472.2	529794.7	45677.5	-0.0	-0.00
25yr72hr	58.38	576652.9	530889.8	45763.1	-0.0	-0.00
25yr72hr	58.40	577828.2	531986.2	45842.0	-0.0	-0.00
25yr72hr	58.42	579025.8	533109.9	45915.9	-0.0	-0.00
25yr72hr	58.43	580198.3	534215.9	45982.4	-0.0	-0.00
25yr72hr	58.45	581390.5	535346.4	46044.2	-0.0	-0.00
25yr72hr	58.47	582582.4	536481.8	46100.6	-0.0	-0.00
25yr72hr	58.48	583782.3	537629.9	46152.4	-0.0	-0.00
25yr72hr	58.50	584976.7	538776.8	46199.9	-0.0	-0.00
25yr72hr	58.52	586173.4	539928.0	46245.3	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	58.53	587374.6	541083.6	46291.0	-0.0	-0.00
25yr72hr	58.55	588583.7	542243.2	46340.5	-0.0	-0.00
25yr72hr	58.57	589819.8	543421.1	46398.8	-0.0	-0.00
25yr72hr	58.58	591067.0	544598.4	46468.6	-0.0	-0.00
25yr72hr	58.60	592339.3	545786.8	46552.5	-0.0	-0.00
25yr72hr	58.62	593628.0	546978.1	46649.8	-0.0	-0.00
25yr72hr	58.63	594947.2	548187.4	46759.7	-0.0	-0.00
25yr72hr	58.65	596299.3	549419.2	46880.1	-0.0	-0.00
25yr72hr	58.67	597661.4	550654.9	47006.5	-0.0	-0.00
25yr72hr	58.68	599050.5	551912.6	47137.9	-0.0	-0.00
25yr72hr	58.70	600453.8	553182.9	47271.0	-0.0	-0.00
25yr72hr	58.72	601879.8	554475.1	47404.6	-0.0	-0.00
25yr72hr	58.73	603299.8	555764.8	47535.0	-0.0	-0.00
25yr72hr	58.75	604753.0	557088.4	47664.6	-0.0	-0.00
25yr72hr	58.77	606213.8	558423.4	47790.4	-0.0	-0.00
25yr72hr	58.78	607689.8	559777.0	47912.7	-0.0	-0.00
25yr72hr	58.80	609174.4	561143.6	48030.8	-0.0	-0.00
25yr72hr	58.82	610653.4	562510.1	48143.2	-0.0	-0.00
25yr72hr	58.83	612160.0	563907.6	48252.4	-0.0	-0.00
25yr72hr	58.85	613667.3	565311.0	48356.3	-0.0	-0.00
25yr72hr	58.87	615196.6	566740.0	48456.5	-0.0	-0.00
25yr72hr	58.88	616727.0	568175.4	48551.6	-0.0	-0.00
25yr72hr	58.90	618258.4	569616.8	48641.6	-0.0	-0.00
25yr72hr	58.92	619803.5	571076.1	48727.4	-0.0	-0.00
25yr72hr	58.93	621358.4	572549.6	48808.8	-0.0	-0.00
25yr72hr	58.95	622895.3	574010.6	48884.7	-0.0	-0.00
25yr72hr	58.97	624466.8	575508.9	48957.9	-0.0	-0.00
25yr72hr	58.98	626028.5	577001.8	49026.7	-0.0	-0.00
25yr72hr	59.00	627592.2	578499.6	49092.6	-0.0	-0.00
25yr72hr	59.02	629183.1	580022.3	49160.8	-0.0	-0.00
25yr72hr	59.03	630780.1	581543.1	49237.0	-0.0	-0.00
25yr72hr	59.05	632390.4	583062.6	49327.8	-0.0	-0.00
25yr72hr	59.07	634039.0	584597.4	49441.7	-0.0	-0.00
25yr72hr	59.08	635751.4	586161.5	49589.9	-0.0	-0.00
25yr72hr	59.10	637526.1	587748.7	49777.4	-0.0	-0.00
25yr72hr	59.12	639319.0	589323.1	49995.8	-0.0	-0.00
25yr72hr	59.13	641201.2	590952.0	50249.2	-0.0	-0.00
25yr72hr	59.15	643096.2	592574.8	50521.4	-0.0	-0.00
25yr72hr	59.17	645068.1	594253.0	50815.1	-0.0	-0.00
25yr72hr	59.18	647103.9	595980.3	51123.5	-0.0	-0.00
25yr72hr	59.20	649145.4	597712.0	51433.4	-0.0	-0.00
25yr72hr	59.22	651234.3	599487.7	51746.6	-0.0	-0.00
25yr72hr	59.23	653347.5	601291.4	52056.0	-0.0	-0.00
25yr72hr	59.25	655488.7	603128.3	52360.4	-0.0	-0.00
25yr72hr	59.27	657673.6	605013.0	52660.5	-0.0	-0.00
25yr72hr	59.28	659931.3	606972.3	52958.9	-0.0	-0.00
25yr72hr	59.30	662129.8	608891.4	53238.4	-0.0	-0.00
25yr72hr	59.32	664395.3	610879.8	53515.5	-0.0	-0.00
25yr72hr	59.33	666642.6	612864.2	53778.4	-0.0	-0.00
25yr72hr	59.35	668969.9	614932.0	54037.9	-0.0	-0.00
25yr72hr	59.37	671259.8	616979.0	54280.8	-0.0	-0.00
25yr72hr	59.38	673600.3	619083.7	54516.6	-0.0	-0.00
25yr72hr	59.40	675962.1	621219.9	54742.2	-0.0	-0.00
25yr72hr	59.42	678317.2	623362.2	54955.0	-0.0	-0.00
25yr72hr	59.43	680723.8	625563.5	55160.3	-0.0	-0.00
25yr72hr	59.45	683105.2	627753.1	55352.1	-0.0	-0.00
25yr72hr	59.47	685490.9	629957.2	55533.7	-0.0	-0.00
25yr72hr	59.48	687874.1	632168.8	55705.3	-0.0	-0.00
25yr72hr	59.50	690326.5	634435.3	55891.3	-0.0	-0.00
25yr72hr	59.52	692872.2	636726.9	56145.3	-0.0	-0.00
25yr72hr	59.53	695519.3	638983.7	56355.6	-0.0	-0.00
25yr72hr	59.55	698566.0	641353.1	56535.1	-0.0	-0.00
25yr72hr	59.57	702076.0	643753.5	56722.4	-0.0	-0.00
25yr72hr	59.58	706262.5	646254.9	56907.6	-0.0	-0.00
25yr72hr	59.60	711247.5	648884.5	57100.9	-0.0	-0.00
25yr72hr	59.62	717138.1	651685.0	57302.4	-0.0	-0.00
25yr72hr	59.63	723909.8	654714.9	57511.5	-0.0	-0.00
25yr72hr	59.65	731523.3	657977.8	57728.1	-0.0	-0.00
25yr72hr	59.67	739931.4	661452.4	57952.4	-0.0	-0.00
25yr72hr	59.68	749055.6	665093.1	58184.5	-0.0	-0.00
25yr72hr	59.70	758845.1	668857.5	58424.2	-0.0	-0.00
25yr72hr	59.72	769349.3	672764.5	58671.5	-0.0	-0.00
25yr72hr	59.73	780189.1	676676.5	58927.4	-0.0	-0.00
25yr72hr	59.75	791743.2	680738.4	59192.6	-0.0	-0.00

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DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	59.77	803651.9	684838.8	118813.1	-0.0	-0.00
25yr72hr	59.78	816024.9	689014.4	127010.5	-0.0	-0.00
25yr72hr	59.80	828838.0	693253.1	135584.9	-0.0	-0.00
25yr72hr	59.82	841980.6	697525.8	144454.8	-0.0	-0.00
25yr72hr	59.83	855448.7	701836.6	153612.1	-0.0	-0.00
25yr72hr	59.85	869335.5	706216.6	163118.8	-0.0	-0.00
25yr72hr	59.87	883509.0	710626.3	172882.8	-0.0	-0.00
25yr72hr	59.88	897976.6	715071.7	182905.0	-0.0	-0.00
25yr72hr	59.90	912715.8	719550.4	193165.4	-0.0	-0.00
25yr72hr	59.92	927708.1	724060.6	203647.5	-0.0	-0.00
25yr72hr	59.93	942937.7	728599.0	214338.6	-0.0	-0.00
25yr72hr	59.95	958390.3	733161.7	225228.6	-0.0	-0.00
25yr72hr	59.97	974055.7	737746.6	236309.1	-0.0	-0.00
25yr72hr	59.98	989926.0	742352.6	247573.4	-0.0	-0.00
25yr72hr	60.00	1005986.0	746978.6	259007.4	-0.0	-0.00
25yr72hr	60.02	1022160.1	751622.7	270537.4	-0.0	-0.00
25yr72hr	60.03	1038322.3	756281.1	282041.1	-0.0	-0.00
25yr72hr	60.05	1054336.5	760951.3	293385.2	-0.0	-0.00
25yr72hr	60.07	1070041.0	765630.0	304411.0	-0.0	-0.00
25yr72hr	60.08	1085215.6	770313.5	314902.1	-0.0	-0.00
25yr72hr	60.10	1099702.8	774997.9	324704.9	-0.0	-0.00
25yr72hr	60.12	1113474.0	779681.1	333792.8	-0.0	-0.00
25yr72hr	60.13	1126536.2	784361.8	342174.4	-0.0	-0.00
25yr72hr	60.15	1138927.1	789039.0	349888.1	-0.0	-0.00
25yr72hr	60.17	1150750.6	793731.8	357018.8	-0.0	-0.00
25yr72hr	60.18	1161961.8	798400.9	363560.9	-0.0	-0.00
25yr72hr	60.20	1172592.6	803036.4	369556.2	-0.0	-0.00
25yr72hr	60.22	1182876.4	807716.0	375160.4	-0.0	-0.00
25yr72hr	60.23	1192733.4	812381.5	380351.9	-0.0	-0.00
25yr72hr	60.25	1202196.6	817032.8	385163.8	-0.0	-0.00
25yr72hr	60.27	1211307.0	821679.4	389627.6	-0.0	-0.00
25yr72hr	60.28	1220088.9	826321.0	393767.9	-0.0	-0.00
25yr72hr	60.30	1228567.8	830957.3	397610.5	-0.0	-0.00
25yr72hr	60.32	1236763.2	835588.2	401175.0	-0.0	-0.00
25yr72hr	60.33	1244694.1	840213.5	404480.6	-0.0	-0.00
25yr72hr	60.35	1252379.5	844833.4	407546.2	-0.0	-0.00
25yr72hr	60.37	1259837.0	849447.7	410389.3	-0.0	-0.00
25yr72hr	60.38	1267081.6	854056.4	413025.2	-0.0	-0.00
25yr72hr	60.40	1274127.3	858659.5	415467.8	-0.0	-0.00
25yr72hr	60.42	1280990.8	863257.1	417733.8	-0.0	-0.00
25yr72hr	60.43	1287686.1	867849.1	419837.0	-0.0	-0.00
25yr72hr	60.45	1294220.0	872435.6	421784.4	-0.0	-0.00
25yr72hr	60.47	1300595.9	877016.4	423579.5	-0.0	-0.00
25yr72hr	60.48	1306816.0	881591.4	425224.6	-0.0	-0.00
25yr72hr	60.50	1312879.8	886160.6	426719.3	-0.0	-0.00
25yr72hr	60.52	1318783.8	890723.6	428060.2	-0.0	-0.00
25yr72hr	60.53	1324522.0	895280.3	429241.7	-0.0	-0.00
25yr72hr	60.55	1330083.9	899830.2	430253.7	-0.0	-0.00
25yr72hr	60.57	1335453.0	904373.0	431080.0	-0.0	-0.00
25yr72hr	60.58	1340612.7	908907.5	431705.1	-0.0	-0.00
25yr72hr	60.60	1345530.8	913414.3	432116.5	-0.0	-0.00
25yr72hr	60.62	1350245.7	917930.4	432315.3	-0.0	-0.00
25yr72hr	60.63	1354735.2	922427.5	432307.7	-0.0	-0.00
25yr72hr	60.65	1359037.7	926933.4	432104.3	0.0	0.00
25yr72hr	60.67	1363137.5	931419.7	431717.8	-0.0	-0.00
25yr72hr	60.68	1367066.9	935905.1	431161.8	0.0	0.00
25yr72hr	60.70	1370825.5	940370.8	430454.6	0.0	0.00
25yr72hr	60.72	1374420.3	944807.6	429612.7	0.0	0.00
25yr72hr	60.73	1377908.0	949270.9	428637.1	0.0	0.00
25yr72hr	60.75	1381243.5	953686.7	427556.8	0.0	0.00
25yr72hr	60.77	1384488.2	958119.5	426368.7	0.0	0.00
25yr72hr	60.78	1387637.0	962550.7	425086.3	0.0	0.00
25yr72hr	60.80	1390666.8	966934.3	423732.6	0.0	0.00
25yr72hr	60.82	1393624.8	971325.4	422299.4	0.0	0.00
25yr72hr	60.83	1396522.9	975733.0	420789.8	0.0	0.00
25yr72hr	60.85	1399325.1	980093.4	419231.8	-0.0	-0.00
25yr72hr	60.87	1402061.1	984442.9	417618.2	-0.0	-0.00
25yr72hr	60.88	1404742.3	988790.8	415951.6	-0.0	-0.00
25yr72hr	60.90	1407369.4	993128.1	414241.3	-0.0	-0.00
25yr72hr	60.92	1409942.5	997446.1	412496.4	-0.0	-0.00
25yr72hr	60.93	1412481.0	1001769.5	410711.5	-0.0	-0.00
25yr72hr	60.95	1414970.4	1006064.6	408905.8	-0.0	-0.00
25yr72hr	60.97	1417439.0	1010371.6	407067.4	-0.0	-0.00
25yr72hr	60.98	1419862.2	1014638.8	405223.4	-0.0	-0.00

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DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	61.00	1422282.0	1018930.8	403351.2	-0.0	-0.00
25yr72hr	61.02	1424669.9	1023195.0	401474.9	-0.0	-0.00
25yr72hr	61.03	1427018.8	1027423.1	399595.7	-0.0	-0.00
25yr72hr	61.05	1429349.8	1031658.5	397691.2	-0.0	-0.00
25yr72hr	61.07	1431657.3	1035900.6	395756.7	-0.0	-0.00
25yr72hr	61.08	1433906.5	1040098.6	393807.9	-0.0	-0.00
25yr72hr	61.10	1436102.9	1044271.3	391831.6	-0.0	-0.00
25yr72hr	61.12	1438243.7	1048414.7	389829.0	-0.0	-0.00
25yr72hr	61.13	1440349.9	1052571.1	387778.9	-0.0	-0.00
25yr72hr	61.15	1442397.0	1056686.5	385710.5	-0.0	-0.00
25yr72hr	61.17	1444430.4	1060846.1	383584.3	-0.0	-0.00
25yr72hr	61.18	1446390.6	1064921.9	381468.7	-0.0	-0.00
25yr72hr	61.20	1448346.9	1069051.7	379295.2	-0.0	-0.00
25yr72hr	61.22	1450235.9	1073094.6	377141.3	-0.0	-0.00
25yr72hr	61.23	1452129.9	1077198.2	374931.7	-0.0	-0.00
25yr72hr	61.25	1453966.0	1081222.1	372743.9	-0.0	-0.00
25yr72hr	61.27	1455797.1	1085278.0	370519.2	-0.0	-0.00
25yr72hr	61.28	1457599.3	1089309.5	368289.9	-0.0	-0.00
25yr72hr	61.30	1459380.5	1093329.8	366050.6	-0.0	-0.00
25yr72hr	61.32	1461147.3	1097351.9	363795.4	-0.0	-0.00
25yr72hr	61.33	1462894.1	1101360.4	361533.7	-0.0	-0.00
25yr72hr	61.35	1464634.1	1105383.3	359250.8	-0.0	-0.00
25yr72hr	61.37	1466373.7	1109433.2	356940.4	-0.0	-0.00
25yr72hr	61.38	1468052.3	1113366.6	354685.8	-0.0	-0.00
25yr72hr	61.40	1469760.0	1117391.7	352368.3	-0.0	-0.00
25yr72hr	61.42	1471423.4	1121333.5	350090.0	-0.0	-0.00
25yr72hr	61.43	1473110.3	1125349.8	347760.5	-0.0	-0.00
25yr72hr	61.45	1474755.1	1129283.0	345472.2	-0.0	-0.00
25yr72hr	61.47	1476416.2	1133271.0	343145.3	-0.0	-0.00
25yr72hr	61.48	1478048.6	1137204.0	340844.6	-0.0	-0.00
25yr72hr	61.50	1479702.4	1141201.5	338500.9	-0.0	-0.00
25yr72hr	61.52	1481329.0	1145147.0	336182.0	-0.0	-0.00
25yr72hr	61.53	1482947.5	1149089.5	333858.0	-0.0	-0.00
25yr72hr	61.55	1484559.5	1153037.7	331521.8	-0.0	-0.00
25yr72hr	61.57	1486148.7	1156958.7	329190.1	-0.0	-0.00
25yr72hr	61.58	1487746.0	1160935.8	326810.2	-0.0	-0.00
25yr72hr	61.60	1489308.6	1164868.9	324439.7	-0.0	-0.00
25yr72hr	61.62	1490838.5	1168763.8	322074.8	-0.0	-0.00
25yr72hr	61.63	1492370.3	1172707.6	319662.6	-0.0	-0.00
25yr72hr	61.65	1493875.5	1176625.4	317250.1	-0.0	-0.00
25yr72hr	61.67	1495379.6	1180580.9	314798.7	-0.0	-0.00
25yr72hr	61.68	1496824.0	1184416.5	312407.5	-0.0	-0.00
25yr72hr	61.70	1498291.1	1188346.5	309944.7	-0.0	-0.00
25yr72hr	61.72	1499734.6	1192244.5	307490.2	-0.0	-0.00
25yr72hr	61.73	1501169.6	1196147.8	305021.8	-0.0	-0.00
25yr72hr	61.75	1502601.0	1200067.1	302533.9	-0.0	-0.00
25yr72hr	61.77	1504016.8	1203966.8	300050.0	-0.0	-0.00
25yr72hr	61.78	1505397.4	1207789.8	297607.6	-0.0	-0.00
25yr72hr	61.80	1506803.4	1211702.0	295101.3	-0.0	-0.00
25yr72hr	61.82	1508187.5	1215570.8	292616.7	-0.0	-0.00
25yr72hr	61.83	1509562.1	1219428.2	290133.9	-0.0	-0.00
25yr72hr	61.85	1510936.6	1223299.6	287637.0	-0.0	-0.00
25yr72hr	61.87	1512301.9	1227158.4	285143.5	-0.0	-0.00
25yr72hr	61.88	1513663.5	1231018.5	282645.1	-0.0	-0.00
25yr72hr	61.90	1515026.4	1234892.7	280133.7	-0.0	-0.00
25yr72hr	61.92	1516381.0	1238752.5	277628.5	-0.0	-0.00
25yr72hr	61.93	1517719.4	1242574.6	275144.9	-0.0	-0.00
25yr72hr	61.95	1519076.7	1246457.5	272619.2	-0.0	-0.00
25yr72hr	61.97	1520411.4	1250282.3	270129.1	-0.0	-0.00
25yr72hr	61.98	1521741.3	1254098.6	267642.7	-0.0	-0.00
25yr72hr	62.00	1523084.2	1257957.6	265126.6	-0.0	-0.00
25yr72hr	62.02	1524421.6	1261809.8	262611.9	-0.0	-0.00
25yr72hr	62.03	1525739.8	1265622.8	260117.0	-0.0	-0.00
25yr72hr	62.05	1527072.1	1269502.1	257570.1	-0.0	-0.00
25yr72hr	62.07	1528345.3	1273243.2	255102.1	-0.0	-0.00
25yr72hr	62.08	1529624.6	1277051.5	252573.1	-0.0	-0.00
25yr72hr	62.10	1530887.8	1280872.7	250015.1	-0.0	-0.00
25yr72hr	62.12	1532130.9	1284696.6	247434.3	-0.0	-0.00
25yr72hr	62.13	1533356.9	1288531.5	244825.4	-0.0	-0.00
25yr72hr	62.15	1534543.5	1292302.7	242240.8	-0.0	-0.00
25yr72hr	62.17	1535705.9	1296051.1	239654.7	-0.0	-0.00
25yr72hr	62.18	1536856.1	1299811.0	237045.1	-0.0	-0.00
25yr72hr	62.20	1537999.5	1303595.9	234403.6	-0.0	-0.00
25yr72hr	62.22	1539131.1	1307384.7	231746.4	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	62.23	1540239.3	1311132.4	229106.8	-0.0	-0.00
25yr72hr	62.25	1541349.9	1314923.4	226426.5	-0.0	-0.00
25yr72hr	62.27	1542425.5	1318626.8	223798.7	-0.0	-0.00
25yr72hr	62.28	1543512.3	1322398.3	221114.0	-0.0	-0.00
25yr72hr	62.30	1544578.3	1326124.8	218453.5	-0.0	-0.00
25yr72hr	62.32	1545639.9	1329860.6	215779.4	-0.0	-0.00
25yr72hr	62.33	1546693.3	1333590.2	213103.1	-0.0	-0.00
25yr72hr	62.35	1547731.8	1337287.7	210444.1	-0.0	-0.00
25yr72hr	62.37	1548759.0	1340964.0	207795.1	-0.0	-0.00
25yr72hr	62.38	1549806.1	1344728.5	205077.5	-0.0	-0.00
25yr72hr	62.40	1550819.8	1348388.8	202430.9	-0.0	-0.00
25yr72hr	62.42	1551835.5	1352069.9	199765.6	-0.0	-0.00
25yr72hr	62.43	1552862.9	1355805.5	197057.4	-0.0	-0.00
25yr72hr	62.45	1553861.9	1359448.6	194413.3	-0.0	-0.00
25yr72hr	62.47	1554867.1	1363124.3	191742.7	-0.0	-0.00
25yr72hr	62.48	1555865.8	1366785.8	189080.0	-0.0	-0.00
25yr72hr	62.50	1556880.8	1370515.8	186365.0	-0.0	-0.00
25yr72hr	62.52	1557868.7	1374155.4	183713.4	-0.0	-0.00
25yr72hr	62.53	1558846.5	1377768.2	181078.4	-0.0	-0.00
25yr72hr	62.55	1559829.5	1381413.0	178416.5	-0.0	-0.00
25yr72hr	62.57	1560813.9	1385080.7	175733.2	-0.0	-0.00
25yr72hr	62.58	1561776.7	1388688.2	173088.5	-0.0	-0.00
25yr72hr	62.60	1562740.8	1392325.2	170415.6	-0.0	-0.00
25yr72hr	62.62	1563699.5	1395967.5	167732.0	-0.0	-0.00
25yr72hr	62.63	1564637.0	1399554.1	165082.9	-0.0	-0.00
25yr72hr	62.65	1565568.4	1403139.9	162428.4	-0.0	-0.00
25yr72hr	62.67	1566496.9	1406736.1	159760.9	-0.0	-0.00
25yr72hr	62.68	1567434.9	1410388.2	157046.7	-0.0	-0.00
25yr72hr	62.70	1568335.8	1413911.7	154424.1	-0.0	-0.00
25yr72hr	62.72	1569243.9	1417477.5	151766.5	-0.0	-0.00
25yr72hr	62.73	1570151.5	1421053.0	149098.4	-0.0	-0.00
25yr72hr	62.75	1571045.0	1424583.1	146461.9	-0.0	-0.00
25yr72hr	62.77	1571950.3	1428168.1	143782.2	-0.0	-0.00
25yr72hr	62.78	1572835.7	1431679.9	141155.8	-0.0	-0.00
25yr72hr	62.80	1573718.7	1435185.8	138532.9	-0.0	-0.00
25yr72hr	62.82	1574605.3	1438708.1	135897.2	-0.0	-0.00
25yr72hr	62.83	1575478.8	1442178.1	133300.7	-0.0	-0.00
25yr72hr	62.85	1576362.0	1445685.3	130676.7	-0.0	-0.00
25yr72hr	62.87	1577235.7	1449152.5	128083.2	-0.0	-0.00
25yr72hr	62.88	1578120.4	1452659.6	125460.8	-0.0	-0.00
25yr72hr	62.90	1578978.6	1456056.7	122921.9	-0.0	-0.00
25yr72hr	62.92	1579847.6	1459490.4	120357.2	-0.0	-0.00
25yr72hr	62.93	1580713.9	1462906.3	117807.6	-0.0	-0.00
25yr72hr	62.95	1581580.0	1466312.7	115267.3	-0.0	-0.00
25yr72hr	62.97	1582440.9	1469688.4	112752.5	-0.0	-0.00
25yr72hr	62.98	1583302.8	1473056.8	110246.0	-0.0	-0.00
25yr72hr	63.00	1584170.3	1476434.1	107736.2	-0.0	-0.00
25yr72hr	63.02	1585026.8	1479755.1	105271.7	-0.0	-0.00
25yr72hr	63.03	1585884.9	1483067.3	102817.6	-0.0	-0.00
25yr72hr	63.05	1586741.2	1486354.8	100386.4	-0.0	-0.00
25yr72hr	63.07	1587600.9	1489634.3	97966.6	-0.0	-0.00
25yr72hr	63.08	1588455.2	1492867.4	95587.8	-0.0	-0.00
25yr72hr	63.10	1589307.6	1496063.3	93244.4	-0.0	-0.00
25yr72hr	63.12	1590162.3	1499231.3	90931.0	-0.0	-0.00
25yr72hr	63.13	1591019.6	1502367.0	88652.5	-0.0	-0.00
25yr72hr	63.15	1591874.3	1505444.3	86430.0	-0.0	-0.00
25yr72hr	63.17	1592726.0	1508453.6	84272.4	-0.0	-0.00
25yr72hr	63.18	1593577.0	1511392.7	82184.3	-0.0	-0.00
25yr72hr	63.20	1594427.3	1514248.2	80179.0	-0.0	-0.00
25yr72hr	63.22	1595277.0	1517006.8	78270.2	-0.0	-0.00
25yr72hr	63.23	1596126.2	1519660.9	76465.3	-0.0	-0.00
25yr72hr	63.25	1596971.3	1522189.6	74781.7	-0.0	-0.00
25yr72hr	63.27	1597825.3	1524677.7	73147.6	-0.0	-0.00
25yr72hr	63.28	1598669.6	1527039.1	71630.5	-0.0	-0.00
25yr72hr	63.30	1599517.5	1529299.6	70217.9	-0.0	-0.00
25yr72hr	63.32	1600361.1	1531432.6	68928.5	-0.0	-0.00
25yr72hr	63.33	1601211.5	1533469.8	67741.7	-0.0	-0.00
25yr72hr	63.35	1602054.6	1535386.4	66668.2	-0.0	-0.00
25yr72hr	63.37	1602904.5	1537224.9	65679.6	-0.0	-0.00
25yr72hr	63.38	1603747.2	1538965.5	64781.7	-0.0	-0.00
25yr72hr	63.40	1604596.7	1540649.9	63946.8	-0.0	-0.00
25yr72hr	63.42	1605439.0	1542261.5	63177.5	-0.0	-0.00
25yr72hr	63.43	1606288.3	1543837.6	62450.7	-0.0	-0.00
25yr72hr	63.45	1607130.3	1545360.6	61769.8	-0.0	-0.00

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DRAINAGE SYSTEM 16B
PRE-DEVELOPMENT CONDITIONS
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	63.47	1607979.4	1546864.4	61115.0	-0.0	-0.00
25yr72hr	63.48	1608821.3	1548331.3	60490.0	-0.0	-0.00
25yr72hr	63.50	1609669.0	1549789.2	59879.8	-0.0	-0.00
25yr72hr	63.52	1610510.9	1551222.5	59288.4	-0.0	-0.00
25yr72hr	63.53	1611359.9	1552655.9	58704.0	-0.0	-0.00
25yr72hr	63.55	1612205.8	1554074.4	58131.4	-0.0	-0.00
25yr72hr	63.57	1613049.5	1555481.3	57568.2	-0.0	-0.00
25yr72hr	63.58	1613898.6	1556890.1	57008.4	-0.0	-0.00
25yr72hr	63.60	1614742.7	1558284.9	56457.8	-0.0	-0.00
25yr72hr	63.62	1615586.5	1559673.7	55912.8	-0.0	-0.00
25yr72hr	63.63	1616432.5	1561061.2	55371.3	-0.0	-0.00
25yr72hr	63.65	1617274.5	1562437.6	54836.9	-0.0	-0.00
25yr72hr	63.67	1618123.6	1563821.3	54302.3	-0.0	-0.00
25yr72hr	63.68	1618969.6	1565195.8	53773.9	-0.0	-0.00
25yr72hr	63.70	1619811.7	1566559.8	53251.9	-0.0	-0.00
25yr72hr	63.72	1620659.6	1567929.2	52730.4	-0.0	-0.00
25yr72hr	63.73	1621508.7	1569296.7	52212.1	-0.0	-0.00
25yr72hr	63.75	1622349.1	1570646.1	51703.1	-0.0	-0.00
25yr72hr	63.77	1623197.0	1572003.4	51193.6	-0.0	-0.00
25yr72hr	63.78	1624046.3	1573358.8	50687.4	-0.0	-0.00
25yr72hr	63.80	1624887.2	1574696.8	50190.4	-0.0	-0.00
25yr72hr	63.82	1625734.7	1576040.9	49693.8	-0.0	-0.00
25yr72hr	63.83	1626584.0	1577383.5	49200.5	-0.0	-0.00
25yr72hr	63.85	1627425.0	1578708.3	48716.7	-0.0	-0.00
25yr72hr	63.87	1628272.6	1580038.8	48233.9	-0.0	-0.00
25yr72hr	63.88	1629115.4	1581356.5	47758.9	-0.0	-0.00
25yr72hr	63.90	1629963.1	1582676.1	47287.0	-0.0	-0.00
25yr72hr	63.92	1630810.8	1583989.1	46821.7	-0.0	-0.00
25yr72hr	63.93	1631653.7	1585285.7	46368.0	-0.0	-0.00
25yr72hr	63.95	1632499.7	1586566.0	45933.7	-0.0	-0.00
25yr72hr	63.97	1633351.4	1587812.2	45539.2	-0.0	-0.00
25yr72hr	63.98	1634192.2	1588988.4	45203.8	-0.0	-0.00
25yr72hr	64.00	1635038.2	1590115.3	44922.9	-0.0	-0.00
25yr72hr	64.02	1635878.0	1591186.9	44691.1	-0.0	-0.00
25yr72hr	64.10	1639938.3	1595959.4	43978.9	-0.0	-0.00
25yr72hr	64.18	1643611.7	1600146.7	43465.1	-0.0	-0.00
25yr72hr	64.27	1646921.6	1603932.5	42989.1	-0.0	-0.00
25yr72hr	64.35	1649992.9	1607403.0	42589.9	-0.0	-0.00
25yr72hr	64.43	1652902.5	1610631.4	42271.1	-0.0	-0.00
25yr72hr	64.52	1655698.5	1613679.2	42019.4	-0.0	-0.00
25yr72hr	64.60	1658407.1	1616591.1	41815.9	-0.0	-0.00
25yr72hr	64.68	1661047.2	1619397.9	41649.2	-0.0	-0.00
25yr72hr	64.77	1663637.9	1622123.9	41514.0	-0.0	-0.00
25yr72hr	64.85	1666197.3	1624790.5	41406.8	-0.0	-0.00
25yr72hr	64.93	1668738.2	1627416.4	41321.8	-0.0	-0.00
25yr72hr	65.02	1671270.7	1630017.5	41253.2	-0.0	-0.00
25yr72hr	65.10	1673803.5	1632605.8	41197.8	-0.0	-0.00
25yr72hr	65.18	1676341.0	1635188.9	41152.1	0.0	0.00
25yr72hr	65.27	1678882.8	1637770.8	41112.0	0.0	0.00
25yr72hr	65.35	1681427.7	1640352.5	41075.1	0.0	0.00
25yr72hr	65.43	1683974.6	1642934.6	41040.0	0.0	0.00
25yr72hr	65.52	1686523.1	1645517.0	41006.1	0.0	0.00
25yr72hr	65.60	1689072.8	1648099.9	40972.9	-0.0	-0.00
25yr72hr	65.68	1691623.6	1650683.3	40940.3	-0.0	-0.00
25yr72hr	65.77	1694175.2	1653267.1	40908.1	-0.0	-0.00
25yr72hr	65.85	1696727.5	1655851.3	40876.1	-0.0	-0.00
25yr72hr	65.93	1699280.2	1658435.9	40844.3	-0.0	-0.00
25yr72hr	66.02	1701833.3	1661020.5	40812.8	-0.0	-0.00
25yr72hr	66.10	1704386.6	1663605.4	40781.3	-0.0	-0.00
25yr72hr	66.18	1706940.2	1666190.3	40749.9	-0.0	-0.00
25yr72hr	66.27	1709493.9	1668775.2	40718.7	-0.0	-0.00
25yr72hr	66.35	1712047.8	1671360.1	40687.7	-0.0	-0.00
25yr72hr	66.43	1714601.9	1673944.9	40657.0	-0.0	-0.00
25yr72hr	66.52	1717156.3	1676529.8	40626.5	-0.0	-0.00
25yr72hr	66.60	1719710.9	1679114.7	40596.1	-0.0	-0.00
25yr72hr	66.68	1722265.7	1681699.7	40566.0	-0.0	-0.00
25yr72hr	66.77	1724820.8	1684284.7	40536.1	-0.0	-0.00
25yr72hr	66.85	1727376.2	1686869.6	40506.5	-0.0	-0.00
25yr72hr	66.93	1729931.8	1689454.7	40477.1	-0.0	-0.00
25yr72hr	67.02	1732487.6	1692039.8	40447.9	-0.0	-0.00
25yr72hr	67.10	1735043.8	1694624.9	40418.9	-0.0	-0.00
25yr72hr	67.18	1737600.2	1697210.0	40390.1	-0.0	-0.00
25yr72hr	67.27	1740156.8	1699795.2	40361.6	-0.0	-0.00
25yr72hr	67.35	1742713.7	1702380.5	40333.2	-0.0	-0.00

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 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	67.43	1745270.8	1704965.8	40305.1	-0.0	-0.00
25yr72hr	67.52	1747828.3	1707551.1	40277.2	-0.0	-0.00
25yr72hr	67.60	1750385.9	1710136.5	40249.5	-0.0	-0.00
25yr72hr	67.68	1752943.8	1712721.9	40222.0	-0.0	-0.00
25yr72hr	67.77	1755502.0	1715307.4	40194.6	-0.0	-0.00
25yr72hr	67.85	1758060.4	1717892.9	40167.6	-0.0	-0.00
25yr72hr	67.93	1760619.1	1720478.4	40140.7	-0.0	-0.00
25yr72hr	68.02	1763174.4	1723063.6	40110.7	-0.0	-0.00
25yr72hr	68.10	1765639.3	1725625.9	40013.4	-0.0	-0.00
25yr72hr	68.18	1767904.2	1728099.1	39805.1	-0.0	-0.00
25yr72hr	68.27	1769988.8	1730437.9	39550.9	-0.0	-0.00
25yr72hr	68.35	1771953.9	1732658.9	39295.0	-0.0	-0.00
25yr72hr	68.43	1773838.3	1734789.8	39048.5	-0.0	-0.00
25yr72hr	68.52	1775665.8	1736852.8	38813.0	-0.0	-0.00
25yr72hr	68.60	1777449.3	1738863.1	38586.2	-0.0	-0.00
25yr72hr	68.68	1779198.4	1740831.0	38367.4	-0.0	-0.00
25yr72hr	68.77	1780922.9	1742765.5	38157.4	-0.0	-0.00
25yr72hr	68.85	1782631.9	1744674.7	37957.1	-0.0	-0.00
25yr72hr	68.93	1784331.6	1746565.7	37765.9	-0.0	-0.00
25yr72hr	69.02	1786027.3	1748443.7	37583.6	-0.0	-0.00
25yr72hr	69.10	1787722.3	1750313.2	37409.2	-0.0	-0.00
25yr72hr	69.18	1789417.4	1752176.7	37240.7	-0.0	-0.00
25yr72hr	69.27	1791112.7	1754035.7	37077.0	-0.0	-0.00
25yr72hr	69.35	1792808.0	1755890.9	36917.0	-0.0	-0.00
25yr72hr	69.43	1794503.4	1757743.1	36760.3	-0.0	-0.00
25yr72hr	69.52	1796198.9	1759592.6	36606.3	-0.0	-0.00
25yr72hr	69.60	1797894.6	1761439.8	36454.8	-0.0	-0.00
25yr72hr	69.68	1799590.3	1763284.9	36305.4	-0.0	-0.00
25yr72hr	69.77	1801286.2	1765128.3	36157.9	-0.0	-0.00
25yr72hr	69.85	1802982.1	1766969.9	36012.2	-0.0	-0.00
25yr72hr	69.93	1804678.2	1768810.1	35868.1	-0.0	-0.00
25yr72hr	70.02	1806374.4	1770648.7	35725.6	-0.0	-0.00
25yr72hr	70.10	1808071.6	1772486.3	35585.4	-0.0	-0.00
25yr72hr	70.18	1809771.2	1774323.4	35447.8	-0.0	-0.00
25yr72hr	70.27	1811473.0	1776160.7	35312.3	-0.0	-0.00
25yr72hr	70.35	1813176.2	1777997.9	35178.2	-0.0	-0.00
25yr72hr	70.43	1814880.3	1779834.8	35045.5	-0.0	-0.00
25yr72hr	70.52	1816585.3	1781671.2	34914.1	-0.0	-0.00
25yr72hr	70.60	1818290.8	1783506.9	34783.9	-0.0	-0.00
25yr72hr	70.68	1819996.8	1785342.0	34654.9	-0.0	-0.00
25yr72hr	70.77	1821703.2	1787176.2	34527.0	-0.0	-0.00
25yr72hr	70.85	1823409.9	1789009.5	34400.4	-0.0	-0.00
25yr72hr	70.93	1825116.8	1790841.9	34275.0	-0.0	-0.00
25yr72hr	71.02	1826823.9	1792673.2	34150.7	-0.0	-0.00
25yr72hr	71.10	1828531.0	1794503.4	34027.7	-0.0	-0.00
25yr72hr	71.18	1830238.3	1796332.4	33905.9	-0.0	-0.00
25yr72hr	71.27	1831945.7	1798160.2	33785.5	-0.0	-0.00
25yr72hr	71.35	1833653.1	1799986.9	33666.3	-0.0	-0.00
25yr72hr	71.43	1835360.7	1801812.3	33548.4	-0.0	-0.00
25yr72hr	71.52	1837068.4	1803636.5	33431.9	-0.0	-0.00
25yr72hr	71.60	1838776.2	1805459.3	33316.8	-0.0	-0.00
25yr72hr	71.68	1840484.0	1807280.9	33203.1	-0.0	-0.00
25yr72hr	71.77	1842192.0	1809101.1	33090.9	-0.0	-0.00
25yr72hr	71.85	1843900.1	1810920.0	32980.1	-0.0	-0.00
25yr72hr	71.93	1845608.3	1812737.5	32870.8	-0.0	-0.00
25yr72hr	72.02	1847310.5	1814552.9	32757.5	-0.0	-0.00
25yr72hr	72.10	1849018.7	1816368.3	32644.2	-0.0	-0.00
25yr72hr	72.19	1850726.9	1818183.7	32530.9	-0.0	-0.00
25yr72hr	72.27	1852435.1	1820000.1	32417.6	-0.0	-0.00
25yr72hr	72.36	1854143.3	1821815.5	32304.3	-0.0	-0.00
25yr72hr	72.45	1855851.5	1823630.9	32191.0	-0.0	-0.00
25yr72hr	72.53	1857559.7	1825446.3	32077.7	-0.0	-0.00
25yr72hr	72.62	1859267.9	1827261.7	31964.4	-0.0	-0.00
25yr72hr	72.71	1860976.1	1829077.1	31851.1	-0.0	-0.00
25yr72hr	72.79	1862684.3	1830892.5	31737.8	-0.0	-0.00
25yr72hr	72.88	1864392.5	1832707.9	31624.5	-0.0	-0.00
25yr72hr	72.97	1866100.7	1834523.3	31511.2	-0.0	-0.00
25yr72hr	73.05	1867808.9	1836338.7	31397.9	-0.0	-0.00
25yr72hr	73.14	1869517.1	1838154.1	31284.6	-0.0	-0.00
25yr72hr	73.23	1871225.3	1840000.5	31171.3	-0.0	-0.00
25yr72hr	73.31	1872933.5	1841815.9	31058.0	-0.0	-0.00
25yr72hr	73.40	1874641.7	1843631.3	30944.7	-0.0	-0.00
25yr72hr	73.49	1876349.9	1845446.7	30831.4	-0.0	-0.00
25yr72hr	73.57	1878058.1	1847262.1	30718.1	-0.0	-0.00
25yr72hr	73.66	1879766.3	1849077.5	30604.8	-0.0	-0.00
25yr72hr	73.75	1881474.5	1850892.9	30491.5	-0.0	-0.00
25yr72hr	73.83	1883182.7	1852708.3	30378.2	-0.0	-0.00
25yr72hr	73.92	1884890.9	1854523.7	30264.9	-0.0	-0.00
25yr72hr	74.01	1886599.1	1856339.1	30151.6	-0.0	-0.00
25yr72hr	74.09	1888307.3	1858154.5	30038.3	-0.0	-0.00
25yr72hr	74.18	1889915.5	1860000.9	29925.0	-0.0	-0.00
25yr72hr	74.27	1891623.7	1861816.3	29811.7	-0.0	-0.00
25yr72hr	74.35	1893331.9	1863631.7	29698.4	-0.0	-0.00
25yr72hr	74.44	1895040.1	1865447.1	29585.1	-0.0	-0.00
25yr72hr	74.53	1896748.3	1867262.5	29471.8	-0.0	-0.00
25yr72hr	74.61	1898456.5	1869077.9	29358.5	-0.0	-0.00
25yr72hr	74.70	1899915.5	1870893.3	29245.2	-0.0	-0.00
25yr72hr	74.79	1901623.7	1872708.7	29131.9	-0.0	-0.00
25yr72hr	74.88	1903331.9	1874524.1	29018.6	-0.0	-0.00
25yr72hr	74.96	1905040.1	1876339.5	28905.3	-0.0	-0.00
25yr72hr	75.05	1906748.3	1878154.9	28792.0	-0.0	-0.00
25yr72hr	75.14	1908456.5	1879970.3	28678.7	-0.0	-0.00
25yr72hr	75.22	1910164.7	1881785.7	28565.4	-0.0	-0.00
25yr72hr	75.31	1911872.9	1883601.1	28452.1	-0.0	-0.00
25yr72hr	75.40	1913581.1	1885416.5	28338.8	-0.0	-0.00
25yr72hr	75.48	1915289.3	1887231.9	28225.5	-0.0	-0.00
25yr72hr	75.57	1916997.5	1889047.3	28112.2	-0.0	-0.00
25yr72hr	75.66	1918705.7	1890862.7	28000.0	-0.0	-0.00
25yr72hr	75.74	1920413.9	1892678.1	27886.7	-0.0	-0.00
25yr72hr	75.83	1922122.1	1894493.5	27773.4	-0.0	-0.00
25yr72hr	75.92	1923830.3	1896308.9	27660.1	-0.0	-0.00
25yr72hr	76.00	1925538.5	1898124.3	27546.8	-0.0	-0.00
25yr72hr	76.09	1927246.7	1899939.7	27433.5	-0.0	-0.00
25yr72hr	76.18	1928954.9	1901755.1	27320.2	-0.0	-0.00
25yr72hr	76.27	1930663.1	1903570.5	27206.9	-0.0	-0.00
25yr72hr	76.35	1932371.3	1905385.9	27093.6	-0.0	-0.00
25yr72hr	76.44	1934079.5	1907201.3	26980.3	-0.0	-0.00
25yr72hr	76.53	1935787.7	1909016.7	26867.0	-0.0	-0.00
25yr72hr	76.61	1937495.9	1910832.1	26753.7	-0.0	-0.00
25yr72hr	76.70	1939204.1	1912647.5	26640.4	-0.0	-0.00
25yr72hr	76.79	1940912.3	1914462.9	26527.1	-0.0	-0.00
25yr72hr	76.87	1942620.5	1916278.3	26413.8	-0.0	-0.00
25yr72hr	76.96	1944328.7	1918093.7	26300.5	-0.0	-0.00
25yr72hr	77.05	1946036.9	1919909.1	26187.2	-0.0	-0.00
25yr72hr	77.13	1947745.1	1921724.5	26073.9	-0.0	-0.00
25yr72hr	77.22	1949453.3	1923539.9	25960.6	-0.0	-0.00
25yr72hr	77.31	1951161.5	1925355.3	25847.3	-0.0	-0.00
25yr72hr	77.39	1952869.7	1927170.7	25734.0	-0.0	-0.00
25yr72hr	77.48	1954577.9	1928986.1	25620.7	-0.0	-0.00
25yr72hr	77.57	1956286.1	1930801.5	25507.4	-0.0	-0.00
25yr72hr	77.65	1957994.3	1932616.9	25394.1	-0.0	-0.00
25yr72hr	77.74	1959702.5	1934432.3	25280.8	-0.0	-0.00
25yr72hr	77.83	1961410.7	1936247.7	25167.5	-0.0	-0.00
25yr72hr	77.91	1963118.9	1938063.1	25054.2	-0.0	-0.00
25yr72hr	78.00	1964827.1	1939878.5	24940.9	-0.0	-0.00
25yr72hr	78.09	1966535.3	1941693.9	24827.6	-0.0	-0.00
25yr72hr	78.17	1968243.5	1943509.3	24714.3	-0.0	-0.00
25yr72hr	78.26	1969951.7	1945324.7	24601.0	-0.0	-0.00
25yr72hr	78.35	1971659.9	1947140.1	24487.7	-0.0	-0.00
25yr72hr	78.43	1973368.1	1948955.5	24374.4	-0.0	-0.00
25yr72hr	78.52	1975076.3	1950770.9	24261.1	-0.0	-0.00
25yr72hr	78.61	1976784.5	1952586.3	24147.8	-0.0	-0.00
25yr72hr	78.69	1978492.7	1954401.7	24034.5	-0.0	-0.00
25yr72hr	78.78	1980200.9	1956217.1	23921.2	-0.0	-0.00
25yr72hr	78.87	1981909.1	1958032.5	23807.9	-0.0	-0.00
25yr72hr	78.95	1983617.3	1959847.9	23694.6	-0.0	-0.00
25yr72hr	79.04	1985325.5	1961663.3	23581.3	-0.0	-0.00
25yr72hr	79.13	1987033.7	1963478.7	23468.0	-0.0	-0.00
25yr72hr	79.21	1988741.9	1965294.1	23354.7	-0.0	-0.00
25yr72hr	79.30	1990450.1	1967109.5	23241.4	-0.0	-0.00
25yr72hr	79.39	1992158.3	1968924.9	23128.1	-0.0	-0.00
25yr72hr	79.47	1993866.5	1970740.3	23014.8	-0.0	-0.00
25yr72hr	79.56	1995574.7	1972555.7	22901.5	-0.0	-0.00
25yr72hr	79.65	1997282.9	1974371.1	22788.2	-0.0	-0.00
25yr72hr	79.73	1998991.1	1976186.5	22674.9	-0.0	-0.00
25yr72hr	79.82	2000699.3	1978001.9	22561.6	-0.0	-0.00
25yr72hr	79.91	2002407.5	1979817.3	22448.3		

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 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	76.77	1851195.4	1844429.0	6766.4	-0.0	-0.00
25yr72hr	77.02	1851195.4	1845387.7	5807.7	-0.0	-0.00
25yr72hr	77.27	1851195.4	1846314.5	4880.9	-0.0	-0.00
25yr72hr	77.52	1851195.4	1847203.4	3992.0	-0.0	-0.00
25yr72hr	77.77	1851195.4	1848048.9	3146.5	-0.0	-0.00
25yr72hr	78.02	1851195.4	1848841.5	2353.9	-0.0	-0.00
25yr72hr	78.27	1851195.4	1849562.1	1633.3	-0.0	-0.00
25yr72hr	78.52	1851195.4	1850169.5	1025.9	-0.0	-0.00
25yr72hr	78.77	1851195.4	1850577.2	618.2	-0.0	-0.00
25yr72hr	79.02	1851195.4	1850727.5	467.9	-0.0	-0.00
25yr72hr	79.27	1851195.4	1850728.8	466.6	-0.0	-0.00
25yr72hr	79.52	1851195.4	1850728.9	466.5	-0.0	-0.00
25yr72hr	79.77	1851195.4	1850729.0	466.4	-0.0	-0.00
25yr72hr	80.02	1851195.4	1850729.2	466.2	-0.0	-0.00
25yr72hr	80.27	1851195.4	1850729.4	466.0	-0.0	-0.00
25yr72hr	80.52	1851195.4	1850729.4	466.0	-0.0	-0.00
25yr72hr	80.77	1851195.4	1850729.5	465.9	-0.0	-0.00
25yr72hr	81.02	1851195.4	1850729.6	465.8	-0.0	-0.00
25yr72hr	81.27	1851195.4	1850729.6	465.8	-0.0	-0.00
25yr72hr	81.52	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	81.77	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	82.02	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	82.27	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	82.52	1851195.4	1850730.0	465.4	-0.0	-0.00
25yr72hr	82.77	1851195.4	1850730.0	465.4	-0.0	-0.00
25yr72hr	83.02	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	83.27	1851195.4	1850729.7	465.6	-0.0	-0.00
25yr72hr	83.52	1851195.4	1850729.7	465.6	-0.0	-0.00
25yr72hr	83.77	1851195.4	1850729.7	465.6	-0.0	-0.00
25yr72hr	84.02	1851195.4	1850729.7	465.6	-0.0	-0.00
25yr72hr	84.27	1851195.4	1850729.7	465.6	-0.0	-0.00
25yr72hr	84.52	1851195.4	1850729.7	465.6	-0.0	-0.00
25yr72hr	84.77	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	85.02	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	85.27	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	85.52	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	85.77	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	86.02	1851195.4	1850729.7	465.7	-0.0	-0.00
25yr72hr	86.27	1851195.4	1850729.6	465.7	-0.0	-0.00
25yr72hr	86.52	1851195.4	1850729.9	465.5	-0.0	-0.00
25yr72hr	86.77	1851195.4	1850729.9	465.5	-0.0	-0.00
25yr72hr	87.02	1851195.4	1850729.6	465.8	-0.0	-0.00
25yr72hr	87.27	1851195.4	1850729.6	465.8	-0.0	-0.00
25yr72hr	87.52	1851195.4	1850729.5	465.9	-0.0	-0.00
25yr72hr	87.77	1851195.4	1850729.5	465.9	-0.0	-0.00
25yr72hr	88.02	1851195.4	1850729.5	465.9	-0.0	-0.00
25yr72hr	88.27	1851195.4	1850729.5	465.9	-0.0	-0.00
25yr72hr	88.52	1851195.4	1850729.4	466.0	-0.0	-0.00
25yr72hr	88.77	1851195.4	1850729.4	466.0	-0.0	-0.00
25yr72hr	89.02	1851195.4	1850729.4	466.0	-0.0	-0.00
25yr72hr	89.27	1851195.4	1850729.3	466.0	-0.0	-0.00
25yr72hr	89.52	1851195.4	1850729.3	466.1	-0.0	-0.00
25yr72hr	89.77	1851195.4	1850729.3	466.1	-0.0	-0.00
25yr72hr	90.02	1851195.4	1850729.2	466.1	-0.0	-0.00
25yr72hr	90.27	1851195.4	1850729.2	466.2	-0.0	-0.00
25yr72hr	90.52	1851195.4	1850729.2	466.2	-0.0	-0.00
25yr72hr	90.77	1851195.4	1850729.4	466.0	-0.0	-0.00
25yr72hr	91.02	1851195.4	1850729.1	466.3	-0.0	-0.00
25yr72hr	91.27	1851195.4	1850729.1	466.3	-0.0	-0.00
25yr72hr	91.52	1851195.4	1850729.0	466.4	-0.0	-0.00
25yr72hr	91.77	1851195.4	1850729.0	466.4	-0.0	-0.00
25yr72hr	92.02	1851195.4	1850729.0	466.4	-0.0	-0.00
25yr72hr	92.27	1851195.4	1850728.9	466.5	-0.0	-0.00
25yr72hr	92.52	1851195.4	1850728.9	466.5	-0.0	-0.00
25yr72hr	92.77	1851195.4	1850728.8	466.5	-0.0	-0.00
25yr72hr	93.02	1851195.4	1850728.8	466.6	-0.0	-0.00
25yr72hr	93.27	1851195.4	1850728.8	466.6	-0.0	-0.00
25yr72hr	93.52	1851195.4	1850728.7	466.7	-0.0	-0.00
25yr72hr	93.77	1851195.4	1850728.7	466.7	-0.0	-0.00
25yr72hr	94.02	1851195.4	1850728.7	466.7	-0.0	-0.00
25yr72hr	94.27	1851195.4	1850728.6	466.8	-0.0	-0.00
25yr72hr	94.52	1851195.4	1850728.6	466.8	-0.0	-0.00
25yr72hr	94.77	1851195.4	1850728.8	466.6	-0.0	-0.00
25yr72hr	95.02	1851195.4	1850728.7	466.7	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 PRE-DEVELOPMENT CONDITIONS
 MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	95.27	1851195.4	1850728.4	467.0	-0.0	-0.00
25yr72hr	95.52	1851195.4	1850728.4	467.0	-0.0	-0.00
25yr72hr	95.77	1851195.4	1850728.4	467.0	-0.0	-0.00
25yr72hr	96.00	1851195.4	1850728.3	467.1	-0.0	-0.00

ICPR: Post-Development

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 NODE-LINK DIAGRAM

Nodes

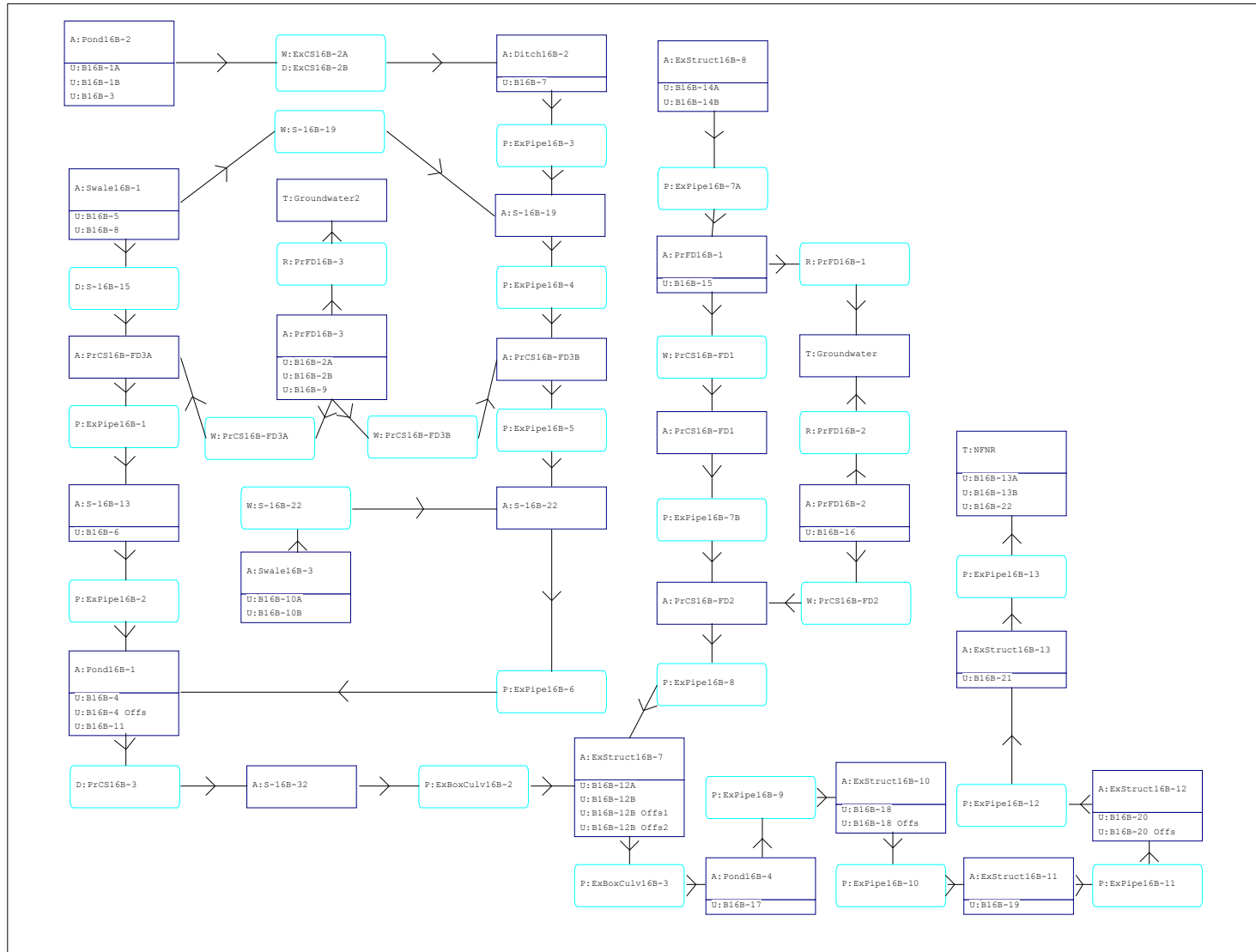
A Stage/Area
 U Stage/Volume
 V Stage/Volume
 T Time/Stage
 M Manhole

Basins

O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA

Links

P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

=====
==== Basins =====
=====

Name: B16B-10A Node: Swale16B-3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount (in): 0.000 Time of Conc(min): 10.00
Area (ac): 1.160 Time Shift(hrs): 0.00
Curve Number: 61.71 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-10B Node: Swale16B-3 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount (in): 0.000 Time of Conc(min): 10.00
Area (ac): 0.300 Time Shift(hrs): 0.00
Curve Number: 63.59 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-11 Node: Pond16B-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount (in): 0.000 Time of Conc(min): 10.00
Area (ac): 1.970 Time Shift(hrs): 0.00
Curve Number: 68.45 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-12A Node: ExStruct16B-7 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount (in): 0.000 Time of Conc(min): 10.00
Area (ac): 1.110 Time Shift(hrs): 0.00
Curve Number: 99.27 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-12B Node: ExStruct16B-7 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount (in): 0.000 Time of Conc(min): 10.00
Area (ac): 1.680 Time Shift(hrs): 0.00
Curve Number: 96.70 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: B16B-12B Offs1	Node: ExStruct16B-7	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 0.690	Time Shift (hrs): 0.00	
Curve Number: 84.90	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-12B Offs2	Node: ExStruct16B-7	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 0.970	Time Shift (hrs): 0.00	
Curve Number: 85.57	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-13A	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 2.080	Time Shift (hrs): 0.00	
Curve Number: 66.87	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-13B	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 1.290	Time Shift (hrs): 0.00	
Curve Number: 66.34	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-14A	Node: ExStruct16B-8	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 1.910	Time Shift (hrs): 0.00	
Curve Number: 76.68	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-14B	Node: ExStruct16B-8	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Rainfall Amount (in): 0.000	Time of Conc(min): 10.00
Area (ac): 0.660	Time Shift (hrs): 0.00
Curve Number: 93.08	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-15	Node: PrFD16B-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 2.780	Time Shift (hrs): 0.00	
Curve Number: 82.32	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-16	Node: PrFD16B-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 3.180	Time Shift (hrs): 0.00	
Curve Number: 72.29	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-17	Node: Pond16B-4	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 1.470	Time Shift (hrs): 0.00	
Curve Number: 67.38	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-18	Node: ExStruct16B-10	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 0.320	Time Shift (hrs): 0.00	
Curve Number: 68.49	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-18 Offs	Node: ExStruct16B-10	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount (in): 0.000	Time of Conc(min): 10.00	
Area (ac): 0.130	Time Shift (hrs): 0.00	
Curve Number: 61.38	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: B16B-19	Node: ExStruct16B-11	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.240	Time Shift(hrs): 0.00	
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-1A	Node: Pond16B-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.130	Time Shift(hrs): 0.00	
Curve Number: 69.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-1B	Node: Pond16B-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.540	Time Shift(hrs): 0.00	
Curve Number: 68.47	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-20	Node: ExStruct16B-12	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.210	Time Shift(hrs): 0.00	
Curve Number: 55.01	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-20 Offs	Node: ExStruct16B-12	Status: Offsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 0.740	Time Shift(hrs): 0.00	
Curve Number: 74.48	Max Allowable Q(cfs): 999999.000	
DCIA(%): 0.00		

Name: B16B-21	Node: ExStruct16B-13	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.240	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-22	Node: NFNR	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.170	Time Shift(hrs): 0.00
Curve Number: 56.50	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-2A	Node: PrFD16B-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 0.820	Time Shift(hrs): 0.00
Curve Number: 100.00	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-2B	Node: PrFD16B-3	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 4.480	Time Shift(hrs): 0.00
Curve Number: 82.77	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-3	Node: Pond16B-2	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 2.490	Time Shift(hrs): 0.00
Curve Number: 76.41	Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00	

Name: B16B-4	Node: Pond16B-1	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	

Unit Hydrograph: Uh256	Peaking Factor: 256.0
Rainfall File:	Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00
Area(ac): 5.730	Time Shift(hrs): 0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Curve Number: 80.94 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-4 Offs Node: Pond16B-1 Status: Offsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.970 Time Shift(hrs): 0.00
Curve Number: 65.30 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-5 Node: Swale16B-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.250 Time Shift(hrs): 0.00
Curve Number: 74.36 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-6 Node: ExStruct16B-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 0.520 Time Shift(hrs): 0.00
Curve Number: 78.90 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-7 Node: Ditch16B-2 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.000 Time Shift(hrs): 0.00
Curve Number: 66.53 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

Name: B16B-8 Node: Swale16B-1 Status: Onsite
Group: BASE Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256 Peaking Factor: 256.0
Rainfall File: Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.530 Time Shift(hrs): 0.00
Curve Number: 76.96 Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

 Name: NFNR Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 0.430
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

 Name: Pond16B-1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 5.000
 Type: Stage/Area

Stage(ft)	Area(ac)
-1.200	0.0023
1.410	0.0023
1.420	0.5472
2.000	0.6787
3.000	0.9223
6.500	2.5276

 Name: Pond16B-2 Base Flow(cfs): 0.000 Init Stage(ft): 2.000
 Group: BASE Warn Stage(ft): 7.800
 Type: Stage/Area

Stage(ft)	Area(ac)
1.720	0.0010
1.990	0.0010
2.000	0.0859
2.750	0.1677
4.170	0.3101
4.920	0.3937
6.500	0.5844
7.500	0.7766

 Name: Pond16B-4 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 3.000
 Type: Stage/Area

Stage(ft)	Area(ac)
-3.000	0.0190
0.000	0.0380
0.420	0.0430
1.000	0.0550
1.420	0.0620
2.000	0.0730
3.000	0.0940
3.500	0.2350
4.000	0.6050
5.000	0.7750

 Name: PrCS16B-FD1 Base Flow(cfs): 0.000 Init Stage(ft): 0.420
 Group: BASE Warn Stage(ft): 7.570

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

```

-----
Name: S-16B-24          Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 13.950
Type: Stage/Area
  
```

Barrier Wall Inlet over 4'X7' "J" Bottom

Stage(ft)	Area(ac)
-3.000	0.0006
3.200	0.0006
3.210	0.0003
13.240	0.0003
13.950	0.0027

```

-----
Name: S-16B-32          Base Flow(cfs): 0.000      Init Stage(ft): 0.420
Group: BASE              Warn Stage(ft): 14.810
Type: Stage/Area
  
```

6'x8' "J" BOTTOM STRUCTURE

Stage(ft)	Area(ac)
-3.300	0.0011
3.620	0.0011
3.630	0.0002
14.810	0.0002

```

-----
Name: Swale16B-1        Base Flow(cfs): 0.000      Init Stage(ft): 3.000
Group: BASE              Warn Stage(ft): 5.280
Type: Stage/Area
  
```

WARNING STAGE REPRESENTS LOWEST EDGE OF SHOULDER.
 LOWEST EDGE OF PAVEMENT IN THIS NODE IS 5.78'

Stage(ft)	Area(ac)
3.000	0.2119
3.250	0.2652
3.500	0.3199
3.750	0.3790
4.500	0.5488
5.020	0.6650
5.280	0.7466
7.000	2.1024

```

-----
Name: Swale16B-3        Base Flow(cfs): 0.000      Init Stage(ft): 5.000
Group: BASE              Warn Stage(ft): 8.480
Type: Stage/Area
  
```

Stage(ft)	Area(ac)
5.000	0.2565
6.500	0.3663
7.960	0.4650

==== Operating Tables =====

```

Name: PrFD16B-1          Group: BASE
Type: Rating Curve
Function: Family of Tailwater-Headwater-Discharge Relationships
  
```

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.60	1.21
0.420	8.07	8.50
1.420	1.42	0.00
1.420	3.60	0.87
1.420	8.07	2.83

Name: PrFD16B-2 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.60	1.13
0.420	7.30	7.16
1.420	1.42	0.00
1.420	3.60	0.81
1.420	7.30	2.30

Name: PrFD16B-3 Group: BASE
 Type: Rating Curve
 Function: Family of Tailwater-Headwater-Discharge Relationships

Tailwater(ft)	Headwater(ft)	Discharge(cfs)
0.420	0.42	0.00
0.420	3.60	2.15
0.420	7.50	14.08
1.420	1.42	0.00
1.420	3.60	1.54
1.420	7.50	4.55

==== Pipes =====

```

Name: ExBoxCulv16B-2              From Node: S-16B-32              Length(ft): 291.00
Group: BASE                              To Node: ExStruct16B-7              Count: 1
                                         Friction Equation: Automatic
                                         Solution Algorithm: Most Restrictive
                                         Flow: Both
Geometry: Rectangular              DOWNSTREAM              Entrance Loss Coef: 0.50
Span(in): 60.00                      Rectangular              Exit Loss Coef: 0.00
Rise(in): 30.00                      30.00                      Bend Loss Coef: 0.00
Invert(ft): -1.080                   -1.080                   Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000              0.013000                   Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000                   0.000                   Stabilizer Option: None
Bot Clip(in): 0.000                   0.000
  
```

Upstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

Name: ExBoxCulv16B-3 From Node: ExStruct16B-7 Length(ft): 23.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Group: BASE	To Node: Pond16B-4	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Rectangular	Rectangular	Flow: Both
Span(in): 60.00	60.00	Entrance Loss Coef: 0.50
Rise(in): 30.00	30.00	Exit Loss Coef: 0.00
Invert(ft): -1.080	-1.580	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

Downstream FHWA Inlet Edge Description:
 Rectangular Box: 30° to 75° wingwall flares

Name: ExPipe16B-1	From Node: PrCS16B-FD3A	Length(ft): 138.00
Group: BASE	To Node: ExStruct16B-2	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 36.00	36.00	Entrance Loss Coef: 0.50
Rise(in): 36.00	36.00	Exit Loss Coef: 0.00
Invert(ft): -0.280	-0.580	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-10	From Node: ExStruct16B-10	Length(ft): 190.00
Group: BASE	To Node: ExStruct16B-11	Count: 1
		Friction Equation: Automatic
UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry: Circular	Circular	Flow: Both
Span(in): 54.00	54.00	Entrance Loss Coef: 0.50
Rise(in): 54.00	54.00	Exit Loss Coef: 0.00
Invert(ft): -2.780	-2.980	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-11	From Node: ExStruct16B-11	Length(ft): 196.00
Group: BASE	To Node: ExStruct16B-12	Count: 1

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
			Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	54.00	54.00	Entrance Loss Coef: 0.50
Rise(in):	54.00	54.00	Exit Loss Coef: 0.00
Invert(ft):	-2.980	-3.080	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-12		From Node: ExStruct16B-12	Length(ft): 202.00
Group: BASE		To Node: ExStruct16B-13	Count: 1
	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
			Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	54.00	54.00	Entrance Loss Coef: 0.50
Rise(in):	54.00	54.00	Exit Loss Coef: 0.00
Invert(ft):	-3.080	-3.180	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-13		From Node: ExStruct16B-13	Length(ft): 86.00
Group: BASE		To Node: NFNR	Count: 1
	UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
			Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	54.00	54.00	Entrance Loss Coef: 0.50
Rise(in):	54.00	54.00	Exit Loss Coef: 0.00
Invert(ft):	-3.180	-3.280	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-2		From Node: ExStruct16B-2	Length(ft): 58.00
Group: BASE		To Node: S-16B-14	Count: 1
Friction Equation: Automatic			

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

	UPSTREAM	DOWNSTREAM	Solution Algorithm: Most Restrictive
Geometry:	Circular	Circular	Flow: Both
Span(in):	36.00	36.00	Entrance Loss Coef: 0.50
Rise(in):	36.00	36.00	Exit Loss Coef: 0.00
Invert(ft):	-0.580	-0.780	Bend Loss Coef: 0.00
Manning's N:	0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in):	0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in):	0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name:	ExPipe16B-3	From Node:	Ditch16B-2	Length(ft):	175.00
Group:	BASE	To Node:	S-16B-19	Count:	1
	UPSTREAM		DOWNSTREAM	Friction Equation:	Automatic
Geometry:	Circular		Circular	Solution Algorithm:	Most Restrictive
Span(in):	30.00		30.00	Flow:	Both
Rise(in):	30.00		30.00	Entrance Loss Coef:	0.50
Invert(ft):	0.920		0.420	Exit Loss Coef:	0.00
Manning's N:	0.013000		0.013000	Bend Loss Coef:	0.00
Top Clip(in):	0.000		0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000		0.000	Inlet Ctrl Spec:	Use dc
				Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name:	ExPipe16B-4	From Node:	S-16B-19	Length(ft):	111.00
Group:	BASE	To Node:	PrCS16B-FD3B	Count:	1
	UPSTREAM		DOWNSTREAM	Friction Equation:	Automatic
Geometry:	Circular		Circular	Solution Algorithm:	Most Restrictive
Span(in):	30.00		30.00	Flow:	Both
Rise(in):	30.00		30.00	Entrance Loss Coef:	0.50
Invert(ft):	0.420		0.120	Exit Loss Coef:	0.00
Manning's N:	0.013000		0.013000	Bend Loss Coef:	0.00
Top Clip(in):	0.000		0.000	Outlet Ctrl Spec:	Use dc or tw
Bot Clip(in):	0.000		0.000	Inlet Ctrl Spec:	Use dc
				Stabilizer Option:	None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name:	ExPipe16B-5	From Node:	PrCS16B-FD3B	Length(ft):	130.00
Group:	BASE	To Node:	S-16B-22	Count:	1
	UPSTREAM		DOWNSTREAM	Friction Equation:	Automatic
				Solution Algorithm:	Most Restrictive

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Geometry: Circular	Circular	Flow: Both
Span(in): 36.00	36.00	Entrance Loss Coef: 0.50
Rise(in): 36.00	36.00	Exit Loss Coef: 0.00
Invert(ft): -0.380	-0.580	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-6	From Node: S-16B-22	Length(ft): 102.00
Group: BASE	To Node: S-16B-24	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Horz Ellipse	Horz Ellipse	Exit Loss Coef: 0.00
Span(in): 45.00	45.00	Bend Loss Coef: 0.00
Rise(in): 29.00	29.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): -0.580	-1.000	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Name: ExPipe16B-7A	From Node: ExStruct16B-8	Length(ft): 105.00
Group: BASE	To Node: PrFD16B-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 24.00	24.00	Bend Loss Coef: 0.00
Rise(in): 24.00	24.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 2.420	2.120	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-7B	From Node: PrCS16B-FD1	Length(ft): 127.00
Group: BASE	To Node: PrCS16B-FD2	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	
Geometry: Circular	Circular	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Span(in): 24.00	24.00	Entrance Loss Coef: 0.50
Rise(in): 24.00	24.00	Exit Loss Coef: 0.00
Invert(ft): 1.020	0.420	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-8	From Node: PrCS16B-FD2	Length(ft): 225.00
Group: BASE	To Node: ExStruct16B-7	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 24.00	24.00	Bend Loss Coef: 0.00
Rise(in): 24.00	24.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): 0.420	-1.080	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: ExPipe16B-9	From Node: Pond16B-4	Length(ft): 180.00
Group: BASE	To Node: ExStruct16B-10	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	Exit Loss Coef: 0.00
Span(in): 54.00	54.00	Bend Loss Coef: 0.00
Rise(in): 54.00	54.00	Outlet Ctrl Spec: Use dc or tw
Invert(ft): -2.580	-2.780	Inlet Ctrl Spec: Use dc
Manning's N: 0.013000	0.013000	Stabilizer Option: None
Top Clip(in): 0.000	0.000	
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Name: PrPipe16B-14	From Node: S-16B-14	Length(ft): 19.00
Group: BASE	To Node: Pond16B-1	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
		Flow: Both
UPSTREAM	DOWNSTREAM	Entrance Loss Coef: 0.50
Geometry: Circular	Circular	
Span(in): 36.00	36.00	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Rise(in): 36.00	36.00	Exit Loss Coef: 0.00
Invert(ft): -0.780	-0.880	Bend Loss Coef: 0.00
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Stabilizer Option: None

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
Name: PrPipel6B-24      From Node: S-16B-24      Length(ft): 17.00
Group: BASE              To Node: Pond16B-1        Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
Geometry: Circular      DOWNSTREAM
Span(in): 36.00         Circular
Rise(in): 36.00         36.00
Invert(ft): -0.300     -0.420
Manning's N: 0.013000  0.013000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
Entrance Loss Coef: 0.50
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

==== Drop Structures =====

```

Name: ExCS16B-2B      From Node: Pond16B-2      Length(ft): 40.00
Group: BASE            To Node: Ditch16B-2      Count: 1
                          Friction Equation: Average Conveyance
                          Solution Algorithm: Most Restrictive
                          Flow: Both
Geometry: Circular      DOWNSTREAM
Span(in): 15.00         Circular
Rise(in): 15.00         15.00
Invert(ft): 1.120      0.920
Manning's N: 0.024000  0.024000
Top Clip(in): 0.000    0.000
Bot Clip(in): 0.000    0.000
Entrance Loss Coef: 0.500
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure ExCS16B-2B ***

Count: 2	Bottom Clip(in): 0.000
Type: Vertical: Mavis	Top Clip(in): 0.000
Flow: Both	Weir Disc Coef: 3.200
Geometry: Circular	Orifice Disc Coef: 0.600

TABLE

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.500
Invert(ft): 0.420	0.220	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

S-16B-15 IS USED AS A CONTROL STRUCTURE (HORIZONTAL WEIR-DBI-E)

*** Weir 1 of 1 for Drop Structure S-16B-15 ***

		TABLE
Count: 1	Bottom Clip(in): 0.000	
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 54.00	Invert(ft): 4.500	
Rise(in): 36.00	Control Elev(ft): 4.500	

==== Weirs =====

Name: ExCS16B-2A From Node: Pond16B-2
 Group: BASE To Node: Ditch16B-2
 Flow: Both Count: 1
 Type: Vertical: Fread Geometry: Trapezoidal

Bottom Width(ft): 25.00
 Left Side Slope(h/v): 2.00
 Right Side Slope(h/v): 3.00
 Invert(ft): 4.920
 Control Elevation(ft): 4.920
 Struct Opening Dim(ft): 9999.00

TABLE

Bottom Clip(ft): 0.000
 Top Clip(ft): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

 Name: PrCS16B-FD1 From Node: PrFD16B-1
 Group: BASE To Node: PrCS16B-FD1
 Flow: Both Count: 1
 Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
 Rise(in): 12.00
 Invert(ft): 3.600
 Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Name: PrCS16B-FD2 From Node: PrFD16B-2
Group: BASE To Node: PrCS16B-FD2
Flow: Both Count: 1
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 49.00
Rise(in): 12.00
Invert(ft): 3.600
Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

Name: PrCS16B-FD3A From Node: PrFD16B-3
Group: BASE To Node: PrCS16B-FD3A
Flow: Both Count: 2
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
Rise(in): 12.00
Invert(ft): 3.600
Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

THIS CONTROL STRUCTURE HAS TWO WEIRS, ONE IN EACH SIDE. FOR MORE INFORMATION, PLEASE SEE DRAINAGE DET

Name: PrCS16B-FD3B From Node: PrFD16B-3
Group: BASE To Node: PrCS16B-FD3B
Flow: Both Count: 2
Type: Vertical: Mavis Geometry: Rectangular

Span(in): 54.00
Rise(in): 12.00
Invert(ft): 3.600
Control Elevation(ft): 3.600

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

THIS CONTROL STRUCTURE HAS TWO WEIRS, ONE IN EACH SIDE. FOR MORE INFORMATION, PLEASE SEE DRAINAGE DET

Name: S-16B-19 From Node: Swale16B-1
Group: BASE To Node: S-16B-19
Flow: Both Count: 1
Type: Horizontal Geometry: Rectangular

Span(in): 27.00
Rise(in): 36.00
Invert(ft): 4.500
Control Elevation(ft): 4.500

TABLE

Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Discharge Coef: 3.200
Orifice Discharge Coef: 0.600

S-16B-19 IS USED AS A CONTROL STRUCTURE (HORIZONTAL WEIR-DBI-E)

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

 Name: S-16B-22 From Node: Swale16B-3
 Group: BASE To Node: S-16B-22
 Flow: Both Count: 1
 Type: Horizontal Geometry: Rectangular

 Span(in): 54.00
 Rise(in): 36.00
 Invert(ft): 6.500
 Control Elevation(ft): 6.500

TABLE

 Bottom Clip(in): 0.000
 Top Clip(in): 0.000
 Weir Discharge Coef: 3.200
 Orifice Discharge Coef: 0.600

S-16B-22 IS USED AS A CONTROL STRUCTURE (HORIZONTAL WEIR-DBI-E)

==== Rating Curves =====

 Name: PrFD16B-1 From Node: PrFD16B-1 Count: 1
 Group: BASE To Node: Groundwater Flow: Both

	TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1:	PrFD16B-1	0.000	0.000
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

 Name: PrFD16B-2 From Node: PrFD16B-2 Count: 1
 Group: BASE To Node: Groundwater Flow: Both

	TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1:	PrFD16B-2	0.000	0.000
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

 Name: PrFD16B-3 From Node: PrFD16B-3 Count: 1
 Group: BASE To Node: Groundwater2 Flow: Both

	TABLE	ELEV ON(ft)	ELEV OFF(ft)
#1:	PrFD16B-3	0.000	0.000
#2:		0.000	0.000
#3:		0.000	0.000
#4:		0.000	0.000

==== Hydrology Simulations =====

Name: 100Y01H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post
 Override Defaults: Yes
 Storm Duration(hrs): 1.00
 Rainfall File: Fdot-1
 Rainfall Amount(in): 5.10

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Time (hrs)	Print	Inc (min)
1.000		1.00
1.330		1.00

Name: 100Y08H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Override Defaults: Yes
Storm Duration (hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount (in): 9.60

Time (hrs)	Print	Inc (min)
2.000		5.00
6.000		1.00
8.000		5.00
8.330		5.00

Name: 100Y24H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Override Defaults: Yes
Storm Duration (hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount (in): 13.50

Time (hrs)	Print	Inc (min)
8.000		15.00
10.000		5.00
14.000		1.00
16.000		5.00
24.000		15.00
24.330		5.00

Name: 10Y01H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Override Defaults: Yes
Storm Duration (hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount (in): 3.60

Time (hrs)	Print	Inc (min)
1.000		1.00
1.330		1.00

Name: 10Y08H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Override Defaults: Yes
Storm Duration (hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount (in): 6.60

Time (hrs)	Print	Inc (min)
2.000		5.00
6.000		1.00
8.000		5.00
8.330		5.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Name: 10Y24H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 25Y72H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

==== Routing Simulations =====

Name: 100Y01H Hydrology Sim: 100Y01H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Execute: No Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 25.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
1.000	1.000
25.000	15.000

Group	Run
BASE	Yes

Name: 100Y08H Hydrology Sim: 100Y08H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Execute: No Restart: No Patch: No
 Alternative: No
 Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

Time Step Optimizer: 10.000
 Start Time(hrs): 0.000
 Min Calc Time(sec): 0.5000
 Boundary Stages:

End Time(hrs): 32.00
 Max Calc Time(sec): 60.0000
 Boundary Flows:

Time(hrs)	Print Inc(min)
2.000	5.000
6.000	1.000
8.000	5.000
32.000	15.000

Group	Run
BASE	Yes

Name: 100Y24H Hydrology Sim: 100Y24H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group	Run
BASE	Yes

Name: 10Y01H Hydrology Sim: 10Y01H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Execute: No Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 25.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
1.000	1.000
25.000	15.000

Group	Run
BASE	Yes

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 INPUT REPORT

```

-----
Name: 10Y08H           Hydrology Sim: 10Y08H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Execute: No           Restart: No           Patch: No
Alternative: No

Max Delta Z(ft): 1.00           Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000           End Time(hrs): 32.00
Min Calc Time(sec): 0.5000      Max Calc Time(sec): 60.0000
Boundary Stages:                 Boundary Flows:
  
```

```

Time(hrs)      Print Inc(min)
-----
2.000          5.000
6.000          1.000
8.000          5.000
32.000         15.000

Group          Run
-----
BASE           Yes
  
```

```

-----
Name: 10Y24H           Hydrology Sim: 10Y24H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Execute: Yes           Restart: No           Patch: No
Alternative: No

Max Delta Z(ft): 1.00           Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000           End Time(hrs): 48.00
Min Calc Time(sec): 0.5000      Max Calc Time(sec): 60.0000
Boundary Stages:                 Boundary Flows:
  
```

```

Time(hrs)      Print Inc(min)
-----
8.000          15.000
10.000         5.000
14.000         1.000
16.000         5.000
48.000         15.000

Group          Run
-----
BASE           Yes
  
```

```

-----
Name: 25Y72H           Hydrology Sim: 25Y72H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System16B_ICPR Post

Execute: Yes           Restart: No           Patch: No
Alternative: No

Max Delta Z(ft): 1.00           Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000           End Time(hrs): 96.00
Min Calc Time(sec): 0.5000      Max Calc Time(sec): 60.0000
Boundary Stages:                 Boundary Flows:
  
```

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
INPUT REPORT

Time (hrs)	Print	Inc (min)
48.000		15.000
56.000		5.000
64.000		1.000
72.000		5.000
96.000		15.000
Group		Run
BASE		Yes

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
LINK CONNECTIVITY REPORT

Name	Group	From Node	To Node	Type	U/S Geometry	D/S Geometry	Flow Dir
ExBoxCulv16B-2	BASE	S-16B-32	ExStruct16B-7	Pipe	Rectangular	Rectangular	Both
ExBoxCulv16B-3	BASE	ExStruct16B-7	Pond16B-4	Pipe	Rectangular	Rectangular	Both
ExPipe16B-1	BASE	PrCS16B-FD3A	ExStruct16B-2	Pipe	Circular	Circular	Both
ExPipe16B-10	BASE	ExStruct16B-10	ExStruct16B-11	Pipe	Circular	Circular	Both
ExPipe16B-11	BASE	ExStruct16B-11	ExStruct16B-12	Pipe	Circular	Circular	Both
ExPipe16B-12	BASE	ExStruct16B-12	ExStruct16B-13	Pipe	Circular	Circular	Both
ExPipe16B-13	BASE	ExStruct16B-13	NFNR	Pipe	Circular	Circular	Both
ExPipe16B-2	BASE	ExStruct16B-2	S-16B-14	Pipe	Circular	Circular	Both
ExPipe16B-3	BASE	Ditch16B-2	S-16B-19	Pipe	Circular	Circular	Both
ExPipe16B-4	BASE	S-16B-19	PrCS16B-FD3B	Pipe	Circular	Circular	Both
ExPipe16B-5	BASE	PrCS16B-FD3B	S-16B-22	Pipe	Circular	Circular	Both
ExPipe16B-6	BASE	S-16B-22	S-16B-24	Pipe	Horz Ellipse	Horz Ellipse	Both
ExPipe16B-7A	BASE	ExStruct16B-8	PrFD16B-1	Pipe	Circular	Circular	Both
ExPipe16B-7B	BASE	PrCS16B-FD1	PrCS16B-FD2	Pipe	Circular	Circular	Both
ExPipe16B-8	BASE	PrCS16B-FD2	ExStruct16B-7	Pipe	Circular	Circular	Both
ExPipe16B-9	BASE	Pond16B-4	ExStruct16B-10	Pipe	Circular	Circular	Both
PrPipe16B-14	BASE	S-16B-14	Pond16B-1	Pipe	Circular	Circular	Both
PrPipe16B-24	BASE	S-16B-24	Pond16B-1	Pipe	Circular	Circular	Both
ExCS16B-2A	BASE	Pond16B-2	Ditch16B-2	Vertical WGO Fread	Trapezoidal		Both
PrCS16B-FD1	BASE	PrFD16B-1	PrCS16B-FD1	Vertical WGO Mavis	Rectangular		Both
PrCS16B-FD2	BASE	PrFD16B-2	PrCS16B-FD2	Vertical WGO Mavis	Rectangular		Both
PrCS16B-FD3A	BASE	PrFD16B-3	PrCS16B-FD3A	Vertical WGO Mavis	Rectangular		Both
PrCS16B-FD3B	BASE	PrFD16B-3	PrCS16B-FD3B	Vertical WGO Mavis	Rectangular		Both
S-16B-19	BASE	Swale16B-1	S-16B-19	Horizontal WGO	Rectangular		Both
S-16B-22	BASE	Swale16B-3	S-16B-22	Horizontal WGO	Rectangular		Both
ExCS16B-2B	BASE	Pond16B-2	Ditch16B-2	Drop Structure	Circular	Circular	Both
--> slot	BASE	Pond16B-2	Ditch16B-2	Vertical WGO Mavis	Circular		Both
--> slot	BASE	Pond16B-2	Ditch16B-2	Vertical WGO Mavis	Rectangular		Both
PrCS16B-3	BASE	Pond16B-1	S-16B-32	Drop Structure	Circular	Circular	Both
--> slot	BASE	Pond16B-1	S-16B-32	Horizontal WGO	Rectangular		Both
--> slot	BASE	Pond16B-1	S-16B-32	Vertical WGO Mavis	Circular		Both
--> slot	BASE	Pond16B-1	S-16B-32	Vertical WGO Mavis	Rectangular		Both
S-16B-15	BASE	Swale16B-1	PrCS16B-FD3A	Drop Structure	Circular	Circular	Both
--> slot	BASE	Swale16B-1	PrCS16B-FD3A	Horizontal WGO	Rectangular		Both
PrFD16B-1	BASE	PrFD16B-1	Groundwater	Rating Curve			Both
PrFD16B-2	BASE	PrFD16B-2	Groundwater	Rating Curve			Both
PrFD16B-3	BASE	PrFD16B-3	Groundwater2	Rating Curve			Both

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Ditch16B-2	BASE	100Y24H	12.85	7.07	7.00	0.0043	22771	12.03	37.27	12.73	17.25
ExStruct16B-10	BASE	100Y24H	12.49	3.11	3.42	0.0019	155	12.70	80.56	12.70	80.58
ExStruct16B-11	BASE	100Y24H	12.39	2.22	3.22	0.0015	156	12.65	81.32	12.65	81.35
ExStruct16B-12	BASE	100Y24H	12.35	1.57	3.42	-0.0024	213	12.39	84.72	12.39	84.73
ExStruct16B-13	BASE	100Y24H	12.34	0.97	4.52	0.0044	380	12.34	86.32	12.34	86.32
ExStruct16B-2	BASE	100Y24H	12.82	6.09	9.00	-0.0076	128	12.05	22.66	12.05	22.51
ExStruct16B-7	BASE	100Y24H	12.50	4.86	8.00	0.0430	164	12.30	76.96	12.30	76.84
ExStruct16B-8	BASE	100Y24H	12.30	8.83	7.00	-0.0079	118	12.27	19.12	12.27	18.94
Groundwater	BASE	100Y24H	0.00	0.42	0.43	0.0000	0	12.54	14.61	0.00	0.00
Groundwater2	BASE	100Y24H	0.00	0.42	0.43	0.0000	0	12.78	10.22	0.00	0.00
NFNR	BASE	100Y24H	0.00	0.42	0.43	0.0000	150	12.28	108.23	0.00	0.00
Pond16B-1	BASE	100Y24H	12.88	5.86	5.00	-0.0078	97272	12.26	110.85	13.78	59.02
Pond16B-2	BASE	100Y24H	12.85	7.08	7.80	0.0026	30273	12.27	48.84	12.03	27.88
Pond16B-4	BASE	100Y24H	12.55	3.96	3.00	0.0024	25212	12.28	86.19	12.80	79.55
PrCS16B-FD1	BASE	100Y24H	12.56	7.50	7.57	0.0130	119	11.88	13.51	12.95	12.19
PrCS16B-FD2	BASE	100Y24H	12.52	6.86	7.29	-0.0102	131	11.89	18.85	11.90	18.00
PrCS16B-FD3A	BASE	100Y24H	12.80	6.23	7.20	-0.0130	123	11.97	21.71	11.97	19.85
PrCS16B-FD3B	BASE	100Y24H	12.79	6.24	7.20	0.0113	130	11.97	24.35	12.04	21.51
PrFD16B-1	BASE	100Y24H	12.58	7.78	7.57	-0.0205	21233	12.27	40.05	12.74	19.84
PrFD16B-2	BASE	100Y24H	12.51	6.95	7.29	-0.0317	8137	12.27	21.98	12.45	12.60
PrFD16B-3	BASE	100Y24H	12.78	6.24	7.20	0.0216	13912	12.27	46.48	12.26	46.35
S-16B-14	BASE	100Y24H	12.85	5.96	9.67	0.0118	119	12.05	22.51	12.05	22.36
S-16B-19	BASE	100Y24H	12.91	6.48	5.28	0.0039	131	14.11	16.60	14.11	16.50
S-16B-22	BASE	100Y24H	12.82	6.12	8.48	0.0072	132	12.04	21.51	12.05	21.34
S-16B-24	BASE	100Y24H	12.86	5.97	13.95	-0.0120	124	12.05	21.34	12.05	21.19
S-16B-32	BASE	100Y24H	12.73	5.39	14.81	0.0282	149	13.78	59.02	13.78	59.09
Swale16B-1	BASE	100Y24H	12.96	6.46	5.28	0.0019	73084	12.27	34.10	14.08	15.92
Swale16B-3	BASE	100Y24H	12.81	6.65	8.48	0.0015	16396	12.27	8.70	12.81	2.77
Ditch16B-2	BASE	10Y24H	12.69	5.53	7.00	0.0043	14826	12.33	28.71	12.71	13.66
ExStruct16B-10	BASE	10Y24H	12.34	1.96	3.42	0.0017	155	12.36	67.09	12.36	67.11
ExStruct16B-11	BASE	10Y24H	12.33	1.57	3.22	0.0013	199	12.35	68.16	12.35	68.17
ExStruct16B-12	BASE	10Y24H	12.33	1.20	3.42	-0.0024	485	12.33	71.33	12.33	71.33
ExStruct16B-13	BASE	10Y24H	12.32	0.76	4.52	0.0043	520	12.32	72.48	12.32	72.48
ExStruct16B-2	BASE	10Y24H	12.71	4.80	9.00	-0.0075	128	12.27	20.62	12.27	20.28
ExStruct16B-7	BASE	10Y24H	12.33	3.04	8.00	0.0303	164	12.27	61.89	12.28	61.78
ExStruct16B-8	BASE	10Y24H	12.32	6.49	7.00	-0.0110	118	12.27	11.49	12.27	11.38
Groundwater	BASE	10Y24H	0.00	0.42	0.43	0.0000	0	12.41	8.86	0.00	0.00
Groundwater2	BASE	10Y24H	0.00	0.42	0.43	0.0000	0	12.67	6.29	0.00	0.00
NFNR	BASE	10Y24H	0.00	0.42	0.43	0.0000	150	12.30	84.18	0.00	0.00
Pond16B-1	BASE	10Y24H	12.80	4.61	5.00	0.0017	72408	12.27	79.05	12.89	40.50
Pond16B-2	BASE	10Y24H	12.69	5.55	7.80	0.0022	20461	12.27	27.46	12.33	22.43
Pond16B-4	BASE	10Y24H	12.34	2.43	3.00	0.0025	3595	12.27	66.93	12.38	65.81
PrCS16B-FD1	BASE	10Y24H	12.41	5.76	7.57	0.0109	119	12.02	13.51	12.02	13.05
PrCS16B-FD2	BASE	10Y24H	12.40	5.05	7.29	-0.0078	131	12.02	19.45	12.03	19.11
PrCS16B-FD3A	BASE	10Y24H	12.63	4.93	7.20	-0.0121	123	12.27	21.37	12.27	18.33
PrCS16B-FD3B	BASE	10Y24H	12.60	4.93	7.20	0.0116	130	12.26	23.13	12.26	19.86

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
PrFD16B-1	BASE	10Y24H	12.41	6.07	7.57	-0.0295	9913	12.27	24.23	12.44	17.36
PrFD16B-2	BASE	10Y24H	12.41	5.13	7.29	-0.0137	5697	12.27	12.45	12.11	10.24
PrFD16B-3	BASE	10Y24H	12.67	4.95	7.20	0.0210	113	12.27	28.76	12.26	32.16
S-16B-14	BASE	10Y24H	12.76	4.70	9.67	0.0090	119	12.27	20.28	12.27	20.16
S-16B-19	BASE	10Y24H	12.69	5.16	5.28	0.0045	131	13.02	12.32	13.02	12.53
S-16B-22	BASE	10Y24H	12.73	4.80	8.48	0.0066	132	12.26	19.86	12.27	19.56
S-16B-24	BASE	10Y24H	12.77	4.69	13.95	-0.0103	124	12.27	19.56	12.27	19.43
S-16B-32	BASE	10Y24H	12.35	3.23	14.81	0.0319	149	12.89	40.50	12.89	40.63
Swale16B-1	BASE	10Y24H	12.69	5.15	5.28	0.0010	30677	12.27	19.76	12.23	10.73
Swale16B-3	BASE	10Y24H	22.00	6.52	8.48	0.0006	16010	12.27	4.47	22.00	0.12
Ditch16B-2	BASE	25Y72H	60.57	6.62	7.00	0.0043	20566	59.80	33.45	60.48	16.27
ExStruct16B-10	BASE	25Y72H	60.19	2.76	3.42	0.0019	155	60.33	77.31	60.33	77.33
ExStruct16B-11	BASE	25Y72H	60.16	1.95	3.22	-0.0023	156	60.29	78.08	60.29	78.09
ExStruct16B-12	BASE	25Y72H	60.13	1.44	3.42	0.0026	220	60.14	81.37	60.14	81.37
ExStruct16B-13	BASE	25Y72H	60.11	0.87	4.52	-0.0033	447	60.11	82.58	60.11	82.58
ExStruct16B-2	BASE	25Y72H	60.50	5.69	9.00	-0.0073	128	59.82	21.47	59.82	21.34
ExStruct16B-7	BASE	25Y72H	60.21	4.37	8.00	0.0488	164	60.07	72.13	60.07	71.99
ExStruct16B-8	BASE	25Y72H	60.07	7.68	7.00	-0.0091	118	60.02	15.10	60.02	14.96
Groundwater	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.24	12.25	0.00	0.00
Groundwater2	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.50	9.09	0.00	0.00
NFNR	BASE	25Y72H	0.00	0.42	0.43	0.0000	150	60.05	100.37	0.00	0.00
Pond16B-1	BASE	25Y72H	60.58	5.44	5.00	-0.0088	89025	60.02	96.46	61.16	56.48
Pond16B-2	BASE	25Y72H	60.57	6.63	7.80	0.0020	26565	60.02	39.61	59.80	25.14
Pond16B-4	BASE	25Y72H	60.22	3.55	3.00	0.0024	11970	60.05	79.56	60.38	76.20
PrCS16B-FD1	BASE	25Y72H	60.25	6.77	7.57	0.0130	119	59.66	13.03	59.66	11.72
PrCS16B-FD2	BASE	25Y72H	60.23	6.18	7.29	-0.0115	131	59.67	18.79	59.69	18.02
PrCS16B-FD3A	BASE	25Y72H	60.45	5.84	7.20	-0.0136	123	59.77	21.15	59.77	19.12
PrCS16B-FD3B	BASE	25Y72H	60.49	5.85	7.20	0.0131	130	59.76	24.60	59.76	20.83
PrFD16B-1	BASE	25Y72H	60.26	7.03	7.57	-0.0209	15329	60.02	31.54	60.35	17.94
PrFD16B-2	BASE	25Y72H	60.23	6.25	7.29	-0.0312	6839	60.02	17.77	59.70	10.90
PrFD16B-3	BASE	25Y72H	60.50	5.87	7.20	0.0218	113	60.02	36.30	60.02	36.20
S-16B-14	BASE	25Y72H	60.55	5.55	9.67	0.0119	119	59.82	21.34	59.82	21.22
S-16B-19	BASE	25Y72H	60.59	6.09	5.28	-0.0048	131	61.36	15.53	61.36	15.70
S-16B-22	BASE	25Y72H	60.51	5.73	8.48	0.0072	132	60.05	21.30	60.06	21.08
S-16B-24	BASE	25Y72H	60.55	5.57	13.95	0.0103	124	60.06	21.08	60.06	20.97
S-16B-32	BASE	25Y72H	60.45	4.93	14.81	0.0282	149	61.16	56.48	61.17	56.61
Swale16B-1	BASE	25Y72H	60.61	6.08	5.28	0.0017	59950	60.02	27.31	61.34	14.35
Swale16B-3	BASE	25Y72H	60.20	6.71	8.48	0.0007	16588	60.02	7.32	60.20	4.78

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExBoxCulv16B-2	BASE	100Y24H	13.78	59.09	4.518	12.73	5.39	12.50	4.86
ExBoxCulv16B-3	BASE	100Y24H	12.30	76.84	-17.794	12.50	4.86	12.55	3.96
ExCS16B-2A	BASE	100Y24H	12.03	26.46	-0.127	12.85	7.08	12.85	7.07
ExCS16B-2B	BASE	100Y24H	11.95	2.78	0.249	12.85	7.08	12.85	7.07
ExPipe16B-1	BASE	100Y24H	11.97	19.85	-3.184	12.80	6.23	12.82	6.09
ExPipe16B-10	BASE	100Y24H	12.70	80.58	-4.404	12.49	3.11	12.39	2.22
ExPipe16B-11	BASE	100Y24H	12.65	81.35	5.717	12.39	2.22	12.35	1.57
ExPipe16B-12	BASE	100Y24H	12.39	84.73	-7.809	12.35	1.57	12.34	0.97
ExPipe16B-13	BASE	100Y24H	12.34	86.32	8.089	12.34	0.97	12.20	1.22
ExPipe16B-2	BASE	100Y24H	12.05	22.51	-7.086	12.82	6.09	12.85	5.96
ExPipe16B-3	BASE	100Y24H	12.73	17.25	-2.214	12.85	7.07	12.91	6.48
ExPipe16B-4	BASE	100Y24H	14.11	16.50	-4.064	12.91	6.48	12.79	6.24
ExPipe16B-5	BASE	100Y24H	12.04	21.51	-4.063	12.79	6.24	12.82	6.12
ExPipe16B-6	BASE	100Y24H	12.05	21.34	-7.563	12.82	6.12	12.86	5.97
ExPipe16B-7A	BASE	100Y24H	12.27	18.94	-1.049	12.30	8.83	12.58	7.78
ExPipe16B-7B	BASE	100Y24H	12.95	12.19	-1.713	12.56	7.50	12.52	6.86
ExPipe16B-8	BASE	100Y24H	11.90	18.00	0.369	12.52	6.86	12.50	4.86
ExPipe16B-9	BASE	100Y24H	12.80	79.55	-4.811	12.55	3.96	12.49	3.11
PrCS16B-3	BASE	100Y24H	13.78	59.02	0.053	12.88	5.86	12.73	5.39
PrCS16B-FD1	BASE	100Y24H	11.88	13.51	-1.531	12.58	7.78	12.56	7.50
PrCS16B-FD2	BASE	100Y24H	11.91	8.19	-1.977	12.51	6.95	12.52	6.86
PrCS16B-FD3A	BASE	100Y24H	12.26	19.71	-8.476	12.78	6.24	12.80	6.23
PrCS16B-FD3B	BASE	100Y24H	12.25	17.21	-9.051	12.78	6.24	12.79	6.24
PrFD16B-1	BASE	100Y24H	12.58	8.03	-0.033	12.58	7.78	0.00	0.42
PrFD16B-2	BASE	100Y24H	12.51	6.60	-0.052	12.51	6.95	0.00	0.42
PrFD16B-3	BASE	100Y24H	12.78	10.22	0.066	12.78	6.24	0.00	0.42
PrPipe16B-14	BASE	100Y24H	12.05	22.36	7.931	12.85	5.96	12.88	5.86
PrPipe16B-24	BASE	100Y24H	12.05	21.19	4.973	12.86	5.97	12.88	5.86
S-16B-15	BASE	100Y24H	14.11	15.08	-0.858	12.96	6.46	12.80	6.23
S-16B-19	BASE	100Y24H	11.94	4.80	0.093	12.96	6.46	12.91	6.48
S-16B-22	BASE	100Y24H	12.81	2.77	0.013	12.81	6.65	12.82	6.12
ExBoxCulv16B-2	BASE	10Y24H	12.89	40.63	4.244	12.35	3.23	12.33	3.04
ExBoxCulv16B-3	BASE	10Y24H	12.28	61.78	-16.691	12.33	3.04	12.34	2.43
ExCS16B-2A	BASE	10Y24H	12.34	21.06	-0.169	12.69	5.55	12.69	5.53
ExCS16B-2B	BASE	10Y24H	12.25	2.55	0.249	12.69	5.55	12.69	5.53
ExPipe16B-1	BASE	10Y24H	12.27	18.33	-3.096	12.63	4.93	12.71	4.80
ExPipe16B-10	BASE	10Y24H	12.36	67.11	-4.423	12.34	1.96	12.33	1.57
ExPipe16B-11	BASE	10Y24H	12.35	68.17	5.706	12.33	1.57	12.33	1.20
ExPipe16B-12	BASE	10Y24H	12.33	71.33	-7.796	12.33	1.20	12.32	0.76
ExPipe16B-13	BASE	10Y24H	12.32	72.48	8.077	12.32	0.76	0.00	0.42
ExPipe16B-2	BASE	10Y24H	12.27	20.28	-5.298	12.71	4.80	12.76	4.70
ExPipe16B-3	BASE	10Y24H	12.71	13.66	-2.204	12.69	5.53	12.69	5.16
ExPipe16B-4	BASE	10Y24H	13.02	12.53	-3.248	12.69	5.16	12.60	4.93
ExPipe16B-5	BASE	10Y24H	12.26	19.86	-3.835	12.60	4.93	12.73	4.80
ExPipe16B-6	BASE	10Y24H	12.27	19.56	-3.913	12.73	4.80	12.77	4.69
ExPipe16B-7A	BASE	10Y24H	12.27	11.38	-1.056	12.32	6.49	12.41	6.07

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExPipe16B-7B	BASE	10Y24H	12.02	13.05	-1.897	12.41	5.76	12.40	5.05
ExPipe16B-8	BASE	10Y24H	12.03	19.11	0.916	12.40	5.05	12.33	3.04
ExPipe16B-9	BASE	10Y24H	12.38	65.81	-4.798	12.34	2.43	12.34	1.96
PrCS16B-3	BASE	10Y24H	12.89	40.50	0.044	12.80	4.61	12.35	3.23
PrCS16B-FD1	BASE	10Y24H	12.02	13.51	-0.551	12.41	6.07	12.41	5.76
PrCS16B-FD2	BASE	10Y24H	12.11	7.48	-2.100	12.41	5.13	12.40	5.05
PrCS16B-FD3A	BASE	10Y24H	12.27	14.91	-7.768	12.67	4.95	12.63	4.93
PrCS16B-FD3B	BASE	10Y24H	12.26	14.67	-10.135	12.67	4.95	12.60	4.93
PrFD16B-1	BASE	10Y24H	12.41	5.24	-0.048	12.41	6.07	0.00	0.42
PrFD16B-2	BASE	10Y24H	12.41	3.62	-0.022	12.41	5.13	0.00	0.42
PrFD16B-3	BASE	10Y24H	12.67	6.29	0.064	12.67	4.95	0.00	0.42
PrPipe16B-14	BASE	10Y24H	12.27	20.16	-3.455	12.76	4.70	12.80	4.61
PrPipe16B-24	BASE	10Y24H	12.27	19.43	-4.405	12.77	4.69	12.80	4.61
S-16B-15	BASE	10Y24H	12.93	10.21	0.146	12.69	5.15	12.63	4.93
S-16B-19	BASE	10Y24H	12.23	4.40	-0.078	12.69	5.15	12.69	5.16
S-16B-22	BASE	10Y24H	22.00	0.12	-0.000	22.00	6.52	12.73	4.80
ExBoxCulv16B-2	BASE	25Y72H	61.17	56.61	-5.135	60.45	4.93	60.21	4.37
ExBoxCulv16B-3	BASE	25Y72H	60.07	71.99	-19.021	60.21	4.37	60.22	3.55
ExCS16B-2A	BASE	25Y72H	59.80	23.77	-0.149	60.57	6.63	60.57	6.62
ExCS16B-2B	BASE	25Y72H	59.69	2.78	0.249	60.57	6.63	60.57	6.62
ExPipe16B-1	BASE	25Y72H	59.77	19.12	-3.254	60.45	5.84	60.50	5.69
ExPipe16B-10	BASE	25Y72H	60.33	77.33	5.632	60.19	2.76	60.16	1.95
ExPipe16B-11	BASE	25Y72H	60.29	78.09	-5.097	60.16	1.95	60.13	1.44
ExPipe16B-12	BASE	25Y72H	60.14	81.37	5.485	60.13	1.44	60.11	0.87
ExPipe16B-13	BASE	25Y72H	60.11	82.58	6.455	60.11	0.87	0.00	0.42
ExPipe16B-2	BASE	25Y72H	59.82	21.34	-7.124	60.50	5.69	60.55	5.55
ExPipe16B-3	BASE	25Y72H	60.48	16.27	-2.520	60.57	6.62	60.59	6.09
ExPipe16B-4	BASE	25Y72H	61.36	15.70	-3.867	60.59	6.09	60.49	5.85
ExPipe16B-5	BASE	25Y72H	59.76	20.83	-4.188	60.49	5.85	60.51	5.73
ExPipe16B-6	BASE	25Y72H	60.06	21.08	-7.604	60.51	5.73	60.55	5.57
ExPipe16B-7A	BASE	25Y72H	60.02	14.96	-1.056	60.07	7.68	60.26	7.03
ExPipe16B-7B	BASE	25Y72H	59.66	11.72	-1.818	60.25	6.77	60.23	6.18
ExPipe16B-8	BASE	25Y72H	59.69	18.02	0.354	60.23	6.18	60.21	4.37
ExPipe16B-9	BASE	25Y72H	60.38	76.20	-4.798	60.22	3.55	60.19	2.76
PrCS16B-3	BASE	25Y72H	61.16	56.48	0.035	60.58	5.44	60.45	4.93
PrCS16B-FD1	BASE	25Y72H	59.66	13.03	-2.352	60.26	7.03	60.25	6.77
PrCS16B-FD2	BASE	25Y72H	59.70	8.14	-2.187	60.23	6.25	60.23	6.18
PrCS16B-FD3A	BASE	25Y72H	60.02	14.95	-9.385	60.50	5.87	60.45	5.84
PrCS16B-FD3B	BASE	25Y72H	59.76	13.49	-8.672	60.50	5.87	60.49	5.85
PrFD16B-1	BASE	25Y72H	60.26	6.80	-0.034	60.26	7.03	0.00	0.42
PrFD16B-2	BASE	25Y72H	60.23	5.45	-0.051	60.23	6.25	0.00	0.42
PrFD16B-3	BASE	25Y72H	60.50	9.09	0.067	60.50	5.87	0.00	0.42
PrPipe16B-14	BASE	25Y72H	59.82	21.22	7.925	60.55	5.55	60.58	5.44
PrPipe16B-24	BASE	25Y72H	60.06	20.97	4.901	60.55	5.57	60.58	5.44
S-16B-15	BASE	25Y72H	61.33	14.25	0.164	60.61	6.08	60.45	5.84
S-16B-19	BASE	25Y72H	59.70	4.01	-0.117	60.61	6.08	60.59	6.09

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 16B
 POST-DEVELOPMENT CONDITIONS
 LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
S-16B-22	BASE	25Y72H	60.20	4.78	0.017	60.20	6.71	60.51	5.73

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100Y24H	B16B-10A	BASE	12.27	6.87	8.137	34262
100Y24H	B16B-10B	BASE	12.27	1.84	8.439	9191
100Y24H	B16B-11	BASE	12.27	12.97	9.202	65804
100Y24H	B16B-12A	BASE	12.27	8.98	13.408	54023
100Y24H	B16B-12B	BASE	12.27	13.56	13.095	79856
100Y24H	B16B-12B Offs1	BASE	12.27	5.33	11.574	28989
100Y24H	B16B-12B Offs2	BASE	12.27	7.52	11.664	41070
100Y24H	B16B-13A	BASE	12.27	13.39	8.957	67631
100Y24H	B16B-13B	BASE	12.27	8.24	8.875	41557
100Y24H	B16B-14A	BASE	12.27	13.83	10.428	72297
100Y24H	B16B-14B	BASE	12.27	5.29	12.643	30290
100Y24H	B16B-15	BASE	12.27	21.11	11.222	113246
100Y24H	B16B-16	BASE	12.27	21.98	9.784	112938
100Y24H	B16B-17	BASE	12.27	9.54	9.037	48220
100Y24H	B16B-18	BASE	12.27	2.11	9.208	10696
100Y24H	B16B-18 Offs	BASE	12.27	0.77	8.083	3814
100Y24H	B16B-19	BASE	12.27	1.94	13.495	11757
100Y24H	B16B-1A	BASE	12.27	14.13	9.286	71801
100Y24H	B16B-1B	BASE	12.27	16.73	9.205	84872
100Y24H	B16B-20	BASE	12.27	1.08	7.021	5352
100Y24H	B16B-20 Offs	BASE	12.27	5.24	10.108	27151
100Y24H	B16B-21	BASE	12.27	1.94	13.495	11757
100Y24H	B16B-22	BASE	12.27	0.91	7.274	4489
100Y24H	B16B-2A	BASE	12.27	6.64	13.495	40171
100Y24H	B16B-2B	BASE	12.27	34.13	11.284	183504
100Y24H	B16B-3	BASE	12.27	17.99	10.389	93899
100Y24H	B16B-4	BASE	12.27	43.06	11.031	229443
100Y24H	B16B-4 Offs	BASE	12.27	12.39	8.711	62294
100Y24H	B16B-5	BASE	12.27	22.99	10.090	119039
100Y24H	B16B-6	BASE	12.27	3.84	10.745	20281
100Y24H	B16B-7	BASE	12.27	12.81	8.904	64645
100Y24H	B16B-8	BASE	12.27	11.11	10.468	58137
100Y24H	B16B-9	BASE	12.27	5.72	12.341	32256
10Y24H	B16B-10A	BASE	12.27	3.51	4.110	17307
10Y24H	B16B-10B	BASE	12.27	0.96	4.337	4723
10Y24H	B16B-11	BASE	12.27	7.10	4.925	35222
10Y24H	B16B-12A	BASE	12.27	5.82	8.659	34892
10Y24H	B16B-12B	BASE	12.27	8.77	8.351	50925
10Y24H	B16B-12B Offs1	BASE	12.27	3.29	6.924	17343
10Y24H	B16B-12B Offs2	BASE	12.27	4.66	7.006	24667
10Y24H	B16B-13A	BASE	12.27	7.23	4.734	35742
10Y24H	B16B-13B	BASE	12.27	4.42	4.670	21866
10Y24H	B16B-14A	BASE	12.27	8.11	5.926	41084
10Y24H	B16B-14B	BASE	12.27	3.39	7.914	18961
10Y24H	B16B-15	BASE	12.27	12.85	6.611	66716
10Y24H	B16B-16	BASE	12.27	12.45	5.392	62240
10Y24H	B16B-17	BASE	12.27	5.17	4.796	25590
10Y24H	B16B-18	BASE	12.27	1.15	4.930	5727
10Y24H	B16B-18 Offs	BASE	12.27	0.39	4.070	1921
10Y24H	B16B-19	BASE	12.27	1.26	8.747	7620
10Y24H	B16B-1A	BASE	12.27	7.78	4.992	38599
10Y24H	B16B-1B	BASE	12.27	9.16	4.928	45436
10Y24H	B16B-20	BASE	12.29	0.51	3.308	2522
10Y24H	B16B-20 Offs	BASE	12.27	3.02	5.658	15199
10Y24H	B16B-21	BASE	12.27	1.26	8.747	7620
10Y24H	B16B-22	BASE	12.29	0.43	3.486	2151
10Y24H	B16B-2A	BASE	12.27	4.30	8.747	26037
10Y24H	B16B-2B	BASE	12.27	20.83	6.666	108402
10Y24H	B16B-3	BASE	12.27	10.52	5.893	53263
10Y24H	B16B-4	BASE	12.27	25.99	6.443	134024
10Y24H	B16B-4 Offs	BASE	12.27	6.58	4.544	32492
10Y24H	B16B-5	BASE	12.27	13.24	5.643	66579
10Y24H	B16B-6	BASE	12.27	2.29	6.196	11695
10Y24H	B16B-7	BASE	12.27	6.89	4.693	34069
10Y24H	B16B-8	BASE	12.27	6.53	5.960	33099
10Y24H	B16B-9	BASE	12.27	3.64	7.629	19940
25Y72H	B16B-10A	BASE	60.02	5.79	8.581	36134
25Y72H	B16B-10B	BASE	60.02	1.54	8.890	9682

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
25Y72H	B16B-11	BASE	60.02	10.64	9.667	69127
25Y72H	B16B-12A	BASE	60.02	6.90	13.907	56037
25Y72H	B16B-12B	BASE	60.02	10.43	13.594	82901
25Y72H	B16B-12B Offs1	BASE	60.02	4.17	12.067	30223
25Y72H	B16B-12B Offs2	BASE	60.02	5.87	12.157	42808
25Y72H	B16B-13A	BASE	60.02	11.05	9.418	71109
25Y72H	B16B-13B	BASE	60.02	6.81	9.334	43707
25Y72H	B16B-14A	BASE	60.02	11.04	10.910	75639
25Y72H	B16B-14B	BASE	60.02	4.08	13.141	31484
25Y72H	B16B-15	BASE	60.02	16.59	11.712	118192
25Y72H	B16B-16	BASE	60.02	17.78	10.258	118407
25Y72H	B16B-17	BASE	60.02	7.85	9.499	50685
25Y72H	B16B-18	BASE	60.02	1.73	9.673	11236
25Y72H	B16B-18 Offs	BASE	60.02	0.65	8.527	4024
25Y72H	B16B-19	BASE	60.02	1.49	13.995	12193
25Y72H	B16B-1A	BASE	60.02	11.56	9.753	75405
25Y72H	B16B-1B	BASE	60.02	13.72	9.670	89158
25Y72H	B16B-20	BASE	60.02	0.95	7.439	5671
25Y72H	B16B-20 Offs	BASE	60.02	4.21	10.586	28436
25Y72H	B16B-21	BASE	60.02	1.49	13.995	12193
25Y72H	B16B-22	BASE	60.02	0.79	7.699	4751
25Y72H	B16B-2A	BASE	60.02	5.10	13.995	41658
25Y72H	B16B-2B	BASE	60.02	26.79	11.775	191482
25Y72H	B16B-3	BASE	60.02	14.36	10.870	98252
25Y72H	B16B-4	BASE	60.02	33.96	11.519	239600
25Y72H	B16B-4 Offs	BASE	60.02	10.29	9.167	65556
25Y72H	B16B-5	BASE	60.02	18.47	10.568	124676
25Y72H	B16B-6	BASE	60.02	3.05	11.230	21198
25Y72H	B16B-7	BASE	60.02	10.59	9.364	67982
25Y72H	B16B-8	BASE	60.02	8.86	10.950	60817
25Y72H	B16B-9	BASE	60.02	4.43	12.839	33555

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	0.00	0.0	0.0	0.0	0.0	0.00
10Y24H	0.25	25.9	15.4	10.5	-0.0	-0.00
10Y24H	0.50	107.9	60.4	47.4	0.0	0.00
10Y24H	0.75	227.1	142.1	85.0	0.0	0.00
10Y24H	1.00	374.4	256.7	117.7	0.0	0.00
10Y24H	1.25	541.4	399.4	141.9	0.0	0.00
10Y24H	1.50	728.5	567.6	160.9	0.0	0.00
10Y24H	1.75	931.6	757.8	173.8	0.0	0.00
10Y24H	2.00	1157.7	970.3	187.5	0.0	0.00
10Y24H	2.25	1421.8	1217.1	204.7	0.0	0.00
10Y24H	2.50	1712.3	1487.6	224.7	-0.0	-0.00
10Y24H	2.75	1990.3	1754.2	236.1	-0.0	-0.00
10Y24H	3.00	2268.4	2017.7	250.7	-0.0	-0.00
10Y24H	3.25	2593.9	2316.1	277.9	-0.0	-0.00
10Y24H	3.50	2939.2	2631.3	307.9	-0.0	-0.00
10Y24H	3.75	3299.5	2958.4	341.1	-0.0	-0.00
10Y24H	4.00	3670.8	3296.1	374.6	-0.0	-0.00
10Y24H	4.25	4094.5	3670.7	423.8	0.0	0.00
10Y24H	4.50	4550.0	4076.3	473.8	0.0	0.00
10Y24H	4.75	4991.7	4471.6	520.1	0.0	0.00
10Y24H	5.00	5505.4	4907.9	597.5	0.0	0.00
10Y24H	5.25	6059.3	5373.1	686.1	0.0	0.00
10Y24H	5.50	6664.5	5866.2	798.3	-0.0	-0.00
10Y24H	5.75	7372.2	6428.6	943.6	-0.0	-0.00
10Y24H	6.00	8161.0	7046.4	1114.7	-0.0	-0.00
10Y24H	6.25	9047.2	7731.2	1316.0	0.0	0.00
10Y24H	6.50	9988.2	8464.5	1523.7	0.0	0.00
10Y24H	6.75	11078.6	9283.7	1794.9	0.0	0.00
10Y24H	7.00	12276.8	10195.7	2081.1	0.0	0.00
10Y24H	7.25	13582.8	11183.5	2399.3	0.0	0.00
10Y24H	7.50	15175.0	12334.5	2840.5	0.0	0.00
10Y24H	7.75	17194.8	13712.4	3482.5	0.0	0.00
10Y24H	8.00	19823.1	15411.8	4411.3	0.0	0.00
10Y24H	8.25	22801.1	17361.6	5439.5	0.0	0.00
10Y24H	8.33	23807.7	18039.5	5768.1	0.0	0.00
10Y24H	8.42	24878.0	18746.6	6131.4	0.0	0.00
10Y24H	8.50	26027.9	19490.3	6537.6	0.0	0.00
10Y24H	8.58	27243.7	20267.5	6976.2	0.0	0.00
10Y24H	8.67	28518.4	21076.4	7442.1	0.0	0.00
10Y24H	8.75	29846.7	21915.6	7931.1	0.0	0.00
10Y24H	8.83	31232.0	22784.6	8447.4	0.0	0.00
10Y24H	8.92	32693.5	23685.9	9007.6	0.0	0.00
10Y24H	9.00	34236.8	24622.3	9614.5	0.0	0.00
10Y24H	9.08	35849.7	25591.1	10258.7	0.0	0.00
10Y24H	9.17	37522.4	26589.7	10932.7	0.0	0.00
10Y24H	9.25	39248.4	27616.3	11632.0	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	9.33	41024.6	28669.8	12354.7	0.0	0.00
10Y24H	9.42	42850.8	29749.9	13101.0	0.0	0.00
10Y24H	9.50	44725.4	30855.8	13869.5	0.0	0.00
10Y24H	9.58	46671.7	31992.5	14679.3	0.0	0.00
10Y24H	9.67	48747.9	33174.6	15573.3	0.0	0.00
10Y24H	9.75	50967.8	34409.5	16558.3	0.0	0.00
10Y24H	9.83	53281.3	35687.2	17594.2	0.0	0.00
10Y24H	9.92	55634.7	36994.5	18640.2	0.0	0.00
10Y24H	10.00	58010.2	38325.3	19684.9	0.0	0.00
10Y24H	10.02	58489.1	38594.3	19894.7	0.0	0.00
10Y24H	10.03	58970.6	38864.6	20106.0	0.0	0.00
10Y24H	10.05	59455.9	39136.4	20319.6	0.0	0.00
10Y24H	10.07	59946.5	39409.9	20536.6	0.0	0.00
10Y24H	10.08	60444.4	39685.7	20758.7	0.0	0.00
10Y24H	10.10	60951.5	39964.2	20987.3	0.0	0.00
10Y24H	10.12	61468.8	40245.8	21223.0	0.0	0.00
10Y24H	10.13	61996.4	40530.6	21465.8	0.0	0.00
10Y24H	10.15	62534.2	40818.6	21715.7	0.0	0.00
10Y24H	10.17	63081.7	41109.7	21972.0	0.0	0.00
10Y24H	10.18	63638.4	41403.9	22234.5	0.0	0.00
10Y24H	10.20	64203.8	41701.1	22502.7	0.0	0.00
10Y24H	10.22	64777.1	42001.2	22775.9	0.0	0.00
10Y24H	10.23	65357.7	42303.9	23053.8	0.0	0.00
10Y24H	10.25	65945.2	42609.3	23336.0	0.0	0.00
10Y24H	10.27	66539.2	42917.1	23622.1	0.0	0.00
10Y24H	10.28	67139.2	43227.4	23911.8	0.0	0.00
10Y24H	10.30	67744.8	43540.2	24204.6	0.0	0.00
10Y24H	10.32	68355.4	43855.0	24500.4	0.0	0.00
10Y24H	10.33	68970.8	44172.2	24798.6	0.0	0.00
10Y24H	10.35	69590.5	44491.1	25099.3	0.0	0.00
10Y24H	10.37	70214.2	44812.3	25401.9	0.0	0.00
10Y24H	10.38	70841.8	45135.4	25706.4	0.0	0.00
10Y24H	10.40	71473.2	45460.4	26012.8	0.0	0.00
10Y24H	10.42	72108.1	45787.2	26320.9	0.0	0.00
10Y24H	10.43	72746.5	46115.8	26630.7	0.0	0.00
10Y24H	10.45	73388.3	46446.4	26941.9	0.0	0.00
10Y24H	10.47	74033.4	46809.8	27223.6	0.0	0.00
10Y24H	10.48	74681.8	47112.7	27569.1	0.0	0.00
10Y24H	10.50	75333.4	47459.7	27873.7	0.0	0.00
10Y24H	10.52	75988.6	47823.5	28165.1	0.0	0.00
10Y24H	10.53	76648.0	48144.2	28503.9	0.0	0.00
10Y24H	10.55	77313.1	48470.7	28842.5	0.0	0.00
10Y24H	10.57	77985.8	48835.8	29150.0	0.0	0.00
10Y24H	10.58	78668.1	49194.5	29473.6	0.0	0.00
10Y24H	10.60	79362.3	49527.2	29835.1	0.0	0.00
10Y24H	10.62	80070.1	49872.3	30197.8	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	10.63	80791.6	50258.5	30533.1	0.0	0.00
10Y24H	10.65	81526.8	50624.6	30902.2	0.0	0.00
10Y24H	10.67	82275.0	50976.8	31298.2	0.0	0.00
10Y24H	10.68	83035.5	51341.5	31694.0	0.0	0.00
10Y24H	10.70	83807.4	51743.8	32063.6	0.0	0.00
10Y24H	10.72	84590.1	52115.3	32474.8	0.0	0.00
10Y24H	10.73	85382.8	52475.9	32906.9	0.0	0.00
10Y24H	10.75	86184.9	52893.7	33291.2	0.0	0.00
10Y24H	10.77	86996.2	53274.7	33721.5	0.0	0.00
10Y24H	10.78	87817.3	53666.1	34151.1	0.0	0.00
10Y24H	10.80	88648.4	54073.8	34574.6	0.0	0.00
10Y24H	10.82	89490.7	54477.3	35013.4	0.0	0.00
10Y24H	10.83	90345.4	54883.3	35462.1	0.0	0.00
10Y24H	10.85	91213.4	55293.5	35920.0	0.0	0.00
10Y24H	10.87	92095.0	55708.3	36386.7	0.0	0.00
10Y24H	10.88	92989.8	56127.7	36862.1	0.0	0.00
10Y24H	10.90	93897.4	56555.9	37341.5	0.0	0.00
10Y24H	10.92	94817.0	56992.8	37824.1	0.0	0.00
10Y24H	10.93	95748.0	57435.1	38312.9	0.0	0.00
10Y24H	10.95	96689.7	57881.6	38808.1	0.0	0.00
10Y24H	10.97	97641.4	58332.0	39309.4	0.0	0.00
10Y24H	10.98	98602.7	58788.7	39813.9	0.0	0.00
10Y24H	11.00	99573.1	59256.6	40316.6	0.0	0.00
10Y24H	11.02	100552.8	59736.7	40816.1	0.0	0.00
10Y24H	11.03	101542.0	60228.0	41314.0	0.0	0.00
10Y24H	11.05	102541.0	60728.6	41812.4	0.0	0.00
10Y24H	11.07	103550.2	61237.1	42313.1	0.0	0.00
10Y24H	11.08	104570.4	61752.5	42818.0	0.0	0.00
10Y24H	11.10	105601.7	62273.9	43327.8	0.0	0.00
10Y24H	11.12	106644.0	62800.9	43843.1	0.0	0.00
10Y24H	11.13	107697.0	63333.3	44363.7	0.0	0.00
10Y24H	11.15	108760.2	63870.6	44889.6	0.0	0.00
10Y24H	11.17	109833.1	64412.8	45420.4	0.0	0.00
10Y24H	11.18	110915.3	64959.5	45955.7	0.0	0.00
10Y24H	11.20	112006.3	65510.8	46495.5	0.0	0.00
10Y24H	11.22	113105.7	66066.4	47039.4	0.0	0.00
10Y24H	11.23	114213.2	66626.1	47587.0	0.0	0.00
10Y24H	11.25	115328.7	67192.9	48135.9	0.0	0.00
10Y24H	11.27	116453.3	67770.3	48683.0	0.0	0.00
10Y24H	11.28	117589.7	68351.3	49238.4	0.0	0.00
10Y24H	11.30	118742.4	68937.0	49805.4	0.0	0.00
10Y24H	11.32	119916.1	69528.4	50387.7	0.0	0.00
10Y24H	11.33	121116.5	70127.0	50989.4	0.0	0.00
10Y24H	11.35	122349.6	70734.8	51614.8	0.0	0.00
10Y24H	11.37	123618.6	71353.1	52265.5	0.0	0.00
10Y24H	11.38	124923.7	71982.8	52940.9	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	11.40	126263.9	72624.2	53639.6	0.0	0.00
10Y24H	11.42	127637.2	73277.3	54359.9	0.0	0.00
10Y24H	11.43	129041.5	73941.7	55099.7	0.0	0.00
10Y24H	11.45	130474.6	74617.1	55857.5	0.0	0.00
10Y24H	11.47	131934.8	75302.8	56632.0	0.0	0.00
10Y24H	11.48	133419.7	75998.3	57421.4	0.0	0.00
10Y24H	11.50	134928.9	76702.9	58226.0	0.0	0.00
10Y24H	11.52	136464.5	77416.8	59047.7	0.0	0.00
10Y24H	11.53	138029.7	78140.3	59889.4	0.0	0.00
10Y24H	11.55	139630.7	78874.5	60756.2	0.0	0.00
10Y24H	11.57	141275.9	79621.1	61654.8	0.0	0.00
10Y24H	11.58	142972.4	80382.3	62590.1	0.0	0.00
10Y24H	11.60	144724.8	81159.8	63565.0	0.0	0.00
10Y24H	11.62	146534.7	81955.0	64579.7	0.0	0.00
10Y24H	11.63	148400.7	82768.6	65632.1	0.0	0.00
10Y24H	11.65	150320.2	83600.6	66719.6	0.0	0.00
10Y24H	11.67	152290.4	84450.7	67839.7	0.0	0.00
10Y24H	11.68	154307.7	85318.1	68989.6	0.0	0.00
10Y24H	11.70	156368.5	86201.9	70166.6	0.0	0.00
10Y24H	11.72	158469.9	87101.2	71368.8	0.0	0.00
10Y24H	11.73	160609.6	88015.4	72594.2	0.0	0.00
10Y24H	11.75	162785.2	88945.7	73839.5	0.0	0.00
10Y24H	11.77	165016.8	89895.1	75121.7	0.0	0.00
10Y24H	11.78	167350.5	90871.5	76479.0	0.0	0.00
10Y24H	11.80	169841.6	91886.8	77954.7	0.0	0.00
10Y24H	11.82	172594.8	92960.7	79634.1	0.0	0.00
10Y24H	11.83	175736.6	94132.0	81604.7	0.0	0.00
10Y24H	11.85	179345.9	95435.5	83910.4	0.0	0.00
10Y24H	11.87	183490.1	96901.8	86588.3	0.0	0.00
10Y24H	11.88	188254.7	98570.2	89684.4	0.0	0.00
10Y24H	11.90	193543.2	100420.2	93123.0	0.0	0.00
10Y24H	11.92	199398.1	102479.3	96918.8	0.0	0.00
10Y24H	11.93	205831.1	104765.1	101066.0	0.0	0.00
10Y24H	11.95	212648.1	107221.8	105426.3	0.0	0.00
10Y24H	11.97	219930.2	109884.2	110046.0	0.0	0.00
10Y24H	11.98	227700.9	112768.2	114932.7	0.0	0.00
10Y24H	12.00	235797.9	115820.3	119977.7	0.0	0.00
10Y24H	12.02	244256.4	119058.8	125197.5	0.0	0.00
10Y24H	12.03	253015.4	122466.3	130549.1	0.0	0.00
10Y24H	12.05	262119.8	126037.3	136082.5	0.0	0.00
10Y24H	12.07	271723.3	129861.4	141861.9	0.0	0.00
10Y24H	12.08	281431.7	133779.2	147652.5	0.0	0.00
10Y24H	12.10	291418.7	137851.4	153567.2	0.0	0.00
10Y24H	12.12	301672.5	142068.6	159604.0	0.0	0.00
10Y24H	12.13	312290.5	146464.3	165826.2	0.0	0.00
10Y24H	12.15	322988.3	150915.7	172072.6	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	12.17	333910.3	155477.8	178432.5	0.0	0.00
10Y24H	12.18	345333.7	160265.8	185067.9	0.0	0.00
10Y24H	12.20	356708.9	165048.6	191660.3	0.0	0.00
10Y24H	12.22	368378.5	169961.3	198417.2	0.0	0.00
10Y24H	12.23	380099.8	174894.7	205205.1	0.0	0.00
10Y24H	12.25	392275.4	180022.1	212253.3	0.0	0.00
10Y24H	12.27	404034.8	184995.1	219039.7	0.0	0.00
10Y24H	12.28	416141.3	190162.8	225978.4	0.0	0.00
10Y24H	12.30	428233.0	195428.6	232804.3	0.0	0.00
10Y24H	12.32	439601.0	200528.9	239072.0	0.0	0.00
10Y24H	12.33	450910.1	205809.8	245100.3	0.0	0.00
10Y24H	12.35	461423.3	210958.2	250465.1	0.0	0.00
10Y24H	12.37	471786.0	216292.4	255493.5	0.0	0.00
10Y24H	12.38	481208.5	221387.2	259821.3	0.0	0.00
10Y24H	12.40	490567.5	226696.7	263870.7	0.0	0.00
10Y24H	12.42	499172.1	231804.7	267367.4	0.0	0.00
10Y24H	12.43	507425.6	236911.0	270514.6	0.0	0.00
10Y24H	12.45	515418.3	242052.8	273365.5	0.0	0.00
10Y24H	12.47	523085.6	247167.8	275917.8	0.0	0.00
10Y24H	12.48	530487.3	252271.8	278215.5	0.0	0.00
10Y24H	12.50	537602.4	257335.0	280267.3	0.0	0.00
10Y24H	12.52	544458.8	262369.1	282089.7	0.0	0.00
10Y24H	12.53	551073.7	267379.2	283694.5	0.0	0.00
10Y24H	12.55	557503.2	272402.2	285101.1	0.0	0.00
10Y24H	12.57	563723.1	277416.1	286307.0	0.0	0.00
10Y24H	12.58	569691.7	282384.6	287307.2	0.0	0.00
10Y24H	12.60	575418.4	287311.1	288107.3	0.0	0.00
10Y24H	12.62	580953.5	292231.8	288721.7	0.0	0.00
10Y24H	12.63	586305.8	297143.9	289161.9	0.0	0.00
10Y24H	12.65	591476.1	302036.4	289439.7	0.0	0.00
10Y24H	12.67	596476.8	306908.9	289567.9	0.0	0.00
10Y24H	12.68	601320.8	311761.0	289559.8	0.0	0.00
10Y24H	12.70	606016.7	316591.8	289424.8	0.0	0.00
10Y24H	12.72	610569.6	321400.7	289168.9	0.0	0.00
10Y24H	12.73	614984.3	326186.3	288798.0	0.0	0.00
10Y24H	12.75	619263.6	330938.3	288325.2	0.0	0.00
10Y24H	12.77	623407.9	335637.0	287770.9	0.0	0.00
10Y24H	12.78	627417.4	340292.6	287124.8	0.0	0.00
10Y24H	12.80	631291.5	344905.9	286385.6	0.0	0.00
10Y24H	12.82	635028.0	349452.3	285575.7	0.0	0.00
10Y24H	12.83	638625.0	353893.0	284732.0	0.0	0.00
10Y24H	12.85	642083.5	358257.4	283826.1	0.0	0.00
10Y24H	12.87	645407.2	362534.8	282872.4	0.0	0.00
10Y24H	12.88	648602.9	366727.5	281875.4	0.0	0.00
10Y24H	12.90	651679.3	370844.5	280834.8	0.0	0.00
10Y24H	12.92	654643.7	374896.6	279747.1	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	12.93	657503.6	378884.9	278618.6	0.0	0.00
10Y24H	12.95	660267.7	382808.8	277458.9	0.0	0.00
10Y24H	12.97	662944.8	386670.2	276274.6	0.0	0.00
10Y24H	12.98	665541.3	390471.7	275069.7	0.0	0.00
10Y24H	13.00	668063.4	394215.9	273847.5	0.0	0.00
10Y24H	13.02	670517.6	397905.4	272612.2	0.0	0.00
10Y24H	13.03	672909.9	401542.9	271366.9	0.0	0.00
10Y24H	13.05	675243.6	405130.8	270112.8	0.0	0.00
10Y24H	13.07	677521.2	408671.2	268850.0	0.0	0.00
10Y24H	13.08	679744.1	412166.0	267578.1	0.0	0.00
10Y24H	13.10	681914.2	415617.1	266297.1	0.0	0.00
10Y24H	13.12	684033.7	419026.3	265007.5	0.0	0.00
10Y24H	13.13	686105.7	422394.6	263711.0	0.0	0.00
10Y24H	13.15	688134.3	425723.0	262411.3	0.0	0.00
10Y24H	13.17	690124.5	429012.8	261111.7	0.0	0.00
10Y24H	13.18	692079.9	432265.5	259814.4	0.0	0.00
10Y24H	13.20	694004.2	435483.3	258521.0	0.0	0.00
10Y24H	13.22	695902.1	438667.9	257234.3	0.0	0.00
10Y24H	13.23	697779.0	441821.3	255957.7	0.0	0.00
10Y24H	13.25	699638.3	444945.9	254692.4	0.0	0.00
10Y24H	13.27	701480.6	448068.6	253412.0	0.0	0.00
10Y24H	13.28	703304.7	451210.9	252093.8	0.0	0.00
10Y24H	13.30	705108.6	454313.3	250795.3	0.0	0.00
10Y24H	13.32	706901.3	457398.6	249502.7	0.0	0.00
10Y24H	13.33	708654.5	460425.9	248228.6	0.0	0.00
10Y24H	13.35	710374.0	463414.3	246959.7	0.0	0.00
10Y24H	13.37	712068.0	466380.0	245688.0	0.0	0.00
10Y24H	13.38	713738.2	469327.1	244411.1	0.0	0.00
10Y24H	13.40	715379.6	472254.1	243125.4	0.0	0.00
10Y24H	13.42	717015.0	475192.6	241822.4	0.0	0.00
10Y24H	13.43	718615.2	478086.2	240529.0	0.0	0.00
10Y24H	13.45	720200.7	480969.8	239230.9	0.0	0.00
10Y24H	13.47	721750.2	483802.7	237947.5	0.0	0.00
10Y24H	13.48	723294.9	486639.1	236655.8	0.0	0.00
10Y24H	13.50	724822.8	489454.8	235367.9	0.0	0.00
10Y24H	13.52	726329.1	492239.8	234089.3	0.0	0.00
10Y24H	13.53	727834.7	495031.7	232802.9	0.0	0.00
10Y24H	13.55	729337.3	497825.6	231511.7	0.0	0.00
10Y24H	13.57	730813.9	500578.3	230235.6	0.0	0.00
10Y24H	13.58	732277.1	503313.1	228964.0	0.0	0.00
10Y24H	13.60	733755.1	506082.8	227672.2	0.0	0.00
10Y24H	13.62	735173.0	508746.5	226426.4	0.0	0.00
10Y24H	13.63	736614.4	511460.2	225154.3	0.0	0.00
10Y24H	13.65	738045.9	514159.3	223886.6	0.0	0.00
10Y24H	13.67	739441.5	516793.9	222647.6	0.0	0.00
10Y24H	13.68	740850.6	519455.2	221395.4	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	13.70	742255.2	522108.1	220147.1	0.0	0.00
10Y24H	13.72	743637.6	524718.0	218919.6	0.0	0.00
10Y24H	13.73	745024.1	527333.4	217690.7	0.0	0.00
10Y24H	13.75	746402.6	529930.6	216472.0	0.0	0.00
10Y24H	13.77	747776.7	532516.8	215259.9	0.0	0.00
10Y24H	13.78	749154.3	535108.4	214045.9	0.0	0.00
10Y24H	13.80	750499.6	537639.6	212860.0	0.0	0.00
10Y24H	13.82	751861.1	540205.2	211655.9	0.0	0.00
10Y24H	13.83	753193.5	542723.7	210469.8	0.0	0.00
10Y24H	13.85	754512.1	545225.9	209286.2	0.0	0.00
10Y24H	13.87	755818.2	547715.0	208103.3	0.0	0.00
10Y24H	13.88	757113.1	550193.0	206920.1	0.0	0.00
10Y24H	13.90	758394.6	552653.2	205741.4	0.0	0.00
10Y24H	13.92	759647.5	555063.2	204584.3	0.0	0.00
10Y24H	13.93	760911.1	557496.7	203414.4	0.0	0.00
10Y24H	13.95	762151.6	559886.6	202265.0	0.0	0.00
10Y24H	13.97	763387.7	562267.0	201120.7	0.0	0.00
10Y24H	13.98	764607.0	564612.8	199994.2	0.0	0.00
10Y24H	14.00	765828.4	566959.1	198869.3	0.0	0.00
10Y24H	14.08	771791.7	578393.6	193398.1	0.0	0.00
10Y24H	14.17	777517.0	589326.6	188190.4	0.0	0.00
10Y24H	14.25	783048.9	599759.4	183289.5	0.0	0.00
10Y24H	14.33	788454.7	609707.1	178747.5	0.0	0.00
10Y24H	14.42	793779.8	619189.2	174590.6	0.0	0.00
10Y24H	14.50	799050.9	628181.7	170869.2	0.0	0.00
10Y24H	14.58	804216.4	636684.2	167532.2	0.0	0.00
10Y24H	14.67	809167.3	644699.2	164468.1	0.0	0.00
10Y24H	14.75	813901.0	652207.4	161693.6	0.0	0.00
10Y24H	14.83	818492.3	659257.4	159234.9	0.0	0.00
10Y24H	14.92	822984.1	665913.3	157070.8	0.0	0.00
10Y24H	15.00	827404.0	672229.0	155175.0	0.0	0.00
10Y24H	15.08	831772.3	678251.2	153521.1	0.0	0.00
10Y24H	15.17	836101.6	684019.5	152082.0	0.0	0.00
10Y24H	15.25	840400.5	689567.8	150832.7	0.0	0.00
10Y24H	15.33	844609.9	694915.0	149694.9	0.0	0.00
10Y24H	15.42	848630.5	700053.4	148577.1	0.0	0.00
10Y24H	15.50	852466.6	704981.3	147485.4	0.0	0.00
10Y24H	15.58	856206.2	709724.4	146481.8	0.0	0.00
10Y24H	15.67	859936.7	714319.2	145617.5	0.0	0.00
10Y24H	15.75	863691.9	718797.9	144893.9	0.0	0.00
10Y24H	15.83	867431.7	723173.4	144258.3	0.0	0.00
10Y24H	15.92	871101.9	727443.6	143658.3	0.0	0.00
10Y24H	16.00	874697.1	731608.4	143088.7	-0.0	-0.00
10Y24H	16.25	885180.1	743560.6	141619.5	-0.0	-0.00
10Y24H	16.50	895088.1	754786.8	140301.3	-0.0	-0.00
10Y24H	16.75	904746.9	765416.4	139330.4	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	17.00	913315.5	775435.5	137880.0	-0.0	-0.00
10Y24H	17.25	920394.5	784568.0	135826.4	-0.0	-0.00
10Y24H	17.50	926831.6	792950.5	133881.1	-0.0	-0.00
10Y24H	17.75	933031.7	800718.8	132312.9	-0.0	-0.00
10Y24H	18.00	939186.7	808063.5	131123.2	-0.0	-0.00
10Y24H	18.25	945103.9	815033.5	130070.4	-0.0	-0.00
10Y24H	18.50	950351.2	821594.8	128756.4	-0.0	-0.00
10Y24H	18.75	955306.8	827763.0	127543.7	-0.0	-0.00
10Y24H	19.00	960550.1	833755.0	126795.2	-0.0	-0.00
10Y24H	19.25	965531.7	839536.8	125995.0	-0.0	-0.00
10Y24H	19.50	970409.7	845127.7	125282.0	-0.0	-0.00
10Y24H	19.75	975233.7	850590.0	124643.7	-0.0	-0.00
10Y24H	20.00	979764.7	855872.5	123892.2	-0.0	-0.00
10Y24H	20.25	984046.3	860976.1	123070.2	-0.0	-0.00
10Y24H	20.50	988220.5	865923.9	122296.6	-0.0	-0.00
10Y24H	20.75	992360.4	870766.0	121594.5	-0.0	-0.00
10Y24H	21.00	996496.5	875523.8	120972.7	0.0	0.00
10Y24H	21.25	1000752.3	880256.0	120496.3	0.0	0.00
10Y24H	21.50	1004944.4	884952.8	119991.7	0.0	0.00
10Y24H	21.75	1009107.4	889609.7	119497.7	0.0	0.00
10Y24H	22.00	1013255.9	894243.5	119012.5	0.0	0.00
10Y24H	22.25	1016978.2	898758.8	118219.4	0.0	0.00
10Y24H	22.50	1020518.7	903134.1	117384.6	0.0	0.00
10Y24H	22.75	1023985.8	907415.0	116570.8	0.0	0.00
10Y24H	23.00	1027547.0	911618.9	115928.0	0.0	0.00
10Y24H	23.25	1031058.2	915782.5	115275.7	0.0	0.00
10Y24H	23.50	1034542.8	919868.3	114674.5	0.0	0.00
10Y24H	23.75	1038017.4	923921.1	114096.3	0.0	0.00
10Y24H	24.00	1041066.4	927839.3	113227.2	0.0	0.00
10Y24H	24.25	1043180.0	931446.6	111733.4	0.0	0.00
10Y24H	24.50	1043509.5	934425.7	109083.8	0.0	0.00
10Y24H	24.75	1043509.5	936918.1	106591.4	0.0	0.00
10Y24H	25.00	1043509.5	939056.3	104453.2	0.0	0.00
10Y24H	25.25	1043509.5	940917.6	102591.9	0.0	0.00
10Y24H	25.50	1043509.5	942562.5	100947.0	0.0	0.00
10Y24H	25.75	1043509.5	944037.5	99472.0	0.0	0.00
10Y24H	26.00	1043509.5	945377.7	98131.7	0.0	0.00
10Y24H	26.25	1043509.5	946609.8	96899.6	0.0	0.00
10Y24H	26.50	1043509.5	947753.9	95755.5	0.0	0.00
10Y24H	26.75	1043509.5	948825.3	94684.2	0.0	0.00
10Y24H	27.00	1043509.5	949835.5	93674.0	0.0	0.00
10Y24H	27.25	1043509.5	950793.2	92716.3	0.0	0.00
10Y24H	27.50	1043509.5	951705.3	91804.2	0.0	0.00
10Y24H	27.75	1043509.5	952576.6	90932.9	0.0	0.00
10Y24H	28.00	1043509.5	953411.2	90098.3	0.0	0.00
10Y24H	28.25	1043509.5	954211.8	89297.7	0.0	0.00

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DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	28.50	1043509.5	954980.8	88528.7	0.0	0.00
10Y24H	28.75	1043509.5	955719.8	87789.7	0.0	0.00
10Y24H	29.00	1043509.5	956430.2	87079.3	0.0	0.00
10Y24H	29.25	1043509.5	957113.0	86396.5	0.0	0.00
10Y24H	29.50	1043509.5	957769.1	85740.3	0.0	0.00
10Y24H	29.75	1043509.5	958399.4	85110.0	0.0	0.00
10Y24H	30.00	1043509.5	959004.8	84504.7	0.0	0.00
10Y24H	30.25	1043509.5	959586.1	83923.4	0.0	0.00
10Y24H	30.50	1043509.5	960144.9	83364.6	0.0	0.00
10Y24H	30.75	1043509.5	960683.0	82826.5	0.0	0.00
10Y24H	31.00	1043509.5	961203.6	82305.9	0.0	0.00
10Y24H	31.25	1043509.5	961713.5	81796.0	0.0	0.00
10Y24H	31.50	1043509.5	962221.5	81288.0	0.0	0.00
10Y24H	31.75	1043509.5	962728.1	80781.3	0.0	0.00
10Y24H	32.00	1043509.5	963233.3	80276.1	0.0	0.00
10Y24H	32.25	1043509.5	963737.0	79772.5	-0.0	-0.00
10Y24H	32.50	1043509.5	964239.1	79270.4	-0.0	-0.00
10Y24H	32.75	1043509.5	964739.5	78769.9	-0.0	-0.00
10Y24H	33.00	1043509.5	965238.3	78271.2	-0.0	-0.00
10Y24H	33.25	1043509.5	965735.2	77774.2	-0.0	-0.00
10Y24H	33.50	1043509.5	966230.5	77279.0	-0.0	-0.00
10Y24H	33.75	1043509.5	966724.0	76785.5	-0.0	-0.00
10Y24H	34.00	1043509.5	967215.7	76293.8	-0.0	-0.00
10Y24H	34.25	1043509.5	967705.7	75803.8	-0.0	-0.00
10Y24H	34.50	1043509.5	968193.8	75315.6	-0.0	-0.00
10Y24H	34.75	1043509.5	968680.2	74829.3	-0.0	-0.00
10Y24H	35.00	1043509.5	969164.8	74344.7	-0.0	-0.00
10Y24H	35.25	1043509.5	969647.6	73861.9	-0.0	-0.00
10Y24H	35.50	1043509.5	970128.6	73380.9	-0.0	-0.00
10Y24H	35.75	1043509.5	970607.7	72901.7	-0.0	-0.00
10Y24H	36.00	1043509.5	971085.1	72424.4	-0.0	-0.00
10Y24H	36.25	1043509.5	971560.6	71948.9	-0.0	-0.00
10Y24H	36.50	1043509.5	972034.2	71475.3	-0.0	-0.00
10Y24H	36.75	1043509.5	972506.0	71003.5	-0.0	-0.00
10Y24H	37.00	1043509.5	972975.9	70533.5	-0.0	-0.00
10Y24H	37.25	1043509.5	973444.0	70065.5	-0.0	-0.00
10Y24H	37.50	1043509.5	973910.2	69599.3	-0.0	-0.00
10Y24H	37.75	1043509.5	974374.5	69135.0	-0.0	-0.00
10Y24H	38.00	1043509.5	974836.9	68672.6	-0.0	-0.00
10Y24H	38.25	1043509.5	975297.3	68212.1	-0.0	-0.00
10Y24H	38.50	1043509.5	975755.9	67753.6	-0.0	-0.00
10Y24H	38.75	1043509.5	976212.4	67297.1	-0.0	-0.00
10Y24H	39.00	1043509.5	976666.9	66842.6	-0.0	-0.00
10Y24H	39.25	1043509.5	977119.4	66390.1	-0.0	-0.00
10Y24H	39.50	1043509.5	977569.9	65939.6	-0.0	-0.00
10Y24H	39.75	1043509.5	978018.5	65491.0	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 16B
POST-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	40.00	1043509.5	978465.1	65044.4	-0.0	-0.00
10Y24H	40.25	1043509.5	978909.5	64599.9	-0.0	-0.00
10Y24H	40.50	1043509.5	979351.8	64157.7	-0.0	-0.00
10Y24H	40.75	1043509.5	979791.8	63717.7	-0.0	-0.00
10Y24H	41.00	1043509.5	980229.5	63280.0	-0.0	-0.00
10Y24H	41.25	1043509.5	980665.0	62844.5	-0.0	-0.00
10Y24H	41.50	1043509.5	981098.2	62411.3	0.0	0.00
10Y24H	41.75	1043509.5	981529.2	61980.3	-0.0	-0.00
10Y24H	42.00	1043509.5	981957.8	61551.6	-0.0	-0.00
10Y24H	42.25	1043509.5	982384.2	61125.3	-0.0	-0.00
10Y24H	42.50	1043509.5	982808.3	60701.2	-0.0	-0.00
10Y24H	42.75	1043509.5	983230.1	60279.4	-0.0	-0.00
10Y24H	43.00	1043509.5	983649.5	59859.9	0.0	0.00
10Y24H	43.25	1043509.5	984066.7	59442.8	0.0	0.00
10Y24H	43.50	1043509.5	984481.5	59028.0	0.0	0.00
10Y24H	43.75	1043509.5	984893.9	58615.5	0.0	0.00
10Y24H	44.00	1043509.5	985304.0	58205.4	0.0	0.00
10Y24H	44.25	1043509.5	985711.8	57797.7	0.0	0.00
10Y24H	44.50	1043509.5	986117.1	57392.3	0.0	0.00
10Y24H	44.75	1043509.5	986520.1	56989.4	0.0	0.00
10Y24H	45.00	1043509.5	986920.7	56588.8	0.0	0.00
10Y24H	45.25	1043509.5	987318.8	56190.7	0.0	0.00
10Y24H	45.50	1043509.5	987714.5	55795.0	0.0	0.00
10Y24H	45.75	1043509.5	988107.8	55401.7	0.0	0.00
10Y24H	46.00	1043509.5	988498.6	55010.9	0.0	0.00
10Y24H	46.25	1043509.5	988887.0	54622.5	0.0	0.00
10Y24H	46.50	1043509.5	989272.9	54236.6	0.0	0.00
10Y24H	46.75	1043509.5	989656.3	53853.2	0.0	0.00
10Y24H	47.00	1043509.5	990037.2	53472.3	0.0	0.00
10Y24H	47.25	1043509.5	990415.6	53093.9	0.0	0.00
10Y24H	47.50	1043509.5	990791.5	52718.0	0.0	0.00
10Y24H	47.75	1043509.5	991164.9	52344.6	0.0	0.00
10Y24H	48.00	1043509.5	991535.5	51974.0	0.0	0.00

Appendix H

System 17

- Land-Use Tables
- Drainage Calculations
- Summary Tables
- ICPR: Pre-Development
- ICPR: Post-Development

I-95 CDC DRAINAGE CALCULATIONS
PRE-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 17

SHGWT EL. (ft-NAVD): 0.42

BASIN	TIME OF CONC. tc (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER CN
B17-1	10	3.06	3.06	2.61	0.23	0.22	0.00	0.00	0.00	0.00	3.00	2.58	4.95	96.56
B17-2	10	9.85	9.85	7.11	0.00	2.74	0.00	0.00	0.00	0.00	8.00	7.58	8.18	81.46
B17-3	10	3.72	3.72	1.38	0.00	2.34	0.00	0.00	0.00	0.00	5.00	4.58	8.18	66.03
B17-4	10	0.91	0.91	0.91	0.00	0.00	0.00	0.00	0.00	0.00	5.00	4.58	8.18	100.00
B17-5	10	9.89	9.89	3.53	0.00	6.36	0.00	0.00	0.00	0.00	5.00	4.58	8.18	65.53
B17-6	10	7.70	7.70	5.48	0.00	2.22	0.00	0.00	0.00	0.00	5.00	4.58	8.18	80.92
B17-6 Offs	10	0.94	0.00	0.00	0.00	0.00	0.94	0.19	0.00	0.75	5.00	4.58	8.18	60.51
SYSTEM TOTALS		36.07	35.13	21.02	0.23	13.88	0.94	0.19	0.00	0.75	--	--	--	--

I-95 CDC DRAINAGE CALCULATIONS
POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: 17

SHGWT EL. (ft-NAVD): 0.42

BASIN	TIME OF CONC. tc (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER CN
B17-1	10	1.12	1.12	0.75	0.18	0.19	0.00	0.00	0.00	0.00	3.00	2.58	4.95	92.25
B17-2	10	10.75	10.75	8.01	0.00	2.74	0.00	0.00	0.00	0.00	8.00	7.58	8.18	82.75
B17-3	10	4.80	4.80	2.64	0.00	2.16	0.00	0.00	0.00	0.00	5.00	4.58	8.18	73.09
B17-4	10	8.10	8.10	6.47	0.00	1.63	0.00	0.00	0.00	0.00	5.00	4.58	8.18	85.87
B17-4 Offs	10	0.58	0.00	0.00	0.00	0.00	0.58	0.17	0.00	0.41	5.00	4.58	8.18	63.36
B17-5A	10	3.73	3.73	1.39	0.00	2.34	0.00	0.00	0.00	0.00	5.00	4.58	8.18	66.09
B17-5B	10	5.81	5.81	2.17	0.00	3.64	0.00	0.00	0.00	0.00	5.00	4.58	8.18	66.12
B17-6	10	0.90	0.90	0.35	0.00	0.55	0.00	0.00	0.00	0.00	5.00	4.58	8.18	66.67
B17-6 Offs	10	0.36	0.00	0.00	0.00	0.00	0.36	0.02	0.00	0.34	5.00	4.58	8.18	56.42
SYSTEM TOTALS		36.15	35.21	21.78	0.18	13.25	0.94	0.19	0.00	0.75	--	--	--	--

I-95 CDC DRAINAGE CALCULATIONS

WATER QUALITY

DRAINAGE SYSTEM: 17

SYSTEM	SHGWT EL. (FT-NAVD)	TOTAL ONSITE AREA (Ac.) [POST-DEV]	ONSITE IMPERVIOUS AREA (Ac.) [POST-DEV]	ONSITE PERVIOUS AREA (Ac.) [POST-DEV]	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET-DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY-/WET-RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	² TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	³ SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
17	0.42	35.21	21.78	13.25	2.93	4.54	4.54	1.18	0.00	1.63	0.00	4.82	0.29
SYSTEM TOTALS:		35.21	21.78	13.25	2.93	4.54	4.54	1.18	0.00	1.63	0.00	4.82	0.29

¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.

³Water quality treatment in System 17 provided for all onsite contributing basins with the exception of B17-1 (which is located downstream of existing/proposed control structures and consists of 0.94 acres of non-water surface area).

POND/SWALE/FD	TYPE	WEIR EL.	VOLUME
		(ft-NAVD)	(Ac-ft)
POND 17-1	DRY DETENTION	2.50	0.43
SWALE 17-1A	DRY RETENTION	3.00	0.56
SWALE 17-1B	DRY RETENTION	3.00	0.65
POND 17-2	DRY DETENTION	3.00	0.74
SWALE 17-2	DRY RETENTION	3.00	0.23
SWALE 17-3	DRY RETENTION	3.00	0.18

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
Post-Development Conditions **BCC**
Engineering

Prepared by: S.O.
 Checked by: H.S.M
 Approved by: R.G.

Date: 4/5/2016
 Date: 4/5/2016
 Date: 4/5/2016

POND 17-1

DRY DETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.2721	0.000	0.000	
2.50	0.5331	0.435	0.435	Weir El. (PrCS17-1)
3.00	0.6366	0.292	0.727	
4.47	0.9409	1.159	1.887	
5.50	1.1721	1.088	2.975	

SWALE 17-1A

DRY RETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.2679	0.000	0.000	
2.00	0.3186	0.170	0.170	
2.50	0.3898	0.177	0.347	
3.00	0.4550	0.211	0.558	Weir El. (PrCS17-3 & 4)
3.50	0.5217	0.244	0.803	
4.00	0.6035	0.281	1.084	
4.01	0.6748	0.006	1.090	
5.25	0.8141	0.923	2.013	

SWALE 17-1B

DRY RETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.3177	0.000	0.000	
2.00	0.3773	0.202	0.202	
2.50	0.4509	0.207	0.409	
3.00	0.5244	0.244	0.652	Weir El. (PrCS17-3 & 4)
4.00	0.7571	0.641	1.293	
5.25	0.9336	1.057	2.350	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
Post-Development Conditions **BCC**
Engineering

Prepared by: S.O. Date: 4/5/2016
Checked by: H.S.M Date: 4/5/2016
Approved by: R.G. Date: 4/5/2016

POND 17-2

DRY DETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.3345	0.000	0.000	
2.50	0.5204	0.462	0.462	
3.00	0.6065	0.282	0.743	Weir El. (PrCS17-2)
4.00	0.7786	0.693	1.436	
4.01	0.8971	0.008	1.444	
4.50	0.9414	0.450	1.895	

SWALE 17-2

DRY RETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.0941	0.000	0.000	
2.50	0.1657	0.140	0.140	
3.00	0.1988	0.091	0.231	Weir El. (PrCS17-3 & 4)
4.00	0.2651	0.232	0.463	
4.01	0.3082	0.003	0.466	
4.35	0.3199	0.107	0.573	
6.50	0.4562	0.834	1.407	

SWALE 17-3

DRY RETENTION

Receiving River Basin: North Fork of the New River

Elev.	Area (Ac)	Incr. Vol. (Ac-Ft)	Treatment Volume (Ac-Ft)	Remark
1.42	0.0806	0.000	0.000	
2.50	0.1295	0.113	0.113	
3.00	0.1522	0.070	0.184	Weir El. (PrCS17-3 & 4)
4.00	0.1975	0.175	0.359	
4.01	0.2225	0.002	0.361	
4.34	0.2310	0.075	0.436	
6.50	0.3724	0.652	1.087	

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
Post-Development Conditions
BCC Engineering

Prepared by: J.R. Date: 3/31/2016
 Checked by: R.G. Date: 3/31/2016
 Approved by: R.G. Date: 3/31/2016

Basin: 17 **Pond :** 17-1 **Control Structure :** PrCS17-1

-Design for Detention Type.....	Dry Detention
-Seasonal high groundwater elevation at the proposed basin.....	0.42 ft
-Flow line of the orifice.....	0.42 ft
-Contributing Area :.....	10.75 Ac
-Detention Volume, 1" x Total Area	0.90 Ac-ft
-Weir elevation	2.50 ft
-One-half the treatment volume	0.45 ac-ft
-Elevation at one-half.....	1.46 ft

Trial #1

From Equation 25-3

$$h = \frac{(h_1 + h_2)}{2}$$

where:

h1 = Depth of water between the top of the treatment volume and the flow line of the orifice **2.08 ft**

h2 = Depth of water between the stage when half the treatment volume has been released and the flow line of the orifice **1.04 ft**

h= 1.56 ft

The average flow rate (Q) required to drawdown one-half the treatment volume between 24 and 30 hours is found from Equation 25-2:

$$Q = \frac{TV}{2tCF}$$

where:

TV = Treatment Volume **39022.50 ft³**

t = Recovery time..... **24 hrs**

CF = Conversion Factor **3600 sec/hr**

Q= 0.226 cfs

Find the area (A) of the orifice utilizing Equation 25-4:

$$A = \frac{Q}{C\sqrt{2gh}}$$

Given:

G = Gravitational constant **32.17 ft/sec²**

C = Orifice coefficient (usually assumed = 0.6)..... **0.60**

A= 0.038 ft²

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.219 ft

D= 2.62 inches

Trial #2

Adjust h1, h2, and the orifice diameter (D) to the flow line of the orifice.

Flow line elevation = 0.53 ft

h1 = 1.97 ft

h2 = 0.93 ft

From Equation 25-3

$$h = \frac{(h_1 + h_2)}{2}$$

h= 1.45 ft

Find the area (A) of the orifice utilizing Equation 25-4:

$$A = \frac{Q}{C\sqrt{2gh}}$$

Given:

G = Gravitational constant **32.17 ft/sec²**
 C = Orifice coefficient (usually assumed = 0.6)..... **0.60**

A= 0.039 ft²

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.223 ft

D= 2.67 inches

Adjusted flow line elev. = 0.53 ft

Difference FLE. 0.00 ft*

D= 3.00 inches**

* This trial is acceptable because there is no difference between the Flow Line Elevations (FLE).

** The diameter may be rounded up to 1.0 inch for construction purposes

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
Post-Development Conditions
BCC Engineering

Prepared by: J.R.
 Checked by: R.G.
 Approved by: R.G.

Date: 3/31/2016
 Date: 3/31/2016
 Date: 3/31/2016

Control Structure	Basin	Area (Ac)	
PrCS17-1	B17-2	10.75	Detention
PrCS17-2	B17-3	4.80	Detention
PrCS17-3	B17-4	8.10	Retention
	B17-4 OFF	0.58	
	B17-6	0.90	
	B17-6 OFF	0.36	
	TOTAL	9.94	
PrCS17-4	B17-5A	3.73	Retention
	B17-5B	5.81	
	TOTAL	9.54	

*B17-1 (NFNR)= 1.12

TOTAL AREA OF SYSTEM 17 36.15

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.138 ft

D= 1.66 inches

Trial #2

Adjust h1, h2, and the orifice diameter (D) to the flow line of the orifice.

Flow line elevation = 0.49 ft

h1 = 2.51 ft

h2 = 1.22 ft

From Equation 25-3

$$h = \frac{(h_1 + h_2)}{2}$$

h= 1.87 ft

Find the area (A) of the orifice utilizing Equation 25-4:

$$A = \frac{Q}{C\sqrt{2gh}}$$

Given:

G = Gravitational constant **32.17 ft/sec²**

C = Orifice coefficient (usually assumed = 0.6)..... **0.60**

A= 0.015 ft²

From Equation 25-5, the orifice diameter (D) is:

$$D = \sqrt{\frac{4A}{\pi}}$$

D= 0.140 ft

D= 1.68 inches

Adjusted flow line elev. = 0.49 ft

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
Post-Development Conditions
BCC Engineering

Prepared by: J.R.
Checked by: R.G.
Approved by: R.G.

Date: 3/31/2016
Date: 3/31/2016
Date: 3/31/2016

Difference FLE. 0.00 ft*

D= 2.00 inches**

Used 3 inches

* This trial is acceptable because there is no difference between the Flow Line Elevations (FLE).

** The diameter may be rounded up to 1.0 inch for construction purposes

I-95 CDC DRAINAGE CALCULATIONS
DRAINAGE SYSTEM SUMMARY TABLES
DRAINAGE SYSTEM: 17

Summary of Peak Discharges								
Receiving Waterbody: North Fork of the New River								
PRE-DEVELOPMENT								
ICPR Link	Outfall Description	Flow Area (ft ²)	10yr-24hr Peak-Flow rate* (cfs)	10yr-24hr Peak-Flow Velocity (fps)	25yr-72hr Peak-Flow rate* (cfs)	25yr-72hr Peak-Flow Velocity (fps)	100yr-24hr Peak-Flow rate* (cfs)	100yr-24hr Peak-Flow Velocity (fps)
B17-1	Basin (Sheet Flow)	--	15.96	--	19.00	--	24.70	--
B17-3	Basin (Sheet Flow)	--	12.66	--	19.58	--	23.66	--
ExCS17-1	48" Pipe	12.57	57.13	4.55	68.00	5.41	76.56	6.09
PRE-DEVELOPMENT TOTALS:		--	--	--	106.58	--	--	--
POST-DEVELOPMENT								
ICPR Link	Outfall Description	Flow Area (ft ²)	10yr-24hr Peak-Flow rate* (cfs)	10yr-24hr Peak-Flow Velocity (fps)	25yr-72hr Peak-Flow rate* (cfs)	25yr-72hr Peak-Flow Velocity (fps)	100yr-24hr Peak-Flow rate* (cfs)	100yr-24hr Peak-Flow Velocity (fps)
B17-1	Basin (Sheet Flow)	--	5.72	--	6.91	--	8.95	--
PrCS17-1	48" Pipe	12.57	32.43	2.58	57.20	4.55	77.56	6.17
PrCS17-2	30" Pipe	4.91	16.82	3.43	26.42	5.38	28.89	5.89
POST-DEVELOPMENT TOTALS:		--	--	--	90.53	--	--	--
* Peak flows at respective ICPR Links occur at different times. For Pre Dev. Condition, Maximum Inflow (cfs) at North Fork New River (at 60.03 hrs) = 105.10 For Post Dev. Condition, Maximum Inflow (cfs) at North Fork New River (at 60.19 hrs) = 87.00					SEE EXAMPLE #1 AFTER DRAINAGE SYSTEM SUMMARY TABLE OF BASIN 16A			
PRE-POST 25yr-72hr Peak Discharge Reduction (cfs)**:			18.10					

** Decrease in discharge compensates increase in discharge in Basin 16B.

Note: Link max condition and basin max condition was used as peak discharge.

Summary of Peak Stages									
Pond/ Swale/ FD #	Type: [Wet/Dry, Det./Ret., FD]	Disposition [Exist./ Prop./ Modified]	Warning EL [Min. Berm/ Min. EOS] (ft-NAVD)	PRE-DEVELOPMENT			POST-DEVELOPMENT		
				Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)	Max 10yr-24hr Stage (ft-NAVD)	Max 25yr-72hr Stage (ft-NAVD)	Max 100yr-24hr Stage (ft-NAVD)
POND 17-1	Dry Det.	Modified	5.50	3.32	3.63	4.06	4.46	4.97	5.22
POND 17-2	Dry Det.	Proposed	6.00	--	--	--	3.95	4.47	4.66
SWALE 17-1A ¹	Dry Ret.	Proposed	6.00	4.28	4.86	5.23	4.40	5.30	5.64
SWALE 17-1B ¹	Dry Ret.	Modified	6.00				4.45	5.44	5.78
SWALE 17-2 ²	Dry Ret.	Modified	6.00	5.19	5.80	6.28	4.65	5.59	6.14 ³
SWALE 17-3 ²	Dry Ret.	Proposed	4.50				4.68 ³	5.62 ³	6.09 ³

¹ SWALE 17-1A & 1B are merged together as SWALE 17-1 in Pre-development condition.

² SWALE 17-2 & 3 are merged together as SWALE 17-2 in Pre-development condition.

³ Post-development elevations are less than Pre-development elevations, and do not impact any travel lanes.

Control Structure Summary Table- Proposed Conditions					
Control Structure	Disposition [Exist./ Prop./ Modified]	Weir Type/ Geometry	Weir EL (ft-NAVD)	Bleeder Type/ Geometry	Bleeder Invert EL. (ft-NAVD)
PrCS17-1	Proposed	Vertical Slot + Horizontal Weir	2.50	3" Circular Orifice	0.42
PrCS17-2	Proposed	Vertical Slot + Horizontal Weir	3.00	3" Circular Orifice	0.42
PrCS17-3	Proposed	Vertical Slot + Horizontal Weir	3.00	--	--
PrCS17-4	Proposed	Raised Type "D" Ditch Bottom Inlet	3.00	--	--

ICPR: Pre-Development

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 NODE-LINK DIAGRAM

Nodes

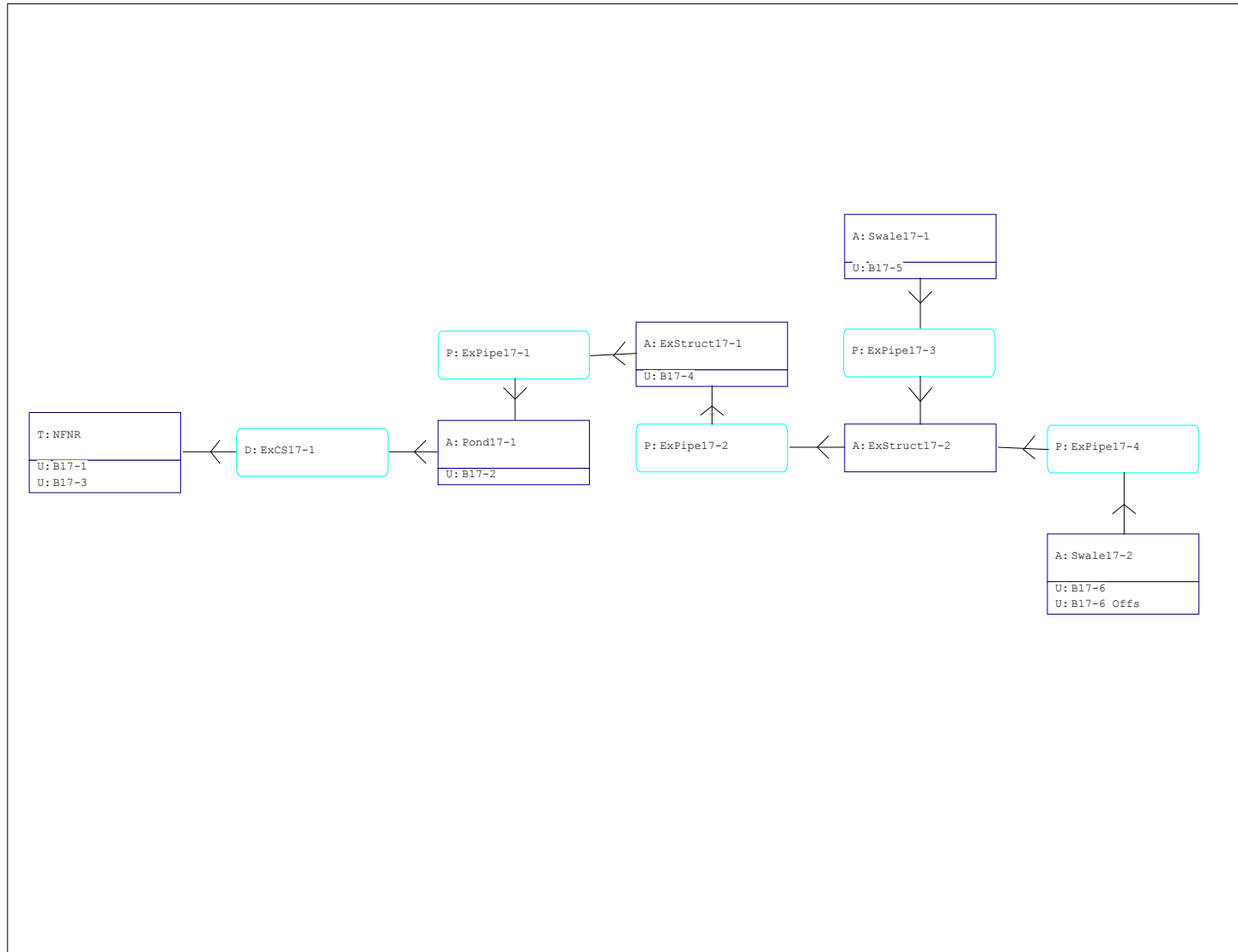
A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole

Basins

O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA

Links

P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExStruct17-1	BASE	100yr24hr	12.49	4.61	6.00	0.0070	174	13.28	27.13	13.31	27.16
ExStruct17-2	BASE	100yr24hr	12.79	5.05	4.76	-0.0079	157	13.45	26.32	13.48	26.21
NFNR	BASE	100yr24hr	0.00	0.42	0.43	0.0000	0	12.28	122.54	0.00	0.00
Pond17-1	BASE	100yr24hr	12.37	4.06	5.50	0.0050	27364	12.27	91.44	12.37	76.56
Swale17-1	BASE	100yr24hr	13.31	5.23	6.00	0.0039	105494	12.27	62.41	16.57	16.04
Swale17-2	BASE	100yr24hr	12.85	6.28	4.50	0.0050	66650	12.27	63.29	12.87	17.36
ExStruct17-1	BASE	10yr24hr	12.56	3.79	6.00	0.0071	174	13.99	22.06	13.12	21.83
ExStruct17-2	BASE	10yr24hr	12.84	4.19	4.76	-0.0082	157	13.12	21.21	13.99	21.62
NFNR	BASE	10yr24hr	0.00	0.42	0.43	0.0000	0	12.30	84.57	0.00	0.00
Pond17-1	BASE	10yr24hr	12.33	3.32	5.50	0.0048	21838	12.26	60.25	12.33	57.13
Swale17-1	BASE	10yr24hr	13.08	4.28	6.00	0.0036	81964	12.27	33.23	14.20	14.44
Swale17-2	BASE	10yr24hr	12.65	5.19	4.50	0.0050	40920	12.27	37.65	11.98	16.74
ExStruct17-1	BASE	25yr72hr	60.22	4.22	6.00	0.0069	174	60.97	25.11	60.94	25.15
ExStruct17-2	BASE	25yr72hr	60.62	4.71	4.76	-0.0078	157	61.18	24.44	61.14	24.32
NFNR	BASE	25yr72hr	0.00	0.42	0.43	0.0000	0	60.03	105.10	0.00	0.00
Pond17-1	BASE	25yr72hr	60.11	3.63	5.50	0.0049	24019	60.02	75.90	60.11	68.00
Swale17-1	BASE	25yr72hr	60.90	4.86	6.00	-0.0032	96901	60.02	51.72	63.10	16.28
Swale17-2	BASE	25yr72hr	60.56	5.80	4.50	0.0050	54090	60.02	50.21	60.17	16.61

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExCS17-1	BASE	100yr24hr	12.37	76.56	-0.202	12.37	4.06	0.00	0.42
ExPipe17-1	BASE	100yr24hr	13.31	27.16	1.918	12.49	4.61	12.37	4.06
ExPipe17-2	BASE	100yr24hr	13.48	26.21	2.502	12.79	5.05	12.49	4.61
ExPipe17-3	BASE	100yr24hr	16.57	16.04	0.834	13.31	5.23	12.79	5.05
ExPipe17-4	BASE	100yr24hr	12.87	17.36	0.336	12.85	6.28	12.79	5.05
ExCS17-1	BASE	10yr24hr	12.33	57.13	-0.098	12.33	3.32	0.00	0.42
ExPipe17-1	BASE	10yr24hr	13.12	21.83	2.072	12.56	3.79	12.33	3.32
ExPipe17-2	BASE	10yr24hr	13.99	21.62	2.548	12.84	4.19	12.56	3.79
ExPipe17-3	BASE	10yr24hr	14.20	14.44	-1.273	13.08	4.28	12.84	4.19
ExPipe17-4	BASE	10yr24hr	11.98	16.74	-0.374	12.65	5.19	12.84	4.19
ExCS17-1	BASE	25yr72hr	60.11	68.00	-0.197	60.11	3.63	0.00	0.42
ExPipe17-1	BASE	25yr72hr	60.94	25.15	2.187	60.22	4.22	60.11	3.63
ExPipe17-2	BASE	25yr72hr	61.14	24.32	2.480	60.62	4.71	60.22	4.22
ExPipe17-3	BASE	25yr72hr	63.10	16.28	0.880	60.90	4.86	60.62	4.71
ExPipe17-4	BASE	25yr72hr	60.17	16.61	0.396	60.56	5.80	60.62	4.71

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100yr24hr	B17-1	BASE	12.27	24.70	13.077	145260
100yr24hr	B17-2	BASE	12.27	74.32	11.103	397001
100yr24hr	B17-3	BASE	12.27	23.66	8.826	119182
100yr24hr	B17-4	BASE	12.27	7.36	13.495	44580
100yr24hr	B17-5	BASE	12.27	62.42	8.747	314036
100yr24hr	B17-6	BASE	12.27	57.86	11.028	308248
100yr24hr	B17-6 Offs	BASE	12.27	5.45	7.941	27096
10yr24hr	B17-1	BASE	12.27	15.96	8.334	92570
10yr24hr	B17-2	BASE	12.27	45.00	6.507	232650
10yr24hr	B17-3	BASE	12.27	12.66	4.632	62550
10yr24hr	B17-4	BASE	12.27	4.77	8.747	28894
10yr24hr	B17-5	BASE	12.27	33.23	4.572	164121
10yr24hr	B17-6	BASE	12.27	34.91	6.441	180034
10yr24hr	B17-6 Offs	BASE	12.27	2.74	3.966	13532
25yr72hr	B17-1	BASE	60.02	19.00	13.577	150807
25yr72hr	B17-2	BASE	60.02	58.53	11.592	414485
25yr72hr	B17-3	BASE	60.02	19.58	9.284	125370
25yr72hr	B17-4	BASE	60.02	5.66	13.995	46230
25yr72hr	B17-5	BASE	60.02	51.77	9.204	330436
25yr72hr	B17-6	BASE	60.02	45.63	11.516	321897
25yr72hr	B17-6 Offs	BASE	60.02	4.62	8.381	28599

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 LINK CONNECTIVITY REPORT

Name	Group	From Node	To Node	Type	U/S Geometry	D/S Geometry	Flow Dir	Count
ExPipe17-1	BASE	ExStruct17-1	Pond17-1	Pipe	Circular	Circular	Both	1
ExPipe17-2	BASE	ExStruct17-2	ExStruct17-1	Pipe	Circular	Circular	Both	1
ExPipe17-3	BASE	Swale17-1	ExStruct17-2	Pipe	Circular	Circular	Both	1
ExPipe17-4	BASE	Swale17-2	ExStruct17-2	Pipe	Circular	Circular	Both	1
ExCS17-1	BASE	Pond17-1	NFNR	Drop Structure	Circular	Circular	Both	1
--> slot	BASE	Pond17-1	NFNR	Horizontal WGO	Rectangular		Both	1
--> slot	BASE	Pond17-1	NFNR	Vertical WGO Mavis	Rectangular		Both	1

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Curve Number: 80.92 Max Allowable Q(cfs): 999999.000
 DCIA(%): 0.00

```

-----
Name: B17-6 Offs                      Node: Swale17-2                      Status: Offsite
Group: BASE                            Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256                      Peaking Factor: 256.0
Rainfall File:                            Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
Area(ac): 0.940                          Time Shift(hrs): 0.00
Curve Number: 60.51                      Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

=====
 Nodes
 =====

```

Name: ExStruct17-1                      Base Flow(cfs): 0.000                      Init Stage(ft): 0.420
Group: BASE                              Warn Stage(ft): 6.000
Type: Stage/Area
  
```

Stage(ft)	Area(ac)
-1.000	0.0006
6.000	0.0006

```

Name: ExStruct17-2                      Base Flow(cfs): 0.000                      Init Stage(ft): 0.420
Group: BASE                              Warn Stage(ft): 4.760
Type: Stage/Area
  
```

Stage(ft)	Area(ac)
0.000	0.0006
4.760	0.0006

```

Name: NFNR                              Base Flow(cfs): 0.000                      Init Stage(ft): 0.420
Group: BASE                              Warn Stage(ft): 0.430
Type: Time/Stage
  
```

Time(hrs)	Stage(ft)
0.00	0.420
100.00	0.420

```

Name: Pond17-1                          Base Flow(cfs): 0.000                      Init Stage(ft): 0.420
Group: BASE                              Warn Stage(ft): 5.500
Type: Stage/Area
  
```

Stage(ft)	Area(ac)
-3.230	0.0020
1.420	0.0100
2.000	0.1960
3.000	0.4490
4.000	0.6110
5.000	0.8740
6.000	1.2440
7.000	1.7370

```

Name: Swale17-1                          Base Flow(cfs): 0.000                      Init Stage(ft): 1.000
  
```


Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
      Name: ExPipe17-3      From Node: Swale17-1      Length(ft): 289.00
      Group: BASE          To Node: ExStruct17-2      Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
      UPSTREAM      DOWNSTREAM
      Geometry: Circular      Circular
      Span(in): 30.00      30.00
      Rise(in): 30.00      30.00
      Invert(ft): 1.250      1.110
      Manning's N: 0.013000      0.013000
      Top Clip(in): 0.000      0.000
      Bot Clip(in): 0.000      0.000
                                Entrance Loss Coef: 0.50
                                Exit Loss Coef: 0.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

```

-----
      Name: ExPipe17-4      From Node: Swale17-2      Length(ft): 89.00
      Group: BASE          To Node: ExStruct17-2      Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
      UPSTREAM      DOWNSTREAM
      Geometry: Circular      Circular
      Span(in): 24.00      24.00
      Rise(in): 24.00      24.00
      Invert(ft): 1.190      1.190
      Manning's N: 0.013000      0.013000
      Top Clip(in): 0.000      0.000
      Bot Clip(in): 0.000      0.000
                                Entrance Loss Coef: 0.50
                                Exit Loss Coef: 0.00
                                Bend Loss Coef: 0.00
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

==== Drop Structures =====

```

-----
      Name: ExCS17-1      From Node: Pond17-1      Length(ft): 354.00
      Group: BASE          To Node: NFNR          Count: 1
                                Friction Equation: Automatic
                                Solution Algorithm: Most Restrictive
                                Flow: Both
      UPSTREAM      DOWNSTREAM
      Geometry: Circular      Circular
      Span(in): 48.00      48.00
      Rise(in): 48.00      48.00
      Invert(ft): -3.580      -3.780
      Manning's N: 0.013000      0.013000
      Top Clip(in): 0.000      0.000
      Bot Clip(in): 0.000      0.000
                                Entrance Loss Coef: 0.500
                                Exit Loss Coef: 0.000
                                Outlet Ctrl Spec: Use dc or tw
                                Inlet Ctrl Spec: Use dc
                                Solution Incs: 10
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure ExCS17-1 ***

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 INPUT REPORT

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 39.50	Invert(ft): 2.220	
Rise(in): 36.00	Control Elev(ft): 2.220	

*** Weir 2 of 2 for Drop Structure ExCS17-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 36.00	Invert(ft): 1.370	
Rise(in): 7.00	Control Elev(ft): 1.370	

==== Hydrology Simulations =====

Name: 100yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System17_ICPR Pre\100yr24hr.R3
 Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 13.50

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 10yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System17_ICPR Pre\10yr24hr.R32
 Override Defaults: Yes
 Storm Duration(hrs): 24.00
 Rainfall File: Scsiii
 Rainfall Amount(in): 8.75

Time(hrs)	Print Inc(min)
8.000	15.00
10.000	5.00
14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

Name: 25yr72hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System17_ICPR Pre\25yr72hr.R32
 Override Defaults: Yes
 Storm Duration(hrs): 72.00
 Rainfall File: Sfwmd72
 Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

==== Routing Simulations =====
 =====

Name: 100yr24hr Hydrology Sim: 100yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System17_ICPR Pre\100yr24hr.I3

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group Run

 BASE Yes

Name: 10yr24hr Hydrology Sim: 10yr24hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System17_ICPR Pre\10yr24hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group Run

 BASE Yes

Name: 25yr72hr Hydrology Sim: 25yr72hr
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\PRE_DEVELOPMENT\System17_ICPR Pre\25yr72hr.I32

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 96.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 17
PRE-DEVELOPMENT CONDITIONS
INPUT REPORT

64.000	1.000
72.000	5.000
96.000	15.000

Group	Run
-----	-----
BASE	Yes

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
DRAINAGE SYSTEM 17
PRE-DEVELOPMENT CONDITIONS
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	0.00	0.0	0.0	0.0	0.0	0.00
100yr24hr	0.26	30.3	0.0	30.3	-0.0	-0.00
100yr24hr	0.50	106.2	0.0	106.2	0.0	0.00
100yr24hr	0.76	211.5	0.0	211.5	0.0	0.00
100yr24hr	1.01	319.2	0.0	319.2	0.0	0.00
100yr24hr	1.25	425.9	0.0	425.9	0.0	0.00
100yr24hr	1.51	538.6	0.0	538.6	-0.0	-0.00
100yr24hr	1.75	648.1	0.0	648.1	-0.0	-0.00
100yr24hr	2.01	762.9	0.0	762.9	-0.0	-0.00
100yr24hr	2.25	887.6	0.0	887.6	-0.0	-0.00
100yr24hr	2.50	1015.8	0.0	1015.8	0.0	0.00
100yr24hr	2.75	1135.9	0.0	1135.9	0.0	0.00
100yr24hr	3.00	1251.4	0.0	1251.4	0.0	0.00
100yr24hr	3.25	1378.9	0.0	1378.9	0.0	0.00
100yr24hr	3.50	1519.6	0.0	1519.6	0.0	0.00
100yr24hr	3.75	1706.4	0.0	1706.4	0.0	0.00
100yr24hr	4.00	1961.2	0.0	1961.2	0.0	0.00
100yr24hr	4.25	2344.2	0.0	2344.2	-0.0	-0.00
100yr24hr	4.50	2823.1	4.9	2818.2	-0.0	-0.00
100yr24hr	4.75	3352.5	174.6	3177.8	-0.0	-0.00
100yr24hr	5.00	4023.8	575.8	3448.0	0.0	0.00
100yr24hr	5.25	4780.5	1184.6	3596.0	0.0	0.00
100yr24hr	5.50	5634.0	1906.1	3728.0	0.0	0.00
100yr24hr	5.75	6651.5	2772.2	3879.4	0.0	0.00
100yr24hr	6.00	7780.6	3754.4	4026.1	0.0	0.00
100yr24hr	6.25	9067.4	4888.5	4178.9	0.0	0.00
100yr24hr	6.50	10425.3	6142.0	4283.3	0.0	0.00
100yr24hr	6.75	11997.3	7508.6	4488.7	0.0	0.00
100yr24hr	7.00	13707.6	9054.1	4653.5	0.0	0.00
100yr24hr	7.25	15597.3	10741.1	4856.2	0.0	0.00
100yr24hr	7.50	17899.2	12674.7	5224.5	0.0	0.00
100yr24hr	7.75	20810.5	14988.7	5821.9	0.0	0.00
100yr24hr	8.00	24638.2	17942.1	6696.1	0.0	0.00
100yr24hr	8.25	28831.7	21485.7	7346.0	0.0	0.00
100yr24hr	8.33	30202.3	22724.4	7477.9	0.0	0.00
100yr24hr	8.42	31742.7	24076.0	7666.7	0.0	0.00
100yr24hr	8.50	33298.9	25398.5	7900.3	0.0	0.00
100yr24hr	8.58	34963.9	26796.5	8167.4	0.0	0.00
100yr24hr	8.67	36765.8	28302.7	8463.0	0.0	0.00
100yr24hr	8.75	38508.4	29760.2	8748.2	0.0	0.00
100yr24hr	8.83	40382.0	31322.9	9059.1	0.0	0.00
100yr24hr	8.92	42364.2	32951.6	9412.6	0.0	0.00
100yr24hr	9.00	44408.8	34595.9	9813.0	0.0	0.00
100yr24hr	9.09	46537.9	36287.0	10250.9	0.0	0.00
100yr24hr	9.17	48738.5	38025.2	10713.3	0.0	0.00
100yr24hr	9.25	50925.9	39749.8	11176.0	0.0	0.00
100yr24hr	9.34	53284.7	41607.7	11677.0	0.0	0.00
100yr24hr	9.42	55640.1	43460.4	12179.7	0.0	0.00
100yr24hr	9.50	58031.2	45340.8	12690.5	0.0	0.00
100yr24hr	9.58	60465.7	47257.1	13208.6	0.0	0.00
100yr24hr	9.67	63179.7	49367.3	13812.5	0.0	0.00
100yr24hr	9.75	65859.5	51442.2	14417.3	0.0	0.00
100yr24hr	9.84	68912.6	53859.0	15053.7	0.0	0.00
100yr24hr	9.92	71750.3	56193.1	15557.2	0.0	0.00
100yr24hr	10.00	74632.2	58643.4	15988.8	0.0	0.00
100yr24hr	10.02	75203.8	59136.4	16067.4	0.0	0.00
100yr24hr	10.03	75778.0	59632.3	16145.7	0.0	0.00
100yr24hr	10.05	76549.8	60298.1	16251.7	0.0	0.00
100yr24hr	10.07	76988.3	60675.0	16313.3	0.0	0.00
100yr24hr	10.09	77685.6	61270.2	16415.4	0.0	0.00
100yr24hr	10.10	78329.9	61814.2	16515.6	0.0	0.00
100yr24hr	10.12	78854.3	62252.8	16601.5	0.0	0.00
100yr24hr	10.14	79656.3	62916.7	16739.6	0.0	0.00
100yr24hr	10.15	80166.6	63335.6	16831.0	0.0	0.00
100yr24hr	10.17	80857.3	63899.3	16958.0	0.0	0.00
100yr24hr	10.18	81515.0	64433.2	17081.8	0.0	0.00
100yr24hr	10.21	82406.1	65153.8	17252.3	0.0	0.00
100yr24hr	10.22	83084.0	65700.8	17383.2	0.0	0.00
100yr24hr	10.23	83597.4	66114.8	17482.6	0.0	0.00
100yr24hr	10.25	84299.6	66681.2	17618.4	0.0	0.00
100yr24hr	10.27	85043.9	67282.0	17761.8	0.0	0.00
100yr24hr	10.28	85795.1	67889.4	17905.7	0.0	0.00
100yr24hr	10.30	86647.7	68580.3	18067.4	0.0	0.00
100yr24hr	10.32	87363.8	69162.2	18201.5	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	10.34	88084.4	69749.7	18334.7	0.0	0.00
100yr24hr	10.35	88809.2	70342.6	18466.6	0.0	0.00
100yr24hr	10.37	89518.3	70924.8	18593.5	0.0	0.00
100yr24hr	10.39	90299.4	71568.6	18730.8	0.0	0.00
100yr24hr	10.40	91123.9	72250.8	18873.2	0.0	0.00
100yr24hr	10.42	91913.1	72906.1	19006.9	0.0	0.00
100yr24hr	10.44	92705.8	73567.0	19138.8	0.0	0.00
100yr24hr	10.45	93352.5	74107.9	19244.5	0.0	0.00
100yr24hr	10.47	94101.5	74736.3	19365.2	0.0	0.00
100yr24hr	10.48	94853.5	75369.3	19484.3	0.0	0.00
100yr24hr	10.51	95860.9	76220.1	19640.8	0.0	0.00
100yr24hr	10.52	96493.6	76755.8	19737.8	0.0	0.00
100yr24hr	10.54	97448.2	77564.9	19883.3	0.0	0.00
100yr24hr	10.55	98097.6	78114.7	19982.9	0.0	0.00
100yr24hr	10.57	98927.3	78814.9	20112.4	0.0	0.00
100yr24hr	10.58	99599.5	79379.0	20220.5	0.0	0.00
100yr24hr	10.60	100625.2	80232.1	20393.0	0.0	0.00
100yr24hr	10.62	101278.1	80770.0	20508.1	0.0	0.00
100yr24hr	10.63	102163.3	81493.4	20669.8	0.0	0.00
100yr24hr	10.65	103007.7	82178.4	20829.4	0.0	0.00
100yr24hr	10.67	104154.8	83102.5	21052.3	0.0	0.00
100yr24hr	10.69	105029.7	83804.1	21225.6	0.0	0.00
100yr24hr	10.70	105693.6	84335.1	21358.4	0.0	0.00
100yr24hr	10.72	106813.6	85229.6	21584.0	0.0	0.00
100yr24hr	10.74	107675.5	85917.5	21758.0	0.0	0.00
100yr24hr	10.75	108653.3	86698.3	21955.0	0.0	0.00
100yr24hr	10.77	109641.8	87487.6	22154.2	0.0	0.00
100yr24hr	10.79	110515.9	88185.3	22330.6	0.0	0.00
100yr24hr	10.80	111462.4	88940.1	22522.3	0.0	0.00
100yr24hr	10.82	112420.4	89702.6	22717.8	0.0	0.00
100yr24hr	10.83	113391.2	90473.0	22918.1	0.0	0.00
100yr24hr	10.86	114706.7	91512.8	23193.9	0.0	0.00
100yr24hr	10.87	115709.5	92302.4	23407.1	0.0	0.00
100yr24hr	10.89	116725.7	93100.6	23625.1	0.0	0.00
100yr24hr	10.90	117754.7	93907.5	23847.1	0.0	0.00
100yr24hr	10.92	118795.6	94723.3	24072.4	0.0	0.00
100yr24hr	10.94	119848.0	95547.9	24300.1	0.0	0.00
100yr24hr	10.95	120910.8	96381.3	24529.5	0.0	0.00
100yr24hr	10.97	122055.3	97280.2	24775.2	0.0	0.00
100yr24hr	10.99	123210.4	98188.9	25021.6	0.0	0.00
100yr24hr	11.00	124375.8	99107.4	25268.4	0.0	0.00
100yr24hr	11.02	125477.6	99977.1	25500.5	0.0	0.00
100yr24hr	11.04	126588.7	100855.3	25733.4	0.0	0.00
100yr24hr	11.05	127709.5	101741.9	25967.6	0.0	0.00
100yr24hr	11.07	128935.2	102711.7	26223.4	0.0	0.00
100yr24hr	11.09	130365.1	103843.0	26522.2	0.0	0.00
100yr24hr	11.10	131231.3	104528.1	26703.2	0.0	0.00
100yr24hr	11.12	132551.7	105572.8	26978.9	0.0	0.00
100yr24hr	11.14	133806.6	106566.2	27240.4	0.0	0.00
100yr24hr	11.15	134755.1	107317.6	27437.5	0.0	0.00
100yr24hr	11.17	136189.0	108454.8	27734.2	0.0	0.00
100yr24hr	11.19	137393.6	109411.8	27981.8	0.0	0.00
100yr24hr	11.20	138606.6	110377.1	28229.5	0.0	0.00
100yr24hr	11.22	139827.5	111350.7	28476.8	0.0	0.00
100yr24hr	11.24	141364.1	112578.9	28785.2	0.0	0.00
100yr24hr	11.25	142395.3	113404.7	28990.6	0.0	0.00
100yr24hr	11.27	143640.6	114403.1	29237.5	0.0	0.00
100yr24hr	11.28	144982.0	115476.9	29505.1	0.0	0.00
100yr24hr	11.30	146342.2	116560.2	29782.0	0.0	0.00
100yr24hr	11.32	147727.2	117653.5	30073.6	0.0	0.00
100yr24hr	11.34	149144.0	118758.0	30386.0	0.0	0.00
100yr24hr	11.35	150599.9	119875.0	30724.9	0.0	0.00
100yr24hr	11.37	152097.8	121006.1	31091.7	0.0	0.00
100yr24hr	11.38	153248.5	121864.6	31383.9	0.0	0.00
100yr24hr	11.40	154818.3	123023.7	31794.6	0.0	0.00
100yr24hr	11.42	156426.2	124200.3	32226.0	0.0	0.00
100yr24hr	11.44	158069.3	125394.8	32674.6	0.0	0.00
100yr24hr	11.45	159745.2	126607.6	33137.6	0.0	0.00
100yr24hr	11.47	161451.4	127838.9	33612.5	0.0	0.00
100yr24hr	11.49	163185.1	129088.6	34096.6	0.0	0.00
100yr24hr	11.50	164946.5	130356.4	34590.0	0.0	0.00
100yr24hr	11.52	166287.3	131319.3	34968.0	0.0	0.00
100yr24hr	11.53	168104.8	132619.3	35485.5	0.0	0.00
100yr24hr	11.55	169963.5	133938.1	36025.4	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	11.57	171970.4	135344.4	36625.9	0.0	0.00
100yr24hr	11.59	173942.9	136705.8	37237.1	0.0	0.00
100yr24hr	11.60	175567.5	137811.4	37756.2	0.0	0.00
100yr24hr	11.62	177572.7	139159.1	38413.6	-0.0	-0.00
100yr24hr	11.63	179636.7	140530.6	39106.1	0.0	0.00
100yr24hr	11.65	181756.8	141926.9	39829.9	0.0	0.00
100yr24hr	11.67	184297.0	143588.0	40709.0	0.0	0.00
100yr24hr	11.69	186526.6	145039.6	41487.0	0.0	0.00
100yr24hr	11.70	188800.6	146516.8	42283.8	0.0	0.00
100yr24hr	11.72	190911.0	147886.9	43024.1	0.0	0.00
100yr24hr	11.73	193318.5	149449.8	43868.7	0.0	0.00
100yr24hr	11.75	195599.8	150931.6	44668.3	0.0	0.00
100yr24hr	11.77	198050.5	152510.0	45540.5	0.0	0.00
100yr24hr	11.78	200776.3	154218.8	46557.5	0.0	0.00
100yr24hr	11.80	203573.1	155893.4	47679.7	0.0	0.00
100yr24hr	11.82	206445.6	157494.7	48950.9	0.0	0.00
100yr24hr	11.83	209901.6	159244.5	50657.1	0.0	0.00
100yr24hr	11.85	213884.0	161062.4	52821.6	0.0	0.00
100yr24hr	11.87	218294.5	162905.5	55389.0	0.0	0.00
100yr24hr	11.88	223470.4	164927.7	58542.6	0.0	0.00
100yr24hr	11.90	229250.4	167084.2	62166.2	0.0	0.00
100yr24hr	11.92	235607.1	169389.1	66218.0	0.0	0.00
100yr24hr	11.93	242508.2	171853.3	70654.9	0.0	0.00
100yr24hr	11.95	249910.9	174484.2	75426.7	0.0	0.00
100yr24hr	11.97	257772.0	177285.5	80486.6	0.0	0.00
100yr24hr	11.98	265763.9	180152.2	85611.6	0.0	0.00
100yr24hr	12.00	274504.0	183315.6	91188.4	0.0	0.00
100yr24hr	12.02	283458.0	186589.4	96868.7	0.0	0.00
100yr24hr	12.03	292701.1	190004.2	102697.0	0.0	0.00
100yr24hr	12.05	302360.3	193606.3	108754.0	0.0	0.00
100yr24hr	12.07	312717.7	197495.7	115222.0	0.0	0.00
100yr24hr	12.08	322936.2	201294.8	121641.4	0.0	0.00
100yr24hr	12.10	333424.0	205150.1	128274.0	0.0	0.00
100yr24hr	12.12	344168.6	209062.8	135105.9	0.0	0.00
100yr24hr	12.13	355157.5	213031.2	142126.4	0.0	0.00
100yr24hr	12.15	366375.1	217054.7	149320.4	0.0	0.00
100yr24hr	12.17	377805.6	221133.1	156672.5	0.0	0.00
100yr24hr	12.18	389436.8	225265.9	164170.9	0.0	0.00
100yr24hr	12.20	401258.3	229452.4	171805.9	0.0	0.00
100yr24hr	12.22	413260.6	233691.8	179568.7	0.0	0.00
100yr24hr	12.23	425429.8	237983.2	187446.6	0.0	0.00
100yr24hr	12.25	438001.6	242420.3	195581.3	0.0	0.00
100yr24hr	12.27	450782.2	246956.1	203826.1	0.0	0.00
100yr24hr	12.28	462854.2	251297.6	211556.6	0.0	0.00
100yr24hr	12.30	475416.1	255922.6	219493.5	0.0	0.00
100yr24hr	12.32	487011.1	260338.4	226672.7	0.0	0.00
100yr24hr	12.33	498184.0	264780.7	233403.3	0.0	0.00
100yr24hr	12.35	509144.7	269365.8	239778.9	0.0	0.00
100yr24hr	12.37	519699.6	274024.4	245675.2	0.0	0.00
100yr24hr	12.38	529717.7	278686.7	251030.9	0.0	0.00
100yr24hr	12.40	539228.2	283345.7	255882.5	0.0	0.00
100yr24hr	12.42	548278.4	287995.0	260283.4	0.0	0.00
100yr24hr	12.43	556916.1	292629.5	264286.6	0.0	0.00
100yr24hr	12.45	564842.4	297052.7	267789.7	0.0	0.00
100yr24hr	12.47	572686.1	301588.3	271097.8	0.0	0.00
100yr24hr	12.48	580330.6	306155.1	274175.5	0.0	0.00
100yr24hr	12.50	587342.1	310470.4	276871.6	0.0	0.00
100yr24hr	12.52	594252.8	314846.8	279406.0	0.0	0.00
100yr24hr	12.53	600999.9	319241.4	281758.5	0.0	0.00
100yr24hr	12.55	607564.0	323636.4	283927.6	0.0	0.00
100yr24hr	12.57	613945.8	328028.9	285916.9	0.0	0.00
100yr24hr	12.58	620112.1	332393.9	287718.2	0.0	0.00
100yr24hr	12.60	625757.3	336502.8	289254.6	0.0	0.00
100yr24hr	12.62	631484.1	340786.2	290697.9	0.0	0.00
100yr24hr	12.63	637003.8	345025.1	291978.7	0.0	0.00
100yr24hr	12.65	642329.7	349218.1	293111.6	-0.0	-0.00
100yr24hr	12.67	647475.4	353363.8	294111.6	0.0	0.00
100yr24hr	12.68	652045.6	357121.8	294923.8	0.0	0.00
100yr24hr	12.70	656879.8	361174.4	295705.3	-0.0	-0.00
100yr24hr	12.72	661561.1	365177.0	296384.1	-0.0	-0.00
100yr24hr	12.73	666094.8	369126.5	296968.3	-0.0	-0.00
100yr24hr	12.75	670483.8	373022.3	297461.5	-0.0	-0.00
100yr24hr	12.77	674728.8	376863.6	297865.2	-0.0	-0.00
100yr24hr	12.78	678493.6	380292.8	298200.9	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	12.80	682462.8	383909.5	298553.3	-0.0	-0.00
100yr24hr	12.82	686208.0	387340.2	298867.7	-0.0	-0.00
100yr24hr	12.83	690036.8	390882.4	299154.4	-0.0	-0.00
100yr24hr	12.85	693617.4	394240.0	299377.4	-0.0	-0.00
100yr24hr	12.87	696706.2	397179.9	299526.4	-0.0	-0.00
100yr24hr	12.88	700099.9	400461.5	299638.5	-0.0	-0.00
100yr24hr	12.90	703158.2	403468.4	299689.7	-0.0	-0.00
100yr24hr	12.92	706104.7	406413.6	299691.0	-0.0	-0.00
100yr24hr	12.93	708946.7	409301.4	299645.3	-0.0	-0.00
100yr24hr	12.95	711693.4	412136.2	299557.2	-0.0	-0.00
100yr24hr	12.97	714353.1	414922.4	299430.7	-0.0	-0.00
100yr24hr	12.98	717038.2	417776.6	299261.5	-0.0	-0.00
100yr24hr	13.00	719642.7	420585.7	299057.0	-0.0	-0.00
100yr24hr	13.02	722074.4	423242.9	298831.5	-0.0	-0.00
100yr24hr	13.04	724541.9	425973.4	298568.5	-0.0	-0.00
100yr24hr	13.05	726946.3	428669.0	298277.4	-0.0	-0.00
100yr24hr	13.07	729290.1	431331.9	297958.2	-0.0	-0.00
100yr24hr	13.09	731326.5	433676.2	297650.3	-0.0	-0.00
100yr24hr	13.10	733472.5	436179.5	297293.1	-0.0	-0.00
100yr24hr	13.12	735568.6	438658.2	296910.4	-0.0	-0.00
100yr24hr	13.14	737702.0	441215.5	296486.4	-0.0	-0.00
100yr24hr	13.15	739582.6	443496.9	296085.7	-0.0	-0.00
100yr24hr	13.17	741607.1	445978.3	295628.8	-0.0	-0.00
100yr24hr	13.18	743546.0	448378.0	295168.0	-0.0	-0.00
100yr24hr	13.20	745373.5	450659.1	294714.4	-0.0	-0.00
100yr24hr	13.22	747438.0	453254.4	294183.6	-0.0	-0.00
100yr24hr	13.24	749293.3	455598.2	293695.1	-0.0	-0.00
100yr24hr	13.25	751283.6	458122.2	293161.4	-0.0	-0.00
100yr24hr	13.27	752801.0	460054.1	292747.0	-0.0	-0.00
100yr24hr	13.28	754680.1	462457.9	292222.2	-0.0	-0.00
100yr24hr	13.30	756537.1	464850.5	291686.6	-0.0	-0.00
100yr24hr	13.32	758204.6	467017.1	291187.5	-0.0	-0.00
100yr24hr	13.34	760145.4	469566.7	290578.7	-0.0	-0.00
100yr24hr	13.35	761735.8	471682.0	290053.8	-0.0	-0.00
100yr24hr	13.37	763578.6	474164.0	289414.6	-0.0	-0.00
100yr24hr	13.39	765225.5	476410.1	288815.4	-0.0	-0.00
100yr24hr	13.40	766913.9	478739.4	288174.5	-0.0	-0.00
100yr24hr	13.42	768577.0	481058.1	287518.8	-0.0	-0.00
100yr24hr	13.44	770135.7	483251.5	286884.2	-0.0	-0.00
100yr24hr	13.45	771518.0	485211.9	286306.1	-0.0	-0.00
100yr24hr	13.47	772996.7	487323.3	285673.5	-0.0	-0.00
100yr24hr	13.48	774541.6	489543.6	284998.1	-0.0	-0.00
100yr24hr	13.50	776051.8	491726.6	284325.1	-0.0	-0.00
100yr24hr	13.52	777796.7	494264.0	283532.7	-0.0	-0.00
100yr24hr	13.54	779217.3	496341.0	282876.3	-0.0	-0.00
100yr24hr	13.55	780749.0	498591.5	282157.6	-0.0	-0.00
100yr24hr	13.57	782041.1	500498.8	281542.3	-0.0	-0.00
100yr24hr	13.58	783549.7	502736.6	280813.1	-0.0	-0.00
100yr24hr	13.60	785063.7	504994.5	280069.3	-0.0	-0.00
100yr24hr	13.62	786393.9	506988.1	279405.8	-0.0	-0.00
100yr24hr	13.64	787996.7	509402.4	278594.3	-0.0	-0.00
100yr24hr	13.65	789458.7	511615.3	277843.4	-0.0	-0.00
100yr24hr	13.67	790621.2	513381.5	277239.7	-0.0	-0.00
100yr24hr	13.68	792066.2	515584.5	276481.8	-0.0	-0.00
100yr24hr	13.70	793431.3	517672.4	275758.9	-0.0	-0.00
100yr24hr	13.72	794860.8	519865.3	274995.5	-0.0	-0.00
100yr24hr	13.74	796340.0	522140.8	274199.2	-0.0	-0.00
100yr24hr	13.75	797699.2	524236.8	273462.4	-0.0	-0.00
100yr24hr	13.77	799052.1	526328.9	272723.3	-0.0	-0.00
100yr24hr	13.79	800453.7	528503.9	271949.8	-0.0	-0.00
100yr24hr	13.80	801707.5	530457.8	271249.7	-0.0	-0.00
100yr24hr	13.82	803090.0	532624.7	270465.2	-0.0	-0.00
100yr24hr	13.83	804322.6	534571.1	269751.6	-0.0	-0.00
100yr24hr	13.85	805624.1	536642.8	268981.3	-0.0	-0.00
100yr24hr	13.87	806964.5	538795.9	268168.6	-0.0	-0.00
100yr24hr	13.88	808289.8	540943.7	267346.1	-0.0	-0.00
100yr24hr	13.90	809600.8	543085.9	266514.9	-0.0	-0.00
100yr24hr	13.92	810898.5	545222.5	265675.9	-0.0	-0.00
100yr24hr	13.93	811994.9	547039.3	264955.6	-0.0	-0.00
100yr24hr	13.95	813301.4	549216.2	264085.2	-0.0	-0.00
100yr24hr	13.97	814565.2	551333.1	263232.0	-0.0	-0.00
100yr24hr	13.99	815811.8	553431.2	262380.6	-0.0	-0.00
100yr24hr	14.00	817010.2	555456.7	261553.5	-0.0	-0.00
100yr24hr	14.08	822779.3	565357.9	257421.4	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	14.17	828634.4	575697.3	252937.1	-0.0	-0.00
100yr24hr	14.25	834015.8	585422.8	248593.0	-0.0	-0.00
100yr24hr	14.34	839416.0	595308.8	244107.2	-0.0	-0.00
100yr24hr	14.42	844842.2	605307.1	239535.1	-0.0	-0.00
100yr24hr	14.50	849922.9	614695.2	235227.7	0.0	0.00
100yr24hr	14.59	855035.9	624271.2	230764.7	0.0	0.00
100yr24hr	14.67	859876.0	633642.1	226234.0	0.0	0.00
100yr24hr	14.75	864603.4	643099.9	221503.4	0.0	0.00
100yr24hr	14.83	869131.3	652331.5	216799.8	0.0	0.00
100yr24hr	14.92	873694.4	661742.0	211952.4	0.0	0.00
100yr24hr	15.00	877999.3	670678.0	207321.4	0.0	0.00
100yr24hr	15.08	882284.2	679597.9	202686.2	0.0	0.00
100yr24hr	15.17	886674.6	688743.6	197931.0	0.0	0.00
100yr24hr	15.25	890815.7	697361.3	193454.4	0.0	0.00
100yr24hr	15.33	894970.8	706121.3	188849.5	0.0	0.00
100yr24hr	15.42	898939.7	714786.7	184153.0	0.0	0.00
100yr24hr	15.50	902763.7	723416.7	179347.0	0.0	0.00
100yr24hr	15.58	906419.1	731762.1	174657.0	-0.0	-0.00
100yr24hr	15.67	910114.8	740119.5	169995.4	-0.0	-0.00
100yr24hr	15.75	913764.2	748239.6	165524.6	-0.0	-0.00
100yr24hr	15.84	917570.2	756663.7	160906.5	-0.0	-0.00
100yr24hr	15.92	921129.8	764605.3	156524.5	-0.0	-0.00
100yr24hr	16.00	924644.8	772505.7	152139.1	-0.0	-0.00
100yr24hr	16.25	935010.3	795802.6	139207.7	-0.0	-0.00
100yr24hr	16.50	944823.0	817997.6	126825.4	-0.0	-0.00
100yr24hr	16.75	954286.0	839266.8	115019.2	-0.0	-0.00
100yr24hr	17.00	962721.1	860205.7	102515.3	-0.0	-0.00
100yr24hr	17.25	969695.5	880006.4	89689.0	-0.0	-0.00
100yr24hr	17.50	976081.9	898847.9	77234.0	-0.0	-0.00
100yr24hr	17.75	982121.9	916311.9	65810.0	0.0	0.00
100yr24hr	18.00	988233.7	933492.4	54741.3	0.0	0.00
100yr24hr	18.25	994022.7	948958.4	45064.3	-0.0	-0.00
100yr24hr	18.50	999226.2	962884.8	36341.4	-0.0	-0.00
100yr24hr	18.75	1004080.2	974675.5	29404.7	-0.0	-0.00
100yr24hr	19.00	1009268.0	985119.6	24148.4	-0.0	-0.00
100yr24hr	19.25	1014149.6	994078.8	20070.8	-0.0	-0.00
100yr24hr	19.50	1018872.2	1001676.1	17196.2	-0.0	-0.00
100yr24hr	19.75	1023667.8	1008573.5	15094.2	-0.0	-0.00
100yr24hr	20.00	1028078.1	1014582.6	13495.5	-0.0	-0.00
100yr24hr	20.25	1032276.0	1020190.9	12085.1	-0.0	-0.00
100yr24hr	20.50	1036360.8	1025511.3	10849.5	-0.0	-0.00
100yr24hr	20.75	1040435.2	1030600.5	9834.7	-0.0	-0.00
100yr24hr	21.00	1044489.9	1035402.8	9087.0	-0.0	-0.00
100yr24hr	21.25	1048739.4	1040056.4	8683.1	-0.0	-0.00
100yr24hr	21.50	1052843.9	1044473.1	8370.8	-0.0	-0.00
100yr24hr	21.76	1056982.8	1048814.0	8168.8	0.0	0.00
100yr24hr	22.00	1060991.9	1052969.0	8022.9	0.0	0.00
100yr24hr	22.25	1064595.9	1057008.5	7587.3	0.0	0.00
100yr24hr	22.50	1068092.7	1060851.5	7241.2	0.0	0.00
100yr24hr	22.75	1071507.2	1064528.9	6978.2	0.0	0.00
100yr24hr	23.00	1075004.8	1068021.9	6982.9	0.0	0.00
100yr24hr	23.25	1078391.2	1071512.6	6878.6	0.0	0.00
100yr24hr	23.50	1081804.0	1074926.0	6878.0	0.0	0.00
100yr24hr	23.76	1085258.9	1078457.9	6801.0	0.0	0.00
100yr24hr	24.00	1088239.3	1081745.5	6493.7	0.0	0.00
100yr24hr	24.25	1090274.8	1084676.1	5598.7	0.0	0.00
100yr24hr	24.50	1090568.2	1086534.8	4033.4	-0.0	-0.00
100yr24hr	24.75	1090568.2	1087327.4	3240.8	-0.0	-0.00
100yr24hr	25.00	1090568.2	1087644.9	2923.3	-0.0	-0.00
100yr24hr	25.25	1090568.2	1087777.9	2790.3	-0.0	-0.00
100yr24hr	25.50	1090568.2	1087840.5	2727.7	0.0	0.00
100yr24hr	25.75	1090568.2	1087874.4	2693.8	0.0	0.00
100yr24hr	26.00	1090568.2	1087894.8	2673.4	0.0	0.00
100yr24hr	26.25	1090568.2	1087908.0	2660.2	0.0	0.00
100yr24hr	26.50	1090568.2	1087917.0	2651.2	0.0	0.00
100yr24hr	26.75	1090568.2	1087923.5	2644.7	0.0	0.00
100yr24hr	27.00	1090568.2	1087928.3	2639.9	0.0	0.00
100yr24hr	27.25	1090568.2	1087932.0	2636.2	0.0	0.00
100yr24hr	27.50	1090568.2	1087934.8	2633.4	0.0	0.00
100yr24hr	27.75	1090568.2	1087937.1	2631.1	0.0	0.00
100yr24hr	28.00	1090568.2	1087939.0	2629.2	0.0	0.00
100yr24hr	28.25	1090568.2	1087940.5	2627.7	0.0	0.00
100yr24hr	28.50	1090568.2	1087941.8	2626.4	0.0	0.00
100yr24hr	28.75	1090568.2	1087942.9	2625.3	0.0	0.00

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100yr24hr	29.00	1090568.2	1087943.9	2624.3	0.0	0.00
100yr24hr	29.25	1090568.2	1087944.8	2623.4	0.0	0.00
100yr24hr	29.50	1090568.2	1087945.6	2622.6	0.0	0.00
100yr24hr	29.75	1090568.2	1087946.3	2621.9	0.0	0.00
100yr24hr	30.00	1090568.2	1087947.0	2621.2	0.0	0.00
100yr24hr	30.25	1090568.2	1087947.6	2620.6	0.0	0.00
100yr24hr	30.50	1090568.2	1087948.1	2620.1	0.0	0.00
100yr24hr	30.75	1090568.2	1087948.6	2619.6	0.0	0.00
100yr24hr	31.00	1090568.2	1087949.1	2619.1	0.0	0.00
100yr24hr	31.25	1090568.2	1087949.5	2618.7	0.0	0.00
100yr24hr	31.50	1090568.2	1087949.9	2618.3	0.0	0.00
100yr24hr	31.75	1090568.2	1087950.3	2617.9	0.0	0.00
100yr24hr	32.00	1090568.2	1087950.6	2617.6	0.0	0.00
100yr24hr	32.25	1090568.2	1087950.9	2617.3	0.0	0.00
100yr24hr	32.50	1090568.2	1087951.2	2617.0	0.0	0.00
100yr24hr	32.75	1090568.2	1087951.5	2616.7	0.0	0.00
100yr24hr	33.00	1090568.2	1087951.7	2616.5	0.0	0.00
100yr24hr	33.25	1090568.2	1087951.9	2616.2	0.0	0.00
100yr24hr	33.50	1090568.2	1087952.2	2616.0	0.0	0.00
100yr24hr	33.75	1090568.2	1087952.4	2615.8	0.0	0.00
100yr24hr	34.00	1090568.2	1087952.6	2615.6	0.0	0.00
100yr24hr	34.25	1090568.2	1087952.7	2615.4	0.0	0.00
100yr24hr	34.50	1090568.2	1087952.9	2615.3	0.0	0.00
100yr24hr	34.75	1090568.2	1087953.1	2615.1	0.0	0.00
100yr24hr	35.00	1090568.2	1087953.2	2615.0	0.0	0.00
100yr24hr	35.25	1090568.2	1087953.4	2614.8	0.0	0.00
100yr24hr	35.50	1090568.2	1087953.5	2614.7	0.0	0.00
100yr24hr	35.75	1090568.2	1087953.6	2614.6	0.0	0.00
100yr24hr	36.00	1090568.2	1087953.7	2614.5	0.0	0.00
100yr24hr	36.25	1090568.2	1087953.9	2614.3	0.0	0.00
100yr24hr	36.50	1090568.2	1087954.0	2614.2	0.0	0.00
100yr24hr	36.75	1090568.2	1087954.1	2614.1	0.0	0.00
100yr24hr	37.00	1090568.2	1087954.2	2614.0	0.0	0.00
100yr24hr	37.25	1090568.2	1087954.2	2613.9	0.0	0.00
100yr24hr	37.50	1090568.2	1087954.3	2613.9	0.0	0.00
100yr24hr	37.75	1090568.2	1087954.4	2613.8	0.0	0.00
100yr24hr	38.00	1090568.2	1087954.5	2613.7	0.0	0.00
100yr24hr	38.25	1090568.2	1087954.6	2613.6	0.0	0.00
100yr24hr	38.50	1090568.2	1087954.6	2613.5	0.0	0.00
100yr24hr	38.75	1090568.2	1087954.7	2613.5	0.0	0.00
100yr24hr	39.00	1090568.2	1087954.8	2613.4	0.0	0.00
100yr24hr	39.25	1090568.2	1087954.8	2613.3	-0.0	-0.00
100yr24hr	39.50	1090568.2	1087954.9	2613.3	0.0	0.00
100yr24hr	39.75	1090568.2	1087955.0	2613.2	0.0	0.00
100yr24hr	40.00	1090568.2	1087955.0	2613.2	0.0	0.00
100yr24hr	40.25	1090568.2	1087955.1	2613.1	0.0	0.00
100yr24hr	40.50	1090568.2	1087955.1	2613.1	0.0	0.00
100yr24hr	40.75	1090568.2	1087955.2	2613.0	-0.0	-0.00
100yr24hr	41.00	1090568.2	1087955.2	2613.0	-0.0	-0.00
100yr24hr	41.25	1090568.2	1087955.3	2612.9	-0.0	-0.00
100yr24hr	41.50	1090568.2	1087955.3	2612.9	-0.0	-0.00
100yr24hr	41.75	1090568.2	1087955.4	2612.8	-0.0	-0.00
100yr24hr	42.00	1090568.2	1087955.4	2612.8	-0.0	-0.00
100yr24hr	42.25	1090568.2	1087955.4	2612.8	-0.0	-0.00
100yr24hr	42.50	1090568.2	1087955.5	2612.7	0.0	0.00
100yr24hr	42.75	1090568.2	1087955.5	2612.7	-0.0	-0.00
100yr24hr	43.00	1090568.2	1087955.5	2612.6	-0.0	-0.00
100yr24hr	43.25	1090568.2	1087955.6	2612.6	0.0	0.00
100yr24hr	43.50	1090568.2	1087955.6	2612.6	0.0	0.00
100yr24hr	43.75	1090568.2	1087955.6	2612.5	-0.0	-0.00
100yr24hr	44.00	1090568.2	1087955.7	2612.5	-0.0	-0.00
100yr24hr	44.25	1090568.2	1087955.7	2612.5	-0.0	-0.00
100yr24hr	44.50	1090568.2	1087955.7	2612.5	-0.0	-0.00
100yr24hr	44.75	1090568.2	1087955.8	2612.4	-0.0	-0.00
100yr24hr	45.00	1090568.2	1087955.8	2612.4	-0.0	-0.00
100yr24hr	45.25	1090568.2	1087955.8	2612.4	-0.0	-0.00
100yr24hr	45.50	1090568.2	1087955.8	2612.4	-0.0	-0.00
100yr24hr	45.75	1090568.2	1087955.9	2612.3	-0.0	-0.00
100yr24hr	46.00	1090568.2	1087955.9	2612.3	-0.0	-0.00
100yr24hr	46.25	1090568.2	1087955.9	2612.3	-0.0	-0.00
100yr24hr	46.50	1090568.2	1087955.9	2612.3	-0.0	-0.00
100yr24hr	46.75	1090568.2	1087956.0	2612.2	-0.0	-0.00
100yr24hr	47.00	1090568.2	1087956.0	2612.2	-0.0	-0.00
100yr24hr	47.25	1090568.2	1087956.0	2612.2	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
100yr24hr	47.50	1090568.2	1087956.0	2612.2	-0.0	-0.00
100yr24hr	47.75	1090568.2	1087956.0	2612.2	-0.0	-0.00
100yr24hr	48.00	1090568.2	1087956.0	2612.1	-0.0	-0.00
100yr24hr	48.00	1090568.2	1087956.0	2612.1	-0.0	-0.00
10yr24hr	0.00	0.0	0.0	0.0	0.0	0.00
10yr24hr	0.26	19.6	0.0	19.6	0.0	0.00
10yr24hr	0.50	68.8	0.0	68.8	-0.0	-0.00
10yr24hr	0.77	138.0	0.0	138.0	0.0	0.00
10yr24hr	1.02	209.1	0.0	209.1	0.0	0.00
10yr24hr	1.25	276.5	0.0	276.5	0.0	0.00
10yr24hr	1.50	347.4	0.0	347.4	0.0	0.00
10yr24hr	1.76	420.6	0.0	420.6	0.0	0.00
10yr24hr	2.00	494.0	0.0	494.0	0.0	0.00
10yr24hr	2.26	576.1	0.0	576.1	-0.0	-0.00
10yr24hr	2.51	660.3	0.0	660.3	-0.0	-0.00
10yr24hr	2.75	736.7	0.0	736.7	-0.0	-0.00
10yr24hr	3.01	811.6	0.0	811.6	-0.0	-0.00
10yr24hr	3.25	892.8	0.0	892.8	0.0	0.00
10yr24hr	3.50	979.3	0.0	979.3	0.0	0.00
10yr24hr	3.75	1063.9	0.0	1063.9	0.0	0.00
10yr24hr	4.00	1150.5	0.0	1150.5	0.0	0.00
10yr24hr	4.25	1245.5	0.0	1245.5	0.0	0.00
10yr24hr	4.50	1344.1	0.0	1344.1	0.0	0.00
10yr24hr	4.75	1436.2	0.0	1436.2	0.0	0.00
10yr24hr	5.00	1546.1	0.0	1546.1	-0.0	-0.00
10yr24hr	5.25	1682.8	0.0	1682.8	-0.0	-0.00
10yr24hr	5.50	1866.9	0.0	1866.9	0.0	0.00
10yr24hr	5.75	2114.0	0.0	2114.0	0.0	0.00
10yr24hr	6.00	2429.3	0.0	2429.3	0.0	0.00
10yr24hr	6.25	2812.3	4.6	2807.7	0.0	0.00
10yr24hr	6.50	3245.9	140.3	3105.7	0.0	0.00
10yr24hr	6.75	3768.9	454.5	3314.4	0.0	0.00
10yr24hr	7.00	4367.5	933.5	3434.0	-0.0	-0.00
10yr24hr	7.25	5029.2	1495.5	3533.7	-0.0	-0.00
10yr24hr	7.50	5853.0	2175.5	3677.5	0.0	0.00
10yr24hr	7.75	6914.9	3018.6	3896.3	0.0	0.00
10yr24hr	8.00	8308.5	4104.7	4203.8	0.0	0.00
10yr24hr	8.25	9869.5	5441.7	4427.8	0.0	0.00
10yr24hr	8.33	10391.1	5917.5	4473.6	0.0	0.00
10yr24hr	8.42	10966.5	6426.4	4540.1	0.0	0.00
10yr24hr	8.50	11571.6	6945.1	4626.5	0.0	0.00
10yr24hr	8.58	12212.4	7489.3	4723.1	-0.0	-0.00
10yr24hr	8.67	12886.6	8061.7	4825.0	-0.0	-0.00
10yr24hr	8.75	13598.1	8668.7	4929.5	-0.0	-0.00
10yr24hr	8.84	14341.9	9304.0	5037.9	-0.0	-0.00
10yr24hr	8.92	15116.8	9959.8	5157.0	-0.0	-0.00
10yr24hr	9.00	15964.1	10672.0	5292.1	0.0	0.00
10yr24hr	9.08	16839.2	11410.3	5428.9	0.0	0.00
10yr24hr	9.17	17735.5	12173.6	5561.9	-0.0	-0.00
10yr24hr	9.25	18688.8	12994.2	5694.6	-0.0	-0.00
10yr24hr	9.34	19675.4	13852.1	5823.3	0.0	0.00
10yr24hr	9.42	20678.3	14730.9	5947.5	-0.0	-0.00
10yr24hr	9.51	21766.3	15690.9	6075.4	-0.0	-0.00
10yr24hr	9.58	22782.0	16581.8	6200.3	-0.0	-0.00
10yr24hr	9.67	23933.5	17564.0	6369.5	-0.0	-0.00
10yr24hr	9.75	25189.2	18612.1	6577.2	-0.0	-0.00
10yr24hr	9.83	26467.6	19686.4	6781.2	-0.0	-0.00
10yr24hr	9.92	27853.8	20882.7	6971.1	-0.0	-0.00
10yr24hr	10.00	29173.3	22050.9	7122.4	-0.0	-0.00
10yr24hr	10.02	29442.6	22291.5	7151.1	-0.0	-0.00
10yr24hr	10.04	29727.9	22546.3	7181.6	-0.0	-0.00
10yr24hr	10.05	29943.6	22738.4	7205.2	-0.0	-0.00
10yr24hr	10.07	30289.2	23044.6	7244.6	-0.0	-0.00
10yr24hr	10.09	30567.0	23288.1	7278.9	-0.0	-0.00
10yr24hr	10.10	30850.2	23533.3	7316.9	-0.0	-0.00
10yr24hr	10.12	31163.4	23801.1	7362.4	-0.0	-0.00
10yr24hr	10.14	31409.1	24008.7	7400.4	-0.0	-0.00
10yr24hr	10.16	31784.9	24323.0	7461.8	-0.0	-0.00
10yr24hr	10.17	32040.1	24534.5	7505.6	-0.0	-0.00
10yr24hr	10.19	32352.3	24791.4	7561.0	-0.0	-0.00
10yr24hr	10.20	32675.8	25055.8	7620.0	-0.0	-0.00
10yr24hr	10.22	33017.8	25334.0	7683.7	-0.0	-0.00
10yr24hr	10.23	33294.7	25558.6	7736.1	-0.0	-0.00
10yr24hr	10.25	33644.9	25841.8	7803.1	-0.0	-0.00

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 DRAINAGE SYSTEM 17
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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	10.27	33981.5	26113.6	7867.9	-0.0	-0.00
10yr24hr	10.29	34339.6	26402.4	7937.2	-0.0	-0.00
10yr24hr	10.30	34701.3	26694.0	8007.2	-0.0	-0.00
10yr24hr	10.32	35043.4	26970.0	8073.4	-0.0	-0.00
10yr24hr	10.34	35388.2	27248.5	8139.7	-0.0	-0.00
10yr24hr	10.35	35735.5	27529.4	8206.1	-0.0	-0.00
10yr24hr	10.37	36114.5	27836.5	8278.0	-0.0	-0.00
10yr24hr	10.38	36407.8	28074.6	8333.2	-0.0	-0.00
10yr24hr	10.40	36850.6	28434.8	8415.8	-0.0	-0.00
10yr24hr	10.42	37147.7	28676.9	8470.7	-0.0	-0.00
10yr24hr	10.44	37583.9	29033.4	8550.5	-0.0	-0.00
10yr24hr	10.45	37872.4	29269.6	8602.8	-0.0	-0.00
10yr24hr	10.47	38259.0	29586.8	8672.3	-0.0	-0.00
10yr24hr	10.49	38696.6	29946.5	8750.1	-0.0	-0.00
10yr24hr	10.50	39063.5	30248.6	8814.8	-0.0	-0.00
10yr24hr	10.52	39432.4	30552.9	8879.6	-0.0	-0.00
10yr24hr	10.54	39804.1	30859.2	8944.9	-0.0	-0.00
10yr24hr	10.55	40116.4	31116.0	9000.4	-0.0	-0.00
10yr24hr	10.57	40590.8	31504.0	9086.8	-0.0	-0.00
10yr24hr	10.58	40912.0	31764.6	9147.4	-0.0	-0.00
10yr24hr	10.61	41402.9	32158.5	9244.4	-0.0	-0.00
10yr24hr	10.62	41740.9	32426.3	9314.6	-0.0	-0.00
10yr24hr	10.64	42176.5	32766.9	9409.5	-0.0	-0.00
10yr24hr	10.65	42531.1	33041.0	9490.1	-0.0	-0.00
10yr24hr	10.67	42959.3	33368.3	9591.0	-0.0	-0.00
10yr24hr	10.68	43417.8	33715.2	9702.7	-0.0	-0.00
10yr24hr	10.70	43883.7	34064.4	9819.3	-0.0	-0.00
10yr24hr	10.72	44326.7	34394.0	9932.7	-0.0	-0.00
10yr24hr	10.73	44775.5	34725.9	10049.6	-0.0	-0.00
10yr24hr	10.75	45229.6	35059.9	10169.7	-0.0	-0.00
10yr24hr	10.77	45727.6	35424.3	10303.3	-0.0	-0.00
10yr24hr	10.79	46310.4	35848.1	10462.4	-0.0	-0.00
10yr24hr	10.80	46719.9	36144.0	10575.9	-0.0	-0.00
10yr24hr	10.82	47102.3	36418.8	10683.5	-0.0	-0.00
10yr24hr	10.83	47619.3	36787.4	10831.9	-0.0	-0.00
10yr24hr	10.85	48178.0	37182.0	10996.0	-0.0	-0.00
10yr24hr	10.87	48679.3	37532.7	11146.6	-0.0	-0.00
10yr24hr	10.89	49188.1	37885.9	11302.2	-0.0	-0.00
10yr24hr	10.90	49641.9	38198.8	11443.1	-0.0	-0.00
10yr24hr	10.92	50199.1	38580.7	11618.4	-0.0	-0.00
10yr24hr	10.93	50763.8	38965.4	11798.4	-0.0	-0.00
10yr24hr	10.95	51306.7	39333.6	11973.1	-0.0	-0.00
10yr24hr	10.97	51884.6	39723.9	12160.7	-0.0	-0.00
10yr24hr	10.99	52468.7	40117.1	12351.6	-0.0	-0.00
10yr24hr	11.00	53021.9	40488.3	12533.5	-0.0	-0.00
10yr24hr	11.02	53580.4	40863.5	12716.8	-0.0	-0.00
10yr24hr	11.03	54072.5	41195.4	12877.1	-0.0	-0.00
10yr24hr	11.05	54694.3	41616.8	13077.5	-0.0	-0.00
10yr24hr	11.07	55244.3	41991.6	13252.7	-0.0	-0.00
10yr24hr	11.08	55839.9	42399.8	13440.1	-0.0	-0.00
10yr24hr	11.10	56442.3	42815.0	13627.3	-0.0	-0.00
10yr24hr	11.12	57076.9	43255.2	13821.7	-0.0	-0.00
10yr24hr	11.13	57654.0	43658.3	13995.7	-0.0	-0.00
10yr24hr	11.15	58301.7	44113.9	14187.8	-0.0	-0.00
10yr24hr	11.17	58955.8	44577.8	14378.0	-0.0	-0.00
10yr24hr	11.18	59533.1	44990.4	14542.7	-0.0	-0.00
10yr24hr	11.20	60166.7	45446.9	14719.8	-0.0	-0.00
10yr24hr	11.22	60875.1	45961.8	14913.3	-0.0	-0.00
10yr24hr	11.24	61524.2	46437.7	15086.5	-0.0	-0.00
10yr24hr	11.25	62096.3	46860.2	15236.1	-0.0	-0.00
10yr24hr	11.27	62783.0	47370.5	15412.5	-0.0	-0.00
10yr24hr	11.29	63477.8	47888.7	15589.1	0.0	0.00
10yr24hr	11.30	64183.6	48414.9	15768.7	0.0	0.00
10yr24hr	11.32	64903.8	48949.4	15954.3	0.0	0.00
10yr24hr	11.33	65455.7	49356.1	16099.6	0.0	0.00
10yr24hr	11.35	66162.6	49871.6	16291.1	0.0	0.00
10yr24hr	11.37	67137.2	50572.7	16564.5	-0.0	-0.00
10yr24hr	11.39	67780.1	51030.5	16749.6	0.0	0.00
10yr24hr	11.40	68604.1	51613.1	16991.0	0.0	0.00
10yr24hr	11.42	69321.3	52117.6	17203.7	0.0	0.00
10yr24hr	11.44	70183.5	52722.5	17461.0	0.0	0.00
10yr24hr	11.45	71064.5	53340.1	17724.4	0.0	0.00
10yr24hr	11.47	71962.9	53970.5	17992.4	0.0	0.00
10yr24hr	11.48	72647.2	54451.8	18195.4	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	11.50	73573.6	55104.9	18468.7	0.0	0.00
10yr24hr	11.52	74442.8	55718.7	18724.1	0.0	0.00
10yr24hr	11.53	75353.4	56361.3	18992.2	0.0	0.00
10yr24hr	11.55	76266.1	57002.6	19263.5	0.0	0.00
10yr24hr	11.57	77236.4	57678.8	19557.7	0.0	0.00
10yr24hr	11.59	78322.6	58426.9	19895.7	0.0	0.00
10yr24hr	11.60	79404.4	59162.6	20241.8	0.0	0.00
10yr24hr	11.62	80523.6	59915.5	20608.1	0.0	0.00
10yr24hr	11.63	81445.2	60530.7	20914.4	0.0	0.00
10yr24hr	11.65	82609.3	61304.0	21305.2	0.0	0.00
10yr24hr	11.67	83697.2	62024.4	21672.8	0.0	0.00
10yr24hr	11.69	85051.4	62920.1	22131.3	0.0	0.00
10yr24hr	11.70	86274.1	63729.7	22544.4	0.0	0.00
10yr24hr	11.72	87521.2	64557.6	22963.6	0.0	0.00
10yr24hr	11.73	88578.1	65261.5	23316.6	0.0	0.00
10yr24hr	11.75	89866.4	66122.9	23743.5	0.0	0.00
10yr24hr	11.77	91188.8	67002.7	24186.0	0.0	0.00
10yr24hr	11.79	92716.0	67993.5	24722.5	0.0	0.00
10yr24hr	11.80	94063.3	68831.4	25231.9	0.0	0.00
10yr24hr	11.82	95638.9	69748.4	25890.5	0.0	0.00
10yr24hr	11.83	97522.0	70746.7	26775.2	0.0	0.00
10yr24hr	11.85	99641.5	71767.3	27874.3	0.0	0.00
10yr24hr	11.87	102111.6	72863.0	29248.6	0.0	0.00
10yr24hr	11.88	104958.1	74050.8	30907.4	0.0	0.00
10yr24hr	11.90	108149.8	75331.8	32817.9	0.0	0.00
10yr24hr	11.92	111513.1	76654.8	34858.3	0.0	0.00
10yr24hr	11.93	115338.1	78148.0	37190.0	0.0	0.00
10yr24hr	11.95	119457.0	79759.5	39697.5	0.0	0.00
10yr24hr	11.97	123847.0	81492.0	42355.0	0.0	0.00
10yr24hr	11.98	128298.6	83269.5	45029.1	0.0	0.00
10yr24hr	12.00	133127.1	85217.9	47909.2	0.0	0.00
10yr24hr	12.02	138082.2	87237.4	50844.8	0.0	0.00
10yr24hr	12.03	143463.3	89451.3	54012.0	0.0	0.00
10yr24hr	12.05	148819.0	91673.6	57145.4	0.0	0.00
10yr24hr	12.07	154509.1	94052.8	60456.3	0.0	0.00
10yr24hr	12.08	160382.6	96527.4	63855.3	0.0	0.00
10yr24hr	12.10	166163.6	98980.2	67183.5	0.0	0.00
10yr24hr	12.12	172302.5	101602.0	70700.4	0.0	0.00
10yr24hr	12.13	178878.3	104429.8	74448.6	0.0	0.00
10yr24hr	12.15	185256.8	107191.7	78065.1	0.0	0.00
10yr24hr	12.17	191771.4	110032.0	81739.4	0.0	0.00
10yr24hr	12.18	198415.6	112948.1	85467.5	0.0	0.00
10yr24hr	12.20	205183.6	115937.6	89246.0	0.0	0.00
10yr24hr	12.22	212166.7	119040.6	93126.0	0.0	0.00
10yr24hr	12.23	219459.4	122301.7	97157.6	0.0	0.00
10yr24hr	12.25	226354.6	125409.1	100945.4	0.0	0.00
10yr24hr	12.27	233665.9	128741.0	104924.9	0.0	0.00
10yr24hr	12.28	240997.8	132139.7	108858.1	0.0	0.00
10yr24hr	12.30	247967.5	135452.5	112514.9	0.0	0.00
10yr24hr	12.32	255175.5	138995.2	116180.3	0.0	0.00
10yr24hr	12.33	262063.0	142527.5	119535.5	0.0	0.00
10yr24hr	12.35	268090.6	145760.5	122330.1	0.0	0.00
10yr24hr	12.37	274600.8	149411.0	125189.8	0.0	0.00
10yr24hr	12.38	279848.8	152475.5	127373.3	0.0	0.00
10yr24hr	12.40	285504.0	155900.3	129603.8	0.0	0.00
10yr24hr	12.42	290677.8	159140.0	131537.8	0.0	0.00
10yr24hr	12.43	295820.4	162454.1	133366.2	0.0	0.00
10yr24hr	12.45	300437.3	165506.0	134931.2	0.0	0.00
10yr24hr	12.47	304945.3	168551.1	136394.2	0.0	0.00
10yr24hr	12.48	309390.5	171611.6	137779.0	0.0	0.00
10yr24hr	12.50	313621.5	174577.0	139044.6	0.0	0.00
10yr24hr	12.52	317785.8	177548.5	140237.4	0.0	0.00
10yr24hr	12.53	321764.0	180438.8	141325.2	0.0	0.00
10yr24hr	12.55	325653.3	183316.4	142336.9	0.0	0.00
10yr24hr	12.57	329415.6	186153.2	143262.4	0.0	0.00
10yr24hr	12.58	333128.1	189009.7	144118.4	0.0	0.00
10yr24hr	12.60	336388.0	191570.2	144817.8	-0.0	-0.00
10yr24hr	12.62	339761.9	194274.6	145487.3	-0.0	-0.00
10yr24hr	12.63	342935.1	196869.4	146065.7	-0.0	-0.00
10yr24hr	12.65	346198.6	199590.3	146608.4	-0.0	-0.00
10yr24hr	12.67	349097.2	202051.5	147045.8	-0.0	-0.00
10yr24hr	12.68	351941.7	204506.7	147435.0	-0.0	-0.00
10yr24hr	12.70	354781.6	206998.6	147783.0	-0.0	-0.00
10yr24hr	12.72	357715.0	209618.6	148096.4	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	12.73	360273.8	211944.7	148329.1	-0.0	-0.00
10yr24hr	12.75	362689.1	214178.3	148510.8	-0.0	-0.00
10yr24hr	12.77	365197.8	216541.6	148656.2	-0.0	-0.00
10yr24hr	12.78	367783.6	219029.2	148754.4	-0.0	-0.00
10yr24hr	12.80	370214.7	221422.5	148792.2	-0.0	-0.00
10yr24hr	12.82	372171.5	223393.1	148778.4	-0.0	-0.00
10yr24hr	12.83	374448.7	225742.8	148705.9	-0.0	-0.00
10yr24hr	12.85	376448.6	227861.9	148586.7	-0.0	-0.00
10yr24hr	12.87	378466.3	230057.2	148409.1	-0.0	-0.00
10yr24hr	12.89	380577.7	232418.9	148158.8	-0.0	-0.00
10yr24hr	12.90	382372.7	234479.6	147893.1	-0.0	-0.00
10yr24hr	12.92	384163.1	236584.9	147578.2	-0.0	-0.00
10yr24hr	12.93	385758.9	238504.1	147254.9	-0.0	-0.00
10yr24hr	12.95	387402.2	240521.3	146880.9	-0.0	-0.00
10yr24hr	12.97	389173.1	242741.6	146431.6	-0.0	-0.00
10yr24hr	12.98	390638.9	244615.3	146023.6	-0.0	-0.00
10yr24hr	13.00	392266.1	246733.5	145532.6	-0.0	-0.00
10yr24hr	13.02	393749.5	248698.1	145051.4	-0.0	-0.00
10yr24hr	13.03	395057.3	250455.9	144601.4	-0.0	-0.00
10yr24hr	13.05	396452.8	252358.6	144094.2	-0.0	-0.00
10yr24hr	13.07	397924.0	254396.6	143527.4	-0.0	-0.00
10yr24hr	13.08	399180.3	256164.5	143015.7	-0.0	-0.00
10yr24hr	13.10	400495.3	258043.6	142451.7	-0.0	-0.00
10yr24hr	13.12	401779.6	259907.7	141871.9	-0.0	-0.00
10yr24hr	13.13	402986.9	261685.4	141301.5	0.0	0.00
10yr24hr	13.15	404217.4	263521.7	140695.7	-0.0	-0.00
10yr24hr	13.17	405376.5	265272.1	140104.4	0.0	0.00
10yr24hr	13.18	406641.7	267203.9	139437.7	-0.0	-0.00
10yr24hr	13.20	407731.1	268883.4	138847.6	-0.0	-0.00
10yr24hr	13.22	408921.1	270731.9	138189.2	-0.0	-0.00
10yr24hr	13.23	410059.9	272510.5	137549.3	-0.0	-0.00
10yr24hr	13.25	411141.2	274206.4	136934.8	-0.0	-0.00
10yr24hr	13.27	412322.4	276066.9	136255.5	-0.0	-0.00
10yr24hr	13.28	413355.4	277702.9	135652.6	-0.0	-0.00
10yr24hr	13.30	414522.7	279564.4	134958.3	-0.0	-0.00
10yr24hr	13.32	415602.3	281302.0	134300.3	-0.0	-0.00
10yr24hr	13.34	416665.6	283032.3	133633.3	-0.0	-0.00
10yr24hr	13.35	417711.5	284755.1	132956.4	-0.0	-0.00
10yr24hr	13.37	418740.0	286470.4	132269.5	-0.0	-0.00
10yr24hr	13.39	419751.8	288178.1	131573.6	-0.0	-0.00
10yr24hr	13.40	420747.8	289878.2	130869.5	-0.0	-0.00
10yr24hr	13.42	421664.4	291458.1	130206.2	-0.0	-0.00
10yr24hr	13.43	422569.5	293031.5	129538.1	-0.0	-0.00
10yr24hr	13.45	423622.8	294877.6	128745.2	-0.0	-0.00
10yr24hr	13.47	424568.9	296548.4	128020.5	-0.0	-0.00
10yr24hr	13.49	425505.3	298212.2	127293.1	-0.0	-0.00
10yr24hr	13.50	426432.9	299869.2	126563.7	-0.0	-0.00
10yr24hr	13.52	427199.7	301245.1	125954.6	-0.0	-0.00
10yr24hr	13.53	428112.8	302890.3	125222.5	-0.0	-0.00
10yr24hr	13.55	429048.6	304583.8	124464.8	-0.0	-0.00
10yr24hr	13.57	430036.4	306379.5	123656.9	-0.0	-0.00
10yr24hr	13.59	430927.0	308005.7	122921.3	-0.0	-0.00
10yr24hr	13.60	431663.8	309356.5	122307.3	-0.0	-0.00
10yr24hr	13.62	432541.6	310972.1	121569.5	-0.0	-0.00
10yr24hr	13.63	433413.0	312582.0	120831.0	-0.0	-0.00
10yr24hr	13.65	434278.2	314186.3	120092.0	-0.0	-0.00
10yr24hr	13.67	435137.9	315784.9	119353.0	-0.0	-0.00
10yr24hr	13.69	436049.2	317483.9	118565.3	-0.0	-0.00
10yr24hr	13.70	436842.2	318965.5	117876.8	-0.0	-0.00
10yr24hr	13.72	437744.0	320652.9	117091.1	-0.0	-0.00
10yr24hr	13.73	438529.4	322124.3	116405.1	-0.0	-0.00
10yr24hr	13.75	439423.1	323800.4	115622.7	-0.0	-0.00
10yr24hr	13.77	440201.5	325261.9	114939.6	-0.0	-0.00
10yr24hr	13.78	440976.1	326718.8	114257.3	-0.0	-0.00
10yr24hr	13.80	441855.9	328378.1	113477.8	-0.0	-0.00
10yr24hr	13.82	442620.0	329824.9	112795.1	-0.0	-0.00
10yr24hr	13.83	443484.9	331472.4	112012.5	-0.0	-0.00
10yr24hr	13.85	444233.8	332908.7	111325.1	-0.0	-0.00
10yr24hr	13.87	445080.0	334543.8	110536.3	-0.0	-0.00
10yr24hr	13.88	445812.5	335968.8	109843.7	-0.0	-0.00
10yr24hr	13.90	446640.8	337590.8	109050.0	-0.0	-0.00
10yr24hr	13.92	447358.5	339004.3	108354.2	-0.0	-0.00
10yr24hr	13.93	448070.1	340412.2	107657.9	-0.0	-0.00
10yr24hr	13.95	448876.5	342014.4	106862.1	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	13.97	449636.6	343529.7	106106.9	-0.0	-0.00
10yr24hr	13.98	450351.7	344958.8	105392.9	-0.0	-0.00
10yr24hr	14.00	451058.1	346375.3	104682.8	-0.0	-0.00
10yr24hr	14.08	454682.3	353776.5	100905.7	0.0	0.00
10yr24hr	14.17	458098.6	360915.8	97182.8	0.0	0.00
10yr24hr	14.25	461525.9	368173.4	93352.5	0.0	0.00
10yr24hr	14.34	464790.8	375109.4	89681.3	0.0	0.00
10yr24hr	14.42	467977.4	381859.0	86118.4	0.0	0.00
10yr24hr	14.50	471161.5	388559.6	82601.9	0.0	0.00
10yr24hr	14.58	474244.4	395073.1	79171.3	0.0	0.00
10yr24hr	14.67	477320.0	401726.6	75593.4	0.0	0.00
10yr24hr	14.75	480133.0	407950.5	72182.5	0.0	0.00
10yr24hr	14.84	482917.5	414168.1	68749.3	0.0	0.00
10yr24hr	14.92	485654.5	420287.3	65367.3	0.0	0.00
10yr24hr	15.00	488248.8	426138.4	62110.3	0.0	0.00
10yr24hr	15.08	490887.2	432100.6	58786.7	0.0	0.00
10yr24hr	15.17	493564.0	438068.4	55495.5	0.0	0.00
10yr24hr	15.25	496148.1	443721.3	52426.8	0.0	0.00
10yr24hr	15.33	498677.3	449215.8	49461.5	0.0	0.00
10yr24hr	15.42	501092.9	454529.2	46563.7	-0.0	-0.00
10yr24hr	15.50	503398.8	459640.4	43758.4	0.0	0.00
10yr24hr	15.58	505647.4	464549.2	41098.2	-0.0	-0.00
10yr24hr	15.67	507998.0	469490.0	38508.0	0.0	0.00
10yr24hr	15.75	510175.8	473871.9	36303.9	0.0	0.00
10yr24hr	15.83	512451.6	478307.1	34144.5	0.0	0.00
10yr24hr	15.92	514684.6	482570.6	32114.0	0.0	0.00
10yr24hr	16.00	516872.0	486657.1	30214.9	0.0	0.00
10yr24hr	16.25	523249.8	497899.4	25350.4	0.0	0.00
10yr24hr	16.50	529185.9	507599.4	21586.5	0.0	0.00
10yr24hr	16.75	535078.6	516263.4	18815.1	0.0	0.00
10yr24hr	17.00	540184.6	523759.9	16424.7	0.0	0.00
10yr24hr	17.25	544533.1	530331.4	14201.7	-0.0	-0.00
10yr24hr	17.50	548388.3	536009.9	12378.4	0.0	0.00
10yr24hr	17.75	552130.2	541348.2	10781.9	-0.0	-0.00
10yr24hr	18.00	555893.0	546417.2	9475.8	0.0	0.00
10yr24hr	18.25	559433.9	550971.4	8462.5	0.0	0.00
10yr24hr	18.50	562630.8	555163.2	7467.7	-0.0	-0.00
10yr24hr	18.76	565670.5	558818.0	6852.5	-0.0	-0.00
10yr24hr	19.01	568847.6	562169.1	6678.5	0.0	0.00
10yr24hr	19.25	571778.1	565302.5	6475.6	0.0	0.00
10yr24hr	19.50	574724.7	568363.4	6361.4	0.0	0.00
10yr24hr	19.75	577683.1	571417.2	6265.9	0.0	0.00
10yr24hr	20.00	580419.2	574314.7	6104.5	0.0	0.00
10yr24hr	20.25	583006.0	577084.5	5921.5	0.0	0.00
10yr24hr	20.51	585561.5	579753.2	5808.3	0.0	0.00
10yr24hr	20.75	588047.4	582311.2	5736.2	-0.0	-0.00
10yr24hr	21.00	590549.6	584835.0	5714.6	-0.0	-0.00
10yr24hr	21.25	593140.5	587386.2	5754.3	-0.0	-0.00
10yr24hr	21.50	595636.7	589901.5	5735.2	-0.0	-0.00
10yr24hr	21.75	598169.4	592444.4	5725.0	-0.0	-0.00
10yr24hr	22.00	600692.8	594988.5	5704.3	-0.0	-0.00
10yr24hr	22.25	602932.6	597435.7	5496.8	-0.0	-0.00
10yr24hr	22.50	605081.7	599721.2	5360.5	-0.0	-0.00
10yr24hr	22.75	607168.0	601920.8	5247.3	-0.0	-0.00
10yr24hr	23.00	609316.8	604044.7	5272.2	-0.0	-0.00
10yr24hr	23.25	611462.1	606242.9	5219.2	-0.0	-0.00
10yr24hr	23.50	613555.2	608325.5	5229.7	-0.0	-0.00
10yr24hr	23.75	615656.0	610467.0	5189.0	-0.0	-0.00
10yr24hr	24.00	617502.9	612496.7	5006.1	-0.0	-0.00
10yr24hr	24.25	618789.9	614318.9	4471.0	-0.0	-0.00
10yr24hr	24.50	618980.6	615442.9	3537.7	-0.0	-0.00
10yr24hr	24.75	618980.6	615910.1	3070.6	-0.0	-0.00
10yr24hr	25.00	618980.6	616099.4	2881.2	-0.0	-0.00
10yr24hr	25.25	618980.6	616183.9	2796.7	-0.0	-0.00
10yr24hr	25.50	618980.6	616227.0	2753.6	-0.0	-0.00
10yr24hr	25.75	618980.6	616252.0	2728.6	-0.0	-0.00
10yr24hr	26.00	618980.6	616267.7	2712.9	-0.0	-0.00
10yr24hr	26.25	618980.6	616278.3	2702.4	-0.0	-0.00
10yr24hr	26.50	618980.6	616285.7	2694.9	-0.0	-0.00
10yr24hr	26.75	618980.6	616291.1	2689.5	-0.0	-0.00
10yr24hr	27.00	618980.6	616295.2	2685.4	-0.0	-0.00
10yr24hr	27.25	618980.6	616298.3	2682.3	-0.0	-0.00
10yr24hr	27.50	618980.6	616300.8	2679.8	-0.0	-0.00
10yr24hr	27.75	618980.6	616302.9	2677.8	-0.0	-0.00

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10yr24hr	28.00	618980.6	616304.5	2676.1	-0.0	-0.00
10yr24hr	28.25	618980.6	616305.9	2674.7	-0.0	-0.00
10yr24hr	28.50	618980.6	616307.1	2673.5	-0.0	-0.00
10yr24hr	28.75	618980.6	616308.2	2672.5	-0.0	-0.00
10yr24hr	29.00	618980.6	616309.1	2671.5	-0.0	-0.00
10yr24hr	29.25	618980.6	616309.9	2670.7	-0.0	-0.00
10yr24hr	29.50	618980.6	616310.7	2669.9	-0.0	-0.00
10yr24hr	29.75	618980.6	616311.4	2669.3	-0.0	-0.00
10yr24hr	30.00	618980.6	616312.0	2668.6	-0.0	-0.00
10yr24hr	30.25	618980.6	616312.6	2668.1	-0.0	-0.00
10yr24hr	30.50	618980.6	616313.1	2667.6	-0.0	-0.00
10yr24hr	30.75	618980.6	616313.6	2667.1	-0.0	-0.00
10yr24hr	31.00	618980.6	616314.0	2666.6	-0.0	-0.00
10yr24hr	31.25	618980.6	616314.4	2666.2	-0.0	-0.00
10yr24hr	31.50	618980.6	616314.8	2665.9	-0.0	-0.00
10yr24hr	31.75	618980.6	616315.1	2665.5	-0.0	-0.00
10yr24hr	32.00	618980.6	616315.4	2665.2	-0.0	-0.00
10yr24hr	32.25	618980.6	616315.7	2664.9	-0.0	-0.00
10yr24hr	32.50	618980.6	616316.0	2664.6	-0.0	-0.00
10yr24hr	32.75	618980.6	616316.3	2664.4	-0.0	-0.00
10yr24hr	33.00	618980.6	616316.5	2664.1	-0.0	-0.00
10yr24hr	33.25	618980.6	616316.7	2663.9	-0.0	-0.00
10yr24hr	33.50	618980.6	616316.9	2663.7	-0.0	-0.00
10yr24hr	33.75	618980.6	616317.1	2663.5	-0.0	-0.00
10yr24hr	34.00	618980.6	616317.3	2663.3	-0.0	-0.00
10yr24hr	34.25	618980.6	616317.5	2663.1	-0.0	-0.00
10yr24hr	34.50	618980.6	616317.7	2663.0	-0.0	-0.00
10yr24hr	34.75	618980.6	616317.8	2662.8	-0.0	-0.00
10yr24hr	35.00	618980.6	616317.9	2662.7	-0.0	-0.00
10yr24hr	35.25	618980.6	616318.1	2662.5	-0.0	-0.00
10yr24hr	35.50	618980.6	616318.2	2662.4	-0.0	-0.00
10yr24hr	35.75	618980.6	616318.3	2662.3	-0.0	-0.00
10yr24hr	36.00	618980.6	616318.5	2662.2	-0.0	-0.00
10yr24hr	36.25	618980.6	616318.6	2662.1	-0.0	-0.00
10yr24hr	36.50	618980.6	616318.7	2662.0	-0.0	-0.00
10yr24hr	36.75	618980.6	616318.8	2661.9	-0.0	-0.00
10yr24hr	37.00	618980.6	616318.9	2661.8	-0.0	-0.00
10yr24hr	37.25	618980.6	616319.0	2661.7	-0.0	-0.00
10yr24hr	37.50	618980.6	616319.0	2661.6	0.0	0.00
10yr24hr	37.75	618980.6	616319.1	2661.5	0.0	0.00
10yr24hr	38.00	618980.6	616319.2	2661.4	0.0	0.00
10yr24hr	38.25	618980.6	616319.3	2661.4	0.0	0.00
10yr24hr	38.50	618980.6	616319.3	2661.3	0.0	0.00
10yr24hr	38.75	618980.6	616319.4	2661.2	0.0	0.00
10yr24hr	39.00	618980.6	616319.5	2661.2	0.0	0.00
10yr24hr	39.25	618980.6	616319.5	2661.1	0.0	0.00
10yr24hr	39.50	618980.6	616319.6	2661.0	0.0	0.00
10yr24hr	39.75	618980.6	616319.7	2661.0	0.0	0.00
10yr24hr	40.00	618980.6	616319.7	2660.9	0.0	0.00
10yr24hr	40.25	618980.6	616319.8	2660.9	0.0	0.00
10yr24hr	40.50	618980.6	616319.8	2660.8	0.0	0.00
10yr24hr	40.75	618980.6	616319.9	2660.8	0.0	0.00
10yr24hr	41.00	618980.6	616319.9	2660.7	0.0	0.00
10yr24hr	41.25	618980.6	616319.9	2660.7	0.0	0.00
10yr24hr	41.50	618980.6	616320.0	2660.6	0.0	0.00
10yr24hr	41.75	618980.6	616320.0	2660.6	0.0	0.00
10yr24hr	42.00	618980.6	616320.1	2660.6	0.0	0.00
10yr24hr	42.25	618980.6	616320.1	2660.5	0.0	0.00
10yr24hr	42.50	618980.6	616320.1	2660.5	0.0	0.00
10yr24hr	42.75	618980.6	616320.2	2660.5	0.0	0.00
10yr24hr	43.00	618980.6	616320.2	2660.4	0.0	0.00
10yr24hr	43.25	618980.6	616320.2	2660.4	0.0	0.00
10yr24hr	43.50	618980.6	616320.3	2660.4	0.0	0.00
10yr24hr	43.75	618980.6	616320.3	2660.3	0.0	0.00
10yr24hr	44.00	618980.6	616320.3	2660.3	0.0	0.00
10yr24hr	44.25	618980.6	616320.4	2660.3	0.0	0.00
10yr24hr	44.50	618980.6	616320.4	2660.2	0.0	0.00
10yr24hr	44.75	618980.6	616320.4	2660.2	0.0	0.00
10yr24hr	45.00	618980.6	616320.5	2660.2	0.0	0.00
10yr24hr	45.25	618980.6	616320.5	2660.2	0.0	0.00
10yr24hr	45.50	618980.6	616320.5	2660.1	0.0	0.00
10yr24hr	45.75	618980.6	616320.5	2660.1	0.0	0.00
10yr24hr	46.00	618980.6	616320.5	2660.1	0.0	0.00
10yr24hr	46.25	618980.6	616320.6	2660.1	0.0	0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10yr24hr	46.50	618980.6	616320.6	2660.0	0.0	0.00
10yr24hr	46.75	618980.6	616320.6	2660.0	0.0	0.00
10yr24hr	47.00	618980.6	616320.6	2660.0	0.0	0.00
10yr24hr	47.25	618980.6	616320.7	2660.0	0.0	0.00
10yr24hr	47.50	618980.6	616320.7	2660.0	0.0	0.00
10yr24hr	47.75	618980.6	616320.7	2659.9	0.0	0.00
10yr24hr	48.00	618980.6	616320.7	2659.9	0.0	0.00
25yr72hr	0.00	0.0	0.0	0.0	0.0	0.00
25yr72hr	0.26	16.8	0.0	16.8	0.0	0.00
25yr72hr	0.50	53.3	0.0	53.3	0.0	0.00
25yr72hr	0.77	104.0	0.0	104.0	0.0	0.00
25yr72hr	1.02	155.1	0.0	155.1	0.0	0.00
25yr72hr	1.26	204.7	0.0	204.7	0.0	0.00
25yr72hr	1.51	257.1	0.0	257.1	0.0	0.00
25yr72hr	1.76	309.5	0.0	309.5	-0.0	-0.00
25yr72hr	2.01	360.0	0.0	360.0	-0.0	-0.00
25yr72hr	2.25	410.7	0.0	410.7	-0.0	-0.00
25yr72hr	2.51	463.7	0.0	463.7	-0.0	-0.00
25yr72hr	2.76	515.2	0.0	515.2	-0.0	-0.00
25yr72hr	3.01	567.1	0.0	567.1	-0.0	-0.00
25yr72hr	3.26	618.3	0.0	618.3	0.0	0.00
25yr72hr	3.51	670.2	0.0	670.2	0.0	0.00
25yr72hr	3.75	721.5	0.0	721.5	0.0	0.00
25yr72hr	4.01	773.7	0.0	773.7	0.0	0.00
25yr72hr	4.25	824.6	0.0	824.6	0.0	0.00
25yr72hr	4.50	876.8	0.0	876.8	0.0	0.00
25yr72hr	4.75	928.0	0.0	928.0	0.0	0.00
25yr72hr	5.00	979.9	0.0	979.9	0.0	0.00
25yr72hr	5.25	1031.9	0.0	1031.9	0.0	0.00
25yr72hr	5.51	1083.9	0.0	1083.9	0.0	0.00
25yr72hr	5.75	1134.5	0.0	1134.5	0.0	0.00
25yr72hr	6.00	1186.5	0.0	1186.5	0.0	0.00
25yr72hr	6.25	1238.5	0.0	1238.5	0.0	0.00
25yr72hr	6.50	1290.5	0.0	1290.5	0.0	0.00
25yr72hr	6.75	1342.2	0.0	1342.2	0.0	0.00
25yr72hr	7.00	1393.7	0.0	1393.7	0.0	0.00
25yr72hr	7.25	1445.3	0.0	1445.3	0.0	0.00
25yr72hr	7.50	1497.8	0.0	1497.8	0.0	0.00
25yr72hr	7.75	1554.6	0.0	1554.6	0.0	0.00
25yr72hr	8.00	1621.4	0.0	1621.4	0.0	0.00
25yr72hr	8.25	1699.2	0.0	1699.2	0.0	0.00
25yr72hr	8.50	1788.5	0.0	1788.5	0.0	0.00
25yr72hr	8.75	1892.0	0.0	1892.0	0.0	0.00
25yr72hr	9.00	2007.4	0.0	2007.4	0.0	0.00
25yr72hr	9.25	2134.2	0.0	2134.2	0.0	0.00
25yr72hr	9.50	2273.2	0.0	2273.2	0.0	0.00
25yr72hr	9.75	2425.2	0.0	2425.2	0.0	0.00
25yr72hr	10.00	2587.6	0.0	2587.6	0.0	0.00
25yr72hr	10.25	2760.4	0.6	2759.8	0.0	0.00
25yr72hr	10.50	2945.4	34.9	2910.5	-0.0	-0.00
25yr72hr	10.75	3141.3	142.4	2998.9	-0.0	-0.00
25yr72hr	11.00	3345.9	301.2	3044.7	-0.0	-0.00
25yr72hr	11.25	3562.2	491.1	3071.1	-0.0	-0.00
25yr72hr	11.50	3789.9	701.0	3088.9	-0.0	-0.00
25yr72hr	11.75	4025.5	922.7	3102.8	-0.0	-0.00
25yr72hr	12.00	4273.2	1158.0	3115.2	-0.0	-0.00
25yr72hr	12.25	4529.2	1402.5	3126.6	-0.0	-0.00
25yr72hr	12.50	4794.6	1657.0	3137.6	-0.0	-0.00
25yr72hr	12.75	5069.4	1921.2	3148.2	0.0	0.00
25yr72hr	13.00	5353.8	2195.2	3158.6	0.0	0.00
25yr72hr	13.25	5648.3	2479.5	3168.8	0.0	0.00
25yr72hr	13.50	5949.0	2770.3	3178.6	0.0	0.00
25yr72hr	13.75	6261.1	3072.6	3188.4	0.0	0.00
25yr72hr	14.00	6578.9	3381.0	3197.9	0.0	0.00
25yr72hr	14.25	6907.5	3700.3	3207.3	0.0	0.00
25yr72hr	14.50	7243.1	4026.7	3216.4	0.0	0.00
25yr72hr	14.75	7586.8	4361.4	3225.4	0.0	0.00
25yr72hr	15.00	7938.4	4704.2	3234.2	0.0	0.00
25yr72hr	15.25	8299.2	5056.3	3242.9	0.0	0.00
25yr72hr	15.50	8665.0	5413.6	3251.4	0.0	0.00
25yr72hr	15.75	9041.8	5781.9	3259.8	-0.0	-0.00
25yr72hr	16.00	9422.6	6154.6	3268.0	-0.0	-0.00
25yr72hr	16.25	9815.0	6538.8	3276.2	-0.0	-0.00
25yr72hr	16.50	10211.7	6927.6	3284.1	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	16.75	10615.5	7323.7	3291.8	-0.0	-0.00
25yr72hr	17.00	11026.6	7726.9	3299.7	-0.0	-0.00
25yr72hr	17.25	11446.0	8137.6	3308.4	-0.0	-0.00
25yr72hr	17.50	11877.1	8559.0	3318.1	-0.0	-0.00
25yr72hr	17.75	12314.1	8985.8	3328.3	-0.0	-0.00
25yr72hr	18.00	12764.9	9426.0	3338.9	-0.0	-0.00
25yr72hr	18.25	13221.3	9872.0	3349.3	-0.0	-0.00
25yr72hr	18.50	13688.2	10328.5	3359.6	-0.0	-0.00
25yr72hr	18.75	14165.1	10795.3	3369.8	-0.0	-0.00
25yr72hr	19.00	14654.8	11274.9	3379.9	-0.0	-0.00
25yr72hr	19.25	15150.2	11760.6	3389.6	-0.0	-0.00
25yr72hr	19.50	15655.5	12255.9	3399.6	-0.0	-0.00
25yr72hr	19.75	16167.1	12757.6	3409.5	-0.0	-0.00
25yr72hr	20.00	16692.0	13272.9	3419.1	-0.0	-0.00
25yr72hr	20.25	17221.0	13792.5	3428.4	-0.0	-0.00
25yr72hr	20.50	17763.3	14325.5	3437.8	-0.0	-0.00
25yr72hr	20.75	18309.5	14862.6	3446.8	-0.0	-0.00
25yr72hr	21.00	18865.7	15409.8	3455.9	-0.0	-0.00
25yr72hr	21.25	19434.4	15969.5	3464.9	-0.0	-0.00
25yr72hr	21.50	20007.4	16533.7	3473.7	-0.0	-0.00
25yr72hr	21.75	20590.8	17108.3	3482.5	-0.0	-0.00
25yr72hr	22.00	21178.2	17685.2	3493.0	-0.0	-0.00
25yr72hr	22.25	21778.2	18277.4	3500.8	-0.0	-0.00
25yr72hr	22.50	22380.5	18871.8	3508.7	-0.0	-0.00
25yr72hr	22.75	22997.6	19479.8	3517.7	-0.0	-0.00
25yr72hr	23.00	23619.7	20093.0	3526.7	-0.0	-0.00
25yr72hr	23.25	24248.8	20713.5	3535.2	-0.0	-0.00
25yr72hr	23.50	24887.1	21343.6	3543.5	-0.0	-0.00
25yr72hr	23.75	25533.1	21981.2	3551.9	-0.0	-0.00
25yr72hr	24.00	26183.8	22623.3	3560.5	-0.0	-0.00
25yr72hr	24.25	26937.0	23298.1	3638.9	-0.0	-0.00
25yr72hr	24.50	27834.1	24075.7	3758.4	-0.0	-0.00
25yr72hr	24.75	28790.0	24941.3	3848.7	-0.0	-0.00
25yr72hr	25.00	29782.8	25875.9	3906.9	-0.0	-0.00
25yr72hr	25.25	30804.3	26861.6	3942.7	-0.0	-0.00
25yr72hr	25.50	31833.1	27866.4	3966.7	-0.0	-0.00
25yr72hr	25.75	32879.2	28893.2	3986.0	-0.0	-0.00
25yr72hr	26.00	33930.8	29927.6	4003.2	-0.0	-0.00
25yr72hr	26.25	34998.8	30979.3	4019.5	-0.0	-0.00
25yr72hr	26.50	36092.2	32056.8	4035.4	-0.0	-0.00
25yr72hr	26.75	37196.1	33145.2	4050.9	-0.0	-0.00
25yr72hr	27.00	38300.0	34234.0	4066.0	-0.0	-0.00
25yr72hr	27.25	39425.6	35344.7	4081.0	-0.0	-0.00
25yr72hr	27.50	40552.2	36456.7	4095.5	-0.0	-0.00
25yr72hr	27.75	41710.7	37600.5	4110.2	-0.0	-0.00
25yr72hr	28.00	42865.4	38741.1	4124.4	-0.0	-0.00
25yr72hr	28.25	44040.8	39902.2	4138.6	-0.0	-0.00
25yr72hr	28.50	45229.1	41076.6	4152.5	-0.0	-0.00
25yr72hr	28.75	46420.3	42254.2	4166.1	-0.0	-0.00
25yr72hr	29.00	47637.5	43457.8	4179.7	-0.0	-0.00
25yr72hr	29.25	48856.4	44663.4	4193.0	-0.0	-0.00
25yr72hr	29.50	50081.9	45875.8	4206.1	-0.0	-0.00
25yr72hr	29.75	51326.8	47107.6	4219.2	-0.0	-0.00
25yr72hr	30.00	52584.1	48352.2	4232.0	-0.0	-0.00
25yr72hr	30.25	53837.9	49593.5	4244.4	-0.0	-0.00
25yr72hr	30.50	55119.8	50862.8	4257.0	-0.0	-0.00
25yr72hr	30.75	56393.0	52123.7	4269.2	-0.0	-0.00
25yr72hr	31.00	57706.8	53425.4	4281.4	-0.0	-0.00
25yr72hr	31.25	58990.0	54696.8	4293.2	-0.0	-0.00
25yr72hr	31.50	60320.7	56015.5	4305.3	-0.0	-0.00
25yr72hr	31.75	61631.8	57314.8	4316.9	-0.0	-0.00
25yr72hr	32.00	62967.1	58638.7	4328.3	-0.0	-0.00
25yr72hr	32.25	64321.8	59981.9	4339.9	-0.0	-0.00
25yr72hr	32.50	65671.5	61320.6	4350.9	-0.0	-0.00
25yr72hr	32.75	67023.1	62661.3	4361.8	-0.0	-0.00
25yr72hr	33.00	68407.1	64034.2	4372.9	-0.0	-0.00
25yr72hr	33.25	69787.7	65404.0	4383.6	-0.0	-0.00
25yr72hr	33.50	71161.4	66767.3	4394.1	-0.0	-0.00
25yr72hr	33.75	72560.8	68156.3	4404.5	-0.0	-0.00
25yr72hr	34.00	73967.8	69552.8	4415.0	-0.0	-0.00
25yr72hr	34.25	75393.3	70968.1	4425.2	-0.0	-0.00
25yr72hr	34.50	76816.7	72381.4	4435.3	-0.0	-0.00
25yr72hr	34.75	78245.2	73799.9	4445.3	-0.0	-0.00
25yr72hr	35.00	79677.9	75222.9	4455.0	-0.0	-0.00

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25yr72hr	35.25	81126.4	76661.6	4464.8	-0.0	-0.00
25yr72hr	35.50	82578.9	78104.6	4474.3	-0.0	-0.00
25yr72hr	35.76	84074.1	79590.0	4484.0	-0.0	-0.00
25yr72hr	36.00	85521.9	81028.6	4493.3	-0.0	-0.00
25yr72hr	36.25	87012.8	82506.7	4506.2	-0.0	-0.00
25yr72hr	36.50	88511.4	83990.3	4521.1	-0.0	-0.00
25yr72hr	36.75	90027.1	85492.6	4534.5	-0.0	-0.00
25yr72hr	37.00	91535.7	86989.7	4545.9	-0.0	-0.00
25yr72hr	37.25	93066.7	88510.7	4556.0	-0.0	-0.00
25yr72hr	37.50	94585.6	90020.2	4565.3	-0.0	-0.00
25yr72hr	37.75	96132.5	91558.1	4574.4	-0.0	-0.00
25yr72hr	38.00	97689.7	93106.5	4583.2	-0.0	-0.00
25yr72hr	38.25	99230.4	94638.7	4591.7	-0.0	-0.00
25yr72hr	38.50	100797.2	96196.9	4600.3	-0.0	-0.00
25yr72hr	38.75	102357.8	97749.2	4608.6	-0.0	-0.00
25yr72hr	39.01	103963.8	99346.8	4617.0	-0.0	-0.00
25yr72hr	39.25	105527.1	100901.9	4625.3	-0.0	-0.00
25yr72hr	39.50	107109.3	102476.0	4633.3	-0.0	-0.00
25yr72hr	39.75	108702.8	104061.5	4641.3	-0.0	-0.00
25yr72hr	40.00	110297.8	105648.6	4649.2	-0.0	-0.00
25yr72hr	40.26	111931.3	107274.1	4657.2	-0.0	-0.00
25yr72hr	40.50	113520.8	108855.9	4664.9	-0.0	-0.00
25yr72hr	40.75	115155.5	110483.0	4672.5	-0.0	-0.00
25yr72hr	41.00	116762.8	112082.7	4680.0	-0.0	-0.00
25yr72hr	41.25	118400.8	113713.3	4687.6	-0.0	-0.00
25yr72hr	41.50	120034.3	115339.4	4694.9	-0.0	-0.00
25yr72hr	41.76	121708.1	117005.7	4702.4	-0.0	-0.00
25yr72hr	42.00	123335.3	118625.7	4709.6	-0.0	-0.00
25yr72hr	42.25	124984.4	120267.7	4716.7	-0.0	-0.00
25yr72hr	42.51	126676.6	121952.8	4723.9	-0.0	-0.00
25yr72hr	42.75	128316.8	123586.0	4730.8	-0.0	-0.00
25yr72hr	43.00	129994.2	125256.1	4738.1	-0.0	-0.00
25yr72hr	43.25	131676.0	126931.3	4744.7	-0.0	-0.00
25yr72hr	43.50	133363.0	128611.6	4751.4	-0.0	-0.00
25yr72hr	43.75	135044.2	130286.2	4758.1	-0.0	-0.00
25yr72hr	44.00	136751.4	131986.4	4765.0	-0.0	-0.00
25yr72hr	44.25	138465.7	133694.3	4771.5	-0.0	-0.00
25yr72hr	44.50	140151.7	135373.9	4777.8	-0.0	-0.00
25yr72hr	44.75	141860.2	137075.9	4784.2	-0.0	-0.00
25yr72hr	45.00	143579.5	138788.9	4790.6	-0.0	-0.00
25yr72hr	45.25	145304.3	140507.4	4796.9	-0.0	-0.00
25yr72hr	45.50	147028.1	142225.0	4803.1	-0.0	-0.00
25yr72hr	45.75	148769.8	143960.6	4809.3	-0.0	-0.00
25yr72hr	46.00	150485.9	145670.6	4815.3	-0.0	-0.00
25yr72hr	46.25	152244.0	147422.5	4821.5	-0.0	-0.00
25yr72hr	46.50	153994.6	149167.1	4827.5	-0.0	-0.00
25yr72hr	46.75	155734.6	150901.3	4833.3	-0.0	-0.00
25yr72hr	47.00	157487.0	152647.7	4839.3	-0.0	-0.00
25yr72hr	47.25	159243.0	154398.1	4845.0	-0.0	-0.00
25yr72hr	47.50	161006.6	156156.0	4850.7	-0.0	-0.00
25yr72hr	47.75	162792.4	157936.0	4856.4	-0.0	-0.00
25yr72hr	48.00	164571.2	159709.1	4862.1	-0.0	-0.00
25yr72hr	48.25	166401.9	161489.0	4912.9	-0.0	-0.00
25yr72hr	48.33	167023.8	162081.7	4942.1	-0.0	-0.00
25yr72hr	48.42	167670.6	162699.5	4971.1	-0.0	-0.00
25yr72hr	48.50	168328.3	163330.5	4997.9	-0.0	-0.00
25yr72hr	48.58	168983.7	163962.2	5021.5	-0.0	-0.00
25yr72hr	48.67	169658.1	164615.4	5042.6	-0.0	-0.00
25yr72hr	48.75	170298.5	165238.5	5059.9	-0.0	-0.00
25yr72hr	48.84	170964.2	165889.0	5075.3	-0.0	-0.00
25yr72hr	48.92	171637.8	166549.7	5088.1	-0.0	-0.00
25yr72hr	49.00	172294.6	167196.3	5098.3	-0.0	-0.00
25yr72hr	49.09	172993.3	167885.2	5108.1	-0.0	-0.00
25yr72hr	49.17	173615.9	168498.3	5117.6	-0.0	-0.00
25yr72hr	49.25	174313.3	169184.2	5129.1	-0.0	-0.00
25yr72hr	49.33	174977.3	169837.6	5139.7	-0.0	-0.00
25yr72hr	49.42	175644.4	170494.9	5149.5	-0.0	-0.00
25yr72hr	49.50	176353.8	171195.0	5158.8	-0.0	-0.00
25yr72hr	49.59	177034.7	171868.0	5166.7	-0.0	-0.00
25yr72hr	49.67	177688.5	172515.0	5173.5	-0.0	-0.00
25yr72hr	49.75	178401.2	173221.2	5180.0	-0.0	-0.00
25yr72hr	49.84	179083.0	173897.5	5185.5	-0.0	-0.00
25yr72hr	49.92	179779.0	174588.6	5190.4	-0.0	-0.00
25yr72hr	50.00	180455.1	175260.4	5194.7	-0.0	-0.00

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25yr72hr	50.09	181165.4	175956.9	5208.5	-0.0	-0.00
25yr72hr	50.17	181844.5	176603.3	5241.2	-0.0	-0.00
25yr72hr	50.25	182629.1	177334.1	5295.0	-0.0	-0.00
25yr72hr	50.34	183400.3	178049.0	5351.2	-0.0	-0.00
25yr72hr	50.42	184162.7	178758.8	5403.9	-0.0	-0.00
25yr72hr	50.50	184963.8	179510.2	5453.7	-0.0	-0.00
25yr72hr	50.59	185790.9	180292.1	5498.9	-0.0	-0.00
25yr72hr	50.67	186578.1	181041.9	5536.2	-0.0	-0.00
25yr72hr	50.75	187381.4	181812.4	5569.0	-0.0	-0.00
25yr72hr	50.83	188184.4	182587.8	5596.6	-0.0	-0.00
25yr72hr	50.92	189022.6	183402.3	5620.3	-0.0	-0.00
25yr72hr	51.00	189822.7	184184.0	5638.7	-0.0	-0.00
25yr72hr	51.09	190702.1	185041.3	5660.8	-0.0	-0.00
25yr72hr	51.17	191491.8	185801.8	5690.0	-0.0	-0.00
25yr72hr	51.26	192393.6	186662.4	5731.2	-0.0	-0.00
25yr72hr	51.34	193279.7	187507.3	5772.4	-0.0	-0.00
25yr72hr	51.42	194118.0	188309.2	5808.7	-0.0	-0.00
25yr72hr	51.50	195015.4	189171.8	5843.6	-0.0	-0.00
25yr72hr	51.59	195909.8	190035.5	5874.3	-0.0	-0.00
25yr72hr	51.67	196777.0	190876.9	5900.2	-0.0	-0.00
25yr72hr	51.75	197671.8	191748.5	5923.3	-0.0	-0.00
25yr72hr	51.84	198586.7	192643.3	5943.4	-0.0	-0.00
25yr72hr	51.92	199484.2	193524.3	5959.9	-0.0	-0.00
25yr72hr	52.00	200387.6	194413.7	5973.9	-0.0	-0.00
25yr72hr	52.09	201323.9	195318.6	6005.4	-0.0	-0.00
25yr72hr	52.17	202309.8	196226.2	6083.6	-0.0	-0.00
25yr72hr	52.25	203346.8	197148.3	6198.5	-0.0	-0.00
25yr72hr	52.34	204445.2	198118.8	6326.4	-0.0	-0.00
25yr72hr	52.42	205544.9	199097.8	6447.1	-0.0	-0.00
25yr72hr	52.50	206672.1	200113.8	6558.4	-0.0	-0.00
25yr72hr	52.58	207845.5	201185.1	6660.4	-0.0	-0.00
25yr72hr	52.67	208998.2	202250.5	6747.8	-0.0	-0.00
25yr72hr	52.75	210188.8	203363.7	6825.1	-0.0	-0.00
25yr72hr	52.84	211450.7	204556.9	6893.9	-0.0	-0.00
25yr72hr	52.92	212547.0	205603.6	6943.4	-0.0	-0.00
25yr72hr	53.00	213799.0	206809.1	6989.8	-0.0	-0.00
25yr72hr	53.09	215026.8	207980.5	7046.4	-0.0	-0.00
25yr72hr	53.17	216239.8	209099.7	7140.0	-0.0	-0.00
25yr72hr	53.25	217604.0	210327.6	7276.4	-0.0	-0.00
25yr72hr	53.34	219055.7	211628.7	7427.1	-0.0	-0.00
25yr72hr	53.42	220446.2	212882.0	7564.2	-0.0	-0.00
25yr72hr	53.50	221833.5	214141.6	7691.9	-0.0	-0.00
25yr72hr	53.59	223332.0	215512.5	7819.5	-0.0	-0.00
25yr72hr	53.67	224796.7	216863.0	7933.7	-0.0	-0.00
25yr72hr	53.75	226223.3	218188.7	8034.6	-0.0	-0.00
25yr72hr	53.84	227705.7	219577.2	8128.5	-0.0	-0.00
25yr72hr	53.92	229222.6	221009.3	8213.3	-0.0	-0.00
25yr72hr	54.00	230689.5	222404.4	8285.2	-0.0	-0.00
25yr72hr	54.09	232211.2	223841.3	8369.9	-0.0	-0.00
25yr72hr	54.17	233776.6	225277.2	8499.3	-0.0	-0.00
25yr72hr	54.25	235456.6	226779.8	8676.8	-0.0	-0.00
25yr72hr	54.34	237184.4	228312.7	8871.6	-0.0	-0.00
25yr72hr	54.42	238846.6	229789.5	9057.1	-0.0	-0.00
25yr72hr	54.50	240644.7	231396.2	9248.5	-0.0	-0.00
25yr72hr	54.59	242446.6	233018.0	9428.7	-0.0	-0.00
25yr72hr	54.67	244162.7	234572.6	9590.2	-0.0	-0.00
25yr72hr	54.75	245912.2	236164.0	9748.2	-0.0	-0.00
25yr72hr	54.84	247843.8	237929.8	9914.0	-0.0	-0.00
25yr72hr	54.92	249584.8	239530.1	10054.7	-0.0	-0.00
25yr72hr	55.00	251341.4	241153.7	10187.7	-0.0	-0.00
25yr72hr	55.08	253171.1	242835.4	10335.6	-0.0	-0.00
25yr72hr	55.17	255102.5	244565.8	10536.7	-0.0	-0.00
25yr72hr	55.25	257079.3	246293.2	10786.1	-0.0	-0.00
25yr72hr	55.33	259065.2	248009.4	11055.8	-0.0	-0.00
25yr72hr	55.42	261130.8	249788.8	11342.0	-0.0	-0.00
25yr72hr	55.50	263200.3	251573.5	11626.8	-0.0	-0.00
25yr72hr	55.59	265378.4	253457.6	11920.9	-0.0	-0.00
25yr72hr	55.67	267483.0	255285.4	12197.6	-0.0	-0.00
25yr72hr	55.75	269530.0	257071.6	12458.4	-0.0	-0.00
25yr72hr	55.84	271711.6	258985.9	12725.7	-0.0	-0.00
25yr72hr	55.92	273864.2	260887.8	12976.4	-0.0	-0.00
25yr72hr	56.01	276063.6	262854.4	13209.2	-0.0	-0.00
25yr72hr	56.02	276486.4	263235.1	13251.2	-0.0	-0.00
25yr72hr	56.04	276910.2	263617.1	13293.2	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	56.06	277371.4	264032.1	13339.2	-0.0	-0.00
25yr72hr	56.07	277728.0	264352.4	13375.6	-0.0	-0.00
25yr72hr	56.09	278267.5	264834.4	13433.0	-0.0	-0.00
25yr72hr	56.10	278567.9	265101.4	13466.5	-0.0	-0.00
25yr72hr	56.12	279047.7	265525.7	13522.0	-0.0	-0.00
25yr72hr	56.13	279471.5	265898.6	13573.0	-0.0	-0.00
25yr72hr	56.15	279929.7	266299.8	13629.9	-0.0	-0.00
25yr72hr	56.17	280391.7	266703.0	13688.8	-0.0	-0.00
25yr72hr	56.19	280876.8	267125.1	13751.7	-0.0	-0.00
25yr72hr	56.20	281316.4	267506.9	13809.5	-0.0	-0.00
25yr72hr	56.22	281807.9	267933.4	13874.5	-0.0	-0.00
25yr72hr	56.24	282302.2	268362.3	13940.0	-0.0	-0.00
25yr72hr	56.25	282736.9	268739.5	13997.5	-0.0	-0.00
25yr72hr	56.27	283204.8	269145.7	14059.1	-0.0	-0.00
25yr72hr	56.28	283674.7	269554.1	14120.7	-0.0	-0.00
25yr72hr	56.30	284146.5	269964.6	14182.0	-0.0	-0.00
25yr72hr	56.32	284738.8	270480.7	14258.1	-0.0	-0.00
25yr72hr	56.34	285190.6	270875.2	14315.4	-0.0	-0.00
25yr72hr	56.35	285699.6	271320.5	14379.1	-0.0	-0.00
25yr72hr	56.37	286082.4	271656.0	14426.3	-0.0	-0.00
25yr72hr	56.39	286658.2	272161.8	14496.4	-0.0	-0.00
25yr72hr	56.40	287139.4	272585.6	14553.8	-0.0	-0.00
25yr72hr	56.42	287621.8	273011.3	14610.5	-0.0	-0.00
25yr72hr	56.44	288105.3	273439.1	14666.1	-0.0	-0.00
25yr72hr	56.45	288561.9	273844.1	14717.8	-0.0	-0.00
25yr72hr	56.47	289039.1	274268.4	14770.6	-0.0	-0.00
25yr72hr	56.48	289543.8	274718.3	14825.5	-0.0	-0.00
25yr72hr	56.50	290042.8	275164.2	14878.6	-0.0	-0.00
25yr72hr	56.52	290542.8	275612.0	14930.7	-0.0	-0.00
25yr72hr	56.53	291001.9	276024.2	14977.7	-0.0	-0.00
25yr72hr	56.55	291524.5	276494.4	15030.1	-0.0	-0.00
25yr72hr	56.57	292074.2	276990.3	15083.9	-0.0	-0.00
25yr72hr	56.59	292598.6	277464.4	15134.2	-0.0	-0.00
25yr72hr	56.60	292992.5	277821.3	15171.2	-0.0	-0.00
25yr72hr	56.62	293551.3	278328.7	15222.6	-0.0	-0.00
25yr72hr	56.64	294045.1	278778.0	15267.1	-0.0	-0.00
25yr72hr	56.65	294539.5	279228.9	15310.6	-0.0	-0.00
25yr72hr	56.67	295034.5	279681.3	15353.2	-0.0	-0.00
25yr72hr	56.69	295612.8	280210.9	15401.8	-0.0	-0.00
25yr72hr	56.70	296026.3	280590.5	15435.8	-0.0	-0.00
25yr72hr	56.72	296605.8	281123.5	15482.3	-0.0	-0.00
25yr72hr	56.73	297030.1	281514.6	15515.5	-0.0	-0.00
25yr72hr	56.75	297560.9	282004.8	15556.1	-0.0	-0.00
25yr72hr	56.77	298145.4	282545.8	15599.6	-0.0	-0.00
25yr72hr	56.78	298544.2	282915.6	15628.6	-0.0	-0.00
25yr72hr	56.80	299076.3	283410.0	15666.3	-0.0	-0.00
25yr72hr	56.82	299675.5	283967.8	15707.6	-0.0	-0.00
25yr72hr	56.84	300175.1	284433.9	15741.1	-0.0	-0.00
25yr72hr	56.85	300675.0	284901.2	15773.8	-0.0	-0.00
25yr72hr	56.87	301175.2	285369.6	15805.7	-0.0	-0.00
25yr72hr	56.88	301592.3	285760.7	15831.6	-0.0	-0.00
25yr72hr	56.90	302218.2	286348.7	15869.5	-0.0	-0.00
25yr72hr	56.92	302635.7	286741.6	15894.1	-0.0	-0.00
25yr72hr	56.94	303186.8	287261.1	15925.7	-0.0	-0.00
25yr72hr	56.95	303666.0	287713.6	15952.4	-0.0	-0.00
25yr72hr	56.97	304179.7	288199.4	15980.3	-0.0	-0.00
25yr72hr	56.99	304715.0	288706.5	16008.6	-0.0	-0.00
25yr72hr	57.00	305250.5	289214.5	16036.0	-0.0	-0.00
25yr72hr	57.02	305679.4	289621.7	16057.8	-0.0	-0.00
25yr72hr	57.03	306189.9	290106.0	16083.9	-0.0	-0.00
25yr72hr	57.05	306729.4	290616.8	16112.6	-0.0	-0.00
25yr72hr	57.07	307272.1	291128.7	16143.4	-0.0	-0.00
25yr72hr	57.08	307785.3	291609.7	16175.6	-0.0	-0.00
25yr72hr	57.10	308303.7	292092.1	16211.5	-0.0	-0.00
25yr72hr	57.12	308827.5	292576.0	16251.4	-0.0	-0.00
25yr72hr	57.14	309401.0	293102.2	16298.8	-0.0	-0.00
25yr72hr	57.16	310070.3	293712.0	16358.3	-0.0	-0.00
25yr72hr	57.17	310520.6	294120.4	16400.2	-0.0	-0.00
25yr72hr	57.19	311101.5	294645.5	16456.0	-0.0	-0.00
25yr72hr	57.20	311540.2	295040.9	16499.3	-0.0	-0.00
25yr72hr	57.22	312128.7	295570.5	16558.2	-0.0	-0.00
25yr72hr	57.23	312684.0	296069.4	16614.6	-0.0	-0.00
25yr72hr	57.25	313242.2	296570.6	16671.6	-0.0	-0.00
25yr72hr	57.27	313803.4	297074.3	16729.1	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	57.28	314414.3	297622.5	16791.8	-0.0	-0.00
25yr72hr	57.30	315122.8	298258.5	16864.3	-0.0	-0.00
25yr72hr	57.32	315597.1	298684.5	16912.6	-0.0	-0.00
25yr72hr	57.33	316139.6	299172.2	16967.5	-0.0	-0.00
25yr72hr	57.35	316751.0	299722.2	17028.8	-0.0	-0.00
25yr72hr	57.37	317364.4	300274.7	17089.7	-0.0	-0.00
25yr72hr	57.38	317902.9	300760.3	17142.6	-0.0	-0.00
25yr72hr	57.40	318481.3	301282.6	17198.7	-0.0	-0.00
25yr72hr	57.42	319061.3	301807.0	17254.3	-0.0	-0.00
25yr72hr	57.43	319642.8	302333.6	17309.2	-0.0	-0.00
25yr72hr	57.45	320371.4	302994.6	17376.8	-0.0	-0.00
25yr72hr	57.47	320858.3	303437.0	17421.3	-0.0	-0.00
25yr72hr	57.49	321590.2	304103.2	17487.1	-0.0	-0.00
25yr72hr	57.50	322098.9	304566.9	17532.0	-0.0	-0.00
25yr72hr	57.52	322726.5	305139.5	17587.0	-0.0	-0.00
25yr72hr	57.54	323356.2	305714.3	17641.8	-0.0	-0.00
25yr72hr	57.55	323909.2	306219.0	17690.2	-0.0	-0.00
25yr72hr	57.57	324504.6	306761.6	17742.9	-0.0	-0.00
25yr72hr	57.59	325103.3	307306.2	17797.1	-0.0	-0.00
25yr72hr	57.60	325705.8	307852.9	17852.8	-0.0	-0.00
25yr72hr	57.62	326464.3	308539.3	17925.0	-0.0	-0.00
25yr72hr	57.64	326973.3	308998.8	17974.4	-0.0	-0.00
25yr72hr	57.66	327741.4	309691.3	18050.1	-0.0	-0.00
25yr72hr	57.67	328163.1	310071.1	18092.0	-0.0	-0.00
25yr72hr	57.68	328798.4	310643.0	18155.4	-0.0	-0.00
25yr72hr	57.70	329410.0	311193.5	18216.5	-0.0	-0.00
25yr72hr	57.72	330077.6	311794.5	18283.2	-0.0	-0.00
25yr72hr	57.74	330815.2	312458.8	18356.4	-0.0	-0.00
25yr72hr	57.75	331319.8	312913.6	18406.2	-0.0	-0.00
25yr72hr	57.77	331994.7	313522.4	18472.2	-0.0	-0.00
25yr72hr	57.79	332756.4	314210.5	18545.9	-0.0	-0.00
25yr72hr	57.80	333393.2	314786.5	18606.7	-0.0	-0.00
25yr72hr	57.82	334031.5	315364.7	18666.9	-0.0	-0.00
25yr72hr	57.84	334671.4	315945.1	18726.3	-0.0	-0.00
25yr72hr	57.85	335205.7	316430.4	18775.3	-0.0	-0.00
25yr72hr	57.87	336008.9	317161.2	18847.8	-0.0	-0.00
25yr72hr	57.88	336545.5	317650.2	18895.4	-0.0	-0.00
25yr72hr	57.90	337298.0	318337.1	18960.9	-0.0	-0.00
25yr72hr	57.92	337944.2	318928.1	19016.1	-0.0	-0.00
25yr72hr	57.94	338634.6	319560.7	19073.9	-0.0	-0.00
25yr72hr	57.95	339153.1	320036.5	19116.6	-0.0	-0.00
25yr72hr	57.97	339845.3	320672.7	19172.5	-0.0	-0.00
25yr72hr	57.98	340495.0	321271.1	19224.0	-0.0	-0.00
25yr72hr	58.00	341145.7	321871.1	19274.5	-0.0	-0.00
25yr72hr	58.02	341797.3	322472.9	19324.4	-0.0	-0.00
25yr72hr	58.03	342505.0	323126.8	19378.2	-0.0	-0.00
25yr72hr	58.06	343324.6	323883.7	19440.9	-0.0	-0.00
25yr72hr	58.07	343873.5	324389.8	19483.7	-0.0	-0.00
25yr72hr	58.09	344701.9	325151.4	19550.5	-0.0	-0.00
25yr72hr	58.10	345258.1	325660.9	19597.2	-0.0	-0.00
25yr72hr	58.12	345966.4	326307.6	19658.8	-0.0	-0.00
25yr72hr	58.13	346507.3	326800.1	19707.2	-0.0	-0.00
25yr72hr	58.15	347233.0	327459.2	19773.8	-0.0	-0.00
25yr72hr	58.17	348055.1	328204.1	19851.0	-0.0	-0.00
25yr72hr	58.19	348744.3	328827.7	19916.6	-0.0	-0.00
25yr72hr	58.20	349437.1	329453.9	19983.2	-0.0	-0.00
25yr72hr	58.22	350133.0	330082.8	20050.2	-0.0	-0.00
25yr72hr	58.23	350715.1	330608.8	20106.3	-0.0	-0.00
25yr72hr	58.25	351591.8	331401.2	20190.6	-0.0	-0.00
25yr72hr	58.27	352178.4	331931.7	20246.7	-0.0	-0.00
25yr72hr	58.29	353061.3	332730.9	20330.5	-0.0	-0.00
25yr72hr	58.30	353666.0	333278.8	20387.2	-0.0	-0.00
25yr72hr	58.32	354423.9	333966.2	20457.7	-0.0	-0.00
25yr72hr	58.33	355069.8	334552.7	20517.1	-0.0	-0.00
25yr72hr	58.35	355831.5	335245.1	20586.5	-0.0	-0.00
25yr72hr	58.37	356595.1	335940.2	20655.0	-0.0	-0.00
25yr72hr	58.38	357216.9	336506.8	20710.1	-0.0	-0.00
25yr72hr	58.41	358175.5	337381.8	20793.7	-0.0	-0.00
25yr72hr	58.42	358896.0	338040.6	20855.4	-0.0	-0.00
25yr72hr	58.44	359617.8	338701.5	20916.2	-0.0	-0.00
25yr72hr	58.45	360220.1	339253.8	20966.3	-0.0	-0.00
25yr72hr	58.47	361125.1	340084.9	21040.2	-0.0	-0.00
25yr72hr	58.49	361729.3	340640.7	21088.7	-0.0	-0.00
25yr72hr	58.51	362637.8	341476.8	21160.9	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	58.52	363321.8	342105.9	21215.9	-0.0	-0.00
25yr72hr	58.54	363947.5	342680.2	21267.3	-0.0	-0.00
25yr72hr	58.55	364704.4	343371.4	21333.0	-0.0	-0.00
25yr72hr	58.57	365471.0	344065.3	21405.8	-0.0	-0.00
25yr72hr	58.59	366282.8	344791.3	21491.6	-0.0	-0.00
25yr72hr	58.60	367027.0	345448.1	21578.9	-0.0	-0.00
25yr72hr	58.62	367869.7	346182.4	21687.2	-0.0	-0.00
25yr72hr	58.64	368728.6	346922.1	21806.5	-0.0	-0.00
25yr72hr	58.65	369492.9	347574.1	21918.8	-0.0	-0.00
25yr72hr	58.67	370324.1	348278.1	22046.0	-0.0	-0.00
25yr72hr	58.69	371167.0	348987.9	22179.1	-0.0	-0.00
25yr72hr	58.70	372020.6	349703.8	22316.8	-0.0	-0.00
25yr72hr	58.72	373101.0	350607.0	22494.0	-0.0	-0.00
25yr72hr	58.74	373828.8	351214.5	22614.3	-0.0	-0.00
25yr72hr	58.76	374931.0	352133.8	22797.2	-0.0	-0.00
25yr72hr	58.77	375672.1	352751.9	22920.2	-0.0	-0.00
25yr72hr	58.79	376627.8	353549.5	23078.4	-0.0	-0.00
25yr72hr	58.80	377349.4	354152.0	23197.4	-0.0	-0.00
25yr72hr	58.82	378317.6	354961.2	23356.3	-0.0	-0.00
25yr72hr	58.83	379169.9	355674.6	23495.3	-0.0	-0.00
25yr72hr	58.86	380395.5	356702.1	23693.3	-0.0	-0.00
25yr72hr	58.87	381320.3	357479.2	23841.1	-0.0	-0.00
25yr72hr	58.89	382327.3	358327.0	24000.2	-0.0	-0.00
25yr72hr	58.90	383105.2	358983.3	24121.8	-0.0	-0.00
25yr72hr	58.92	383885.8	359643.2	24242.5	-0.0	-0.00
25yr72hr	58.94	385061.4	360639.6	24421.8	-0.0	-0.00
25yr72hr	58.95	385848.1	361308.0	24540.1	-0.0	-0.00
25yr72hr	58.97	386890.1	362195.6	24694.5	-0.0	-0.00
25yr72hr	58.99	387904.2	363061.7	24842.5	-0.0	-0.00
25yr72hr	59.00	388922.5	363932.9	24989.6	-0.0	-0.00
25yr72hr	59.02	389691.1	364589.8	25101.3	-0.0	-0.00
25yr72hr	59.04	390987.6	365691.1	25296.4	-0.0	-0.00
25yr72hr	59.06	391978.4	366523.3	25455.1	-0.0	-0.00
25yr72hr	59.07	392991.5	367361.6	25629.9	-0.0	-0.00
25yr72hr	59.09	394034.5	368207.0	25827.5	-0.0	-0.00
25yr72hr	59.10	395110.5	369061.0	26049.5	-0.0	-0.00
25yr72hr	59.12	396219.8	369925.0	26294.9	-0.0	-0.00
25yr72hr	59.14	397361.5	370800.0	26561.5	-0.0	-0.00
25yr72hr	59.15	398533.7	371687.1	26846.6	-0.0	-0.00
25yr72hr	59.17	399733.8	372586.9	27146.9	-0.0	-0.00
25yr72hr	59.19	400959.8	373499.9	27459.8	-0.0	-0.00
25yr72hr	59.20	402209.6	374426.4	27783.2	-0.0	-0.00
25yr72hr	59.22	403480.8	375366.5	28114.3	-0.0	-0.00
25yr72hr	59.24	404771.2	376320.2	28451.0	-0.0	-0.00
25yr72hr	59.25	406079.4	377287.2	28792.2	-0.0	-0.00
25yr72hr	59.27	407404.5	378267.5	29137.0	-0.0	-0.00
25yr72hr	59.28	408745.2	379260.8	29484.4	-0.0	-0.00
25yr72hr	59.30	410100.2	380266.9	29833.3	-0.0	-0.00
25yr72hr	59.32	411468.6	381285.5	30183.1	-0.0	-0.00
25yr72hr	59.33	412849.6	382316.4	30533.2	-0.0	-0.00
25yr72hr	59.35	414242.3	383359.2	30883.1	-0.0	-0.00
25yr72hr	59.37	416116.1	384767.8	31348.3	-0.0	-0.00
25yr72hr	59.39	417533.1	385837.4	31695.7	-0.0	-0.00
25yr72hr	59.40	418959.3	386918.0	32041.3	-0.0	-0.00
25yr72hr	59.42	420394.0	388009.3	32384.7	-0.0	-0.00
25yr72hr	59.44	421836.6	389111.1	32725.5	-0.0	-0.00
25yr72hr	59.45	423286.6	390222.9	33063.7	-0.0	-0.00
25yr72hr	59.47	424743.9	391344.6	33399.3	-0.0	-0.00
25yr72hr	59.49	426208.9	392475.8	33733.1	-0.0	-0.00
25yr72hr	59.50	427697.6	393616.6	34081.0	-0.0	-0.00
25yr72hr	59.52	429182.4	394722.5	34459.9	-0.0	-0.00
25yr72hr	59.53	430702.8	395797.4	34905.4	-0.0	-0.00
25yr72hr	59.55	432554.7	396997.5	35557.3	-0.0	-0.00
25yr72hr	59.57	434687.6	398218.7	36468.9	-0.0	-0.00
25yr72hr	59.58	437274.1	399513.9	37760.2	-0.0	-0.00
25yr72hr	59.60	440400.2	400896.6	39503.6	-0.0	-0.00
25yr72hr	59.62	444051.2	402360.4	41690.9	-0.0	-0.00
25yr72hr	59.63	448169.7	403907.0	44262.7	-0.0	-0.00
25yr72hr	59.65	452965.7	405638.3	47327.4	-0.0	-0.00
25yr72hr	59.67	458120.8	407457.7	50663.1	-0.0	-0.00
25yr72hr	59.68	463707.3	409409.0	54298.4	-0.0	-0.00
25yr72hr	59.70	469869.4	411561.0	58308.3	-0.0	-0.00
25yr72hr	59.72	476193.8	413782.3	62411.5	-0.0	-0.00
25yr72hr	59.73	482897.1	416158.0	66739.1	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	59.75	490109.5	418744.3	71365.2	-0.0	-0.00
25yr72hr	59.77	497422.9	421400.9	76022.0	-0.0	-0.00
25yr72hr	59.78	505139.4	424239.8	80899.6	-0.0	-0.00
25yr72hr	59.80	513115.1	427211.9	85903.2	-0.0	-0.00
25yr72hr	59.82	520968.9	430175.3	90793.5	-0.0	-0.00
25yr72hr	59.83	529397.7	433394.9	96002.8	-0.0	-0.00
25yr72hr	59.85	538035.7	436733.5	101302.2	-0.0	-0.00
25yr72hr	59.87	546588.4	440074.2	106514.2	-0.0	-0.00
25yr72hr	59.88	555570.2	443615.3	111954.9	-0.0	-0.00
25yr72hr	59.90	564853.6	447310.2	117543.5	-0.0	-0.00
25yr72hr	59.92	573991.4	450980.7	123010.7	-0.0	-0.00
25yr72hr	59.93	583271.0	454717.9	128553.1	-0.0	-0.00
25yr72hr	59.95	592683.9	458489.0	134194.9	-0.0	-0.00
25yr72hr	59.97	602223.9	462294.8	139929.2	-0.0	-0.00
25yr72hr	59.98	612426.8	466350.5	146076.4	-0.0	-0.00
25yr72hr	60.00	622208.8	470229.7	151979.1	-0.0	-0.00
25yr72hr	60.02	632056.2	474143.7	157912.5	-0.0	-0.00
25yr72hr	60.03	641894.2	478090.0	163804.2	-0.0	-0.00
25yr72hr	60.05	651775.9	482121.2	169654.7	-0.0	-0.00
25yr72hr	60.07	661725.6	486289.7	175435.8	-0.0	-0.00
25yr72hr	60.08	670695.2	490199.4	180495.8	-0.0	-0.00
25yr72hr	60.10	679870.3	494400.5	185469.8	-0.0	-0.00
25yr72hr	60.12	688153.0	498395.4	189757.6	-0.0	-0.00
25yr72hr	60.13	696420.1	502596.5	193823.6	-0.0	-0.00
25yr72hr	60.15	703970.4	506632.8	197337.6	-0.0	-0.00
25yr72hr	60.17	711124.6	510638.7	200485.9	-0.0	-0.00
25yr72hr	60.18	718045.8	514685.8	203360.0	-0.0	-0.00
25yr72hr	60.20	724413.1	518560.9	205852.1	-0.0	-0.00
25yr72hr	60.22	730688.1	522518.3	208169.8	-0.0	-0.00
25yr72hr	60.23	736904.4	526567.6	210336.8	-0.0	-0.00
25yr72hr	60.25	742893.8	530589.0	212304.8	-0.0	-0.00
25yr72hr	60.27	748370.5	534371.4	213999.2	-0.0	-0.00
25yr72hr	60.28	753790.5	538213.1	215577.5	-0.0	-0.00
25yr72hr	60.30	758978.6	541980.0	216998.7	-0.0	-0.00
25yr72hr	60.32	763845.0	545554.6	218290.4	-0.0	-0.00
25yr72hr	60.33	769074.2	549412.7	219661.5	-0.0	-0.00
25yr72hr	60.35	773632.0	552793.1	220838.9	-0.0	-0.00
25yr72hr	60.37	778543.3	556458.2	222085.1	-0.0	-0.00
25yr72hr	60.38	782717.3	559593.6	223123.7	-0.0	-0.00
25yr72hr	60.40	787070.2	562886.2	224184.1	-0.0	-0.00
25yr72hr	60.42	791030.8	565902.0	225128.8	-0.0	-0.00
25yr72hr	60.43	795254.7	569140.4	226114.3	-0.0	-0.00
25yr72hr	60.45	799134.4	572138.0	226996.4	-0.0	-0.00
25yr72hr	60.47	803338.7	575416.8	227921.9	-0.0	-0.00
25yr72hr	60.49	807432.3	578644.8	228787.6	-0.0	-0.00
25yr72hr	60.50	811169.2	581627.8	229541.4	-0.0	-0.00
25yr72hr	60.52	814289.9	584150.7	230139.2	-0.0	-0.00
25yr72hr	60.53	817826.2	587050.8	230775.4	-0.0	-0.00
25yr72hr	60.55	821230.1	589894.7	231335.4	-0.0	-0.00
25yr72hr	60.57	824696.5	592858.7	231837.8	-0.0	-0.00
25yr72hr	60.58	827920.2	595693.0	232227.1	-0.0	-0.00
25yr72hr	60.60	830962.1	598451.4	232510.7	-0.0	-0.00
25yr72hr	60.62	833864.7	601170.3	232694.3	-0.0	-0.00
25yr72hr	60.63	836407.4	603627.3	232780.1	-0.0	-0.00
25yr72hr	60.65	839209.9	606421.2	232788.7	-0.0	-0.00
25yr72hr	60.67	841569.8	608847.0	232722.8	-0.0	-0.00
25yr72hr	60.69	844227.7	611661.5	232566.2	-0.0	-0.00
25yr72hr	60.70	846538.7	614179.3	232359.4	-0.0	-0.00
25yr72hr	60.72	848848.5	616762.5	232086.0	-0.0	-0.00
25yr72hr	60.73	850753.3	618942.4	231810.8	-0.0	-0.00
25yr72hr	60.75	852682.2	621194.6	231487.6	-0.0	-0.00
25yr72hr	60.77	854878.3	623812.9	231065.4	-0.0	-0.00
25yr72hr	60.79	856808.6	626161.1	230647.5	-0.0	-0.00
25yr72hr	60.80	858758.6	628577.0	230181.6	-0.0	-0.00
25yr72hr	60.82	860277.9	630488.7	229789.1	-0.0	-0.00
25yr72hr	60.83	862156.3	632887.2	229269.1	-0.0	-0.00
25yr72hr	60.85	863728.5	634924.2	228804.3	-0.0	-0.00
25yr72hr	60.87	865534.6	637297.7	228236.9	-0.0	-0.00
25yr72hr	60.88	867134.5	639428.6	227705.9	-0.0	-0.00
25yr72hr	60.90	868756.7	641614.2	227142.5	-0.0	-0.00
25yr72hr	60.92	870414.4	643872.1	226542.2	-0.0	-0.00
25yr72hr	60.94	872042.8	646112.3	225930.5	-0.0	-0.00
25yr72hr	60.95	873422.0	648024.6	225397.3	-0.0	-0.00
25yr72hr	60.97	874922.5	650118.8	224803.7	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	60.99	876525.2	652368.8	224156.4	-0.0	-0.00
25yr72hr	61.00	877914.0	654326.8	223587.3	-0.0	-0.00
25yr72hr	61.02	879388.1	656414.4	222973.7	-0.0	-0.00
25yr72hr	61.03	880845.3	658492.3	222353.1	-0.0	-0.00
25yr72hr	61.05	882342.5	660646.8	221695.7	-0.0	-0.00
25yr72hr	61.07	883668.6	662577.5	221091.1	-0.0	-0.00
25yr72hr	61.08	885058.9	664632.2	220426.7	-0.0	-0.00
25yr72hr	61.10	886326.0	666537.3	219788.8	-0.0	-0.00
25yr72hr	61.12	887654.0	668569.0	219085.0	-0.0	-0.00
25yr72hr	61.13	889005.5	670674.8	218330.7	-0.0	-0.00
25yr72hr	61.15	890326.5	672769.6	217556.9	-0.0	-0.00
25yr72hr	61.17	891619.4	674853.3	216766.2	-0.0	-0.00
25yr72hr	61.18	892670.0	676569.5	216100.4	-0.0	-0.00
25yr72hr	61.20	893871.0	678556.0	215315.0	-0.0	-0.00
25yr72hr	61.22	895033.2	680501.3	214531.9	-0.0	-0.00
25yr72hr	61.24	896270.2	682594.2	213676.0	-0.0	-0.00
25yr72hr	61.25	897337.2	684417.2	212920.0	-0.0	-0.00
25yr72hr	61.27	898465.6	686362.1	212103.6	-0.0	-0.00
25yr72hr	61.28	899580.2	688298.9	211281.3	-0.0	-0.00
25yr72hr	61.30	900727.8	690308.0	210419.8	-0.0	-0.00
25yr72hr	61.32	901749.8	692109.4	209640.4	-0.0	-0.00
25yr72hr	61.34	902874.3	694103.5	208770.8	-0.0	-0.00
25yr72hr	61.35	903943.7	696010.9	207932.8	-0.0	-0.00
25yr72hr	61.37	905048.0	697991.1	207056.9	-0.0	-0.00
25yr72hr	61.38	905924.9	699570.5	206354.4	-0.0	-0.00
25yr72hr	61.40	906978.7	701476.0	205502.7	-0.0	-0.00
25yr72hr	61.42	908016.8	703360.2	204656.6	-0.0	-0.00
25yr72hr	61.43	909048.7	705239.2	203809.5	-0.0	-0.00
25yr72hr	61.45	910202.7	707347.1	202855.6	-0.0	-0.00
25yr72hr	61.47	911053.2	708904.6	202148.6	-0.0	-0.00
25yr72hr	61.48	912111.7	710847.0	201264.7	-0.0	-0.00
25yr72hr	61.50	913165.4	712784.7	200380.7	-0.0	-0.00
25yr72hr	61.52	914197.3	714686.8	199510.4	-0.0	-0.00
25yr72hr	61.53	915131.9	716415.1	198716.8	-0.0	-0.00
25yr72hr	61.55	916093.8	718201.5	197892.4	-0.0	-0.00
25yr72hr	61.57	917080.6	720045.4	197035.2	-0.0	-0.00
25yr72hr	61.59	918097.5	721961.6	196135.9	-0.0	-0.00
25yr72hr	61.60	919101.8	723872.9	195228.9	-0.0	-0.00
25yr72hr	61.62	920092.8	725778.9	194313.8	-0.0	-0.00
25yr72hr	61.63	920876.2	727299.8	193576.4	-0.0	-0.00
25yr72hr	61.65	921829.0	729165.6	192663.4	-0.0	-0.00
25yr72hr	61.67	922686.8	730859.6	191827.2	-0.0	-0.00
25yr72hr	61.69	923717.0	732910.5	190806.5	-0.0	-0.00
25yr72hr	61.70	924653.7	734789.4	189864.3	-0.0	-0.00
25yr72hr	61.72	925396.9	736288.5	189108.3	-0.0	-0.00
25yr72hr	61.73	926318.6	738157.3	188161.3	-0.0	-0.00
25yr72hr	61.75	927233.1	740020.6	187212.5	-0.0	-0.00
25yr72hr	61.77	928010.7	741611.3	186399.3	-0.0	-0.00
25yr72hr	61.79	928935.0	743509.1	185425.9	-0.0	-0.00
25yr72hr	61.80	929767.5	745224.4	184543.1	-0.0	-0.00
25yr72hr	61.82	930624.1	746994.3	183629.8	-0.0	-0.00
25yr72hr	61.84	931511.7	748833.3	182678.4	-0.0	-0.00
25yr72hr	61.85	932395.0	750667.6	181727.4	-0.0	-0.00
25yr72hr	61.87	933098.7	752131.8	180966.9	-0.0	-0.00
25yr72hr	61.88	933979.1	753966.7	180012.4	-0.0	-0.00
25yr72hr	61.90	934783.6	755645.7	179137.8	-0.0	-0.00
25yr72hr	61.92	935652.1	757460.6	178191.5	-0.0	-0.00
25yr72hr	61.94	936512.3	759259.9	177252.4	-0.0	-0.00
25yr72hr	61.95	937342.3	760997.3	176345.0	-0.0	-0.00
25yr72hr	61.97	938135.7	762658.9	175476.8	-0.0	-0.00
25yr72hr	61.99	938996.0	764461.2	174534.8	-0.0	-0.00
25yr72hr	62.00	939854.2	766259.8	173594.4	-0.0	-0.00
25yr72hr	62.02	940538.5	767695.9	172842.5	-0.0	-0.00
25yr72hr	62.03	941389.4	769487.6	171901.8	-0.0	-0.00
25yr72hr	62.05	942199.8	771203.8	170996.0	-0.0	-0.00
25yr72hr	62.07	943034.9	772987.4	170047.5	-0.0	-0.00
25yr72hr	62.09	943789.2	774618.4	169170.8	-0.0	-0.00
25yr72hr	62.10	944514.3	776208.2	168306.1	-0.0	-0.00
25yr72hr	62.12	945328.0	778019.5	167308.5	-0.0	-0.00
25yr72hr	62.14	946076.6	779711.9	166364.7	-0.0	-0.00
25yr72hr	62.15	946842.7	781468.6	165374.2	-0.0	-0.00
25yr72hr	62.17	947446.2	782869.1	164577.1	-0.0	-0.00
25yr72hr	62.18	948189.9	784613.8	163576.1	-0.0	-0.00
25yr72hr	62.20	948851.5	786182.2	162669.2	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	62.22	949592.5	787955.2	161637.2	-0.0	-0.00
25yr72hr	62.24	950306.1	789677.1	160628.9	-0.0	-0.00
25yr72hr	62.25	951007.1	791381.5	159625.7	-0.0	-0.00
25yr72hr	62.27	951567.1	792751.3	158815.8	-0.0	-0.00
25yr72hr	62.28	952233.1	794389.6	157843.6	-0.0	-0.00
25yr72hr	62.30	952893.3	796022.0	156871.3	-0.0	-0.00
25yr72hr	62.32	953547.9	797648.7	155899.2	-0.0	-0.00
25yr72hr	62.33	954197.5	799269.7	154927.8	-0.0	-0.00
25yr72hr	62.35	954842.4	800885.2	153957.2	-0.0	-0.00
25yr72hr	62.37	955482.9	802495.2	152987.7	-0.0	-0.00
25yr72hr	62.38	956119.4	804099.9	152019.5	-0.0	-0.00
25yr72hr	62.40	956752.2	805699.2	151053.0	-0.0	-0.00
25yr72hr	62.42	957381.6	807293.3	150088.3	-0.0	-0.00
25yr72hr	62.43	958007.9	808882.3	149125.7	-0.0	-0.00
25yr72hr	62.45	958631.4	810466.1	148165.3	-0.0	-0.00
25yr72hr	62.47	959252.1	812044.8	147207.3	-0.0	-0.00
25yr72hr	62.48	959870.2	813618.5	146251.7	-0.0	-0.00
25yr72hr	62.50	960485.8	815187.3	145298.6	-0.0	-0.00
25yr72hr	62.52	961098.9	816751.0	144347.9	-0.0	-0.00
25yr72hr	62.54	961709.0	818309.7	143399.4	-0.0	-0.00
25yr72hr	62.55	962315.8	819863.3	142452.5	-0.0	-0.00
25yr72hr	62.57	962918.6	821411.8	141506.9	-0.0	-0.00
25yr72hr	62.59	963516.7	822954.9	140561.8	-0.0	-0.00
25yr72hr	62.60	964109.7	824492.7	139617.0	-0.0	-0.00
25yr72hr	62.62	964697.2	826024.8	138672.5	-0.0	-0.00
25yr72hr	62.64	965279.5	827551.1	137728.5	-0.0	-0.00
25yr72hr	62.65	965856.9	829071.4	136785.5	-0.0	-0.00
25yr72hr	62.67	966429.6	830585.7	135843.8	-0.0	-0.00
25yr72hr	62.68	966903.5	831842.9	135060.6	-0.0	-0.00
25yr72hr	62.70	967468.7	833345.8	134122.9	-0.0	-0.00
25yr72hr	62.72	968030.2	834842.3	133187.9	-0.0	-0.00
25yr72hr	62.73	968588.5	836332.4	132256.2	-0.0	-0.00
25yr72hr	62.75	969143.8	837815.8	131328.0	-0.0	-0.00
25yr72hr	62.77	969733.2	839390.8	130342.4	-0.0	-0.00
25yr72hr	62.78	970261.3	840801.9	129459.4	-0.0	-0.00
25yr72hr	62.80	970787.2	842206.9	128580.3	-0.0	-0.00
25yr72hr	62.82	971311.2	843605.9	127705.4	-0.0	-0.00
25yr72hr	62.83	971891.4	845153.1	126738.3	-0.0	-0.00
25yr72hr	62.85	972411.9	846539.1	125872.8	-0.0	-0.00
25yr72hr	62.87	972930.8	847919.1	125011.7	-0.0	-0.00
25yr72hr	62.88	973505.8	849445.5	124060.2	-0.0	-0.00
25yr72hr	62.90	974036.2	850851.2	123185.1	-0.0	-0.00
25yr72hr	62.92	974536.9	852175.4	122361.6	-0.0	-0.00
25yr72hr	62.93	975062.8	853563.3	121499.4	-0.0	-0.00
25yr72hr	62.95	975607.3	855002.1	120605.2	-0.0	-0.00
25yr72hr	62.97	976141.1	856415.6	119725.5	-0.0	-0.00
25yr72hr	62.98	976689.8	857870.3	118819.5	-0.0	-0.00
25yr72hr	63.00	977212.6	859257.3	117955.3	-0.0	-0.00
25yr72hr	63.02	977750.1	860683.4	117066.8	-0.0	-0.00
25yr72hr	63.03	978261.5	862039.4	116222.1	-0.0	-0.00
25yr72hr	63.05	978804.1	863477.5	115326.6	-0.0	-0.00
25yr72hr	63.07	979302.3	864796.7	114505.6	-0.0	-0.00
25yr72hr	63.09	979899.4	866376.3	113523.1	-0.0	-0.00
25yr72hr	63.10	980355.0	867580.5	112774.6	-0.0	-0.00
25yr72hr	63.12	980863.5	868922.7	111940.7	-0.0	-0.00
25yr72hr	63.13	981387.3	870303.9	111083.3	-0.0	-0.00
25yr72hr	63.15	981942.2	871765.6	110176.7	-0.0	-0.00
25yr72hr	63.17	982476.9	873171.8	109305.1	-0.0	-0.00
25yr72hr	63.18	982971.6	874471.2	108500.3	-0.0	-0.00
25yr72hr	63.20	983533.0	875944.1	107588.9	-0.0	-0.00
25yr72hr	63.22	984038.8	877268.9	106769.8	-0.0	-0.00
25yr72hr	63.24	984575.8	878673.7	105902.1	-0.0	-0.00
25yr72hr	63.25	985069.1	879962.3	105106.8	-0.0	-0.00
25yr72hr	63.27	985562.2	881248.4	104313.8	-0.0	-0.00
25yr72hr	63.28	986129.9	882727.0	103402.9	-0.0	-0.00
25yr72hr	63.30	986650.1	884079.6	102570.5	-0.0	-0.00
25yr72hr	63.32	987122.8	885307.0	101815.8	-0.0	-0.00
25yr72hr	63.34	987713.5	886838.2	100875.3	-0.0	-0.00
25yr72hr	63.35	988205.6	888111.7	100093.9	-0.0	-0.00
25yr72hr	63.37	988697.6	889382.9	99314.7	-0.0	-0.00
25yr72hr	63.39	989248.4	890803.7	98444.7	-0.0	-0.00
25yr72hr	63.40	989759.8	892120.3	97639.5	-0.0	-0.00
25yr72hr	63.42	990251.5	893383.8	96867.7	-0.0	-0.00
25yr72hr	63.43	990767.7	894707.7	96059.9	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	63.45	991382.0	896280.2	95101.9	-0.0	-0.00
25yr72hr	63.47	991794.9	897334.5	94460.4	-0.0	-0.00
25yr72hr	63.48	992345.3	898737.3	93607.9	-0.0	-0.00
25yr72hr	63.50	992836.7	899987.0	92849.7	-0.0	-0.00
25yr72hr	63.52	993426.4	901482.9	91943.5	-0.0	-0.00
25yr72hr	63.54	993917.9	902726.4	91191.5	-0.0	-0.00
25yr72hr	63.55	994409.3	903967.0	90442.3	-0.0	-0.00
25yr72hr	63.57	994931.4	905281.9	89649.5	-0.0	-0.00
25yr72hr	63.58	995434.7	906545.9	88888.8	-0.0	-0.00
25yr72hr	63.60	996000.8	907964.1	88036.7	-0.0	-0.00
25yr72hr	63.62	996472.6	909142.9	87329.8	-0.0	-0.00
25yr72hr	63.64	997042.7	910563.4	86479.4	-0.0	-0.00
25yr72hr	63.65	997534.2	911784.5	85749.7	-0.0	-0.00
25yr72hr	63.67	998124.0	913245.7	84878.3	-0.0	-0.00
25yr72hr	63.69	998615.5	914459.7	84155.8	-0.0	-0.00
25yr72hr	63.70	999137.7	915746.1	83391.6	-0.0	-0.00
25yr72hr	63.72	999618.1	916926.1	82692.0	-0.0	-0.00
25yr72hr	63.73	1000121.4	918158.7	81962.7	-0.0	-0.00
25yr72hr	63.75	1000612.2	919357.1	81255.1	-0.0	-0.00
25yr72hr	63.77	1001178.5	920735.7	80442.8	-0.0	-0.00
25yr72hr	63.78	1001650.4	921880.9	79769.5	-0.0	-0.00
25yr72hr	63.80	1002220.6	923260.4	78960.1	-0.0	-0.00
25yr72hr	63.82	1002712.2	924445.9	78266.3	-0.0	-0.00
25yr72hr	63.84	1003302.1	925863.7	77438.4	-0.0	-0.00
25yr72hr	63.85	1003793.7	927041.2	76752.5	-0.0	-0.00
25yr72hr	63.87	1004316.1	928288.4	76027.7	-0.0	-0.00
25yr72hr	63.89	1004819.5	929486.3	75333.2	-0.0	-0.00
25yr72hr	63.90	1005323.0	930680.6	74642.4	-0.0	-0.00
25yr72hr	63.92	1005873.7	931982.8	73890.8	-0.0	-0.00
25yr72hr	63.93	1006365.3	933142.1	73223.2	-0.0	-0.00
25yr72hr	63.95	1006857.1	934298.3	72558.7	-0.0	-0.00
25yr72hr	63.97	1007447.1	935681.7	71765.4	-0.0	-0.00
25yr72hr	63.99	1007938.9	936831.3	71107.6	-0.0	-0.00
25yr72hr	64.00	1008461.1	938049.3	70411.9	-0.0	-0.00
25yr72hr	64.02	1008953.9	939202.6	69751.2	-0.0	-0.00
25yr72hr	64.10	1011401.1	945068.5	66332.7	-0.0	-0.00
25yr72hr	64.18	1013670.5	951042.5	62628.0	-0.0	-0.00
25yr72hr	64.27	1015729.4	956911.8	58817.6	-0.0	-0.00
25yr72hr	64.35	1017601.2	962453.4	55147.8	-0.0	-0.00
25yr72hr	64.43	1019375.5	967776.9	51598.6	-0.0	-0.00
25yr72hr	64.52	1021097.2	972932.5	48164.7	-0.0	-0.00
25yr72hr	64.60	1022740.0	977799.5	44940.5	-0.0	-0.00
25yr72hr	64.68	1024366.2	982531.4	41834.8	-0.0	-0.00
25yr72hr	64.77	1025946.9	987014.4	38932.5	-0.0	-0.00
25yr72hr	64.85	1027553.1	991416.7	36136.4	-0.0	-0.00
25yr72hr	64.94	1029103.3	995498.2	33605.1	-0.0	-0.00
25yr72hr	65.02	1030648.7	999388.5	31260.1	-0.0	-0.00
25yr72hr	65.10	1032194.2	1003093.0	29101.2	-0.0	-0.00
25yr72hr	65.18	1033742.6	1006618.7	27123.9	-0.0	-0.00
25yr72hr	65.27	1035330.6	1010050.9	25279.7	-0.0	-0.00
25yr72hr	65.35	1036901.9	1013275.1	23626.9	-0.0	-0.00
25yr72hr	65.44	1038456.1	1016304.9	22151.1	-0.0	-0.00
25yr72hr	65.52	1040011.1	1019187.8	20823.4	-0.0	-0.00
25yr72hr	65.60	1041608.6	1022004.8	19603.8	-0.0	-0.00
25yr72hr	65.69	1043155.8	1024603.4	18552.3	-0.0	-0.00
25yr72hr	65.77	1044786.9	1027215.8	17571.1	-0.0	-0.00
25yr72hr	65.85	1046270.0	1029487.7	16782.3	-0.0	-0.00
25yr72hr	65.93	1047827.6	1031776.9	16050.7	-0.0	-0.00
25yr72hr	66.02	1049427.1	1034036.1	15391.0	-0.0	-0.00
25yr72hr	66.10	1050953.7	1036114.9	14838.8	-0.0	-0.00
25yr72hr	66.19	1052544.2	1038210.8	14333.4	-0.0	-0.00
25yr72hr	66.27	1054139.4	1040251.6	13887.8	-0.0	-0.00
25yr72hr	66.35	1055655.9	1042143.6	13512.2	-0.0	-0.00
25yr72hr	66.43	1057229.3	1044066.6	13162.7	-0.0	-0.00
25yr72hr	66.52	1058843.5	1046009.5	12833.9	-0.0	-0.00
25yr72hr	66.60	1060356.8	1047813.2	12543.6	-0.0	-0.00
25yr72hr	66.68	1061920.2	1049658.3	12262.0	-0.0	-0.00
25yr72hr	66.77	1063469.9	1051469.0	12000.8	-0.0	-0.00
25yr72hr	66.85	1065093.9	1053348.1	11745.7	-0.0	-0.00
25yr72hr	66.93	1066623.4	1055100.8	11522.6	-0.0	-0.00
25yr72hr	67.02	1068224.5	1056918.8	11305.6	-0.0	-0.00
25yr72hr	67.10	1069790.9	1058681.7	11109.2	-0.0	-0.00
25yr72hr	67.19	1071350.5	1060421.9	10928.6	-0.0	-0.00
25yr72hr	67.27	1072905.7	1062143.3	10762.4	-0.0	-0.00

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25yr72hr	67.35	1074449.1	1063838.7	10610.4	-0.0	-0.00
25yr72hr	67.43	1076020.3	1065552.0	10468.3	-0.0	-0.00
25yr72hr	67.52	1077692.0	1067361.9	10330.1	-0.0	-0.00
25yr72hr	67.60	1079201.3	1068985.3	10216.0	-0.0	-0.00
25yr72hr	67.69	1080768.5	1070660.8	10107.7	-0.0	-0.00
25yr72hr	67.77	1082314.3	1072304.1	10010.1	-0.0	-0.00
25yr72hr	67.85	1083893.6	1073974.3	9919.3	-0.0	-0.00
25yr72hr	67.94	1085548.6	1075715.6	9833.0	-0.0	-0.00
25yr72hr	68.02	1087028.8	1077268.5	9760.2	-0.0	-0.00
25yr72hr	68.10	1088513.1	1078875.5	9637.6	-0.0	-0.00
25yr72hr	68.18	1089900.0	1080492.4	9407.6	-0.0	-0.00
25yr72hr	68.27	1091184.0	1082082.4	9101.6	-0.0	-0.00
25yr72hr	68.35	1092378.7	1083605.8	8772.9	-0.0	-0.00
25yr72hr	68.43	1093542.3	1085103.0	8439.3	-0.0	-0.00
25yr72hr	68.52	1094651.6	1086524.7	8127.0	-0.0	-0.00
25yr72hr	68.60	1095784.5	1087960.8	7823.7	-0.0	-0.00
25yr72hr	68.69	1096867.4	1089311.0	7556.4	-0.0	-0.00
25yr72hr	68.77	1097915.7	1090590.2	7325.5	-0.0	-0.00
25yr72hr	68.85	1098947.1	1091813.9	7133.2	-0.0	-0.00
25yr72hr	68.93	1099970.2	1092993.2	6977.0	-0.0	-0.00
25yr72hr	69.02	1101007.1	1094155.5	6851.5	-0.0	-0.00
25yr72hr	69.10	1102084.1	1095332.9	6751.2	-0.0	-0.00
25yr72hr	69.19	1103142.0	1096465.7	6676.3	-0.0	-0.00
25yr72hr	69.27	1104179.2	1097558.7	6620.4	-0.0	-0.00
25yr72hr	69.35	1105179.4	1098600.3	6579.2	-0.0	-0.00
25yr72hr	69.43	1106218.3	1099672.0	6546.3	-0.0	-0.00
25yr72hr	69.52	1107262.4	1100741.2	6521.2	-0.0	-0.00
25yr72hr	69.60	1108330.7	1101828.9	6501.8	-0.0	-0.00
25yr72hr	69.68	1109331.2	1102843.3	6487.9	-0.0	-0.00
25yr72hr	69.77	1110370.3	1103893.3	6477.0	-0.0	-0.00
25yr72hr	69.85	1111413.9	1104945.3	6468.7	-0.0	-0.00
25yr72hr	69.93	1112443.0	1105980.5	6462.5	-0.0	-0.00
25yr72hr	70.02	1113514.6	1107057.0	6457.6	-0.0	-0.00
25yr72hr	70.10	1114554.6	1108099.8	6454.7	-0.0	-0.00
25yr72hr	70.19	1115663.5	1109209.6	6453.8	-0.0	-0.00
25yr72hr	70.27	1116632.4	1110178.0	6454.3	-0.0	-0.00
25yr72hr	70.35	1117671.3	1111215.7	6455.5	-0.0	-0.00
25yr72hr	70.44	1118792.8	1112335.7	6457.1	-0.0	-0.00
25yr72hr	70.52	1119753.9	1113295.3	6458.6	-0.0	-0.00
25yr72hr	70.60	1120789.2	1114329.2	6460.1	-0.0	-0.00
25yr72hr	70.69	1121873.2	1115411.6	6461.5	-0.0	-0.00
25yr72hr	70.77	1122918.7	1116455.8	6462.8	-0.0	-0.00
25yr72hr	70.85	1123957.1	1117493.1	6464.0	-0.0	-0.00
25yr72hr	70.94	1125013.7	1118548.7	6465.0	-0.0	-0.00
25yr72hr	71.02	1126078.9	1119613.1	6465.8	-0.0	-0.00
25yr72hr	71.10	1127095.8	1120629.3	6466.5	-0.0	-0.00
25yr72hr	71.19	1128158.6	1121691.5	6467.1	-0.0	-0.00
25yr72hr	71.27	1129175.2	1122707.6	6467.6	-0.0	-0.00
25yr72hr	71.36	1130283.3	1123815.2	6468.1	-0.0	-0.00
25yr72hr	71.44	1131276.2	1124807.7	6468.4	-0.0	-0.00
25yr72hr	71.52	1132341.7	1125872.9	6468.8	-0.0	-0.00
25yr72hr	71.60	1133377.1	1126908.0	6469.2	-0.0	-0.00
25yr72hr	71.69	1134462.2	1127992.7	6469.5	-0.0	-0.00
25yr72hr	71.77	1135503.8	1129034.0	6469.8	-0.0	-0.00
25yr72hr	71.85	1136525.7	1130055.7	6470.0	-0.0	-0.00
25yr72hr	71.94	1137595.4	1131125.2	6470.3	-0.0	-0.00
25yr72hr	72.02	1138636.2	1132171.4	6464.8	-0.0	-0.00
25yr72hr	72.27	1140712.1	1135104.0	5608.1	-0.0	-0.00
25yr72hr	72.52	1140955.2	1136941.4	4013.8	-0.0	-0.00
25yr72hr	72.77	1140955.2	1137719.1	3236.1	-0.0	-0.00
25yr72hr	73.02	1140955.2	1138029.9	2925.3	-0.0	-0.00
25yr72hr	73.27	1140955.2	1138160.7	2794.6	-0.0	-0.00
25yr72hr	73.52	1140955.2	1138222.0	2733.3	-0.0	-0.00
25yr72hr	73.77	1140955.2	1138255.4	2699.8	-0.0	-0.00
25yr72hr	74.02	1140955.2	1138275.6	2679.6	-0.0	-0.00
25yr72hr	74.27	1140955.2	1138288.7	2666.5	-0.0	-0.00
25yr72hr	74.52	1140955.2	1138297.7	2657.6	-0.0	-0.00
25yr72hr	74.77	1140955.2	1138304.1	2651.1	-0.0	-0.00
25yr72hr	75.02	1140955.2	1138308.9	2646.4	-0.0	-0.00
25yr72hr	75.27	1140955.2	1138312.5	2642.7	-0.0	-0.00
25yr72hr	75.52	1140955.2	1138315.3	2639.9	-0.0	-0.00
25yr72hr	75.77	1140955.2	1138317.6	2637.6	-0.0	-0.00
25yr72hr	76.02	1140955.2	1138319.5	2635.8	-0.0	-0.00
25yr72hr	76.27	1140955.2	1138321.0	2634.2	-0.0	-0.00

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25yr72hr	76.52	1140955.2	1138322.3	2632.9	-0.0	-0.00
25yr72hr	76.77	1140955.2	1138323.4	2631.8	-0.0	-0.00
25yr72hr	77.02	1140955.2	1138324.4	2630.8	-0.0	-0.00
25yr72hr	77.27	1140955.2	1138325.3	2630.0	0.0	0.00
25yr72hr	77.52	1140955.2	1138326.1	2629.2	0.0	0.00
25yr72hr	77.77	1140955.2	1138326.8	2628.4	0.0	0.00
25yr72hr	78.02	1140955.2	1138327.5	2627.8	0.0	0.00
25yr72hr	78.27	1140955.2	1138328.1	2627.2	0.0	0.00
25yr72hr	78.52	1140955.2	1138328.6	2626.6	0.0	0.00
25yr72hr	78.77	1140955.2	1138329.1	2626.1	-0.0	-0.00
25yr72hr	79.02	1140955.2	1138329.6	2625.7	-0.0	-0.00
25yr72hr	79.27	1140955.2	1138330.0	2625.2	-0.0	-0.00
25yr72hr	79.52	1140955.2	1138330.4	2624.9	-0.0	-0.00
25yr72hr	79.77	1140955.2	1138330.7	2624.5	-0.0	-0.00
25yr72hr	80.02	1140955.2	1138331.1	2624.2	-0.0	-0.00
25yr72hr	80.27	1140955.2	1138331.4	2623.9	-0.0	-0.00
25yr72hr	80.52	1140955.2	1138331.7	2623.6	-0.0	-0.00
25yr72hr	80.77	1140955.2	1138331.9	2623.3	-0.0	-0.00
25yr72hr	81.02	1140955.2	1138332.2	2623.1	-0.0	-0.00
25yr72hr	81.27	1140955.2	1138332.4	2622.8	-0.0	-0.00
25yr72hr	81.52	1140955.2	1138332.6	2622.6	-0.0	-0.00
25yr72hr	81.77	1140955.2	1138332.8	2622.4	-0.0	-0.00
25yr72hr	82.02	1140955.2	1138333.0	2622.2	-0.0	-0.00
25yr72hr	82.27	1140955.2	1138333.2	2622.0	-0.0	-0.00
25yr72hr	82.52	1140955.2	1138333.4	2621.9	-0.0	-0.00
25yr72hr	82.77	1140955.2	1138333.5	2621.7	-0.0	-0.00
25yr72hr	83.02	1140955.2	1138333.7	2621.6	-0.0	-0.00
25yr72hr	83.27	1140955.2	1138333.8	2621.4	-0.0	-0.00
25yr72hr	83.52	1140955.2	1138334.0	2621.3	-0.0	-0.00
25yr72hr	83.77	1140955.2	1138334.1	2621.2	-0.0	-0.00
25yr72hr	84.02	1140955.2	1138334.2	2621.0	-0.0	-0.00
25yr72hr	84.27	1140955.2	1138334.3	2620.9	-0.0	-0.00
25yr72hr	84.52	1140955.2	1138334.4	2620.8	-0.0	-0.00
25yr72hr	84.77	1140955.2	1138334.5	2620.7	-0.0	-0.00
25yr72hr	85.02	1140955.2	1138334.6	2620.6	-0.0	-0.00
25yr72hr	85.27	1140955.2	1138334.7	2620.5	-0.0	-0.00
25yr72hr	85.52	1140955.2	1138334.8	2620.4	-0.0	-0.00
25yr72hr	85.77	1140955.2	1138334.9	2620.4	-0.0	-0.00
25yr72hr	86.02	1140955.2	1138335.0	2620.3	-0.0	-0.00
25yr72hr	86.27	1140955.2	1138335.1	2620.2	-0.0	-0.00
25yr72hr	86.52	1140955.2	1138335.1	2620.1	-0.0	-0.00
25yr72hr	86.77	1140955.2	1138335.2	2620.1	-0.0	-0.00
25yr72hr	87.02	1140955.2	1138335.3	2620.0	-0.0	-0.00
25yr72hr	87.27	1140955.2	1138335.3	2619.9	-0.0	-0.00
25yr72hr	87.52	1140955.2	1138335.4	2619.9	-0.0	-0.00
25yr72hr	87.77	1140955.2	1138335.4	2619.8	-0.0	-0.00
25yr72hr	88.02	1140955.2	1138335.5	2619.7	-0.0	-0.00
25yr72hr	88.27	1140955.2	1138335.6	2619.7	-0.0	-0.00
25yr72hr	88.52	1140955.2	1138335.6	2619.6	-0.0	-0.00
25yr72hr	88.77	1140955.2	1138335.7	2619.6	-0.0	-0.00
25yr72hr	89.02	1140955.2	1138335.7	2619.5	-0.0	-0.00
25yr72hr	89.27	1140955.2	1138335.7	2619.5	-0.0	-0.00
25yr72hr	89.52	1140955.2	1138335.8	2619.5	-0.0	-0.00
25yr72hr	89.77	1140955.2	1138335.8	2619.4	-0.0	-0.00
25yr72hr	90.02	1140955.2	1138335.9	2619.4	-0.0	-0.00
25yr72hr	90.27	1140955.2	1138335.9	2619.3	-0.0	-0.00
25yr72hr	90.52	1140955.2	1138335.9	2619.3	-0.0	-0.00
25yr72hr	90.77	1140955.2	1138336.0	2619.3	-0.0	-0.00
25yr72hr	91.02	1140955.2	1138336.0	2619.2	-0.0	-0.00
25yr72hr	91.27	1140955.2	1138336.1	2619.2	-0.0	-0.00
25yr72hr	91.52	1140955.2	1138336.1	2619.2	-0.0	-0.00
25yr72hr	91.77	1140955.2	1138336.1	2619.1	-0.0	-0.00
25yr72hr	92.02	1140955.2	1138336.1	2619.1	-0.0	-0.00
25yr72hr	92.27	1140955.2	1138336.2	2619.1	-0.0	-0.00
25yr72hr	92.52	1140955.2	1138336.2	2619.0	-0.0	-0.00
25yr72hr	92.77	1140955.2	1138336.2	2619.0	-0.0	-0.00
25yr72hr	93.02	1140955.2	1138336.3	2619.0	-0.0	-0.00
25yr72hr	93.27	1140955.2	1138336.3	2619.0	-0.0	-0.00
25yr72hr	93.52	1140955.2	1138336.3	2618.9	-0.0	-0.00
25yr72hr	93.77	1140955.2	1138336.3	2618.9	-0.0	-0.00
25yr72hr	94.02	1140955.2	1138336.4	2618.9	-0.0	-0.00
25yr72hr	94.27	1140955.2	1138336.4	2618.9	-0.0	-0.00
25yr72hr	94.52	1140955.2	1138336.4	2618.8	-0.0	-0.00
25yr72hr	94.77	1140955.2	1138336.4	2618.8	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 PRE-DEVELOPMENT CONDITIONS
 MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
25yr72hr	95.02	1140955.2	1138336.4	2618.8	-0.0	-0.00
25yr72hr	95.27	1140955.2	1138336.5	2618.8	-0.0	-0.00
25yr72hr	95.52	1140955.2	1138336.5	2618.8	-0.0	-0.00
25yr72hr	95.77	1140955.2	1138336.5	2618.7	-0.0	-0.00
25yr72hr	96.00	1140955.2	1138336.5	2618.7	-0.0	-0.00

ICPR: Post-Development

I-95 EXPOSTSS LANES PHASE 3 - SEGMENT 3A-1
 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT CONDITIONS
 NODE-LINK DIAGRAM

Nodes

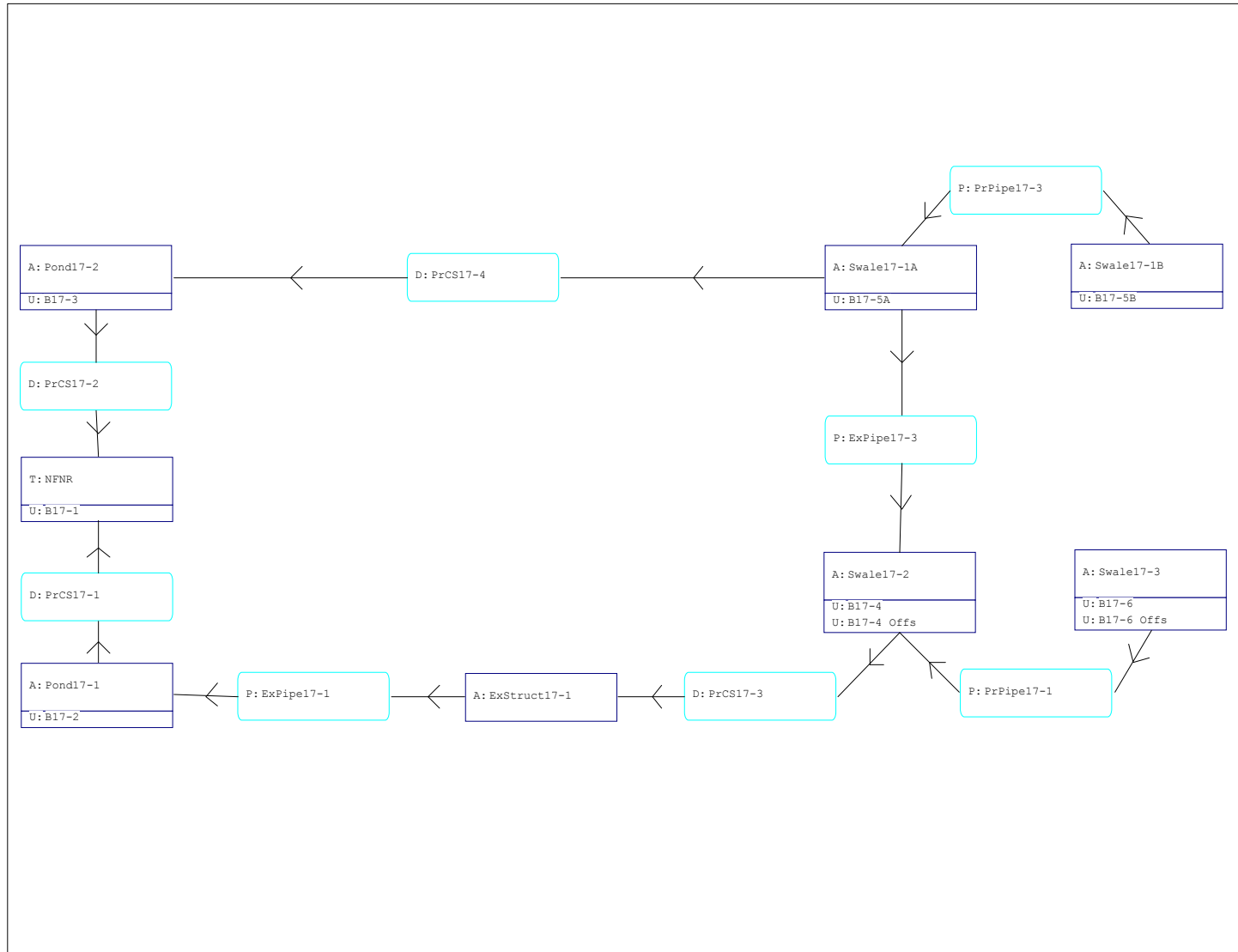
A Stage/Area
 V Stage/Volume
 T Time/Stage
 M Manhole

Basins

O Overland Flow
 U SCS Unit CN
 S SBUH CN
 Y SCS Unit GA
 Z SBUH GA

Links

P Pipe
 W Weir
 C Channel
 D Drop Structure
 B Bridge
 R Rating Curve
 H Breach
 E Percolation
 F Filter
 X Exfil Trench



I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT
 INPUT REPORT

2.000	0.3773
3.000	0.5244
4.000	0.7571
5.250	0.9336

```

-----
Name: Swale17-2          Base Flow(cfs): 0.000      Init Stage(ft): 1.420
Group: BASE              Warn Stage(ft): 6.000
Type: Stage/Area
  
```

Stage(ft)	Area(ac)
0.500	0.0001
1.410	0.0001
1.420	0.0941
4.000	0.2651
4.010	0.3082
4.350	0.3199
6.500	0.4562

```

-----
Name: Swale17-3          Base Flow(cfs): 0.000      Init Stage(ft): 1.420
Group: BASE              Warn Stage(ft): 4.500
Type: Stage/Area
  
```

Stage(ft)	Area(ac)
1.420	0.0806
4.000	0.1975
4.010	0.2225
4.340	0.2310
6.500	0.3724

==== Operating Tables =====

```

Name:                    Group: BASE
Type: Bottom Clip
Function: Time vs. Depth of Clip
  
```

Time(hrs)	Clip Depth(in)
-----	-----

==== Pipes =====

```

Name: ExPipe17-1        From Node: ExStruct17-1    Length(ft): 524.00
Group: BASE              To Node: Pond17-1          Count: 1
                          Friction Equation: Automatic
                          Solution Algorithm: Most Restrictive
                          Flow: Both
UPSTREAM                DOWNSTREAM
Geometry: Circular      Circular
Span(in): 36.00         36.00
Rise(in): 36.00         36.00
Invert(ft): 0.090       -0.730
Manning's N: 0.013000   0.013000
Top Clip(in): 0.000     0.000
Bot Clip(in): 0.000     0.000
                          Entrance Loss Coef: 0.50
                          Exit Loss Coef: 0.00
                          Bend Loss Coef: 0.00
                          Outlet Ctrl Spec: Use dc or tw
                          Inlet Ctrl Spec: Use dc
                          Stabilizer Option: None
  
```

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT
 INPUT REPORT

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: ExPipe17-3	From Node: Swale17-1A	Length(ft): 252.00
Group: BASE	To Node: Swale17-2	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 30.00	30.00	Exit Loss Coef: 0.00
Rise(in): 30.00	30.00	Bend Loss Coef: 0.00
Invert(ft): 1.250	1.110	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: PrPipe17-1	From Node: Swale17-3	Length(ft): 578.00
Group: BASE	To Node: Swale17-2	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 1.420	0.500	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Name: PrPipe17-3	From Node: Swale17-1B	Length(ft): 122.00
Group: BASE	To Node: Swale17-1A	Count: 1
		Friction Equation: Automatic
		Solution Algorithm: Most Restrictive
UPSTREAM	DOWNSTREAM	Flow: Both
Geometry: Circular	Circular	Entrance Loss Coef: 0.50
Span(in): 24.00	24.00	Exit Loss Coef: 0.00
Rise(in): 24.00	24.00	Bend Loss Coef: 0.00
Invert(ft): 1.420	1.250	Outlet Ctrl Spec: Use dc or tw
Manning's N: 0.013000	0.013000	Inlet Ctrl Spec: Use dc
Top Clip(in): 0.000	0.000	Stabilizer Option: None
Bot Clip(in): 0.000	0.000	

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

=====
 Drop Structures
 =====

Name: PrCS17-1	From Node: Pond17-1	Length(ft): 607.00
Group: BASE	To Node: NFNR	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 48.00	48.00	Flow: Both
Rise(in): 48.00	48.00	Entrance Loss Coef: 0.500
Invert(ft): -4.000	-3.780	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure PrCS17-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 79.00	Invert(ft): 4.500	
Rise(in): 36.00	Control Elev(ft): 4.500	

*** Weir 2 of 3 for Drop Structure PrCS17-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 3.00	Invert(ft): 0.420	
Rise(in): 3.00	Control Elev(ft): 0.420	

*** Weir 3 of 3 for Drop Structure PrCS17-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 66.00	Invert(ft): 2.500	
Rise(in): 12.00	Control Elev(ft): 2.500	

Name: PrCS17-2	From Node: Pond17-2	Length(ft): 63.00
Group: BASE	To Node: NFNR	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.500
Invert(ft): -2.400	-2.500	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT
 INPUT REPORT

Top Clip(in): 0.000 0.000 Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000 0.000 Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure PrCS17-2 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Horizontal Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

 Span(in): 79.00 Invert(ft): 5.000
 Rise(in): 36.00 Control Elev(ft): 5.000

*** Weir 2 of 3 for Drop Structure PrCS17-2 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Circular Orifice Disc Coef: 0.600

 Span(in): 3.00 Invert(ft): 0.420
 Rise(in): 3.00 Control Elev(ft): 0.420

*** Weir 3 of 3 for Drop Structure PrCS17-2 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Vertical: Mavis Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

 Span(in): 66.00 Invert(ft): 3.000
 Rise(in): 12.00 Control Elev(ft): 3.000

Name: PrCS17-3	From Node: Swale17-2	Length(ft): 214.00
Group: BASE	To Node: ExStruct17-1	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Automatic
Geometry: Circular	Circular	Solution Algorithm: Most Restrictive
Span(in): 36.00	36.00	Flow: Both
Rise(in): 36.00	36.00	Entrance Loss Coef: 0.500
Invert(ft): 0.500	0.160	Exit Loss Coef: 0.000
Manning's N: 0.013000	0.013000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
 Circular Concrete: Square edge w/ headwall

S-17-17 CONNECTING TO EXPIPE17-2

*** Weir 1 of 2 for Drop Structure PrCS17-3 ***

TABLE

Count: 1 Bottom Clip(in): 0.000
 Type: Horizontal Top Clip(in): 0.000
 Flow: Both Weir Disc Coef: 3.200
 Geometry: Rectangular Orifice Disc Coef: 0.600

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DRAINAGE SYSTEM 17
POST-DEVELOPMENT
INPUT REPORT

Rainfall Amount(in): 9.60

Time(hrs)	Print	Inc(min)
2.000	5.00	
6.000	1.00	
8.000	5.00	
8.330	5.00	

Name: 100Y24H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\
Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 13.50

Time(hrs)	Print	Inc(min)
8.000	15.00	
10.000	5.00	
14.000	1.00	
16.000	5.00	
24.000	15.00	
24.330	5.00	

Name: 10Y01H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\
Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: Fdot-1
Rainfall Amount(in): 3.60

Time(hrs)	Print	Inc(min)
1.000	1.00	
1.330	1.00	

Name: 10Y08H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\
Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: Fdot-8
Rainfall Amount(in): 6.60

Time(hrs)	Print	Inc(min)
2.000	5.00	
6.000	1.00	
8.000	5.00	
8.330	5.00	

Name: 10Y24H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\
Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Scsiii
Rainfall Amount(in): 8.75

Time(hrs)	Print	Inc(min)
8.000	15.00	
10.000	5.00	

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 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT
 INPUT REPORT

14.000	1.00
16.000	5.00
24.000	15.00
24.330	5.00

```
-----
Name: 25Y72H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 14.00
```

Time(hrs)	Print Inc(min)
48.000	15.00
56.000	5.00
64.000	1.00
72.000	5.00
72.330	5.00

```
==== Routing Simulations =====
```

```
Name: 100Y01H Hydrology Sim: 100Y01H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 25.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:
```

Time(hrs)	Print Inc(min)
1.000	1.000
25.000	15.000

Group	Run
BASE	Yes

```
Name: 100Y08H Hydrology Sim: 100Y08H
Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 32.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:
```

Time(hrs)	Print Inc(min)
2.000	5.000
6.000	1.000
8.000	5.000

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT
 INPUT REPORT

32.000 15.000
 Group Run

 BASE Yes

Name: 100Y24H Hydrology Sim: 100Y24H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 48.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000

Group Run

 BASE Yes

Name: 10Y01H Hydrology Sim: 10Y01H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Execute: No Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 25.00
 Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
1.000	1.000
25.000	15.000

Group Run

 BASE Yes

Name: 10Y08H Hydrology Sim: 10Y08H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Execute: No Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
 Time Step Optimizer: 10.000
 Start Time(hrs): 0.000 End Time(hrs): 32.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT
 INPUT REPORT

Min Calc Time(sec): 0.5000
 Boundary Stages:

Max Calc Time(sec): 60.0000
 Boundary Flows:

Time(hrs)	Print Inc(min)
2.000	5.000
6.000	1.000
8.000	5.000
32.000	15.000
Group	Run
-----	-----
BASE	Yes

Name: 10Y24H Hydrology Sim: 10Y24H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 48.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
8.000	15.000
10.000	5.000
14.000	1.000
16.000	5.000
48.000	15.000
Group	Run
-----	-----
BASE	Yes

Name: 25Y72H Hydrology Sim: 25Y72H
 Filename: H:\Projects\0140531.00 DB I95 3A1\Drainage\6-ICPR\POST_DEVELOPMENT\System17_ICPR Post\

Execute: Yes Restart: No Patch: No
 Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 96.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	15.000
56.000	5.000
64.000	1.000
72.000	5.000
96.000	15.000
Group	Run
-----	-----

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
INPUT REPORT

BASE Yes

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
 DRAINAGE SYSTEM 17
 POST-DEVELOPMENT
 LINK CONNECTIVITY REPORT

Name	Group	From Node	To Node	Type	U/S Geometry	D/S Geometry	Flow Dir
ExPipe17-1	BASE	ExStruct17-1	Pond17-1	Pipe	Circular	Circular	Both
ExPipe17-3	BASE	Swale17-1A	Swale17-2	Pipe	Circular	Circular	Both
PrPipe17-1	BASE	Swale17-3	Swale17-2	Pipe	Circular	Circular	Both
PrPipe17-3	BASE	Swale17-1B	Swale17-1A	Pipe	Circular	Circular	Both
PrCS17-1	BASE	Pond17-1	NFNR	Drop Structure	Circular	Circular	Both
--> slot	BASE	Pond17-1	NFNR	Horizontal WGO	Rectangular		Both
--> slot	BASE	Pond17-1	NFNR	Vertical WGO Mavis	Circular		Both
--> slot	BASE	Pond17-1	NFNR	Vertical WGO Mavis	Rectangular		Both
PrCS17-2	BASE	Pond17-2	NFNR	Drop Structure	Circular	Circular	Both
--> slot	BASE	Pond17-2	NFNR	Horizontal WGO	Rectangular		Both
--> slot	BASE	Pond17-2	NFNR	Vertical WGO Mavis	Circular		Both
--> slot	BASE	Pond17-2	NFNR	Vertical WGO Mavis	Rectangular		Both
PrCS17-3	BASE	Swale17-2	ExStruct17-1	Drop Structure	Circular	Circular	Both
--> slot	BASE	Swale17-2	ExStruct17-1	Horizontal WGO	Rectangular		Both
--> slot	BASE	Swale17-2	ExStruct17-1	Vertical WGO Mavis	Rectangular		Both
PrCS17-4	BASE	Swale17-1A	Pond17-2	Drop Structure	Circular	Circular	Both
--> slot	BASE	Swale17-1A	Pond17-2	Horizontal WGO	Rectangular		Both

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
NODE MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
ExStruct17-1	BASE	100Y24H	12.43	5.79	6.00	-0.0050	152	12.71	18.93	12.71	18.96
NFNR	BASE	100Y24H	0.00	0.42	0.43	0.0000	0	12.40	110.76	0.00	0.00
Pond17-1	BASE	100Y24H	12.40	5.22	5.50	-0.0046	48391	12.27	97.81	12.40	77.56
Pond17-2	BASE	100Y24H	12.79	4.66	6.00	-0.0046	41627	12.28	46.44	12.79	28.89
Swale17-1A	BASE	100Y24H	12.89	5.64	6.00	0.0027	37375	12.27	24.43	13.51	18.93
Swale17-1B	BASE	100Y24H	13.10	5.78	6.00	0.0029	43924	12.27	36.99	14.39	10.28
Swale17-2	BASE	100Y24H	12.44	6.14	6.00	0.0050	18930	12.25	39.85	12.71	18.93
Swale17-3	BASE	100Y24H	12.71	6.09	4.50	0.0033	15074	12.27	7.70	13.07	4.75
ExStruct17-1	BASE	10Y24H	12.58	4.55	6.00	0.0057	152	13.62	11.10	13.62	11.11
NFNR	BASE	10Y24H	0.00	0.42	0.43	0.0000	0	12.71	49.82	0.00	0.00
Pond17-1	BASE	10Y24H	12.56	4.46	5.50	-0.0046	40938	12.27	57.18	12.56	32.43
Pond17-2	BASE	10Y24H	12.95	3.95	6.00	-0.0046	33572	12.25	31.69	12.95	16.82
Swale17-1A	BASE	10Y24H	12.93	4.40	6.00	0.0029	31318	12.25	11.69	13.55	12.05
Swale17-1B	BASE	10Y24H	13.07	4.45	6.00	0.0029	35763	12.27	19.81	13.97	6.52
Swale17-2	BASE	10Y24H	12.59	4.65	6.00	0.0030	14816	12.28	19.01	13.62	11.10
Swale17-3	BASE	10Y24H	12.67	4.68	4.50	0.0030	11062	12.27	4.03	13.02	2.80
ExStruct17-1	BASE	25Y72H	60.20	5.34	6.00	0.0050	152	60.53	15.72	60.50	15.65
NFNR	BASE	25Y72H	0.00	0.42	0.43	0.0000	0	60.19	87.00	0.00	0.00
Pond17-1	BASE	25Y72H	60.19	4.97	5.50	0.0049	45896	60.02	77.70	60.19	57.20
Pond17-2	BASE	25Y72H	60.53	4.47	6.00	-0.0046	40872	60.03	39.37	60.53	26.42
Swale17-1A	BASE	25Y72H	60.61	5.30	6.00	-0.0026	35751	60.02	21.18	61.41	17.62
Swale17-1B	BASE	25Y72H	60.77	5.44	6.00	-0.0029	41851	60.02	30.59	61.92	9.55
Swale17-2	BASE	25Y72H	60.20	5.59	6.00	0.0041	17392	60.00	30.95	60.53	15.72
Swale17-3	BASE	25Y72H	60.44	5.62	4.50	0.0033	13730	60.02	6.43	60.79	3.92

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
LINK MAXIMUM CONDITIONS REPORT

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
ExPipe17-1	BASE	100Y24H	12.71	18.96	-7.518	12.43	5.79	12.40	5.22
ExPipe17-3	BASE	100Y24H	15.35	4.51	0.276	12.89	5.64	12.44	6.14
PrCS17-1	BASE	100Y24H	12.40	77.56	0.221	12.40	5.22	0.00	0.42
PrCS17-2	BASE	100Y24H	12.79	28.89	0.221	12.79	4.66	0.00	0.42
PrCS17-3	BASE	100Y24H	12.71	18.93	1.396	12.44	6.14	12.43	5.79
PrCS17-4	BASE	100Y24H	12.96	18.58	0.028	12.89	5.64	12.79	4.66
PrPipe17-1	BASE	100Y24H	13.07	4.75	0.700	12.71	6.09	12.44	6.14
PrPipe17-3	BASE	100Y24H	14.39	10.28	0.400	13.10	5.78	12.89	5.64
ExPipe17-1	BASE	10Y24H	13.62	11.11	-7.518	12.58	4.55	12.56	4.46
ExPipe17-3	BASE	10Y24H	14.54	3.61	0.255	12.93	4.40	12.59	4.65
PrCS17-1	BASE	10Y24H	12.56	32.43	0.221	12.56	4.46	0.00	0.42
PrCS17-2	BASE	10Y24H	12.95	16.82	0.221	12.95	3.95	0.00	0.42
PrCS17-3	BASE	10Y24H	13.62	11.10	1.965	12.59	4.65	12.58	4.55
PrCS17-4	BASE	10Y24H	12.20	13.00	0.075	12.93	4.40	12.95	3.95
PrPipe17-1	BASE	10Y24H	13.02	2.80	0.432	12.67	4.68	12.59	4.65
PrPipe17-3	BASE	10Y24H	13.97	6.52	0.400	13.07	4.45	12.93	4.40
ExPipe17-1	BASE	25Y72H	60.50	15.65	-7.518	60.20	5.34	60.19	4.97
ExPipe17-3	BASE	25Y72H	62.74	4.98	-0.290	60.61	5.30	60.20	5.59
PrCS17-1	BASE	25Y72H	60.19	57.20	0.221	60.19	4.97	0.00	0.42
PrCS17-2	BASE	25Y72H	60.53	26.42	0.221	60.53	4.47	0.00	0.42
PrCS17-3	BASE	25Y72H	60.53	15.72	1.326	60.20	5.59	60.20	5.34
PrCS17-4	BASE	25Y72H	60.68	17.17	-0.024	60.61	5.30	60.53	4.47
PrPipe17-1	BASE	25Y72H	60.79	3.92	0.556	60.44	5.62	60.20	5.59
PrPipe17-3	BASE	25Y72H	61.92	9.55	0.412	60.77	5.44	60.61	5.30

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
BASIN MAXIMUM CONDITIONS REPORT

Simulation	Basin	Group	Time Max hrs	Flow Max cfs	Volume in	Volume ft3
100Y24H	B17-1	BASE	12.27	8.95	12.537	50972
100Y24H	B17-2	BASE	12.27	81.87	11.281	440220
100Y24H	B17-3	BASE	12.27	33.49	9.903	172547
100Y24H	B17-4	BASE	12.27	62.93	11.704	344139
100Y24H	B17-4 Offs	BASE	12.27	3.53	8.403	17691
100Y24H	B17-5A	BASE	12.27	23.74	8.835	119630
100Y24H	B17-5B	BASE	12.27	37.00	8.840	186439
100Y24H	B17-6	BASE	12.27	5.78	8.926	29161
100Y24H	B17-6 Offs	BASE	12.27	1.92	7.260	9488
10Y24H	B17-1	BASE	12.27	5.72	7.814	31769
10Y24H	B17-2	BASE	12.27	49.97	6.663	260022
10Y24H	B17-3	BASE	12.27	19.09	5.489	95641
10Y24H	B17-4	BASE	12.27	39.08	7.042	207056
10Y24H	B17-4 Offs	BASE	12.27	1.84	4.309	9073
10Y24H	B17-5A	BASE	12.27	12.71	4.639	62816
10Y24H	B17-5B	BASE	12.27	19.81	4.643	97922
10Y24H	B17-6	BASE	12.27	3.11	4.710	15386
10Y24H	B17-6 Offs	BASE	12.29	0.92	3.476	4543
25Y72H	B17-1	BASE	60.02	6.91	13.035	52997
25Y72H	B17-2	BASE	60.02	64.29	11.772	459362
25Y72H	B17-3	BASE	60.02	27.01	10.378	180829
25Y72H	B17-4	BASE	60.02	49.08	12.198	358655
25Y72H	B17-4 Offs	BASE	60.02	2.96	8.853	18639
25Y72H	B17-5A	BASE	60.02	19.65	9.294	125837
25Y72H	B17-5B	BASE	60.02	30.62	9.299	196109
25Y72H	B17-6	BASE	60.02	4.77	9.386	30664
25Y72H	B17-6 Offs	BASE	60.02	1.66	7.685	10043

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	0.00	0.0	0.0	0.0	0.0	0.00
10Y24H	0.25	0.0	292.7	-292.7	0.0	-0.00
10Y24H	0.50	0.0	431.8	-431.8	0.0	-0.00
10Y24H	0.75	0.0	538.5	-538.5	0.0	-0.00
10Y24H	1.01	0.0	630.8	-630.8	0.0	-0.00
10Y24H	1.25	0.0	701.1	-701.1	0.0	-0.00
10Y24H	1.51	0.0	759.9	-759.9	0.0	-0.00
10Y24H	1.75	0.0	804.8	-804.8	0.0	-0.00
10Y24H	2.01	0.0	841.5	-841.5	0.0	-0.00
10Y24H	2.25	0.0	868.6	-868.6	0.0	-0.00
10Y24H	2.51	0.0	891.7	-891.7	0.0	-0.00
10Y24H	2.76	0.0	910.1	-910.1	0.0	-0.00
10Y24H	3.00	0.0	925.0	-925.0	0.0	-0.00
10Y24H	3.26	0.0	938.1	-938.1	0.0	-0.00
10Y24H	3.51	0.0	949.1	-949.1	0.0	-0.00
10Y24H	3.76	2.3	958.1	-955.8	0.0	-0.00
10Y24H	4.01	14.7	966.1	-951.3	0.0	-0.00
10Y24H	4.26	53.4	973.1	-919.7	0.0	-0.00
10Y24H	4.50	117.8	979.2	-861.5	0.0	-0.00
10Y24H	4.76	216.0	985.6	-769.7	0.0	-0.00
10Y24H	5.01	375.6	994.4	-618.7	0.0	-0.00
10Y24H	5.25	585.5	1010.5	-425.0	0.0	-0.00
10Y24H	5.50	854.0	1039.0	-185.0	0.0	-0.00
10Y24H	5.75	1206.8	1088.0	118.7	0.0	0.00
10Y24H	6.00	1640.6	1160.8	479.8	0.0	0.00
10Y24H	6.25	2142.7	1255.8	886.9	0.0	0.00
10Y24H	6.50	2707.7	1370.3	1337.4	-0.0	-0.00
10Y24H	6.75	3378.9	1501.3	1877.6	-0.0	-0.00
10Y24H	7.00	4132.5	1651.9	2480.6	-0.0	-0.00
10Y24H	7.25	4971.6	1824.2	3147.4	-0.0	-0.00
10Y24H	7.50	6017.9	2033.3	3984.6	-0.0	-0.00
10Y24H	7.75	7363.3	2279.9	5083.5	-0.0	-0.00
10Y24H	8.00	9135.0	2567.9	6567.1	-0.0	-0.00
10Y24H	8.25	11116.5	2890.8	8225.7	-0.0	-0.00
10Y24H	8.33	11794.4	3005.6	8788.8	-0.0	-0.00
10Y24H	8.42	12522.0	3124.6	9397.4	-0.0	-0.00
10Y24H	8.50	13311.7	3248.9	10062.8	-0.0	-0.00
10Y24H	8.58	14134.6	3376.1	10758.6	-0.0	-0.00
10Y24H	8.67	15005.7	3509.1	11496.6	-0.0	-0.00
10Y24H	8.75	15910.9	3646.4	12264.6	-0.0	-0.00
10Y24H	8.84	16876.2	3789.4	13086.9	-0.0	-0.00
10Y24H	8.92	17867.8	3929.0	13938.9	-0.0	-0.00
10Y24H	9.00	18957.3	4074.6	14882.8	-0.0	-0.00
10Y24H	9.08	20072.4	4217.6	15854.8	-0.0	-0.00
10Y24H	9.17	21231.7	4361.6	16870.2	-0.0	-0.00
10Y24H	9.25	22430.7	4506.4	17924.2	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	9.33	23667.2	4652.2	19015.0	-0.0	-0.00
10Y24H	9.42	24972.6	4802.6	20170.0	-0.0	-0.00
10Y24H	9.50	26276.9	4949.5	21327.3	-0.0	-0.00
10Y24H	9.58	27660.7	5100.4	22560.3	-0.0	-0.00
10Y24H	9.67	29111.5	5249.4	23862.1	-0.0	-0.00
10Y24H	9.75	30695.5	5402.4	25293.1	-0.0	-0.00
10Y24H	9.83	32316.5	5553.6	26762.9	-0.0	-0.00
10Y24H	9.92	33999.8	5709.0	28290.8	-0.0	-0.00
10Y24H	10.00	35668.7	5862.5	29806.2	-0.0	-0.00
10Y24H	10.02	36031.8	5895.8	30136.1	-0.0	-0.00
10Y24H	10.03	36363.9	5926.0	30437.9	-0.0	-0.00
10Y24H	10.05	36698.8	5956.4	30742.4	0.0	0.00
10Y24H	10.07	37071.2	5989.8	31081.5	0.0	0.00
10Y24H	10.08	37415.2	6020.2	31395.1	0.0	0.00
10Y24H	10.10	37765.6	6050.6	31715.0	0.0	0.00
10Y24H	10.12	38144.5	6083.0	32061.5	0.0	0.00
10Y24H	10.13	38501.8	6112.9	32388.9	0.0	0.00
10Y24H	10.15	38895.8	6145.4	32750.5	0.0	0.00
10Y24H	10.17	39297.2	6177.9	33119.4	-0.0	-0.00
10Y24H	10.18	39674.5	6207.9	33466.6	-0.0	-0.00
10Y24H	10.20	40089.0	6240.5	33848.5	-0.0	-0.00
10Y24H	10.22	40477.7	6270.7	34207.0	-0.0	-0.00
10Y24H	10.23	40903.5	6303.4	34600.0	-0.0	-0.00
10Y24H	10.25	41334.6	6336.2	34998.4	-0.0	-0.00
10Y24H	10.27	41737.6	6366.6	35371.0	-0.0	-0.00
10Y24H	10.28	42177.9	6399.5	35778.4	-0.0	-0.00
10Y24H	10.30	42622.5	6432.4	36190.1	-0.0	-0.00
10Y24H	10.32	43037.1	6462.9	36574.2	-0.0	-0.00
10Y24H	10.33	43489.0	6496.0	36993.1	-0.0	-0.00
10Y24H	10.35	43944.3	6529.1	37415.3	-0.0	-0.00
10Y24H	10.37	44368.1	6559.8	37808.3	-0.0	-0.00
10Y24H	10.38	44829.3	6593.0	38236.3	-0.0	-0.00
10Y24H	10.40	45284.7	6625.7	38659.1	-0.0	-0.00
10Y24H	10.42	45742.8	6658.4	39084.4	-0.0	-0.00
10Y24H	10.43	46168.0	6688.7	39479.3	-0.0	-0.00
10Y24H	10.45	46631.1	6721.5	39909.6	-0.0	-0.00
10Y24H	10.47	47096.6	6754.4	40342.2	-0.0	-0.00
10Y24H	10.48	47564.7	6787.4	40777.4	-0.0	-0.00
10Y24H	10.50	48035.3	6820.4	41214.9	-0.0	-0.00
10Y24H	10.52	48508.5	6853.5	41655.0	-0.0	-0.00
10Y24H	10.53	48985.0	6886.6	42098.4	-0.0	-0.00
10Y24H	10.55	49465.7	6919.8	42545.9	-0.0	-0.00
10Y24H	10.57	49952.1	6953.1	42999.1	-0.0	-0.00
10Y24H	10.58	50407.6	6983.8	43423.8	-0.0	-0.00
10Y24H	10.60	50909.4	7017.2	43892.2	-0.0	-0.00
10Y24H	10.62	51421.3	7050.6	44370.6	-0.0	-0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	10.63	51943.3	7084.1	44859.2	-0.0	-0.00
10Y24H	10.65	52475.4	7117.7	45357.6	-0.0	-0.00
10Y24H	10.67	52991.8	7149.8	45842.0	-0.0	-0.00
10Y24H	10.68	53542.2	7183.5	46358.7	-0.0	-0.00
10Y24H	10.70	54100.9	7217.3	46883.7	-0.0	-0.00
10Y24H	10.72	54676.5	7251.6	47424.8	-0.0	-0.00
10Y24H	10.73	55250.7	7285.5	47965.2	-0.0	-0.00
10Y24H	10.75	55832.0	7319.5	48512.4	-0.0	-0.00
10Y24H	10.77	56392.8	7352.0	49040.8	-0.0	-0.00
10Y24H	10.78	56987.7	7386.1	49601.6	-0.0	-0.00
10Y24H	10.80	57590.2	7420.3	50169.9	-0.0	-0.00
10Y24H	10.82	58172.6	7453.0	50719.6	-0.0	-0.00
10Y24H	10.83	58792.2	7487.3	51304.9	-0.0	-0.00
10Y24H	10.85	59421.6	7521.7	51899.9	-0.0	-0.00
10Y24H	10.87	60070.9	7556.7	52514.2	-0.0	-0.00
10Y24H	10.88	60720.4	7591.3	53129.1	-0.0	-0.00
10Y24H	10.90	61338.4	7623.8	53714.6	-0.0	-0.00
10Y24H	10.92	62015.9	7659.0	54356.9	-0.0	-0.00
10Y24H	10.93	62691.7	7693.9	54997.7	-0.0	-0.00
10Y24H	10.95	63375.4	7730.2	55645.2	-0.0	-0.00
10Y24H	10.97	64055.8	7768.1	56287.8	-0.0	-0.00
10Y24H	10.98	64743.1	7808.5	56934.6	-0.0	-0.00
10Y24H	11.00	65437.1	7852.0	57585.1	-0.0	-0.00
10Y24H	11.02	66137.8	7898.9	58238.8	-0.0	-0.00
10Y24H	11.03	66845.2	7949.5	58895.7	-0.0	-0.00
10Y24H	11.05	67559.8	8004.1	59555.7	-0.0	-0.00
10Y24H	11.07	68327.2	8066.6	60260.5	-0.0	-0.00
10Y24H	11.08	69057.5	8130.1	60927.4	-0.0	-0.00
10Y24H	11.10	69795.9	8198.1	61597.8	-0.0	-0.00
10Y24H	11.12	70542.1	8270.8	62271.3	-0.0	-0.00
10Y24H	11.13	71296.1	8348.5	62947.6	-0.0	-0.00
10Y24H	11.15	72057.5	8431.2	63626.3	-0.0	-0.00
10Y24H	11.17	72825.8	8519.0	64306.9	-0.0	-0.00
10Y24H	11.18	73600.8	8612.0	64988.9	-0.0	-0.00
10Y24H	11.20	74382.3	8710.2	65672.1	-0.0	-0.00
10Y24H	11.22	75169.8	8813.8	66356.0	-0.0	-0.00
10Y24H	11.23	76003.0	8928.4	67074.6	-0.0	-0.00
10Y24H	11.25	76782.4	9040.1	67742.3	-0.0	-0.00
10Y24H	11.27	77608.6	9163.1	68445.5	-0.0	-0.00
10Y24H	11.28	78433.5	9290.1	69143.4	-0.0	-0.00
10Y24H	11.30	79239.3	9417.8	69821.5	-0.0	-0.00
10Y24H	11.32	80101.9	9557.7	70544.2	-0.0	-0.00
10Y24H	11.33	80973.8	9701.7	71272.0	-0.0	-0.00
10Y24H	11.35	81881.0	9853.6	72027.4	-0.0	-0.00
10Y24H	11.37	82769.2	10003.9	72765.3	-0.0	-0.00
10Y24H	11.38	83717.4	10166.2	73551.2	-0.0	-0.00

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DRAINAGE SYSTEM 17
POST-DEVELOPMENT
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	11.40	84703.5	10337.0	74366.5	-0.0	-0.00
10Y24H	11.42	85714.6	10514.8	75199.9	-0.0	-0.00
10Y24H	11.43	86685.2	10688.0	75997.2	-0.0	-0.00
10Y24H	11.45	87739.9	10879.4	76860.5	-0.0	-0.00
10Y24H	11.47	88788.5	11073.1	77715.4	-0.0	-0.00
10Y24H	11.48	89854.8	11273.7	78581.2	-0.0	-0.00
10Y24H	11.50	90938.6	11481.2	79457.4	-0.0	-0.00
10Y24H	11.52	92041.4	11695.9	80345.6	-0.0	-0.00
10Y24H	11.53	93165.5	11917.6	81247.9	-0.0	-0.00
10Y24H	11.55	94373.4	12158.2	82215.2	-0.0	-0.00
10Y24H	11.57	95556.5	12394.9	83161.6	-0.0	-0.00
10Y24H	11.58	96776.5	12639.3	84137.2	-0.0	-0.00
10Y24H	11.60	98036.6	12891.6	85145.1	-0.0	-0.00
10Y24H	11.62	99338.0	13152.1	86185.9	-0.0	-0.00
10Y24H	11.63	100693.1	13423.9	87269.2	-0.0	-0.00
10Y24H	11.65	102101.4	13707.6	88393.9	-0.0	-0.00
10Y24H	11.67	103490.1	13988.9	89501.2	-0.0	-0.00
10Y24H	11.68	104970.0	14291.2	90678.7	-0.0	-0.00
10Y24H	11.70	106482.2	14603.4	91878.9	-0.0	-0.00
10Y24H	11.72	107963.8	14912.6	93051.2	-0.0	-0.00
10Y24H	11.73	109533.9	15244.2	94289.6	-0.0	-0.00
10Y24H	11.75	111130.8	15586.0	95544.8	-0.0	-0.00
10Y24H	11.77	112737.8	15931.0	96806.8	-0.0	-0.00
10Y24H	11.78	114418.8	16286.2	98132.6	-0.0	-0.00
10Y24H	11.80	116213.3	16652.6	99560.6	-0.0	-0.00
10Y24H	11.82	118192.2	17031.9	101160.3	-0.0	-0.00
10Y24H	11.83	120485.8	17433.3	103052.5	-0.0	-0.00
10Y24H	11.85	123117.5	17851.6	105265.9	-0.0	-0.00
10Y24H	11.87	126100.3	18287.3	107812.9	-0.0	-0.00
10Y24H	11.88	129559.7	18761.1	110798.6	-0.0	-0.00
10Y24H	11.90	133398.9	19265.1	114133.8	-0.0	-0.00
10Y24H	11.92	137675.5	19813.9	117861.6	-0.0	-0.00
10Y24H	11.93	142308.8	20405.5	121903.4	-0.0	-0.00
10Y24H	11.95	147297.6	21049.0	126248.5	-0.0	-0.00
10Y24H	11.97	152736.4	21766.4	130970.0	-0.0	-0.00
10Y24H	11.98	158306.8	22523.1	135783.8	-0.0	-0.00
10Y24H	12.00	164153.7	23344.7	140809.0	-0.0	-0.00
10Y24H	12.02	170260.2	24234.8	146025.4	-0.0	-0.00
10Y24H	12.03	176612.9	25196.4	151416.5	-0.0	-0.00
10Y24H	12.05	183200.8	26232.0	156968.8	-0.0	-0.00
10Y24H	12.07	190360.0	27397.5	162962.6	-0.0	-0.00
10Y24H	12.08	197396.4	28575.4	168821.0	-0.0	-0.00
10Y24H	12.10	204634.3	29819.5	174814.8	-0.0	-0.00
10Y24H	12.12	212065.6	31129.6	180936.0	-0.0	-0.00
10Y24H	12.13	219682.0	32501.0	187181.1	-0.0	-0.00
10Y24H	12.15	227473.3	33918.3	193555.1	-0.0	-0.00

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10Y24H	12.17	235428.9	35379.1	200049.8	-0.0	-0.00
10Y24H	12.18	243540.7	36882.1	206658.5	-0.0	-0.00
10Y24H	12.20	251894.2	38443.3	213450.9	-0.0	-0.00
10Y24H	12.22	260536.7	40073.4	220463.3	-0.0	-0.00
10Y24H	12.23	269078.0	41715.8	227362.2	-0.0	-0.00
10Y24H	12.25	277727.7	43428.7	234299.1	-0.0	-0.00
10Y24H	12.27	286441.8	45218.9	241222.9	-0.0	-0.00
10Y24H	12.28	295405.0	47147.3	248257.7	-0.0	-0.00
10Y24H	12.30	303994.4	49102.7	254891.6	-0.0	-0.00
10Y24H	12.32	312373.7	51138.9	261234.8	-0.0	-0.00
10Y24H	12.33	320842.7	53360.6	267482.1	-0.0	-0.00
10Y24H	12.35	328532.1	55551.5	272980.6	-0.0	-0.00
10Y24H	12.37	335845.9	57810.7	278035.3	-0.0	-0.00
10Y24H	12.38	342797.7	60132.7	282665.0	-0.0	-0.00
10Y24H	12.40	349507.6	62550.1	286957.5	-0.0	-0.00
10Y24H	12.42	355897.1	65021.9	290875.2	-0.0	-0.00
10Y24H	12.43	361999.5	67543.3	294456.2	-0.0	-0.00
10Y24H	12.45	367951.6	70159.4	297792.2	-0.0	-0.00
10Y24H	12.47	373344.7	72666.5	300678.2	-0.0	-0.00
10Y24H	12.48	378673.5	75272.1	303401.4	-0.0	-0.00
10Y24H	12.50	383692.8	77845.8	305846.9	-0.0	-0.00
10Y24H	12.52	388542.6	80448.3	308094.3	-0.0	-0.00
10Y24H	12.53	393374.4	83159.3	310215.1	-0.0	-0.00
10Y24H	12.55	398263.1	86028.6	312234.6	-0.0	-0.00
10Y24H	12.57	402841.6	88838.7	314002.9	-0.0	-0.00
10Y24H	12.58	407049.3	91534.1	315515.2	-0.0	-0.00
10Y24H	12.60	411358.5	94416.1	316942.4	-0.0	-0.00
10Y24H	12.62	415178.1	97079.3	318098.8	-0.0	-0.00
10Y24H	12.63	419218.8	100012.0	319206.7	-0.0	-0.00
10Y24H	12.65	423312.7	103107.7	320205.0	-0.0	-0.00
10Y24H	12.67	426417.7	105540.5	320877.2	-0.0	-0.00
10Y24H	12.68	430260.9	108654.7	321606.2	-0.0	-0.00
10Y24H	12.70	433569.7	111429.1	322140.6	-0.0	-0.00
10Y24H	12.72	436879.6	114295.0	322584.6	-0.0	-0.00
10Y24H	12.74	440399.9	117447.2	322952.7	0.0	0.00
10Y24H	12.75	443129.6	119970.0	323159.5	0.0	0.00
10Y24H	12.77	446169.7	122867.0	323302.7	-0.0	-0.00
10Y24H	12.78	449207.2	125861.1	323346.1	-0.0	-0.00
10Y24H	12.80	451936.6	128644.8	323291.8	-0.0	-0.00
10Y24H	12.82	454813.7	131686.5	323127.2	0.0	0.00
10Y24H	12.84	457383.0	134506.9	322876.1	0.0	0.00
10Y24H	12.85	459772.6	137227.1	322545.5	0.0	0.00
10Y24H	12.87	462173.9	140062.3	322111.6	0.0	0.00
10Y24H	12.88	464428.3	142821.4	321607.0	0.0	0.00
10Y24H	12.90	466667.7	145658.5	321009.2	0.0	0.00
10Y24H	12.92	469034.0	148764.3	320269.7	0.0	0.00

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10Y24H	12.93	471000.6	151432.0	319568.5	0.0	0.00
10Y24H	12.95	472932.1	154128.0	318804.1	0.0	0.00
10Y24H	12.97	474822.6	156838.6	317984.0	0.0	0.00
10Y24H	12.98	476714.5	159622.0	317092.5	0.0	0.00
10Y24H	13.00	478661.9	162560.4	316101.5	0.0	0.00
10Y24H	13.02	480487.4	165379.8	315107.6	0.0	0.00
10Y24H	13.03	482135.7	167977.8	314157.9	0.0	0.00
10Y24H	13.05	483834.9	170707.7	313127.2	0.0	0.00
10Y24H	13.07	485443.6	173341.1	312102.5	0.0	0.00
10Y24H	13.08	487111.8	176124.2	310987.6	0.0	0.00
10Y24H	13.10	488904.5	179175.6	309728.9	0.0	0.00
10Y24H	13.12	490362.3	181703.6	308658.7	0.0	0.00
10Y24H	13.13	491789.3	184217.8	307571.5	0.0	0.00
10Y24H	13.15	493188.2	186718.0	306470.2	0.0	0.00
10Y24H	13.17	494616.4	189303.2	305313.2	0.0	0.00
10Y24H	13.18	496127.1	192069.9	304057.2	0.0	0.00
10Y24H	13.20	497454.5	194525.2	302929.3	0.0	0.00
10Y24H	13.22	499024.9	197452.5	301572.4	0.0	0.00
10Y24H	13.23	500318.7	199876.1	300442.6	0.0	0.00
10Y24H	13.25	501601.2	202285.3	299315.9	0.0	0.00
10Y24H	13.27	503074.9	205061.9	298013.0	0.0	0.00
10Y24H	13.28	504332.3	207440.2	296892.1	0.0	0.00
10Y24H	13.30	505576.4	209804.3	295772.1	0.0	0.00
10Y24H	13.32	507049.1	212622.3	294426.8	0.0	0.00
10Y24H	13.34	508257.3	214955.0	293302.3	0.0	0.00
10Y24H	13.35	509541.1	217458.2	292082.9	0.0	0.00
10Y24H	13.37	510664.0	219669.1	290994.9	0.0	0.00
10Y24H	13.38	511907.5	222140.5	289767.0	0.0	0.00
10Y24H	13.40	513041.2	224414.0	288627.3	0.0	0.00
10Y24H	13.42	514270.3	226898.2	287372.1	0.0	0.00
10Y24H	13.43	515372.8	229141.5	286231.3	0.0	0.00
10Y24H	13.45	516732.7	231925.3	284807.4	0.0	0.00
10Y24H	13.47	517807.5	234136.1	283671.4	0.0	0.00
10Y24H	13.48	518871.9	236332.5	282539.4	0.0	0.00
10Y24H	13.50	519886.9	238432.0	281455.0	0.0	0.00
10Y24H	13.52	520991.8	240721.3	280270.4	0.0	0.00
10Y24H	13.53	522153.5	243132.5	279021.0	0.0	0.00
10Y24H	13.55	523264.4	245441.0	277823.3	0.0	0.00
10Y24H	13.57	524285.0	247564.3	276720.8	0.0	0.00
10Y24H	13.58	525399.0	249884.1	275515.0	0.0	0.00
10Y24H	13.60	526403.8	251978.5	274425.3	0.0	0.00
10Y24H	13.62	527649.5	254573.5	273076.0	0.0	0.00
10Y24H	13.63	528479.5	256299.6	272179.9	0.0	0.00
10Y24H	13.65	529518.7	258456.6	271062.1	0.0	0.00
10Y24H	13.67	530570.9	260635.9	269935.1	0.0	0.00
10Y24H	13.68	531620.6	262803.9	268816.7	-0.0	-0.00

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Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	13.70	532589.6	264799.1	267790.4	-0.0	-0.00
10Y24H	13.72	533647.1	266969.8	266677.3	-0.0	-0.00
10Y24H	13.74	534748.3	269221.8	265526.4	-0.0	-0.00
10Y24H	13.75	535662.0	271083.6	264578.4	0.0	0.00
10Y24H	13.77	536761.0	273315.6	263445.4	0.0	0.00
10Y24H	13.78	537703.2	275224.6	262478.6	0.0	0.00
10Y24H	13.80	538826.7	277497.5	261329.3	0.0	0.00
10Y24H	13.82	539755.4	279376.8	260378.6	0.0	0.00
10Y24H	13.84	540732.8	281359.2	259373.6	0.0	0.00
10Y24H	13.85	541561.3	283044.4	258516.9	0.0	0.00
10Y24H	13.87	542530.5	285022.4	257508.1	0.0	0.00
10Y24H	13.88	543443.5	286892.6	256550.9	0.0	0.00
10Y24H	13.90	544403.5	288865.2	255538.3	0.0	0.00
10Y24H	13.92	545277.4	290665.2	254612.2	0.0	0.00
10Y24H	13.94	546316.0	292808.6	253507.5	0.0	0.00
10Y24H	13.95	547216.9	294669.3	252547.5	0.0	0.00
10Y24H	13.97	548068.6	296428.9	251639.7	0.0	0.00
10Y24H	13.98	548914.7	298176.1	250738.7	0.0	0.00
10Y24H	14.00	549808.0	300019.1	249788.9	0.0	0.00
10Y24H	14.09	554294.2	309272.4	245021.8	-0.0	-0.00
10Y24H	14.17	558306.7	317551.2	240755.5	-0.0	-0.00
10Y24H	14.25	562496.9	326152.4	236344.6	-0.0	-0.00
10Y24H	14.34	566356.9	333956.1	232400.7	-0.0	-0.00
10Y24H	14.42	570193.9	341549.2	228644.7	-0.0	-0.00
10Y24H	14.50	574079.5	349049.4	225030.1	-0.0	-0.00
10Y24H	14.58	577739.3	356021.6	221717.7	-0.0	-0.00
10Y24H	14.67	581390.5	363039.7	218350.8	-0.0	-0.00
10Y24H	14.75	584824.3	369711.2	215113.0	-0.0	-0.00
10Y24H	14.84	588239.8	376328.1	211911.7	-0.0	-0.00
10Y24H	14.92	591508.2	382583.3	208924.9	0.0	0.00
10Y24H	15.00	594707.5	388599.2	206108.3	-0.0	-0.00
10Y24H	15.08	597860.4	394402.3	203458.0	-0.0	-0.00
10Y24H	15.17	601071.5	400174.7	200896.9	-0.0	-0.00
10Y24H	15.25	604142.5	405560.4	198582.1	-0.0	-0.00
10Y24H	15.33	607177.4	410832.0	196345.4	-0.0	-0.00
10Y24H	15.42	610144.9	416060.2	194084.7	0.0	0.00
10Y24H	15.50	612950.9	421071.5	191879.4	0.0	0.00
10Y24H	15.58	615635.9	425824.5	189811.4	0.0	0.00
10Y24H	15.67	618411.4	430586.0	187825.4	-0.0	-0.00
10Y24H	15.75	621147.6	435102.6	186045.0	-0.0	-0.00
10Y24H	15.83	623821.1	439404.8	184416.3	-0.0	-0.00
10Y24H	15.92	626491.3	443657.0	182834.3	-0.0	-0.00
10Y24H	16.00	629111.2	447793.8	181317.4	-0.0	-0.00
10Y24H	16.25	636775.9	459562.5	177213.4	0.0	0.00
10Y24H	16.50	643977.8	470360.9	173616.9	0.0	0.00
10Y24H	16.75	651016.3	480377.1	170639.2	0.0	0.00

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10Y24H	17.00	657290.3	489739.3	167551.0	-0.0	-0.00
10Y24H	17.25	662426.5	498166.4	164260.1	0.0	0.00
10Y24H	17.50	667134.8	505851.4	161283.4	0.0	0.00
10Y24H	17.75	671691.1	512839.6	158851.5	0.0	0.00
10Y24H	18.00	676119.0	519141.3	156977.7	0.0	0.00
10Y24H	18.25	680449.6	525094.4	155355.1	0.0	0.00
10Y24H	18.50	684248.4	530581.9	153666.5	0.0	0.00
10Y24H	18.75	687875.5	535699.0	152176.5	0.0	0.00
10Y24H	19.00	691691.3	540490.9	151200.4	0.0	0.00
10Y24H	19.25	695317.6	545057.0	150260.6	0.0	0.00
10Y24H	19.50	698905.3	549445.3	149460.0	0.0	0.00
10Y24H	19.75	702396.0	553601.7	148794.3	0.0	0.00
10Y24H	20.00	705707.2	557631.9	148075.3	0.0	0.00
10Y24H	20.25	708832.1	561491.9	147340.2	0.0	0.00
10Y24H	20.50	711863.1	565168.0	146695.1	0.0	0.00
10Y24H	20.75	714878.6	568725.7	146152.9	0.0	0.00
10Y24H	21.00	717913.1	572193.5	145719.6	0.0	0.00
10Y24H	21.25	721006.4	575552.1	145454.3	0.0	0.00
10Y24H	21.50	724057.7	578861.4	145196.3	0.0	0.00
10Y24H	21.75	727095.7	582120.8	144974.9	0.0	0.00
10Y24H	22.00	730119.4	585335.6	144783.7	0.0	0.00
10Y24H	22.25	732824.6	588482.0	144342.7	0.0	0.00
10Y24H	22.50	735406.8	591529.6	143877.2	0.0	0.00
10Y24H	22.75	737926.8	594483.2	143443.6	0.0	0.00
10Y24H	23.00	740533.9	597368.7	143165.2	0.0	0.00
10Y24H	23.25	743087.2	600195.6	142891.6	0.0	0.00
10Y24H	23.50	745623.4	602955.3	142668.1	0.0	0.00
10Y24H	23.75	748158.6	605694.0	142464.6	0.0	0.00
10Y24H	24.00	750380.9	608359.2	142021.7	0.0	0.00
10Y24H	24.25	751923.4	610912.3	141011.2	0.0	0.00
10Y24H	24.50	752160.2	613167.4	138992.7	0.0	0.00
10Y24H	24.75	752160.2	615060.0	137100.1	0.0	0.00
10Y24H	25.00	752160.2	616665.4	135494.7	0.0	0.00
10Y24H	25.25	752160.2	618033.8	134126.3	0.0	0.00
10Y24H	25.50	752160.2	619219.3	132940.9	0.0	0.00
10Y24H	25.75	752160.2	620258.7	131901.4	0.0	0.00
10Y24H	26.00	752160.2	621178.2	130981.9	0.0	0.00
10Y24H	26.25	752160.2	621997.4	130162.8	0.0	0.00
10Y24H	26.50	752160.2	622741.7	129418.4	0.0	0.00
10Y24H	26.75	752160.2	623426.9	128733.2	0.0	0.00
10Y24H	27.00	752160.2	624068.9	128091.3	0.0	0.00
10Y24H	27.25	752160.2	624698.8	127461.3	0.0	0.00
10Y24H	27.50	752160.2	625327.9	126832.3	0.0	0.00
10Y24H	27.75	752160.2	625952.9	126207.3	0.0	0.00
10Y24H	28.00	752160.2	626578.9	125581.2	0.0	0.00
10Y24H	28.25	752160.2	627202.7	124957.4	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	28.50	752160.2	627823.0	124337.1	0.0	0.00
10Y24H	28.75	752160.2	628444.2	123716.0	0.0	0.00
10Y24H	29.00	752160.2	629063.6	123096.5	0.0	0.00
10Y24H	29.25	752160.2	629678.2	122482.0	0.0	0.00
10Y24H	29.50	752160.2	630292.9	121867.2	0.0	0.00
10Y24H	29.75	752160.2	630908.4	121251.7	0.0	0.00
10Y24H	30.00	752160.2	631519.0	120641.2	0.0	0.00
10Y24H	30.25	752160.2	632127.7	120032.4	0.0	0.00
10Y24H	30.50	752160.2	632737.8	119422.4	0.0	0.00
10Y24H	30.75	752160.2	633342.9	118817.3	0.0	0.00
10Y24H	31.00	752160.2	633946.1	118214.0	0.0	0.00
10Y24H	31.25	752160.2	634547.5	117612.6	0.0	0.00
10Y24H	31.50	752160.2	635150.1	117010.0	0.0	0.00
10Y24H	31.75	752160.2	635747.7	116412.4	0.0	0.00
10Y24H	32.00	752160.2	636343.4	115816.7	0.0	0.00
10Y24H	32.25	752160.2	636937.2	115222.9	0.0	0.00
10Y24H	32.50	752160.2	637529.9	114630.3	0.0	0.00
10Y24H	32.75	752160.2	638122.8	114037.3	0.0	0.00
10Y24H	33.00	752160.2	638710.1	113450.1	0.0	0.00
10Y24H	33.25	752160.2	639299.1	112861.0	0.0	0.00
10Y24H	33.50	752160.2	639883.2	112277.0	0.0	0.00
10Y24H	33.75	752160.2	640465.2	111694.9	0.0	0.00
10Y24H	34.00	752160.2	641048.3	111111.8	0.0	0.00
10Y24H	34.25	752160.2	641625.6	110534.5	0.0	0.00
10Y24H	34.50	752160.2	642203.9	109956.2	0.0	0.00
10Y24H	34.75	752160.2	642776.5	109383.7	0.0	0.00
10Y24H	35.00	752160.2	643350.7	108809.5	0.0	0.00
10Y24H	35.25	752160.2	643919.2	108241.0	0.0	0.00
10Y24H	35.50	752160.2	644489.3	107670.9	0.0	0.00
10Y24H	35.75	752160.2	645057.3	107102.9	0.0	0.00
10Y24H	36.00	752160.2	645619.6	106540.6	0.0	0.00
10Y24H	36.25	752160.2	646183.4	105976.8	0.0	0.00
10Y24H	36.50	752160.2	646745.1	105415.0	0.0	0.00
10Y24H	36.75	752160.2	647301.1	104859.1	0.0	0.00
10Y24H	37.00	752160.2	647859.4	104300.7	0.0	0.00
10Y24H	37.25	752160.2	648412.0	103748.1	0.0	0.00
10Y24H	37.50	752160.2	648966.0	103194.1	0.0	0.00
10Y24H	37.75	752160.2	649513.4	102646.7	0.0	0.00
10Y24H	38.00	752160.2	650059.5	102100.6	0.0	0.00
10Y24H	38.25	752160.2	650606.1	101554.1	0.0	0.00
10Y24H	38.50	752160.2	651147.8	101012.4	0.0	0.00
10Y24H	38.75	752160.2	651690.8	100469.4	0.0	0.00
10Y24H	39.00	752160.2	652227.2	99933.0	0.0	0.00
10Y24H	39.25	752160.2	652765.7	99394.5	0.0	0.00
10Y24H	39.50	752160.2	653297.5	98862.6	0.0	0.00
10Y24H	39.75	752160.2	653828.9	98331.3	0.0	0.00

I-95 EXPRESS LANES PHASE 3 - SEGMENT 3A
DRAINAGE SYSTEM 17
POST-DEVELOPMENT
MASS BALANCE REPORT

Simulation	Time hrs	Inflow Volume ft3	Outflow Volume ft3	Change in Sys Storage ft3	Difference ft3	Error %
10Y24H	40.00	752160.2	654359.7	97800.5	0.0	0.00
10Y24H	40.25	752160.2	654888.1	97272.1	0.0	0.00
10Y24H	40.50	752160.2	655410.0	96750.2	0.0	0.00
10Y24H	40.75	752160.2	655933.8	96226.4	0.0	0.00
10Y24H	41.00	752160.2	656455.2	95705.0	0.0	0.00
10Y24H	41.25	752160.2	656974.2	95186.0	0.0	0.00
10Y24H	41.50	752160.2	657486.7	94673.5	0.0	0.00
10Y24H	41.75	752160.2	658000.9	94159.2	0.0	0.00
10Y24H	42.00	752160.2	658511.3	93648.9	0.0	0.00
10Y24H	42.25	752160.2	659019.2	93140.9	0.0	0.00
10Y24H	42.50	752160.2	659525.2	92635.0	0.0	0.00
10Y24H	42.75	752160.2	660027.6	92132.6	0.0	0.00
10Y24H	43.00	752160.2	660527.5	91632.6	0.0	0.00
10Y24H	43.25	752160.2	661029.0	91131.2	0.0	0.00
10Y24H	43.50	752160.2	661523.9	90636.3	0.0	0.00
10Y24H	43.75	752160.2	662016.3	90143.9	0.0	0.00
10Y24H	44.00	752160.2	662506.1	89654.1	0.0	0.00
10Y24H	44.25	752160.2	662993.4	89166.8	0.0	0.00
10Y24H	44.50	752160.2	663480.0	88680.2	0.0	0.00
10Y24H	44.75	752160.2	663963.0	88197.1	0.0	0.00
10Y24H	45.00	752160.2	664443.4	87716.8	0.0	0.00
10Y24H	45.25	752160.2	664921.1	87239.0	0.0	0.00
10Y24H	45.50	752160.2	665396.2	86764.0	0.0	0.00
10Y24H	45.75	752160.2	665868.5	86291.7	0.0	0.00
10Y24H	46.00	752160.2	666338.1	85822.1	0.0	0.00
10Y24H	46.25	752160.2	666805.0	85355.2	0.0	0.00
10Y24H	46.50	752160.2	667268.1	84892.0	0.0	0.00
10Y24H	46.75	752160.2	667729.4	84430.7	0.0	0.00
10Y24H	47.00	752160.2	668187.9	83972.3	0.0	0.00
10Y24H	47.25	752160.2	668643.5	83516.6	0.0	0.00
10Y24H	47.50	752160.2	669096.3	83063.8	0.0	0.00
10Y24H	47.75	752160.2	669540.9	82619.3	0.0	0.00
10Y24H	48.00	752160.2	669972.7	82187.5	0.0	0.00
10Y24H	48.00	752160.2	669972.7	82187.5	0.0	0.00



FORM 0499
5.87

South Florida Water Management District

BEG. PERMIT

NUMBER 06-01469-S



South Florida Water Management District

QUO 7
1787 269
POSTED
Permit File

P.O. Box 2040 • 400 University Blvd. • West Palm Beach, FL 33416-2040 • (407) 680-8800 • FL WATS 1-800-452-2045

CON 24-06-02

Regulation Department
Application No.: 901109-12

November 26, 1990

Florida Department of Transportation
780 S.W. 24th Street
Fort Lauderdale, Florida 33315-2696

Dear Sir or Madam:

Subject: Notice of Intent to Construct Works
General Highway Permit and
Stormwater Discharge Certification No: 06-01469-S
Permittee: Florida Department of Transportation
Project : I-95 - Broward Blvd. Park-N-Ride
Location : Fort Lauderdale, Broward County, S5,8/T50S/R42E

This letter is to notify you of the District's agency action concerning your Notice of Intent to Construct Works. This action is taken pursuant to Rule 40E-1.606 and Chapter 40E-40, Florida Administrative Code.

Based on the information submitted which includes surface water management system design plans signed and sealed by a Florida registered Professional Engineer, a General Highway Permit and Stormwater Discharge Certification is in effect for this project subject to:

1. Not receiving a filed request for a Chapter 120 Florida Statutes, administrative hearing,
2. the attached 12 Standard Limiting Conditions and
3. 2 Exhibits.

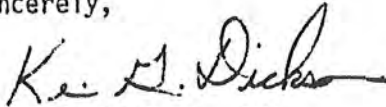
Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you prior to the date specified in the "Notice of Rights", we will assume that you concur with the District's action.

Florida Department of Transportation
Subject: Notice of Intent to Construct Works
November 26, 1990
Page 2

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the addressee (and the persons listed in the attached distribution list) no later than 5:00 p.m. this 26, day of November, 1990, in accordance with Section 120.60(3), Florida Statutes.

Sincerely,



Kevin G. Dickson, P.E.
Supervising Professional
South Florida Water Management District

KGD/kw
CERTIFIED MAIL NO. P 390 773 542
Enclosures



South Florida Water Management District

GENERAL PERMIT

NOTICE OF RIGHTS

This Notice of Rights is intended to inform the recipient of the specific administrative and judicial review which may be available as mandated by section 120.60(3), Florida Statutes. It is intended to be comprehensive, the review procedures set forth herein have been the subject of judicial construction by administrative interpretation which may affect the administrative or judicial review available. Recipients are therefore advised to become familiar with Chapters 120 and 373, Florida Statutes, and the judicial interpretation of the provisions of these chapters.

1. If a substantially affected person objects to the staff's recommendation, that person has the right to request an administrative hearing on the proposed agency action. The substantially affected person may request either a formal or an informal hearing, as set forth below. Failure to comply with the prescribed time periods shall constitute a waiver of the right to a hearing.
2. If a substantially affected person believes a genuine issue of material fact is in dispute, that person may request a formal hearing pursuant to section 120.57(1), Florida Statutes, by filing a petition not later than:
 - a. IF NOTICE OF THE APPLICATION WAS PUBLISHED BY THE APPLICANT, within fourteen (14) days after mailing of the proposed agency action or
 - b. IF NOTICE OF THE APPLICATION WAS NOT PUBLISHED, within fourteen days after receipt of actual notice.

The request for a section 120.57(1), F.S., formal hearing must comply with the requirements of Rule 40E-1.521, Florida Administrative Code, a copy of which is attached. Petitions are deemed filed upon receipt by the District. Failure to substantially comply with the provisions of Rule 40E-1.521, Florida Administrative Code, shall constitute a waiver of the right to a 120.57(1) hearing. If a petition for administrative hearing is not timely filed, the staff's proposed agency will automatically mature into final agency action.

3. If a substantially affected person believes that no issues of material fact are in dispute, that person may request an informal hearing pursuant to section 120.57(2), F.S., by filing a petition for hearing not later than:
 - a. IF NOTICE OF THE APPLICATION WAS PUBLISHED BY THE APPLICANT, within fourteen (14) days after mailing of the proposed agency action or
 - b. IF NOTICE OF THE APPLICATION WAS NOT PUBLISHED, within fourteen days after receipt of actual notice.

A request for informal hearing shall be considered as a waiver of the right to request a formal section 120.57(1), F.S., hearing. A request for a section 120.57(1), F.S., formal hearing not in substantial compliance with the provisions of rule 40E-1.521, F.A.C., may be considered by the District as a request for informal hearing. If a petition for administrative hearing is not timely filed, the staff's proposed agency action will automatically mature into final agency action.

4. Pursuant to section 373.114, Florida Statutes, a party to the proceeding below may seek review of a Final Order rendered on the permit application before the Land and Water Adjudicatory Commission, as provided therein. Review under this section is initiated by filing a request for review with the Land and Water Adjudicatory Commission and serving a copy on the Department of Environmental Regulation and any person named in the Order within 20 days after rendering of the District's Order. However, when the order to be reviewed has statewide or regional significance, as determined by the Land and Water Adjudicatory Commission within 60 days after receipt of a request for review, the commission may accept a request for review from any affected person within 30 days after the rendering of the order. Review under section 373.114, Florida Statutes, is limited solely to a determination of consistency with the provisions and purposes of Chapter 373, Florida Statutes. This review is appellate in nature and limited to the record below.
5. A party who is adversely affected by final agency action on the permit application is entitled to judicial review in the District Court of Appeal pursuant to section 120.68, Florida Statutes, as provided therein. Review under section 120.68, Florida Statutes in the District Court of Appeal is initiated by filing a petition in the appropriate District Court of Appeal in accordance with Florida rule of appellate procedure 9.110. The Court of Appeal must be filed within 30 days of the final agency action.
6. Section 373.517(2), Florida Statutes, provides:

Any person substantially affected by a final action of any agency with respect to a permit may seek review within 90 days of the rendering of such decision and request monetary damages and other relief in the circuit court in the judicial circuit in which the affected property is located; however, circuit court review shall be confined solely to determining whether final agency action is an unreasonable exercise of the state's police power constituting a taking without just compensation. Review of final agency action for the purpose of determining whether the action is in accordance with existing statutes or rules and based on competent substantial evidence shall proceed in accordance with Chapter 120.
7. Please be advised that exhaustion of administrative remedies is generally a prerequisite to appeal to the District Court of Appeal or the seeking of Circuit Court review of final agency action by the District on the permit application. There are, however, exceptions to the exhaustion requirement. The applicant is advised to consult the case law as to the requirements of exhaustion of administrative remedies.

LIMITING CONDITIONS

1. THE PERMITTEE SHALL PROSECUTE THE WORK AUTHORIZED IN A MANNER SO AS TO MINIMIZE ANY ADVERSE IMPACT OF THE WORKS ON FISH, WILDLIFE, NATURAL ENVIRONMENTAL VALUES, AND WATER QUALITY. THE PERMITTEE SHALL INSTITUTE NECESSARY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING FULL COMPACTION OF ANY FILL MATERIAL PLACED AROUND NEWLY INSTALLED STRUCTURES, TO REDUCE EROSION, TURBIDITY, NUTRIENT LOADING AND SEDIMENTATION IN THE RECEIVING WATERS.
2. WATER QUALITY DATA FOR THE WATER DISCHARGED FROM THE PERMITTEE'S PROPERTY OR INTO SURFACE WATERS OF THE STATE SHALL BE SUBMITTED TO THE DISTRICT AS REQUIRED. PARAMETERS TO BE MONITORED MAY INCLUDE THOSE LISTED IN CHAPTER 17-3. IF WATER QUALITY DATA IS REQUIRED, THE PERMITTEE SHALL PROVIDE DATA AS REQUIRED, ON VOLUMES OF WATER DISCHARGED, INCLUDING TOTAL VOLUME DISCHARGED DURING THE DAYS OF SAMPLING AND TOTAL MONTHLY DISCHARGES FROM THE PROPERTY OR INTO THE SURFACE WATERS OF THE STATE.
3. THE PERMITTEE SHALL COMPLY WITH ALL APPLICABLE LOCAL SUBDIVISION REGULATIONS AND OTHER LOCAL REQUIREMENTS. IN ADDITION, THE PERMITTEE SHALL OBTAIN ALL NECESSARY FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY CONSTRUCTION OR ALTERATION ON WORKS AUTHORIZED BY THIS PERMIT.
4. THE OPERATION PHASE OF THIS PERMIT SHALL NOT BECOME EFFECTIVE UNTIL A FLORIDA REGISTERED PROFESSIONAL ENGINEER CERTIFIES THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE DISTRICT. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL SUBMIT THE CERTIFICATION AND NOTIFY THE DISTRICT THAT THE FACILITIES ARE READY FOR INSPECTION AND APPROVAL. UPON APPROVAL OF THE COMPLETED SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL REQUEST TRANSFER OF THE PERMIT TO THE RESPONSIBLE ENTITY APPROVED BY THE DISTRICT.
5. ALL ROADS SHALL BE SET AT OR ABOVE ELEVATIONS REQUIRED BY THE APPLICABLE LOCAL GOVERNMENT FLOOD CRITERIA.
6. ALL BUILDING FLOORS SHALL BE SET AT OR ABOVE ELEVATIONS ACCEPTABLE TO THE APPLICABLE LOCAL GOVERNMENT.
7. OFF-SITE DISCHARGES DURING CONSTRUCTION AND DEVELOPMENT SHALL BE MADE ONLY THROUGH THE FACILITIES AUTHORIZED BY THIS PERMIT. NO ROADWAY OR BUILDING CONSTRUCTION SHALL COMMENCE ON-SITE UNTIL COMPLETION OF THE PERMITTED DISCHARGE STRUCTURE AND DETENTION AREAS. WATER DISCHARGED FROM THE PROJECT SHALL BE THROUGH STRUCTURES HAVING A MECHANISM SUITABLE FOR REGULATING UPSTREAM WATER STAGES. STAGES MAY BE SUBJECT TO OPERATING SCHEDULES SATISFACTORY TO THE DISTRICT.
8. NO CONSTRUCTION AUTHORIZED HEREIN SHALL COMMENCE UNTIL A RESPONSIBLE ENTITY ACCEPTABLE TO THE DISTRICT HAS BEEN ESTABLISHED AND HAS AGREED TO OPERATE AND MAINTAIN THE SYSTEM. THE ENTITY MUST BE PROVIDED WITH SUFFICIENT OWNERSHIP SO THAT IT HAS CONTROL OVER ALL WATER MANAGEMENT FACILITIES AUTHORIZED HEREIN. UPON RECEIPT OF WRITTEN EVIDENCE OF THE SATISFACTION OF THIS CONDITION, THE DISTRICT WILL ISSUE AN AUTHORIZATION TO COMMENCE CONSTRUCTION.
9. THE PERMIT DOES NOT CONVEY TO THE PERMITTEE ANY PROPERTY RIGHT NOR ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 17E-4, FAC.
10. THE PERMITTEE SHALL HOLD AND SAVE THE DISTRICT HARMLESS FROM ANY AND ALL DAMAGES, CLAIMS, OR LIABILITIES WHICH MAY ARISE BY REASON OF THE CONSTRUCTION, OPERATION, MAINTENANCE OR USE OF ANY FACILITY AUTHORIZED BY THE PERMIT.
11. THIS PERMIT IS ISSUED BASED ON THE APPLICANTS SUBMITTED INFORMATION WHICH REASONABLY DEMONSTRATES THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS WILL NOT BE CAUSED BY THE COMPLETED PERMIT ACTIVITY. IT IS ALSO THE RESPONSIBILITY OF THE PERMITTEE TO INSURE THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS DO NOT OCCUR DURING CONSTRUCTION.
12. PRIOR TO DEWATERING, PLANS SHALL BE SUBMITTED TO THE DISTRICT FOR APPROVAL. INFORMATION SHALL INCLUDE AS A MINIMUM: PUMP SIZES, LOCATIONS AND HOURS OF OPERATION FOR EACH PUMP. IF OFF-SITE DISCHARGE IS PROPOSED, OR OFF-SITE ADVERSE IMPACTS ARE EVIDENT, AN INDIVIDUAL WATER USE PERMIT MAY BE REQUIRED. THE PERMITTEE IS CAUTIONED THAT SEVERAL MONTHS MAY BE REQUIRED FOR CONSIDERATION OF THE WATER USE PERMIT APPLICATION.

GENERAL PERMIT DISTRIBUTION LIST

PROJECT: i-95/Broward Blvd. Park-N-Ride

APPLICATION NUMBER: 901109-12

INTERNAL DISTRIBUTION

X Reviewer: K. Dickson

- X S. Anderson
- X S. Bradow
- J. Carnes
- J. Fanjul - Miami
- X B. Colavecchio
- X M. Cruz
- K. Dickson
- JM Hiscock
- X J. Jackson
- F. Lund
- P. Millar
- J. Morgan
- B. Pratt
- X P. Rhoads
- M. Slayton
- X R. Mierau
- J. Show
- W. Stimmel
- J. Strutzel
- X P. Walker, Comp Plan Div
- D. Thatcher
- X K. Wallace
- E. Yain
- X Area Engineer
- X Day File
- X Enforcement
- X Field Representative
- X Permit File

EXTERNAL DISTRIBUTION

X Applicant: FL Dept of Transportation

X Applicant's Consultant: Same

X Engineer, County of: Broward

X Engineer, City of: Fort Lauderdale

Local Drainage District: _____

EXTERNAL DISTRIBUTION CONT'D

DEPT. OF ENVIRONMENTAL REGULATION:

- Ft. Myers
- Orlando
- Port St. Lucie
- Tallahassee
- X West Palm Beach

BUILDING AND ZONING

- Boca Raton
- Boynton Beach
- Royal Palm Beach
- Tequesta
- West Palm Beach

COUNTY

- X Broward -BCEQCB
- X -Dir., Water Mgmt. Div.
- Dade -DERM
- Lee -D.O.T.
- Long Range Planning
- Mosquito Control
- Martin -Community Development Dir
- Orange -Env Protection Agency
- Public Utilities
- Palm Beach -Building Division
- Environmental Res. Mgmt.
- Land Development Division
- School Brd., Growth Mgt.
- LWDD
- Zoning Division
- Polk -Water Resources Dept.
- St. Lucie -Planning Division

OTHER

- Sierra Club
- Central Florida Group
- Port St. Lucie Planning Division
- U.S. EPA, Mr. Johnson
- X U.S. EPA, Mr. Couch

SOUTH FLORIDA WATER MANAGEMENT DISTRICT RC-1A ADMINISTRATIVE INFORMATION FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS AND/OR WATER USE PERMIT APPLICATIONS



Form 6645-AD1
01/90

901109-12

I. GENERAL INFORMATION	
THIS IS AN APPLICATION FOR (PLEASE CHECK APPROPRIATE BOXES):	
<input checked="" type="checkbox"/> A SURFACE WATER MANAGEMENT PERMIT <input type="checkbox"/> A WATER USE PERMIT	
OWNER	APPLICANT (IF DIFFERENT FROM OWNER)
NAME Florida Department of Transportation	NAME Joyce Howland
ADDRESS 780 S.W. 24th Street	ADDRESS 780 S.W. 24th Street
CITY, STATE, ZIP Fort Lauderdale, FL 33315-2696	CITY, STATE, ZIP Fort Lauderdale, FL 33315-2696
TELEPHONE (305) 524-8621	TELEPHONE (305) 797-1750
PROJECT ENGINEER, CONSULTANT OR AGENT	PRE-APPLICATION MEETING
NAME OF FIRM	HAVE ANY PRE-APPLICATION MEETINGS BEEN HELD WITH DISTRICT STAFF? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
NAME OF CONTACT PERSON	DATE(S) NOV 09 1996
ADDRESS	LOCATION(S)
CITY, STATE, ZIP	NAME(S) OF KEY DISTRICT STAFF REGULATION DEPT.
TELEPHONE ()	NAME(S) OF PROJECT REPRESENTATIVE(S)
PROJECT INFORMATION	
NAME (INCLUDING THE PHASES COVERED BY THIS APPLICATION) I-95/Broward Blvd. Park-N-Ride	
TOTAL PROJECT ACREAGE, INCLUDING ALL PHASES: 9.9	PHASE AREAS (IF APPLICABLE):
CITY, TOWN, OR VILLAGE (IF APPLICABLE) Fort Lauderdale	COUNTY Broward
SECTION(S) OR GOVERNMENT LOT(S) 5	TOWNSHIP 50 RANGE 42
SECTION(S) OR GOVERNMENT LOT(S) 8	TOWNSHIP 50 RANGE 42
SECTION(S) OR GOVERNMENT LOT(S)	TOWNSHIP RANGE
H. SURFACE WATER MANAGEMENT	
FORM OF PERMIT (PLEASE CHECK ONLY ONE BOX)	
<input type="checkbox"/> A NEW INDIVIDUAL PERMIT, PURSUANT TO RULE 40E-4, FLORIDA ADMINISTRATIVE CODE (F.A.C.)	<input checked="" type="checkbox"/> A NEW GENERAL PERMIT, PURSUANT TO RULE 40E-40, F.A.C.
<input type="checkbox"/> A MODIFICATION OF EXISTING INDIVIDUAL PERMIT NO.	<input type="checkbox"/> A MODIFICATION OF EXISTING GENERAL PERMIT NO.
DESCRIBE IN GENERAL TERMS THE REQUESTED CHANGE(S) OR NEW WORK(S)	

SURFACE WATER MANAGEMENT (CONTINUED)



Form 6845-A02

TYPE OF PERMIT (PLEASE CHECK AT LEAST ONE BOX)

- CONCEPTUAL APPROVAL OF A SURFACE WATER MANAGEMENT SYSTEM WHICH WILL SERVE THE ENTIRE _____ ACRE SITE. (PLEASE FILL IN THE ACREAGE OF YOUR ENTIRE PROJECT.)
 - CONSTRUCTION AND OPERATION OF A SURFACE WATER MANAGEMENT SYSTEM WHICH WILL SERVE THE ENTIRE 9.9 ACRE SITE (PLEASE FILL IN THE ACREAGE OF YOUR ENTIRE PROJECT.) 4.7 Ac. on-site
5.2 Ac. off-site
 - PHASES OF THE SITE: CONSTRUCTION AND OPERATION OF A SURFACE WATER MANAGEMENT SYSTEM WHICH WILL SERVE _____ ACRES (PLEASE FILL IN THE ACREAGE OF THE PART OF YOUR PROJECT FOR WHICH A CONSTRUCTION AND OPERATION PERMIT IS SOUGHT.) OF THE ENTIRE _____ ACRE SITE. (PLEASE FILL IN THE ACREAGE OF YOUR ENTIRE PROJECT.)
 - OPERATION OF AN EXISTING SURFACE WATER MANAGEMENT SYSTEM WHICH SERVES THE ENTIRE _____ ACRE SITE. (PLEASE FILL IN THE ACREAGE OF YOUR ENTIRE PROJECT.)
 - PHASES OF THE SITE: OPERATION OF AN EXISTING SURFACE WATER MANAGEMENT SYSTEM WHICH SERVES _____ ACRES (PLEASE FILL IN THE ACREAGE OF THE PART OF YOUR PROJECT FOR WHICH AN OPERATION PERMIT IS SOUGHT.) OF THE ENTIRE _____ ACRE SITE. (PLEASE FILL IN THE ACREAGE OF YOUR ENTIRE PROJECT.)
- IF THIS IS THE CASE, YOU MUST ALSO USE THIS FORM TO APPLY FOR OTHER TYPES OF PERMITS FOR THE REST OF THE SITE, TO ASSURE THAT THE ENTIRE SITE IS COVERED BY THIS APPLICATION.**

III. WATER USE

FORM OF PERMIT (PLEASE CHECK ONLY ONE BOX):

- | | |
|---|--|
| <input type="checkbox"/> A NEW INDIVIDUAL PERMIT PURSUANT TO RULE 40E-2.101, FLORIDA ADMINISTRATIVE CODE (F.A.C.) | <input type="checkbox"/> A NEW GENERAL PERMIT, PURSUANT TO RULE 40E-20, F.A.C. |
| <input type="checkbox"/> A MODIFICATION OF EXISTING PERMIT NO. _____ | <input type="checkbox"/> RENEWAL OF EXISTING PERMIT NO. _____ |

THE PURPOSE OF THIS REQUEST:

TYPE OF PERMIT (PLEASE CHECK AT LEAST ONE BOX):

- | | | |
|--|---|--|
| <input type="checkbox"/> AGRICULTURAL IRRIGATION | <input type="checkbox"/> LANDSCAPING IRRIGATION | <input type="checkbox"/> GOLF COURSE IRRIGATION |
| <input type="checkbox"/> PUBLIC WATER SUPPLY | <input type="checkbox"/> MINING/DEWATERING | <input type="checkbox"/> INDUSTRIAL/COMMERCIAL |
| <input type="checkbox"/> RECREATIONAL | <input type="checkbox"/> AQUACULTURE | <input type="checkbox"/> OTHER (PLEASE DESCRIBE) _____ |

SOURCE OF WATER (PLEASE CHECK AT LEAST ONE BOX):

- SURFACE WATER FROM THE FOLLOWING WATER BODY(IES): _____ (NAME)
 ON-SITE RETENTION POND(S) OR LAKE(S) ADJACENT LAKE, CANAL, RIVER, OR CREEK _____ (NAME)
- GROUND WATER FROM THE FOLLOWING NAMED AQUIFER(S) (PLEASE INDICATE, FOR EACH AQUIFER, WHETHER IT IS SHALLOW OR DEEP):**

IV. CERTIFICATION

I hereby certify that, to the best of my knowledge, the total project acreage listed above is owned or controlled by me and all information on the project referenced in this permit application. In addition, I agree to provide entry to the project site for South Florida Water Management District inspectors with proper identification or documents as required by law for the purpose of making preliminary analyses of the site. Further, I agree to provide entry to the project site for both inspectors to monitor prescribed work if a permit is granted.

Florida Department of Transportation

Signature (if not the owner, certify below)

Joseph P. Howland
 Joseph P. Howland

Date:

11-9-90

Date:

FOR DISTRICT USE ONLY

APPLICATION NUMBER

901109-12

FEE REQUIRED

NO

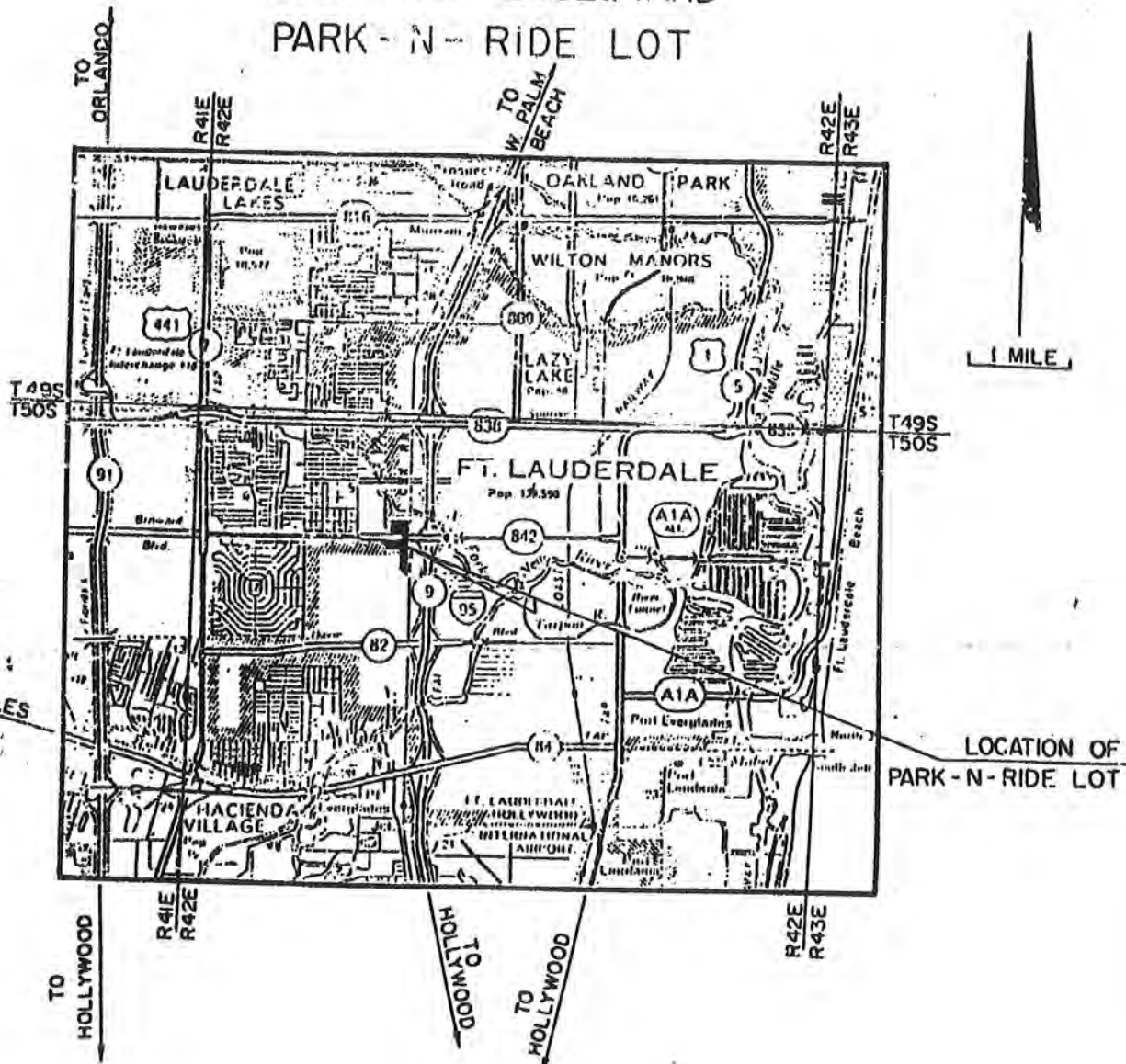
FEE PAID

N/A

RECEIPT NUMBER

N/A

BROWARD BOULEVARD PARK - N - RIDE LOT



LOCATION MAP

901109-12

Item No. I-1



Form 0645 - 501
01/90

RC-1S APPLICATION FOR A SURFACE WATER MANAGEMENT PERMIT

FOR SFWMD USE ONLY

Application No. 901109-12

SFWMD
ONLY

N A I M

SECTION I - SITE INFORMATION

<input checked="" type="checkbox"/>	A	LOCATION SKETCH IS SUBMITTED AS ITEM I-1.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	B	AERIAL PHOTOGRAPH IS SUBMITTED AS ITEM I-2.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	C	WETLANDS <u>N/A</u>	
		EXISTING COVER IS SUBMITTED AS ITEM I-3.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		PROPOSED PRESERVATION TECHNIQUES ARE SUBMITTED AS ITEM I-4.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		WETLANDS CONTROL ELEVATION TABLE IS SUBMITTED AS ITEM I-5.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

SECTION II - PROJECT INFORMATION

<input checked="" type="checkbox"/>	A	PROJECT DESCRIPTION IS SUBMITTED AS ITEM II-1A.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		STAFF GUIDANCE DOCUMENTS ARE SUBMITTED AS ITEM II-1B.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	B	TOPOGRAPHIC MAP IS SUBMITTED AS ITEM II-2.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	C	DRAINAGE MAP IS SUBMITTED AS ITEM II-3.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	D	WATER ELEVATION <u>Based on S.C.S. Soils Report for Broward Co.</u>	
		BASIN WATER TABLE ELEVATION TABLE IS SUBMITTED AS ITEM II-4A.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		SUPPORTING INFORMATION IS SUBMITTED AS ITEM II-4B.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		DESCRIPTION OF AFFECTED SYSTEMS IS SUBMITTED AS ITEM II-5. <u>N/A</u>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		FLOODPLAIN INFORMATION IS SUBMITTED AS ITEM II-6.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	E	PERCOLATION DATA ARE SUBMITTED AS ITEM II-7.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	F	WATER WITHDRAWAL IS SUBMITTED AS ITEM II-8. <u>N/A</u>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

SECTION III - MASTER PLAN

<input checked="" type="checkbox"/>	A	MASTER PAVING, GRADING, AND DRAINAGE PLANS	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		CONCEPTUAL APPROVAL, PLANS NOT SUBMITTED. <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		MASTER PAVING, GRADING, AND DRAINAGE PLANS ARE SUBMITTED AS ITEM III-1.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	B	DRAINAGE PLAN DETAILS ARE SUBMITTED AS ITEM III-2.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	C	RECEIVING BODY LIST IS SUBMITTED AS ITEM III-3.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	D	CONSTRUCTION TECHNIQUES DESCRIPTION	
		CONCEPTUAL APPROVAL, STATEMENT NOT REQUIRED <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		CONSTRUCTION TECHNIQUES DESCRIPTION IS SUBMITTED AS ITEM III-4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

FDOT Specs



SECTION III - MASTER PLAN (CONTINUED)

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<input checked="" type="checkbox"/>	E	LEGAL RESERVATIONS	
		CONCEPTUAL APPROVAL, RESERVATIONS NOT REQUIRED. <input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		LEGAL RESERVATIONS ARE SUBMITTED AS ITEM III-5.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	F	AFFECTED FACILITIES ANALYSIS IS SUBMITTED AS ITEM III-6	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

SECTION IV - SURFACE WATER MANAGEMENT ANALYSIS

	A	FACILITIES	
		DESCRIPTION OF EXISTING FACILITIES IS SUBMITTED AS ITEM IV-1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		DESCRIPTION OF PREVIOUSLY APPROVED/PERMITTED FACILITIES IS SUBMITTED AS ITEM IV-2	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		DESCRIPTION OF PROPOSED FACILITIES FOR THE ENTIRE PROJECT IS SUBMITTED AS ITEM IV-3	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		DESCRIPTION OF PROPOSED FACILITIES FOR THIS PHASE IS SUBMITTED AS ITEM IV-4.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		FACILITY DETAILS FOR EXFILTRATION TRENCH ARE SUBMITTED AS ITEM IV-5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		PERCOLATION TESTS AND CALCULATIONS ARE SUBMITTED AS ITEM IV-6	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		EXFILTRATION TRENCH COMPUTATIONS ARE SUBMITTED AS ITEM IV-7	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		FACILITY DETAILS FOR GRAVITY DISCHARGE STRUCTURE(S) ARE SUBMITTED AS ITEM IV-8.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		STAGE-DISCHARGE CALCULATION IS SUBMITTED AS ITEM IV-9.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		SPREADER SWALE VELOCITY CALCULATION IS SUBMITTED AS ITEM IV-10.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	B	A STAGE-DISCHARGE, A STAGE-STORAGE, AND A LAND COVERAGE TABLE FOR EACH BASIN ARE SUBMITTED AS ITEM IV-11	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	C	DRAINAGE BASIN(S) AND/OR PHASE(S) TABLES ARE SUBMITTED AS ITEM IV-12.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	D	WATER QUALITY BEST MANAGEMENT PRACTICES DESCRIPTION IS SUBMITTED AS ITEM IV-13A	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		RETENTION/DETENTION VOLUME CALCULATIONS FOR EACH BASIN OR PHASE ARE SUBMITTED AS ITEM IV-13B.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	E	WET SEASON WATER TABLE AND SOIL STORAGE CALCULATIONS ARE SUBMITTED AS ITEM IV-13C.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	F	ALLOWABLE DISCHARGE SUPPORTING CALCULATIONS ARE SUBMITTED AS ITEM IV-14.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	G	FLOOD ROUTINGS ARE SUBMITTED AS ITEM IV-15.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	H	FLOODPLAIN ENCROACHMENT	
		CONVEYANCE PREDEVELOPMENT CONDITIONS ARE SUBMITTED AS ITEM IV-16.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		CONVEYANCE POST-DEVELOPMENT CONDITIONS ARE SUBMITTED AS ITEM IV-17	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		STORAGE PREDEVELOPMENT SITE RUNOFF CONDITIONS ARE SUBMITTED AS ITEM IV-18	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		STORAGE PREDEVELOPMENT BASIN STORAGE CONDITIONS ARE SUBMITTED AS ITEM IV-19	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		FLOODPLAIN <input type="checkbox"/> IMPORTER <input type="checkbox"/> EXPORTER SUPPORTING INFORMATION IS SUBMITTED AS ITEM IV-20	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>



Form 0645 - 103

SECTION V - LEGAL AND INSTITUTIONAL

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N A I V

<input checked="" type="checkbox"/>	A	PROOF OF OWNERSHIP SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-1 IF DOT RLW	□□□□
	B	RESPONSIBLE ENTITY(IES) SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-2.	□□□□
	C	UTILITIES	
		WATER UTILITIES SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-3 <i>N/A</i>	□□□□
		SEWERAGE SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-4 <i>N/A</i>	□□□□
	D	RECEIVING BODY(IES) <i>N. Fork New River (C-12)</i>	
		LEGAL AVAILABILITY DOCUMENTATION IS SUBMITTED AS ITEM V-5	□□□□
		PHYSICAL CAPACITY DOCUMENTATION IS SUBMITTED AS ITEM V-6	□□□□
		RIGHT OF WAY PERMIT APPLICATION IS SUBMITTED NOW <input type="checkbox"/>	□□□□
		RIGHT OF WAY PERMIT IS APPLIED FOR, APPLICATION NO _____	□□□□
		PROJECT IS PERMITTED FOR RIGHT OF WAY PERMIT NO _____	□□□□
<input checked="" type="checkbox"/>	E	LAND USE TABLE IS SUBMITTED AS ITEM V-7	□□□□
<input checked="" type="checkbox"/>	F	DEVELOPMENT OF REGIONAL IMPACT STATUS INFORMATION IS SUBMITTED AS ITEM V-8.	□□□□
	G	BOUNDARY SURVEY IS SUBMITTED AS ITEM V-9: <i>N/A</i>	□□□□

SECTION VI - PUBLIC NOTICING INFORMATION

	A	DEPICTION OF WORKS AND FACILITIES IS SUBMITTED AS ITEM VI-1.	□□□□
<input checked="" type="checkbox"/>	B	PROJECT MAP IS SUBMITTED AS ITEM VI-2	□□□□
	C	WETLANDS STATEMENT IS SUBMITTED AS ITEM VI-3. <i>N/A</i>	□□□□
	D	MITIGATION STATEMENT IS SUBMITTED AS ITEM VI-4. <i>N/A</i>	□□□□

SECTION VII - WORKS OF THE DISTRICT SURFACE WATER IMPROVEMENT AND MANAGEMENT (SWIM)

	A	PROJECT IS PERMITTED FOR WORKS OF THE DISTRICT (SWIM). PERMIT NO _____	□□□□
	B	WORKS OF THE DISTRICT (SWIM) PERMIT IS APPLIED FOR, APPLICATION NUMBER: _____	□□□□
	C	WORKS OF THE DISTRICT (SWIM) PERMIT IS NOT REQUIRED <input type="checkbox"/>	□□□□

FLORIDA

GOVERNMENT



DEPARTMENT OF TRANSPORTATION

SEN. G. BAYNE
SECRETARY

780 Southwest 24 Street
Fort Lauderdale, Florida 33315-2696
Telephone: (305) 524-8621

HAND-DELIVERED

November 9, 1990

RECEIVED

Mr. Jim Show
So. Fla. Water Management District
3301 Gun Club Road
W. Palm Beach, FL 33416-4680

NOV 09 1990

REGULATION DEPT.

Dear Mr. Show:

Subject: Broward Boulevard Park-N-Ride Lot
W.P.I. No. 4140895
State Project No. 86070-3496
Broward County

The Florida Department of Transportation proposes to construct a parking lot for I-95 commuters west of I-95, north and south of Broward Boulevard. I-95 access ramps including a bridge over the C-12 Canal are also proposed.

A permit application package for I-95 improvements and the Broward Boulevard flyover was submitted to your office October 26, 1990.

The permit package includes:

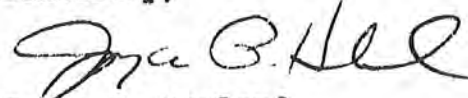
- 1 RC-1A Administrative Information form
- 6 copies of Form RC-1S
- 6 copies of calculations, supporting data and

(continued)

Mr. Jim Show
November 9, 1990
(page 2)

If additional information is required, please call me at
(305) 797-1750.

Sincerely,



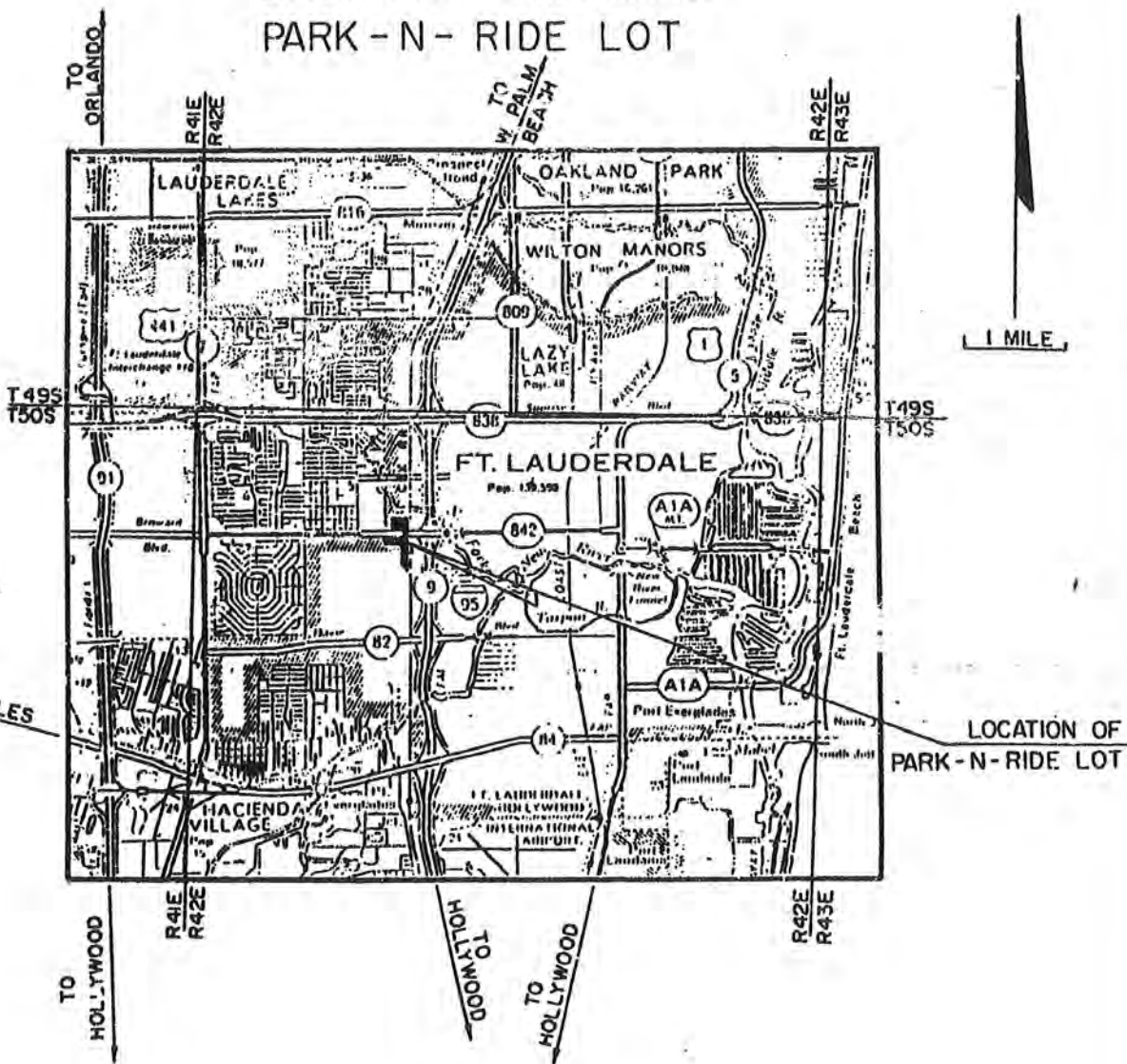
Joyce P. Howland
District Environmental
Permit Coordinator

JPH:ah

Enclosures

cc: Mr. Jim Hunt
Mr. Gary Keife
Mr. Chuck Allen

BROWARD BOULEVARD PARK - N - RIDE LOT



LOCATION MAP

Item No. I-1

Items I-3 and I-4

Existing Land Use

The present land use within the project limits consists of commercial and residential properties with approximately 40% impervious area (existing buildings, parking areas and roadways). The remaining area consists of open grassed areas. The three proposed sites for parking areas to be constructed are upland land which contains no wetlands. Therefore, no mitigation is proposed within the project limits.

Item No. II-1A

Project Description

This project is for construction of three (3) remote parking facilities accessed from I-95 and Broward Boulevard. It is one part of an overall facility network intended to relieve traffic congestion within this highly urbanized area.

Stormwater runoff will be collected and transported by inlets and pipes. Treatment will be provided by exfiltration systems or by detention with effluent filtration. The two (2) treatment systems shows a common outfall into the North Fork New River.



EXFILTRATION TRENCH TABLE

ONLY

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	TRENCH NO. 1	TRENCH NO. 2	TRENCH NO. 3	
HYDRAULIC CONDUCTIVITY (K) (CFS/FT ² -FT HEAD)	1.4×10^{-4}	9.4×10^{-5}	4×10^{-5}	□□□□
VOLUME TO BE TREATED (V) (AC-IN.)	2.8 (2.6 vegrd)	3.3 (2.6 vegrd)	2.4	□□□□
DEPTH TO WATER TABLE (H) (FT)	4.5	4.0	4.0	□□□□
NON-SATURATED TRENCH DEPTH (D _u) (FT)	2.9	2.4	2.4	□□□□
SATURATED TRENCH DEPTH (D _s) (FT)	1.25	2.0	2.3	□□□□
TOP OF TRENCH ELEVATION (FT, NGVD)	6.15	5.0	5.2	□□□□
BOTTOM OF TRENCH ELEVATION (FT, NGVD)	2.0	0.7	0.4	□□□□
TRENCH WIDTH (W) (FT)	4	4	14	□□□□
PIPE INVERT ELEVATION (FT, NGVD)	3.0	2.3	2.4	□□□□
OVERFLOW (OR LOWEST INLET) ELEVATION (FT, NGVD)	6.15	5.0	5.2	□□□□
PROPOSED TRENCH LENGTH (FT)	345	594	298	□□□□

EXFILTRATION TRENCH COMPUTATIONS *See Attached Sheets*
 COMPUTE REQUIRED TRENCH LENGTH, L, FOR TRENCH NO. _____ □□□□

$$L = \frac{V \times 1.00834}{\text{SEC}} \div \frac{K \times [(W \times H) + (2 \times H \times D_u) - (D_u \times D_u) + (2 \times H \times D_s)] + (1.39 \times 10^{-4} \times W \times D_u)}{\text{SEC}}$$

(ROUND "1.00834" to "1")

$$= \text{AC-IN.} \times \frac{1}{\text{SEC}} \times 3630 \frac{\text{FT}}{\text{AC-IN.}}$$

□□□□

$$\frac{\text{CU FT}}{\text{SEC-CU FT}} = \frac{[(\text{FT} \times \text{FT}) + (2 \times \text{FT} \times \text{FT}) - (\text{FT} \times \text{FT}) + (2 \times \text{FT} \times \text{FT})] + (1.39 \times 10^{-4} \times \text{FT} \times \text{FT})}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}}$$

□□□□

$$\frac{\text{CU FT} \times [(\text{SQ FT}) + (\text{SQ FT}) - (\text{SQ FT}) + (\text{SQ FT})]}{\text{SEC-CU FT}} \div \frac{\text{SQ FT}}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}}$$

□□□□

$$\frac{\text{CU FT}}{\text{SEC-CU FT}} \times (\text{SQ FT}) \div \frac{\text{SQ FT}}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}}$$

□□□□

$$\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}} = \text{FT} \quad \square \square \square \square$$

$$\frac{\text{SQ FT}}{\text{SEC}}$$



EXFILTRATION TRENCH TABLE

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	TRENCH NO. 4	TRENCH NO. 5	TRENCH NO. 6	
HYDRAULIC CONDUCTIVITY (K) (CFS/FT ² -FT HEAD)	4×10^{-5}	4×10^{-5}	4×10^{-5}	□□□□
VOLUME TO BE TREATED (V) (AC-IN.)	2.0	1.9	2.1	□□□□
DEPTH TO WATER TABLE (H) (FT)	4.0	4.0	4.0	□□□□
NON-SATURATED TRENCH DEPTH (D _u) (FT)	2.4	2.4	2.4	□□□□
SATURATED TRENCH DEPTH (D _s) (FT)	2.3	2.3	2.3	□□□□
TOP OF TRENCH ELEVATION (FT, NGVD)	5.2	5.2	5.2	□□□□
BOTTOM OF TRENCH ELEVATION (FT, NGVD)	0.4	0.4	0.4	□□□□
TRENCH WIDTH (W) (FT)	14	14	14	□□□□
PIPE INVERT ELEVATION (FT, NGVD)	2.4	2.4	2.4	□□□□
OVERFLOW (OR LOWEST INLET) ELEVATION (FT, NGVD)	5.2	5.2	5.2	□□□□
PROPOSED TRENCH LENGTH (FT)	248	231	260	□□□□

NOTE:
TRENCH 3-7
ONE SYSTEM

EXFILTRATION TRENCH COMPUTATIONS See Attached Sheets
COMPUTE REQUIRED TRENCH LENGTH, L, FOR TRENCH NO. _____ □□□□

$$L = \frac{V \times 1.08334}{\text{SEC}}$$

$$K \times \left[(H_2 \times W) + (2 \times H_2 \times D_u) - (D_u \times D_u) + (2 \times H_2 \times D_s) \right] + (1.39 \times 10^{-4} \times W \times D_u)$$

(ROUND "1.08334" to "1")

$$\text{AC-IN.} \times \frac{1}{\text{SEC}} \times 3630 \frac{\text{FT}^3}{\text{AC-IN.}}$$

$$\frac{\text{CU FT}}{\text{SEC}} \times \left(\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} - \frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} \right) + \frac{\text{SQ FT}}{\text{SEC}}$$

$$\frac{\text{CU FT}}{\text{SEC}} \times \left(\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} - \frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} \right) + \frac{\text{SQ FT}}{\text{SEC}}$$

$$\frac{\text{CU FT}}{\text{SEC}} \times \left(\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} - \frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} \right) + \frac{\text{SQ FT}}{\text{SEC}}$$

$$\frac{\text{CU FT}}{\text{SEC}} \times \left(\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} - \frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} \right) + \frac{\text{SQ FT}}{\text{SEC}}$$

$$\frac{\text{CU FT}}{\text{SEC}} \times \left(\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} - \frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} \right) + \frac{\text{SQ FT}}{\text{SEC}}$$

$$\frac{\text{CU FT}}{\text{SEC}} \times \left(\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} - \frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}} \right) + \frac{\text{SQ FT}}{\text{SEC}}$$

EXFILTRATION TRENCH TABLE

ONLY
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 □□□□

	TRENCH NO. <u>1</u>	TRENCH NO. <u>2</u>	TRENCH NO. <u>3</u>	□□□□
HYDRAULIC CONDUCTIVITY (K) (CFS/FT ² -FT HEAD)	<u>4x10⁻⁵</u>	<u>4x10⁻⁵</u>	<u>4x10⁻⁵</u>	□□□□
VOLUME TO BE TREATED (V) (AC-IN.)	<u>0.6</u>	<u>3.9</u>	<u>2.0</u>	□□□□
DEPTH TO WATER TABLE (H) (FT)	<u>4.0</u>	<u>4.0</u>	<u>4.0</u>	□□□□
NON-SATURATED TRENCH DEPTH (Du) (FT)	<u>2.4</u>	<u>2.4</u>	<u>2.4</u>	□□□□
SATURATED TRENCH DEPTH (Ds) (FT)	<u>2.3</u>	<u>2.3</u>	<u>2.3</u>	□□□□
TOP OF TRENCH ELEVATION (FT, NGVD)	<u>5.2</u>	<u>5.7</u>	<u>5.7</u>	□□□□
BOTTOM OF TRENCH ELEVATION (FT, NGVD)	<u>0.4</u>	<u>0.7</u>	<u>0.7</u>	□□□□
TRENCH WIDTH (W) (FT)	<u>14</u>	<u>14</u>	<u>14</u>	□□□□
PIPE INVERT ELEVATION (FT, NGVD)	<u>2.4</u>	<u>2.7</u>	<u>2.7</u>	□□□□
OVERFLOW (OR LOWEST INLET) ELEVATION (FT, NGVD)	<u>5.2</u>	<u>5.7</u>	<u>5.7</u>	□□□□
PROPOSED TRENCH LENGTH (FT)	<u>76</u>	<u>477</u>	<u>243</u>	□□□□

EXFILTRATION TRENCH COMPUTATIONS *see Attached Sheets*
 COMPUTE REQUIRED TRENCH LENGTH, L, FOR TRENCH NO. _____ □□□□

$$L = \frac{V \times 1.00834}{\text{SEC}}$$

$$K \times [(M_2 \times W) + (2 \times M_2 \times D_u) - (D_u \times D_u) + (2 \times M_2 \times D_s)] + (1.39 \times 10^{-4} \times W \times D_u)$$

(ROUND "1.00834" to "1")

$$= \text{AC-IN.} \times \frac{1}{\text{SEC}} \times 3630 \frac{\text{FT}^3}{\text{AC-IN.}}$$

$$\frac{\text{CU FT}}{\text{SEC-CU FT}} = \frac{(\text{FT} \times \text{FT}) + (2 \times \text{FT} \times \text{FT}) - (\text{FT} \times \text{FT}) + (2 \times \text{FT} \times \text{FT}) + (1.39 \times 10^{-4} \times \text{FT} \times \text{FT})}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}}$$

$$\frac{\text{CU FT}}{\text{SEC-CU FT}} \times ((\text{SQ FT}) + (\text{SQ FT}) - (\text{SQ FT}) + (\text{SQ FT})) + \frac{\text{SQ FT}}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}}$$

$$\frac{\text{CU FT}}{\text{SEC-CU FT}} \times (\text{SQ FT}) + \frac{\text{SQ FT}}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}}$$

$$\frac{\text{SQ FT}}{\text{SEC}} + \frac{\text{SQ FT}}{\text{SEC}}$$

$$= \frac{\text{CU FT}}{\text{SEC}} = \text{FT} \quad \square \square \square \square$$

$$\frac{\text{SQ FT}}{\text{SEC}}$$

DATE	DESIGN	DSA GROUP, INC.		ENGINEERS	SHEET
	CHECK	JOB	FOR		OF
		PARK-N-RIDE #1			JOB NO.

SUBJECT
Item No. IX-5, IX-7 EXFILTRATION

AREA CONTRIBUTING TO EXFILTRATION TRENCH #1 (S-2 to S-17)

IMPERVIOUS = 2.6 AC.

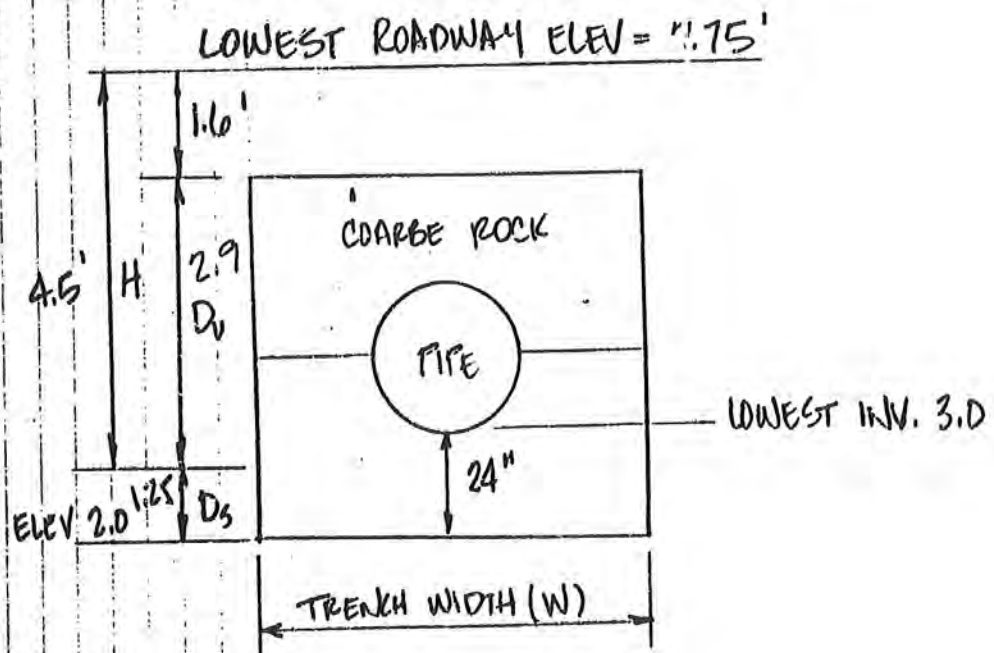
PERVIOUS = 0.6 AC

TOTAL = 3.2 AC

% IMPERVIOUS = $\frac{2.6}{3.2} \times 100 = 81.3\%$

$0.813 \times 2.5 \times 50\% = 1.0 \text{ in}$

VOLUME TO BE TREATED = $(2.6)(1") = 2.6 \text{ AC} \cdot \text{IN}$



DATE	DESIGN	DSA GROUP, INC.		ENGINEERS	SHEET
	CHECK	JOB	FOR		OF
SUBJECT					JOB NO.
Item No. IV-5, IV-7					

$$VOL = L \left[K(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4})W D_u \right]$$

L = Length of Trench (FT) = 345

K = HYDRAULIC CONDUCTIVITY (CFS/FT² · FT HEAD) = 14×10^{-4}

H₂ = DEPTH TO WATER TABLE (FT) = 4.5

D_u = NON SATURATED TRENCH DEPTH (FT) = 2.9

D_s = SATURATED TRENCH DEPTH (FT) = 1.25

W = TRENCH WIDTH (FT) = 4

$$VOL = (345) \left[(14 \times 10^{-4}) (4.5)(4) + (2)(4.5)(2.9) - (2.9)^2 + (2)(4.5)(1.25) + (1.39 \times 10^{-4})(4)(2.9) \right]$$

$$VOL = 2.8 \text{ AC} \cdot \text{IN} > 2.6 \text{ AC} \cdot \text{IN}$$

$$\text{Excess Vol} = 0.2 \text{ AC} \cdot \text{IN} = 0.02 \text{ AC} \cdot \text{FT}$$

DATE	DESIGN	DSA GROUP, INC.		ENGINEERS	SHEET
	CHECK	JOB	PARK-N-RIDE #2	FOR	OF
					JOB NO.

SUBJECT
Item No. II-5, II-7 EXFILTRATION

POSTDEVELOPMENT CONDITIONS

IMPERVIOUS 2.4 AC
 PERVIOUS 0.4 AC
 TOTAL 2.8 AC

TREATMENT WILL BE PROVIDED IN EXFILTRATION TRUNK #2 (S-32 to S-37). SFWMO CRITERIA FOR RETENTION 1" RUNOFF OF TOTAL RUNOFF FROM 2 1/2 times the percentage of impervious whichever greater

$$\% \text{ IMPERVIOUS} = \frac{2.4}{2.8} \times 100 = 85.7\%$$

$$2.5 \times 0.857 = 2.1" > 1"$$

$$50\% \times 2.1" = 1.1"$$

$$\text{FIRST } 1.1" \text{ RUNOFF} = (1.1)(2.4) = 2.6 \text{ AC-11.1}$$

DATE	DESIGN	DBA GROUP, INC.		ENGINEERS	SHEET
	CHECK	JOB	FOR		OF
SUBJECT					JOB NO.

Item No. IV-5, IV-7.

EXFILTRATION TRENCH # 2 (S-32 to S-31)

$$VOL = L \left[K(H_2 W + 2H_2 D_u - D_u^2 + 2H_2 D_s) + (1.39 \times 10^{-4}) W D_u \right]$$

L = LENGTH OF TRENCH (FT) = 594.11

K = HYDRAULIC CONDUCTIVITY (CFS/FT² · FT HEAD) = 9.4×10^{-5}

H₂ = DEPTH OF WATER TABLE (FT) = 4.0

D_u = NON SATURATED TRENCH DEPTH (FT) = 2.4

D_s = SATURATED TRENCH DEPTH (FT) = 2.0

W = TRENCH WIDTH (FT) = 4

L = 594 FT

$$VOL = (594) \left[9.4 \times 10^{-5} (4 \times 4) + 2(4)(2.4) - (2.4)^2 + 2(4)(2.0) + (1.39 \times 10^{-4})(4)(2.4) \right]$$

VOL = 3.3 AC-IN > 2.6 AC-IN

EXCESS VOL = 0.7 AC-IN = 0.06 AC-FT

DATE	DESIGN	DSA GROUP, INC.		ENGINEERS	SHEET
	CHECK	JOB	FOR		OF
		Park - N - Ride # 3			JOB NO.

SUBJECT
Item No. B-5, IV-7 Exfiltration

Post Development Conditions

Impervious = 13.0 Ac.

Pervious = 1.3 Ac.

Total = 14.3 Ac.

Treatment will be provided in exfiltration trenches No. 3 thru No. 9. SFWMD criteria for retention:

1" Runoff or Total Runoff from 2 1/2 times the percentage of imperviousness, whichever is greater ...

$$\% \text{ Imp.} = 13.0 / 14.3 = 91\%$$

$$2.5 (0.91) = 2.27" > 1"$$

$$50\% (2.27") = 1.13"$$

$$\text{First } 1.13" \text{ Runoff} = 1.13" (13.0 \text{ Ac}) = 14.7 \text{ Ac/In.}$$

DATE 9-18-90	DESIGN CEB	DSA GROUP, INC.		ENGINEERS	SHEET
CHECK	JOB PARK-N-RIDE #3	FOR		OF	JOB NO.
SUBJECT Item No. IV-5, IV-7 EXFILTRATION					

EXFILTRATION TRENCH # 3 (S-38 to S-49)

$$VOL = L \left[K (H_2 W + 2 H_2 D_u - D_u^2 + 2 H_2 D_s) + (1.39 \times 10^{-4}) W D_u \right]$$

L = LENGTH OF TRENCH (FT)

K = HYDRAULIC CONDUCTIVITY (CFS/FT² · FT. HEAD) = 4.0×10^{-5}

H₂ = DEPTH OF WATER TABLE (FT) = 4.0

D_u = NON SATURATED TRENCH DEPTH (FT) = 2.4

D_s = SATURATED TRENCH DEPTH (FT) = 2.3

W = TRENCH WIDTH (FT) = 14 FT

$$LENGTH = 31 + 41 + 59 + 61 + 35 + 35 + 36 \\ = 298 \text{ L.F.}$$

$$VOL = (298) \left[(4 \times 10^{-5}) ((4)(14) + (2)(4)(2.4) - (2.4)^2 + (2)(4)(2.3)) \right. \\ \left. + (1.39 \times 10^{-4})(14)(2.4) \right] \\ = 2.4 \text{ AC. IN.}$$

DATE 9-18-90	DESIGN CEB	DSA GROUP, INC.		ENGINEERS	SHEET
	CHECK	JOB PARK-N-RIDE #3	FOR		OF
SUBJECT Item No. IX-5, IX-7 EXFILTRATION					JOB NO.

EXFILTRATION TRENCH #4 (S-49 to S-53)

$$L = 61 + 61 + 126$$

$$= 248 \text{ L.F.}$$

$$\text{VOL} = (248) \left[(4 \times 10^{-5})(4)(14) + (2)(4)(2.4) - (2.4)^2 + (2)(4)(2.3) \right. \\ \left. + (1.39 \times 10^{-4})(14)(2.4) \right]$$

$$\text{VOL} = 2.0 \text{ AC} \cdot \text{IN}$$

EXFILTRATION TRENCH #5 (S-44B to S-49)

$$L = 56 + 175$$

$$= 231 \text{ L.F.}$$

$$\text{VOL} = (231) \left[(4 \times 10^{-5})(4)(14) + (2)(4)(2.4) - (2.4)^2 + (2)(4)(2.3) \right. \\ \left. + (1.39 \times 10^{-4})(14)(2.4) \right]$$

$$\text{VOL} = 1.9 \text{ AC} \cdot \text{IN}$$

EXFILTRATION TRENCH #6 (S-45 to S-49)

$$L = 21 + 62 + 49 + 128$$

$$= 260 \text{ L.F.}$$

$$\text{VOL} = (260) \left[(4 \times 10^{-5})(4)(14) + (2)(4)(2.4) - (2.4)^2 + (2)(4)(2.3) \right. \\ \left. + (1.39 \times 10^{-4})(14)(2.4) \right]$$

$$\text{VOL} = 2.1 \text{ AC} \cdot \text{IN}$$

DATE 9-18-90	DESIGN CEB	DSA GROUP, INC.		ENGINEERS	SHEET
CHECK	JOB PARK-N-RIDE #3	FOR		OF	JOB NO.

SUBJECT
Item No. ~~IX-5~~ ~~IX-7~~ EXFILTRATION

EXFILTRATION TRENCH # 7 (S-52 to S-53)

$$L = 76 \text{ L.F.}$$

$$\text{VOL} = (76) \left[(4 \times 10^{-5}) ((4)(14) + (2)(4)(2.4) - (.24)^2 + (2)(4)(2.3)) + (1.39 \times 10^{-4})(14)(.24) \right]$$

$$\text{VOL} = 0.6 \text{ AC-IN}$$

$$\text{SUBTOTAL} = 9.0 \text{ AC-IN}$$

EXFILTRATION TRENCH # 8 (S-55 to S-65)

$$L = 61 + 116 + 61 + 61 + 117 + 61 \\ = 477 \text{ L.F.}$$

$$\text{VOL} = (477) \left[(4 \times 10^{-5}) ((4)(14) + (2)(4)(2.4) - (.24)^2 + (2)(4)(2.3)) + (1.39 \times 10^{-4})(14)(.24) \right]$$

$$\text{VOL} = 3.9 \text{ AC-IN}$$

DATE	DESIGN	DSA GROUP, INC.		ENGINEERS	SHEET
	CHECK	JOB	FOR		OF
SUBJECT					JOB NO.
Item No. IV-5, IV-7					

EXFILTRATION TRENCH # 9 (S-02 to S-14)

$$L = 61 + 182$$

$$L = 243 \text{ L.F.}$$

$$\text{VOL} = (243) \left[(4 \times 10^{-5})(4)(14) + (2)(4)(2.4) - (2.4)^2 + (2)(4)(2.3) + (1.39 \times 10^{-4})(14)(2.4) \right]$$

$$\text{VOL} = 2.0 \text{ AC-IN}$$

$$\text{TOTAL FOR PARK-N-RIDE \#3} = 14.9 \text{ AC-IN} > 14.7 \text{ AC-IN}$$

$$\text{EXCESS VOL} = 0.2 \text{ AC-IN} = 0.02 \text{ AC-FT}$$

II-7
Item No. IV-6

USUAL OPEN HOLE TEST No. 1
I-95 HOV and Park-N-Ride
Ft. Lauderdale, Florida

St. 149100, 20' Lt.
P-N-R Access #1

<u>Elapsed Time (min)</u>	<u>Exfiltration Rate (gpm)</u>
1	2.8
2	1.8
3	1.8
4	1.8
5	1.9
6	1.8
7	1.9
8	1.8
9	1.7
10	<u>1.8</u>
Average	1.9

SUBSURFACE CONDITIONS

<u>Depth (ft)</u> <u>From-To</u>	<u>Soil Description</u>
0.0 - 10.0	Brown to tan fine sand (A-3)

Notes:

$K = 6.3 \times 10^{-5} \text{ cfs/ft}^2 - \text{ft head}$

$Q = 4.25 \times 10^{-3} \text{ cfs}$

$d = 0.5 \text{ ft}$

$H = 6.0 \text{ ft}$

$D_o = 4.0 \text{ ft}$

depth of hole = 10.0 ft

conversion from gpm to cfs = .002228

Item No. II-7
IV-6

USUAL OPEN HOLE TEST No. 2 Sta. 224-50, 25' Lt.
I-95 HOV and Park-N-Ride P-N-R Access #2
Ft. Lauderdale, Florida

<u>Elapsed Time (min)</u>	<u>Exfiltration Rate (gpm)</u>
1	0.59
2	0.98
3	0.98
4	0.98
5	0.98
6	0.79
7	0.98
8	0.98
9	0.79
10	<u>1.10</u>
Average	0.92

SUBSURFACE CONDITIONS

<u>Depth (ft)</u> <u>From-To</u>	<u>Soil Description</u>
0.0 - 10.0	Brown to tan fine sand (A-3)

Notes:

$K = 4.0 \times 10^{-5} \text{ cfs/ft}^2 - \text{ft head}$

$Q = 2.04 \times 10^{-3} \text{ cfs}$

$d = 0.5 \text{ ft}$

$H = 4.0 \text{ ft}$

$D_a = 6.0 \text{ ft}$

depth of hole = 10.0 ft

conversion from gpm to cfs = .002228

II-7
Item No. IV-C

USUAL OPEN HOLE TEST No. 3
I-95 HOV and Park-N-Ride
Ft. Lauderdale, Florida

Sta. 9+00, 130' Rt.
& Const. Broward Blvd.

Elapsed Time (min)

Exfiltration Rate (gpm)

1	2.4
2	2.4
3	2.4
4	2.0
5	1.8
6	2.0
7	2.4
8	2.4
9	1.8
10	2.0

Average 2.2

SUBSURFACE CONDITIONS

Depth (ft)
From-To

Soil Description

0.0 - 8.0
8.0 - 10.0

Brown to tan fine sand (A-3)
Tan fine calcareous sand
with sandstone

Notes:

$K = 9.4 \times 10^{-5}$ cfs/ft² - ft head

$Q = 4.81 \times 10^{-3}$ cfs

$d = 0.5$ ft

$H = 4.0$ ft

$D_s = 6.0$ ft

depth of hole = 10.0 ft

conversion from gpm to cfs = .002228

Item No. II-7
IV-C

USUAL OPEN HOLE TEST No. 4
I-95 HOV and Park-N-Ride
Ft. Lauderdale, Florida

<u>Elapsed Time (min)</u>	<u>Exfiltration Rate (gpm)</u>
1	4.0
2	4.1
3	3.9
4	3.8
5	3.7
6	3.1
7	3.3
8	3.5
9	3.1
10	3.2
	<u>3.2</u>
	Average 3.6

SUBSURFACE CONDITIONS

Depth (ft)
From-To

0.0 - 1.0
1.0 - 10.0

Soil Description

Brown fine sand (A-3)
Tan fine calcareous sand
with sandstone

Notes:

$K = 1.4 \times 10^{-4}$ cfs/ft² - ft head

$Q = 7.96 \times 10^{-3}$ cfs

$d = 0.5$ ft

$H = 4.5$ ft

$D_a = 5.5$ ft

depth of hole = 10.0 ft

conversion from gpm to cfs = .002228



Form 6015-02H

Item No. IV-8

SFWD
ONLY

N A I M

DISCHARGE STRUCTURE TABLE

	DISCHARGE STRUCTURE			
	NO. 2-1	NO.	NO.	
BAFFLE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
CONTROL DEVICE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
CIRCULAR ORIFICE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
INVERT ELEVATION	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
DIAMETER	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
TRIANGULAR ORIFICE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
INVERT ELEVATION	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
INVERT ANGLE	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
HEIGHT	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
TOP WIDTH	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
OTHER _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
OVERFLOW DEVICE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
WEIR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
SHARP-CRESTED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
BROAD-CRESTED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
"C" VALUE	3.13	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
LENGTH	3.00	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
CREST ELEVATION	4.00	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
SIDE SLOPE, IF APPLICABLE (VERTICAL:HORIZONTAL)	1:1	1:1	1:1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
OTHER _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
OUTFALL CULVERT, DITCH, ETC.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
LENGTH	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
DIMENSION(S)	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
MATERIAL	RCP	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
INVERT ELEVATION	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
UPSTREAM	2.3	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
DOWNSTREAM	2.1	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
SPREADER SWALE N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
LENGTH	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
INVERT ELEVATION	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
CREST ELEVATION	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
OTHER _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
_____	_____	_____	_____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>



Item No. IV-11

BASIN NO. Detention Pond CONTROL STRUCTURE NO. S-1

STAGE-DISCHARGE TABLE

CONTROL ELEVATION: 2.3 FT, NGVD

ELEVATION (FT, NGVD)	CONTROL STRUCTURE DISCHARGE (CFS)	COMMENTS				
<u>2.3</u>	<u>0</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>4.5</u>	<u>0</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>5.0</u>	<u>3.2</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>5.2</u>	<u>12.0</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>6.4</u>	<u>21.7</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LAND COVERAGE TABLE

LAND USE	SIZE (ACRES)	STORAGE CAN OCCUR					
		FROM ELEVATION (FT, NGVD)	TO ELEVATION (FT, NGVD)				
BUILDING AREAS				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WET AREAS				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER: <u>Pavement</u>	<u>4.3</u>	<u>7.0</u>	<u>8.0</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Grass</u>	<u>2.4</u>	<u>6.5</u>	<u>8.0</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Other</u>	<u>5.2</u>	<u>6.4</u>	<u>8.0</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOTAL	<u>2.9</u>			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

STAGE-STORAGE TABLE

CONTROL ELEVATION:	ELEVATION (FT, NGVD)	WET AREAS (AC-FT)	ALL OTHERS (AC-FT)	TOTAL (AC-FT)				
	<u>2.3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<u>2.0</u>	<u>0</u>	<u>1.1177</u>	<u>1.1177</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Form 6018-4222

SFWMD
ONLY
N A I M

Item No. IV-12

DRAINAGE BASIN(S) TABLE

□□□□

	BASIN NO. ^{Detention Pond}		BASIN NO.		TOTAL DRAINAGE AREA (ACRES)	□□□□
	PROJECT (ACRES)	OFF-SITE (ACRES)	PROJECT (ACRES)	OFF-SITE (ACRES)		
IMPERVIOUS BUILDINGS						□□□□
OTHERS	4.3	5.2				□□□□
WATER MANAGEMENT						
WET						□□□□
DRY						□□□□
PERVIOUS	0.4					□□□□
TOTAL	4.7	5.2				□□□□
NUMBER OF DWELLING UNITS (ALLOWED/PROPOSED)	1		1		1	□□□□
SQUARE FOOTAGE OF:						
COMMERCIAL						□□□□
INDUSTRIAL						□□□□

PHASE(S) TABLE

□□□□

	CONSTRUCTION AND OPERATION				TOTAL PROJECT AREA (ACRES)	□□□□
	ALL PAST PHASES		THIS PHASE			
	PROJECT (ACRES)	OFF-SITE (ACRES)	PROJECT (ACRES)	OFF-SITE (ACRES)		
IMPERVIOUS BUILDINGS						□□□□
OTHERS						□□□□
WATER MANAGEMENT						
WET						□□□□
DRY						□□□□
PERVIOUS						□□□□
TOTAL						□□□□
NUMBER OF DWELLING UNITS (ALLOWED/PROPOSED)	1		1		1	□□□□
SQUARE FOOTAGE OF:						
COMMERCIAL						□□□□
INDUSTRIAL						□□□□



Item No. IV-13B

SFVMD ONLY

N A I M

BASIN NUMBER Detention Pond OR PHASE NUMBER _____

FOR FIRST INCH:

1 IN. x $\frac{1 \text{ FT}}{12 \text{ IN.}} \times \frac{2.9}{(\text{PROJECT AREA, ACRES})} = [0.83] \text{ AC-FT}$

FOR 2.5 IN. TIMES PERCENT IMPERVIOUS (ALL AREA UNITS IN ACRES):

SITE AREA: $\frac{2.9}{\text{PROJECT AREA}} - \left(\frac{\quad}{\text{LAKES}} + \frac{\quad}{\text{ROOFS}} \right) = \frac{2.9}{\text{SITE AREA}}$

IMPERVIOUS AREA: $\frac{2.9}{\text{SITE AREA}} - \frac{5.6}{\text{PERVIOUS AREA}} = \frac{4.3}{\text{IMPERVIOUS AREA}}$

PERCENT IMPERVIOUS: $\frac{\text{IMPERVIOUS AREA (4.3)}}{\text{SITE AREA (2.9)}} \times 100\% = \frac{44}{\text{PERCENT IMPERV.}}$

2.5 IN. x % IMPERVIOUS: $2.5 \text{ IN.} \times \frac{0.44}{\text{PERCENT IMPERVIOUS}} = \frac{1.10}{\text{INCHES TO BE TREATED}}$

INCHES TO BE TREATED TIMES AREA TO BE TREATED:

$\frac{1.1}{\text{INCHES TO BE TREATED}} \text{ IN.} \times \left(\frac{2.9}{\text{PROJECT AREA}} - \frac{\quad}{\text{LAKES}} \right) \times \frac{1 \text{ FT}}{12 \text{ IN.}} = [0.9] \text{ AC-FT}$

REQUIRED WET DETENTION = LARGER OF TWO [] VALUES = 0.9 AC-FT

WILL SYSTEM UTILIZE DRY DETENTION?

NO

YES: REQUIRED DRY DETENTION = $0.75 \times \frac{\quad}{\text{REQUIRED WET DETENTION}}$ = _____ AC-FT

WILL SYSTEM UTILIZE RETENTION?

NO

YES: REQUIRED RETENTION = $0.5 \times \frac{0.9}{\text{REQUIRED WET DETENTION}} = \frac{0.45}{\text{AC-FT}}$

0.10 Excess Vol. Trench

0.35 Ac-Ft.

ACTUAL DETENTION/RETENTION TO BE PROVIDED = 0.35 AC-FT

IT WILL BE PROVIDED BETWEEN CONTROL ELEVATION = 2.3 FT, NGVD

AND ELEVATION = 4.0 FT, NGVD

PARCEL DISCHARGES TO OFW AND IS GREATER THAN 40% IMPERVIOUS?

YES: SEE "DRY PRETREATMENT" BELOW.

NO

PARCEL IS ZONED COMMERCIAL OR INDUSTRIAL?

YES, BUT ITEM IV-6 (ASSURANCES) IS ATTACHED.

YES, BUT ITEM IV-6 (ASSURANCES) IS WAIVED. SEE "DRY PRETREATMENT" BELOW.

NO

DRY PRETREATMENT VOLUME REQUIRED:

$0.5 \text{ IN.} \times \left(\frac{\quad}{\text{PROJECT AREA}} - \frac{\quad}{\text{LAKES}} \right) \text{ AC} \times \frac{1 \text{ FT}}{12 \text{ IN.}} = \text{_____ AC-FT}$

METHOD: _____



Item No. IV-15

FLOOD ROUTING SUMMARY TABLE

Basin No. or Phase No.

Grid boxes for Basin/Phase No.

ROADS

DISTRICT 5-YEAR, 24-HOUR
OTHER: -YEAR, -HOUR
OTHER:
FLOOD CONTOUR: FT, NGVD
MINIMUM GRADE: FT, NGVD

RAINFALL AMOUNT (INCHES)

Grid boxes for Road Rainfall

PARKING LOTS WITH TRENCH

DISTRICT 5-YEAR, .1-HOUR
OTHER: -YEAR, -HOUR
OTHER:
FLOOD CONTOUR: 3.0 FT, NGVD
MINIMUM GRADE: 7.0 FT, NGVD

Grid boxes for Parking Lot Rainfall

BASIN DESIGN

STANDARD 25-YEAR, 72-HOUR
OTHER: -YEAR, -HOUR
OTHER:
FLOOD CONTOUR : FT, NGVD
MINIMUM PERIMETER SITE GRADE: FT, NGVD
PEAK DISCHARGE
ALLOWABLE: 33.8 CFS
DESIGN : 20.1 CFS

Grid boxes for Basin Design

BUILDING FLOORS N/A

DISTRICT 100-YEAR, 72-HOUR, 0-DISCHARGE
OTHER:
FLOOD CONTOUR : FT, NGVD*
MINIMUM FLOOR : FT, NGVD
FEMA FLOOD : FT, NGVD
100-YEAR 72-HOUR, 0-DISCHARGE STORM CALCULATIONS

Grid boxes for Building Floors

*P = 72-HOUR RAINFALL IN.
S = SOIL STORAGE IN.

Grid boxes for Storm Calculations

Q = (P - 0.25)^2 / (P + 0.85) = (IN. - (0.2 x IN.))^2 / (IN. + (0.8 x IN.))
= (IN. - IN.)^2 / (IN. + IN.) = (IN.)^2 / (IN.) = IN.

Grid boxes for Q calculation

RUNOFF VOLUME: (Q) IN. x (SITE AREA) AC x 1 FT / 12 IN. = AC-FT

Grid boxes for Runoff Volume

STAGE TO RETAIN RUNOFF VOLUME: FT, NGVD

Grid boxes for Stage to Retain

NODE SUMMARY

Path	From Node	To Node	Type	Backflow	Flow
1	ROADWAY & OFFSITE RUNOFF	DETENTION POND	NULL	0.00	30.03
2	DETENTION POND	STRUCTURE #17	NULL	0.00	20.10
3	PARK-N-RIDE LOT#1	STRUCTURE #17	NULL	0.00	12.15
4	STRUCTURE #17	STRUCTURE #54	PIPE	-0.01	29.44
5	PARK-N-RIDE LOT#3	STRUCTURE #54	NULL	0.00	57.82
6	STRUCTURE #54	S-66A	PIPE	0.00	80.50
7	S-66A	N.FORK NEW RIVER (C-12)	PIPE	0.00	80.50

(Page 1 of 1)

PATH SUMMARY

Node	Name	Type	Inflow	Outflow	Stage	Storage
1	PARK-N-RIDE LOT#1	INFLOW	12.155	12.154	6.311	0.002
2	DETENTION POND	DESIGN FOND	31.153	20.095	6.780	0.769
3	ROADWAY & OFFSITE RUNOFF	INFLOW	30.035	30.035	2.300	0.000
4	STRUCTURE #17	JUNCTION	29.602	29.444	5.492	0.034
5	S-66A	JUNCTION	80.498	80.495	3.538	0.000
6	STRUCTURE #54	JUNCTION	80.860	80.498	4.225	0.064
7	PARK-N-RIDE LOT#3	INFLOW	57.816	57.816	2.300	0.000
8	N.FORK NEW RIVER (C-12)	OUTFALL	80.495	0.000	2.300	4.941

(Page 1 of 1)

PRK&RD#1: DETENTION POND, [DESIGN POND] STAGE - DISCHARGE

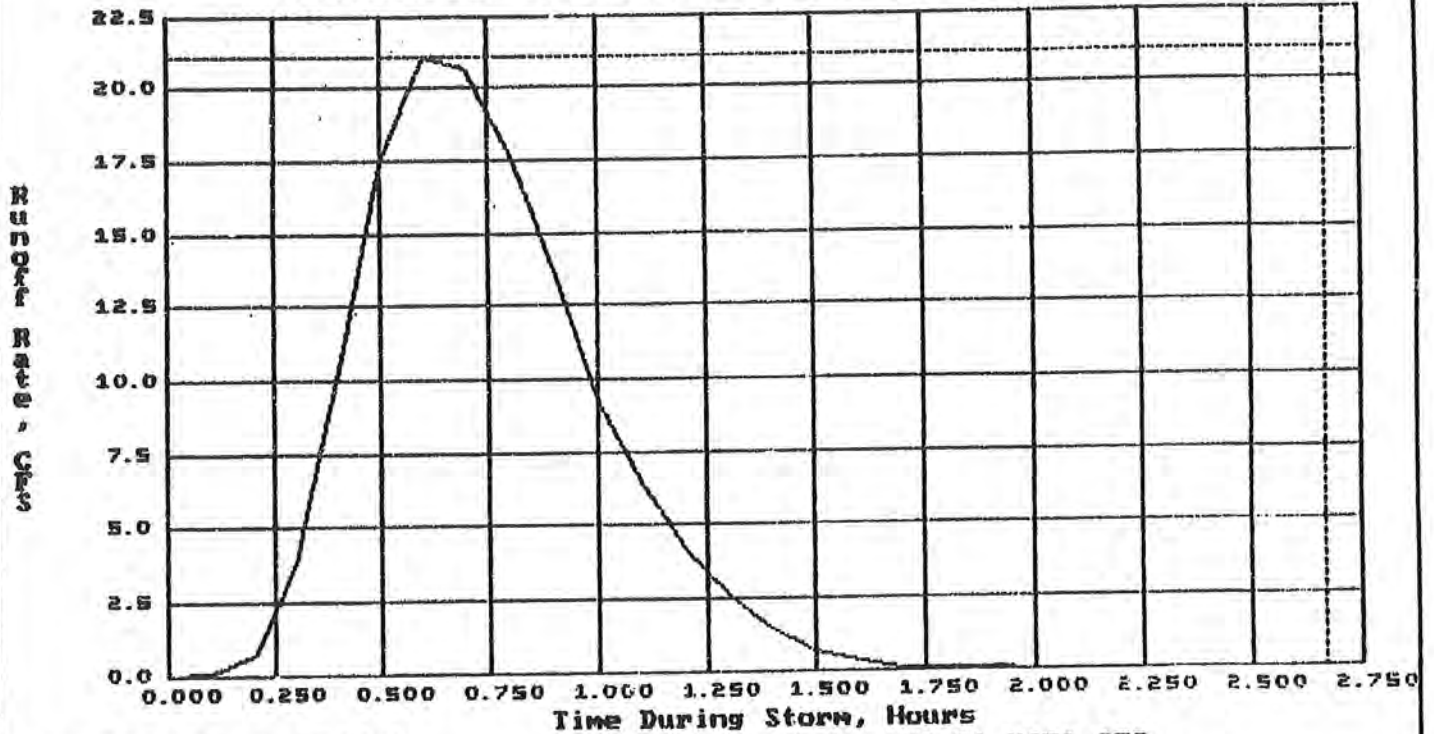
Time	Rain	Runoff	Stage	CFS In	CFS Out	ACFT In	Storage	ACFT Out
0.000	0.000	0.000	2.300	0.000	0.000	0.000	-0.000	0.000
0.100	0.064	0.203	2.309	0.203	0.000	0.000	0.000	0.000
0.200	0.256	0.610	2.344	0.610	0.000	0.004	0.004	0.000
0.300	0.640	1.220	2.451	1.899	0.000	0.015	0.015	0.000
0.400	1.312	2.135	2.883	8.768	0.000	0.059	0.059	0.000
0.500	2.000	2.186	3.835	20.136	0.000	0.179	0.178	0.000
0.600	2.576	1.830	5.049	29.247	0.626	0.382	0.380	0.003
0.700	2.928	1.119	6.029	31.153	10.280	0.632	0.584	0.048
0.800	3.152	0.712	6.380	27.900	16.579	0.876	0.717	0.159
0.900	3.184	0.102	6.780	21.134	19.838	1.078	0.769	0.309
1.000	3.200	0.051	6.709	14.512	20.095	1.226	0.752	0.474
1.100	3.200	0.000	6.505	10.029	17.059	1.327	0.699	0.628
1.200	3.200	0.000	6.266	6.723	13.641	1.396	0.642	0.755
1.300	3.200	0.000	6.035	4.315	10.518	1.442	0.588	0.854
1.400	3.200	0.000	5.822	2.468	7.824	1.470	0.540	0.930
1.500	3.200	0.000	5.634	1.213	5.654	1.485	0.499	0.986
1.600	3.200	0.000	5.477	0.496	3.987	1.492	0.467	1.026
1.700	3.200	0.000	5.355	0.156	2.822	1.495	0.441	1.054
1.800	3.200	0.000	5.257	0.030	1.999	1.496	0.422	1.074
1.900	3.200	0.000	5.184	0.006	1.450	1.496	0.408	1.088
2.000	3.200	0.000	5.130	0.000	1.047	1.496	0.398	1.098
2.100	3.200	0.000	5.091	0.000	0.803	1.496	0.390	1.106
2.200	3.200	0.000	5.059	0.000	0.670	1.496	0.384	1.112
2.300	3.200	0.000	5.033	0.000	0.559	1.496	0.379	1.117
2.400	3.200	0.000	5.011	0.000	0.466	1.496	0.375	1.121
2.500	3.200	0.000	4.992	0.000	0.389	1.496	0.371	1.125
2.600	3.200	0.000	4.977	0.000	0.325	1.496	0.368	1.128
2.700	3.200	0.000	4.964	0.000	0.271	1.496	0.366	1.130
2.800	3.200	0.000	4.953	0.000	0.224	1.496	0.364	1.132
2.900	3.200	0.000	4.944	0.000	0.184	1.496	0.362	1.134
3.000	3.200	0.000	4.936	0.000	0.151	1.496	0.360	1.135
3.100	3.200	0.000	4.929	0.000	0.124	1.496	0.359	1.137
3.200	3.200	0.000	4.924	0.000	0.103	1.496	0.358	1.137
3.300	3.200	0.000	4.920	0.000	0.087	1.496	0.358	1.138
3.400	3.200	0.000	4.916	0.000	0.074	1.496	0.357	1.139
3.500	3.200	0.000	4.913	0.000	0.062	1.496	0.356	1.139
3.600	3.200	0.000	4.911	0.000	0.051	1.496	0.356	1.140
3.700	3.200	0.000	4.909	0.000	0.046	1.496	0.356	1.140
3.800	3.200	0.000	4.907	0.000	0.038	1.496	0.355	1.140
3.900	3.200	0.000	4.906	0.000	0.032	1.496	0.355	1.140
4.000	3.200	0.000	4.905	0.000	0.026	1.496	0.355	1.141
4.100	3.200	0.000	4.904	0.000	0.021	1.496	0.355	1.141
4.200	3.200	0.000	4.903	0.000	0.018	1.496	0.355	1.141
4.300	3.200	0.000	4.903	0.000	0.014	1.496	0.355	1.141
4.400	3.200	0.000	4.903	0.000	0.012	1.496	0.355	1.141
4.500	3.200	0.000	4.902	0.000	0.010	1.496	0.354	1.141
4.600	3.200	0.000	4.902	0.000	0.008	1.496	0.354	1.141
4.700	3.200	0.000	4.902	0.000	0.007	1.496	0.354	1.142
4.800	3.200	0.000	4.901	0.000	0.005	1.496	0.354	1.142
4.900	3.200	0.000	4.901	0.000	0.005	1.496	0.354	1.142
5.000	3.200	0.000	4.901	0.000	0.004	1.496	0.354	1.142
5.100	3.200	0.000	4.901	0.000	0.003	1.496	0.354	1.142
5.200	3.200	0.000	4.901	0.000	0.003	1.496	0.354	1.142
5.300	3.200	0.000	4.900	0.000	0.002	1.496	0.354	1.142
5.400	3.200	0.000	4.900	0.000	0.002	1.496	0.354	1.142

PRK&RD#1: DETENTION POND, [DESIGN POND]

Time	Rain	Runoff	Stage	CFS In	CFS Out	ACFT In	Storage	ACFT Out
5.400	3.200	0.000	4.900	0.000	0.000	1.496	0.354	1.142
5.500	3.200	0.000	4.900	0.000	0.000	1.496	0.354	1.142
5.600	3.200	0.000	4.900	0.000	0.000	1.496	0.354	1.142
5.700	3.200	0.000	4.900	0.000	0.000	1.496	0.354	1.142
5.800	3.200	0.000	4.900	0.000	0.000	1.496	0.354	1.142
5.900	3.200	0.000	4.900	0.000	0.000	1.496	0.354	1.142
6.000	3.200	0.000	4.900	0.000	0.000	1.496	0.354	1.142

(Page 2 of 2)

PRK&RD1: PARK & RIDE PARKING #1



Rainfall File: FDOT_1
1.00 Hours, 3.20 Inches

Peak Runoff 21.0456 CFS
Volume of Runoff 1.0716 ACFT

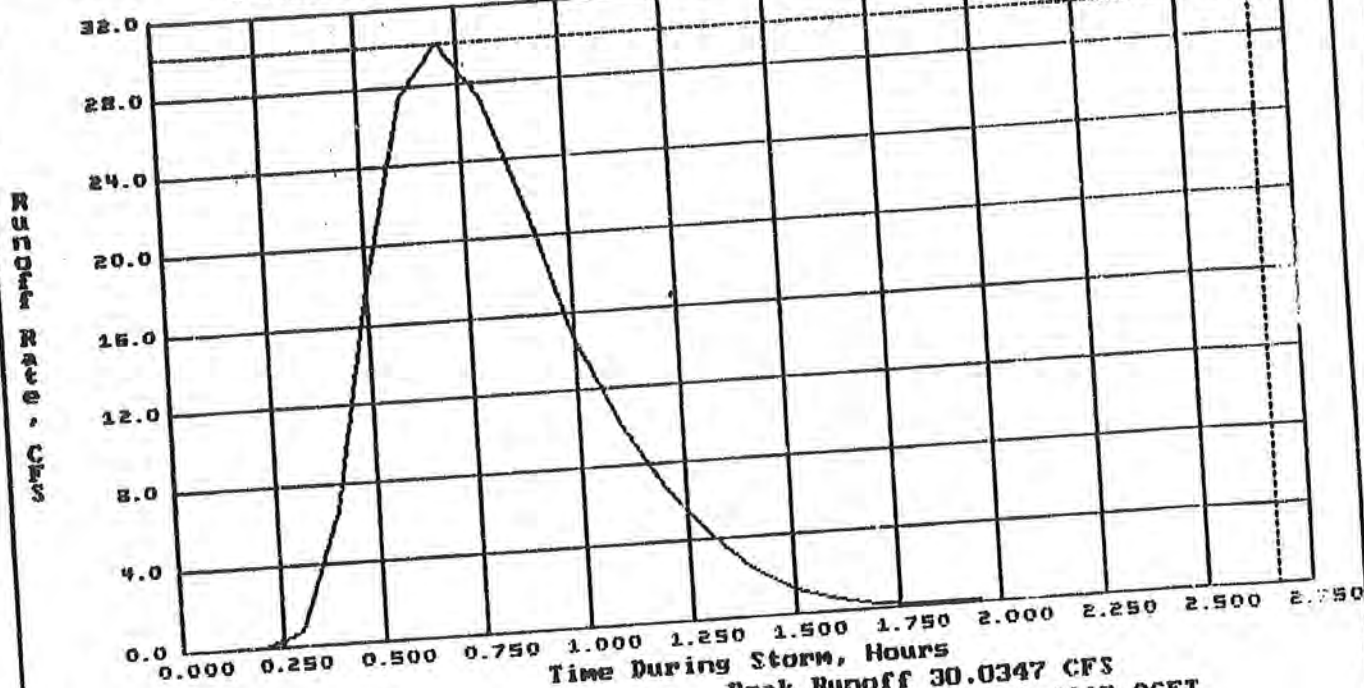
BRN 2.3: DSA

Subbasin File: PRK&RD1, SUBBASIN TOKENS

```

00001: Number of Paths      1
00002: Path Number        1
00003: From Node..        1
00004: To Node....        2
00005: Path Type..        1
00006: *
00007: *****
00008: Number of Nodes     2
00009: Node                1
00010: PARK & RIDE PARKING #1
00011: Type 11
00012: SCS_256
00013: total acres.....    4.5000
00014: weighted curve number...  97.0000
00015: abstraction loss, in....  0.0600
00016: Time of Conc, Hours.....  0.1670
00017: *****
00018: Node                2
00019: DETENTION POND
00020: Type 4
00021: *****
00022: Checksum 3
    
```

PK&RD2: ROADWAY & OFFSITE RUNOFF



Rainfall File: FDOT_1
1.00 Hours, 3.20 Inches

Time During Storm, Hours

Peak Runoff 30.0347 CFS
Volume of Runoff 1.4119 ACFT

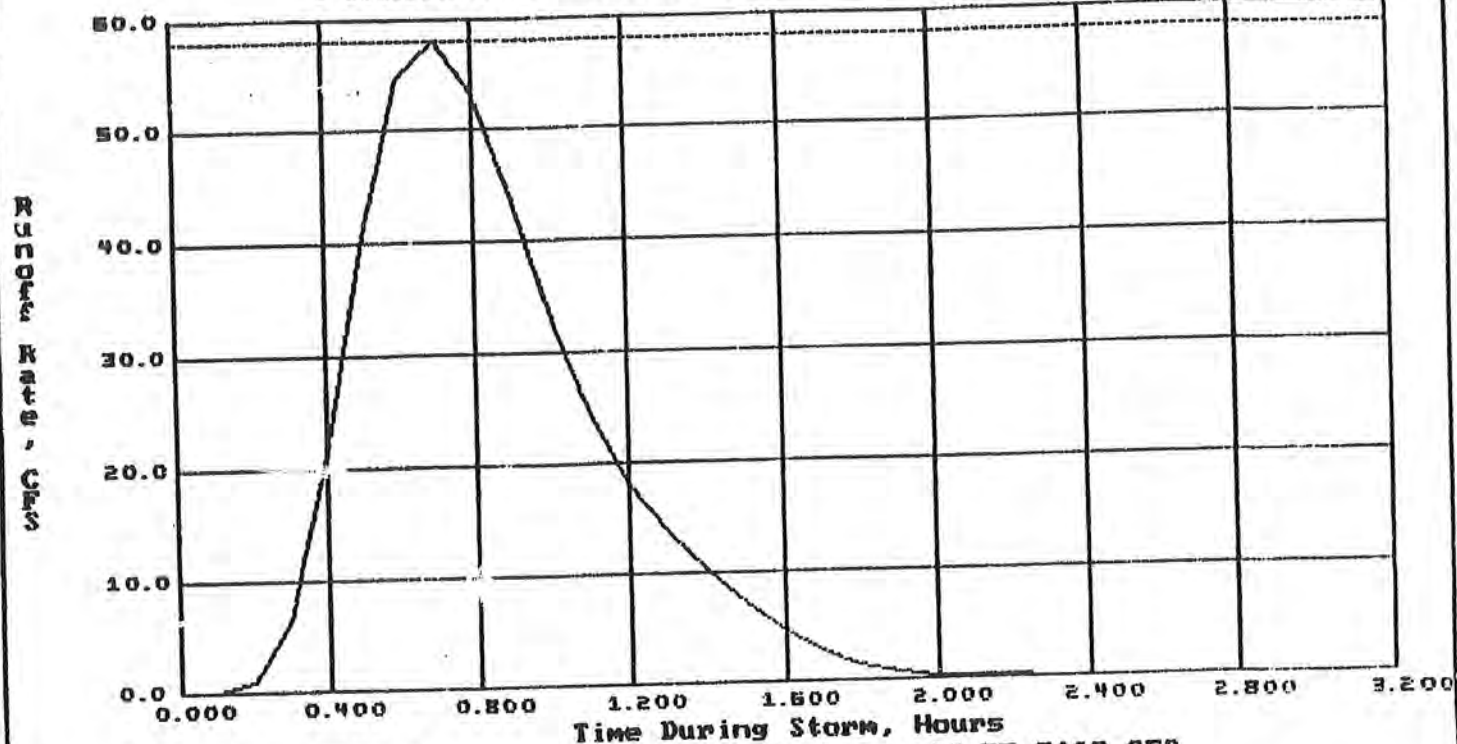
BRN 2.3: DSA

Subbasin File: PK&RD2, SUBBASIN TOKENS

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00001: Number of Paths      1
00002: Path Number         1
00003: From Node..         1
00004: To Node....         2
00005: Path Type..         1
00006: *
00007: *****
00008: Number of Nodes     2
00009: Node                1
00010: ROADWAY & OFFSITE RUNOFF
00011: Type 11
00012: SCS_256
00013: total acres.....    9.9000
00014: weighted curve number... 84.4000
00015: abstraction loss, in.... 0.3700
00016: Time of Conc, Hours..... 0.1670
00017: *****
00018: Node                2
00019: DETENTION POND
00020: Type 4
00021: *****
00022: Checksum 3
    
```

PK&RD3: PARK & RIDE #3 RUNOFF



Rainfall File: FDOT_1
1.00 Hours, 3.20 Inches

Peak Runoff 57.8163 CFS
Volume of Runoff 3.2330 ACFT

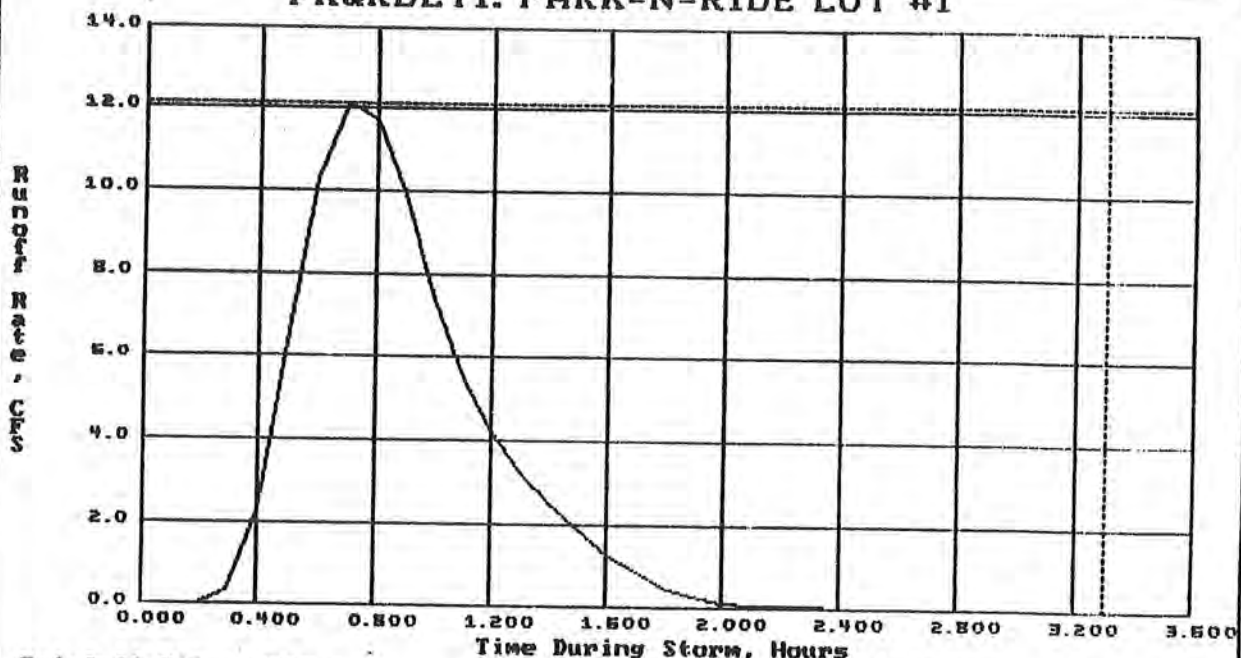
BRN 2.3: DSO

Subbasin File: PK&RD3, SUBBASIN TOKENS

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00001: Number of Paths      1
00002: Path Number        1
00003: From Node..        1
00004: To Node....        2
00005: Path Type..        1
00006: *
00007: *****
00008: Number of Nodes      2
00009: Node                1
00010: PARK & RIDE #3 RUNOFF
00011: Type 11
00012: SCS_256
00013: total acres..... 14.1
00014: weighted curve number... 96.0000
00015: abstraction loss, in.... 0.0800
00016: Time of Conc, Hours..... 0.2200
00017: *****
00018: Node                2
00019: DETENTION POND
00020: Type 4
00021: *****
00022: Checksum 3
    
```

PK&RDLT1: PARK-N-RIDE LOT #1



Rainfall File: FDOT_1
 1.00 Hours, 3.20 Inches

Peak Runoff 12.1546 CFS
 Volume of Runoff 0.6667 ACFT

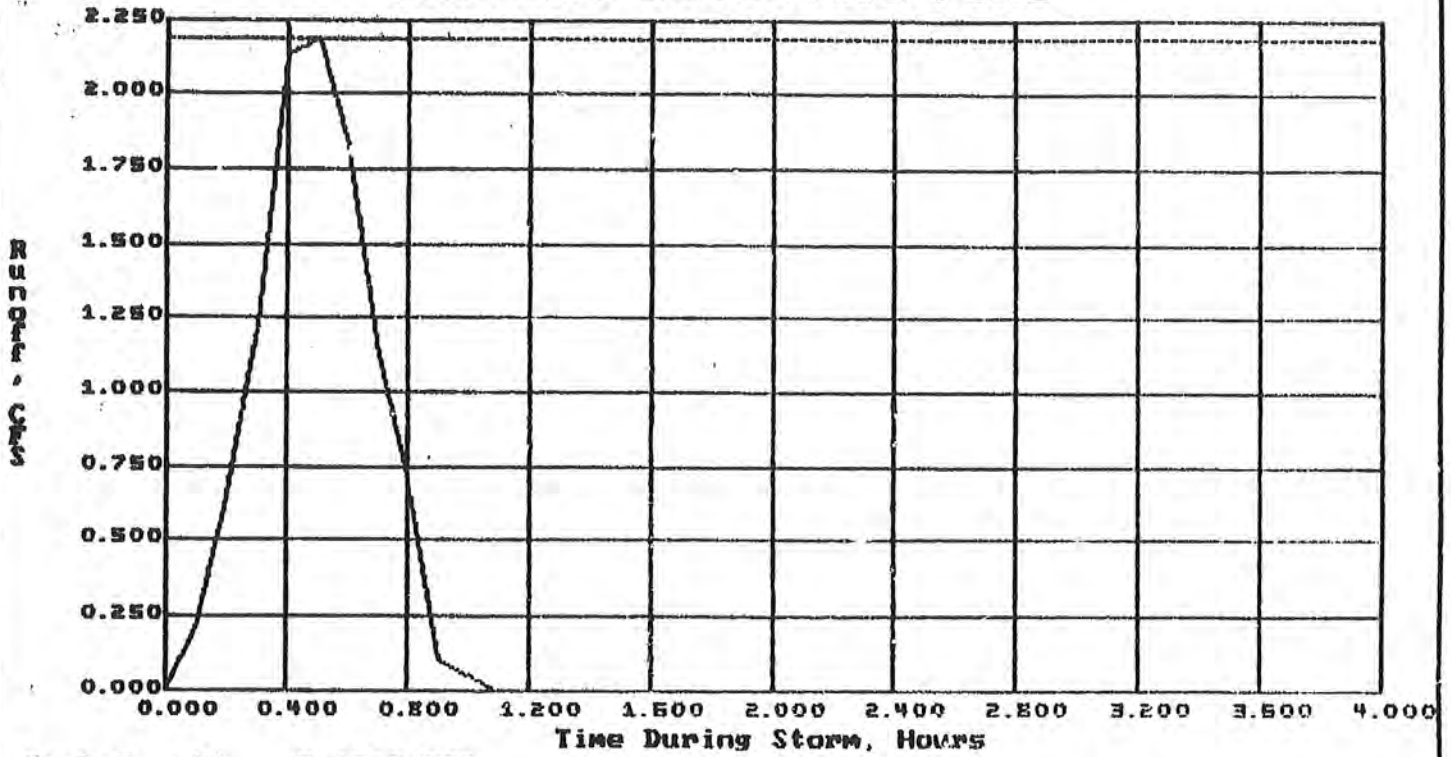
BRN 2.3: DSA

Subbasin File: PK&RDLT1, SUBBASIN TOKENS

```

00001: Number of Paths      1
00002: Path Number         1
00003: From Node..        1
00004: To Node....        2
00005: Path Type..        1
00006: *
00007: *****
00008: Number of Nodes     2
00009: Node                1
00010: PARK-N-RIDE LOT #1
00011: Type 11
00012: SCS_256
00013: total acres.....    4.1000
00014: weighted curve number... 87.5000
00015: abstraction loss, in.... 0.2900
00016: Time of Conc, Hours..... 0.2300
00017: *****
00018: Node                2
00019: STRUCTURE #17
00020: Type 4
00021: *****
00022: Checksum 3
    
```

PRK&RD#1: DETENTION POND

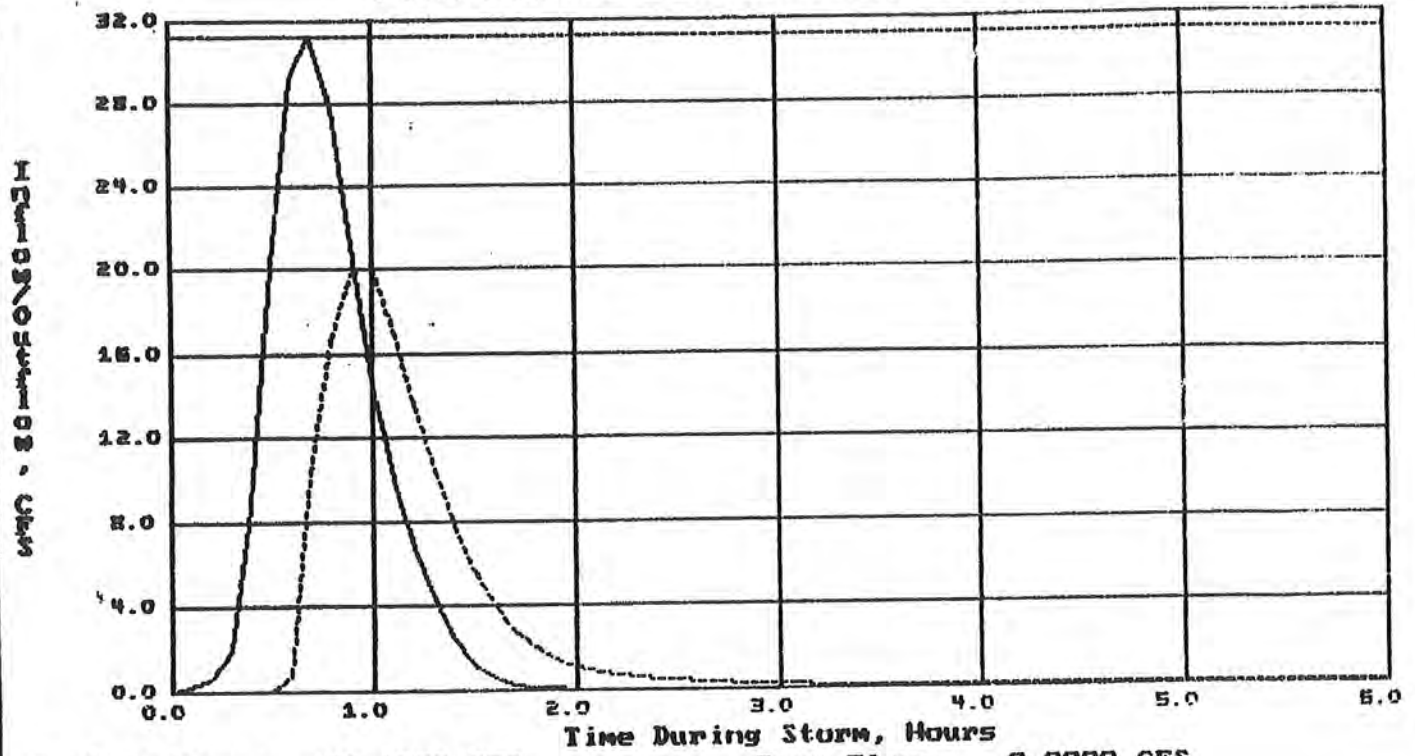


Peak Runoff 2.1862 CFS

SURFACE RUNOFF (RAINFALL ON POND)

BRN 2.3: DSA

PRK&RD#1: DETENTION POND

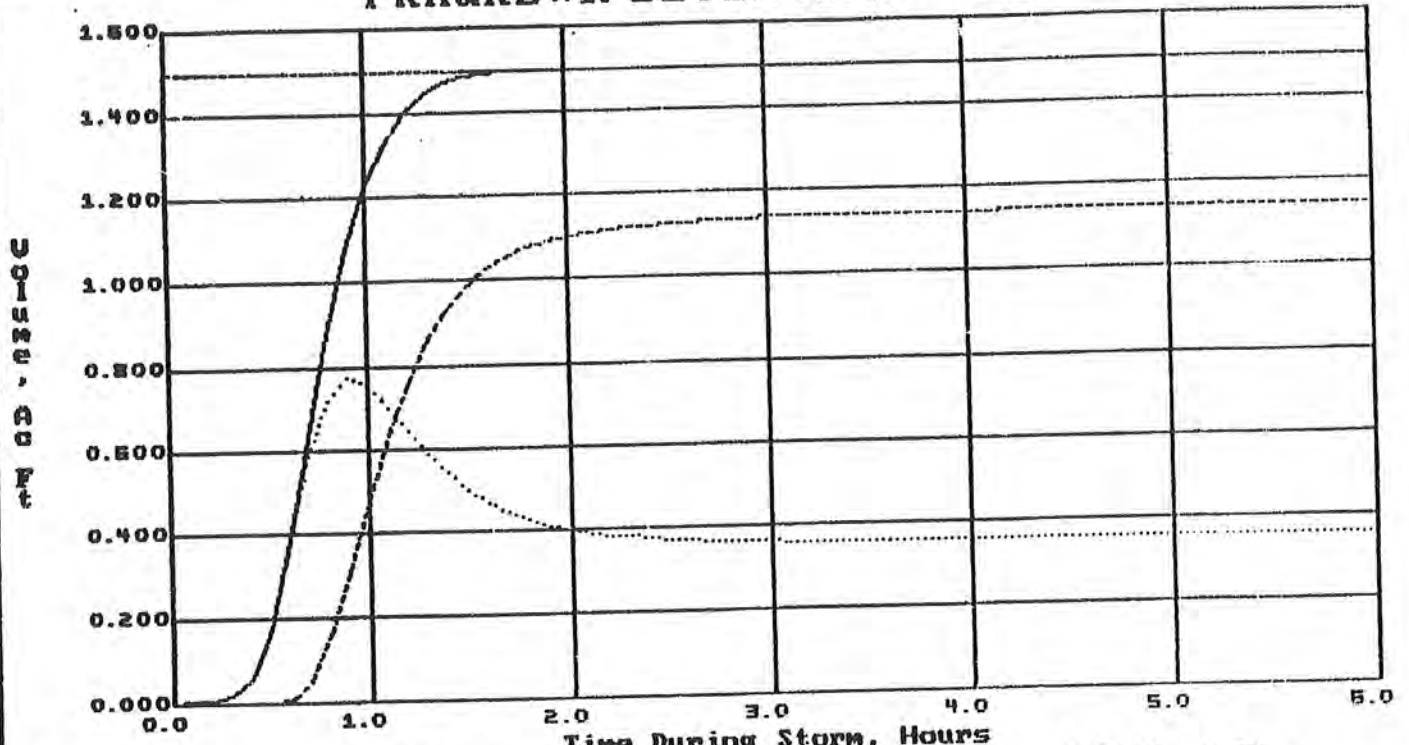


Peak Inflow.: 31.1533 CFS
Peak Outflow: 20.0952 CFS

Base Flow: 0.0000 CFS

BRN 2.3: DSA

PRK&RD#1: DETENTION POND



Peak Storage
Total Intake.

0.7693 AcFt
1.4959 Ac Ft

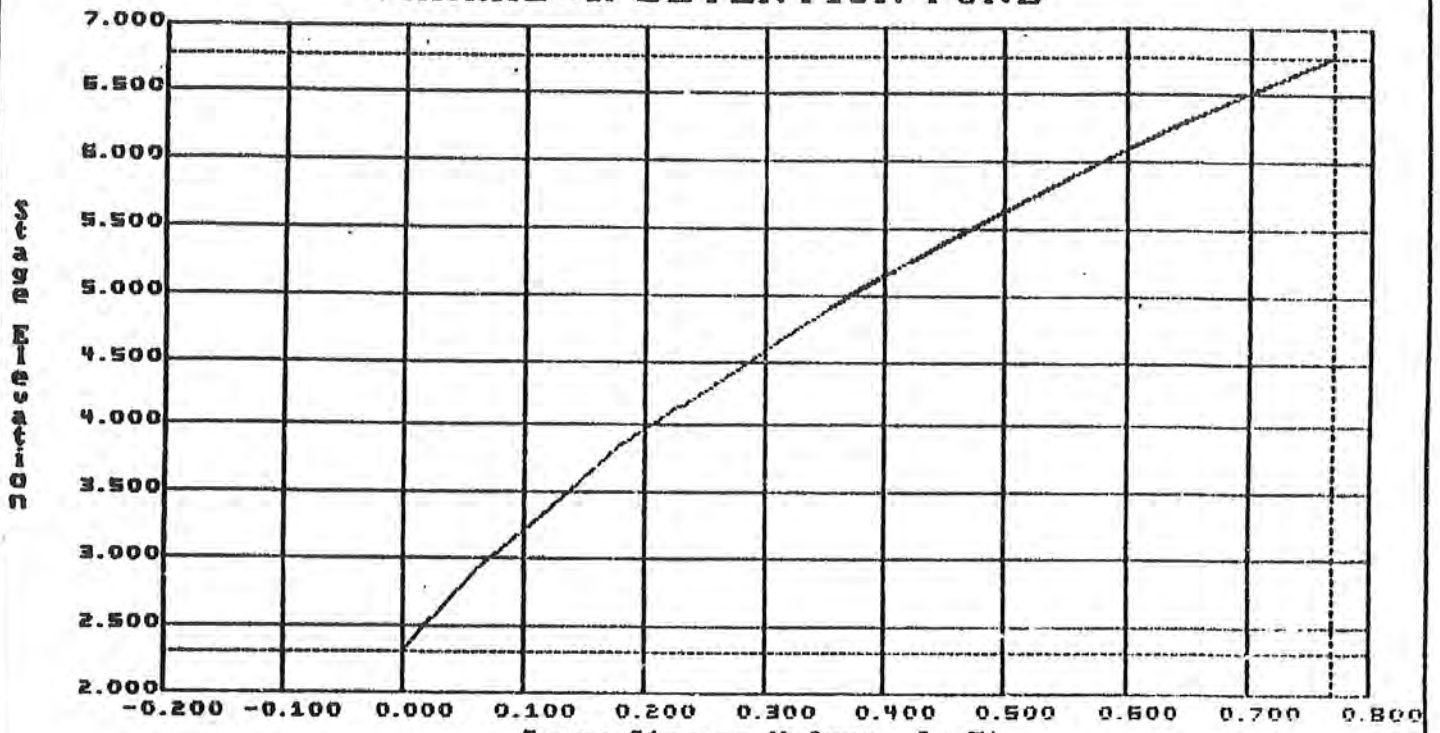
Time During Storm, Hours

Total Outflow

1.1418 Ac Ft

BRN 2.3: DSA

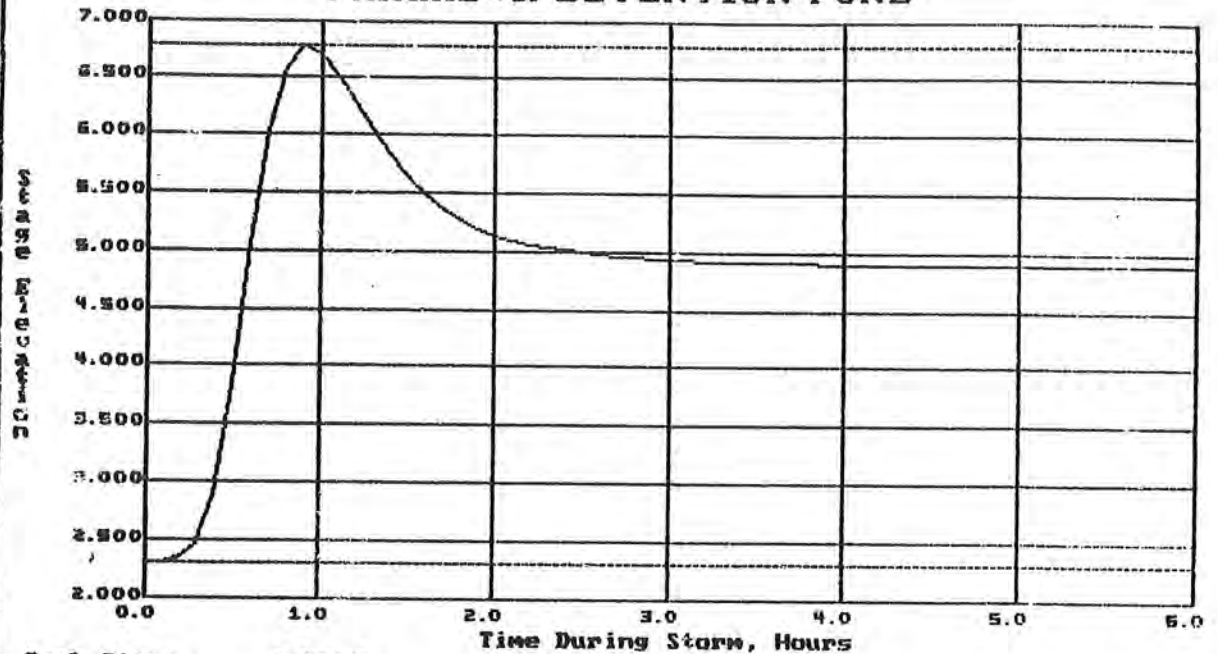
PRK&RD#1: DETENTION POND



Peak Storage 0.7693 AcFt Gross Storage Volume, Ac Ft Net Storage.... 0.7693 AcFt
Initial Storage -0.0000 AcFt

BRN 2.3: DSA

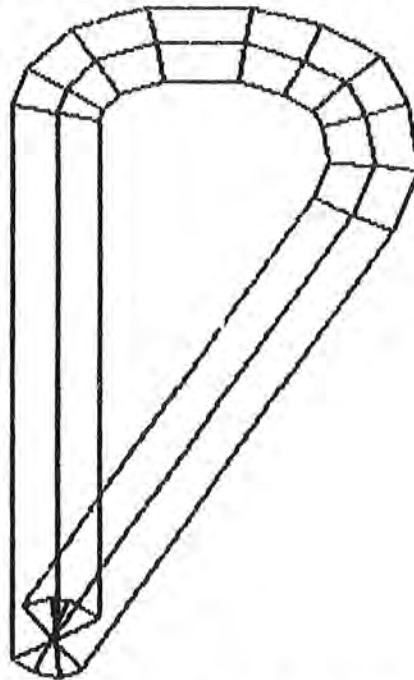
PRK&RD#1: DETENTION POND



Peak Stage.. 6.75 ft
Peak Storage 0.7693 Acft

FIG 2.3: DSA

DESIGN POND FILE: PK&RIDE1



Plan View of Pond

Top Surface Area 13728 Square Feet
Depth 5.700 Feet

Gross Storage 48688 Cubic Feet
Gross Storage 1.1177 Acre Feet

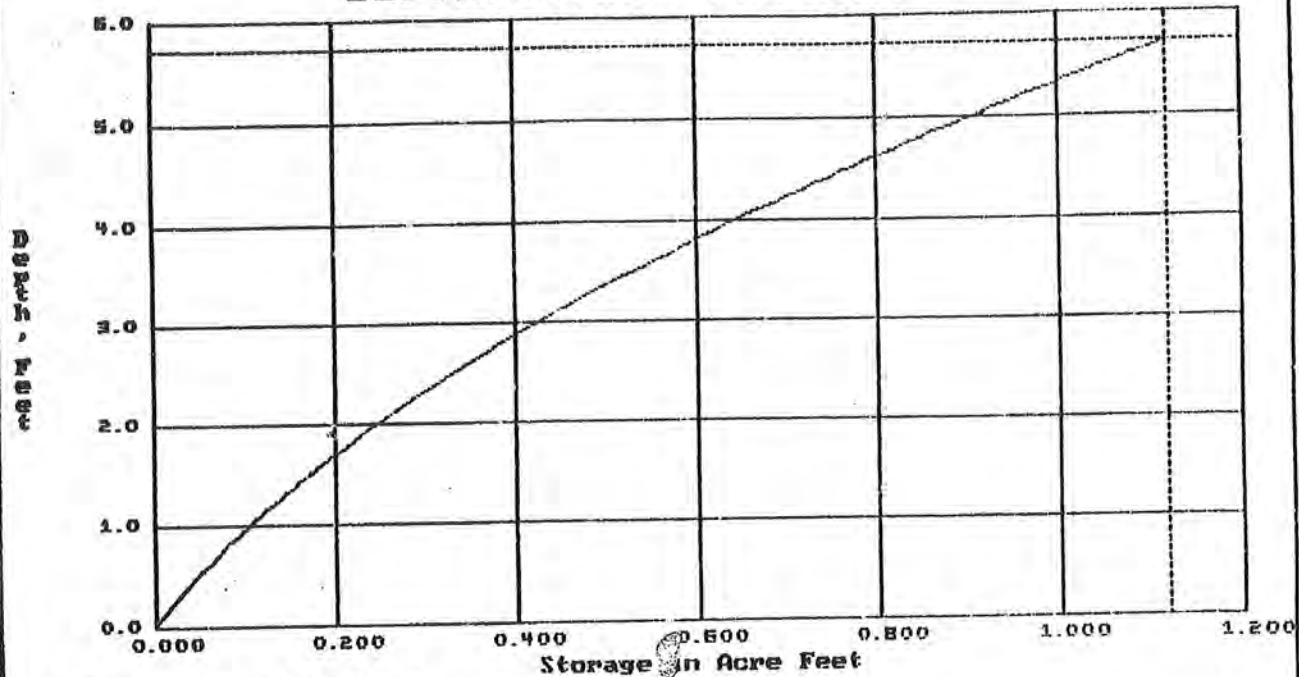
BN 2.3: DSA

POND COORDINATES FILE: PK&RIDE1

Number of Coordinates 14

Pt# 001, X =	0.00, Y =	5.00, S =	4.00
Pt# 002, X =	0.00, Y =	169.00, S =	4.00
Pt# 003, X =	4.00, Y =	180.00, S =	4.00
Pt# 004, X =	15.00, Y =	192.00, S =	4.00
Pt# 005, X =	35.00, Y =	199.00, S =	4.00
Pt# 006, X =	62.00, Y =	199.00, S =	4.00
Pt# 007, X =	80.00, Y =	193.00, S =	4.00
Pt# 008, X =	95.00, Y =	184.00, S =	4.00
Pt# 009, X =	102.00, Y =	170.00, S =	4.00
Pt# 010, X =	105.00, Y =	150.00, S =	4.00
Pt# 011, X =	98.00, Y =	132.00, S =	4.00
Pt# 012, X =	18.00, Y =	2.00, S =	4.00
Pt# 013, X =	12.00, Y =	0.00, S =	4.00
Pt# 014, X =	6.00, Y =	1.00, S =	4.00

DEPTH/STORAGE: PK&RIDE1



Maximum Depth 5.700 Feet
Maximum Storage 1.1177 Acre Feet

BN 2.3: DSA

POND COORDINATES FILE: PK&RIDE1

DEPTH	SQUARE FEET	ACRES	CUBIC FEET	AL ... FEET
5.700	13727.50	0.3151	48687.8	1.1177
5.320	12968.76	0.2977	43616.0	1.0013
4.940	12224.98	0.2806	38829.6	0.8914
4.560	11496.15	0.2639	34323.1	0.7879
4.180	10782.28	0.2475	30090.7	0.6908
3.800	10083.36	0.2315	26126.7	0.5998
3.420	9399.40	0.2158	22425.4	0.5140
3.040	8730.40	0.2004	18981.2	0.4357
2.660	8076.35	0.1854	15788.4	0.3625
2.280	7437.26	0.1707	12841.3	0.2948
1.900	6813.12	0.1564	10134.2	0.2326
1.520	6203.94	0.1424	7661.4	0.1759
1.140	5609.72	0.1288	5417.3	0.1244
0.760	5030.45	0.1155	3396.2	0.0780
0.380	4466.14	0.1025	1592.3	0.0366
0.000	3916.78	0.0899	0.0	0.0000

Project File: PRK&RD#1, NETWORK TOKENS

00001: Number of Paths 7
00002: Path Number 1
00003: From Node.. 3
00004: To Node.... 2
00005: Path Type.. 1
00006: *
00007: Number of Flow Controls. 0
00008: *****
00009: Path Number 2
00010: From Node.. 2
00011: To Node.... 4
00012: Path Type.. 1
00013: *
00014: Number of Flow Controls. 1
00015: Type 1
00016: Weir Crest El..... 4.9000
00017: Width of Opening, feet.. 5.0000
00018: Weir Coefficient..... 3.1300
00019: Number of Ends..... 2
00020: *****
00021: Path Number 3
00022: From Node.. 1
00023: To Node.... 4
00024: Path Type.. 1
00025: *
00026: Number of Flow Controls. 1
00027: Type 1
00028: Weir Crest El..... 5.0000
00029: Width of Opening, feet.. 3.0000
00030: Weir Coefficient..... 3.1300
00031: Number of Ends..... 2
00032: *****
00033: Path Number 4
00034: From Node.. 4
00035: To Node.... 6
00036: Path Type.. 2
00037: *
00038: Pipe Length, feet..... 800.0000
00039: Manning Coefficient..... 0.0120
00040: Pipe Rise, feet..... 3.0000
00041: Pipe Span, feet..... 3.0000
00042: Upstream Invert..... 1.0000
00043: Forward Entrance Ke..... 0.2000
00044: Downstream Invert..... 0.0000
00045: Backflow Entrance Ke.... 0.2000
00046: Flapgate Flag..... 0
00047: *****
00048: Path Number 5
00049: From Node.. 7
00050: To Node.... 6
00051: Path Type.. 1
00052: *
00053: Number of Flow Controls. 0
00054: *****

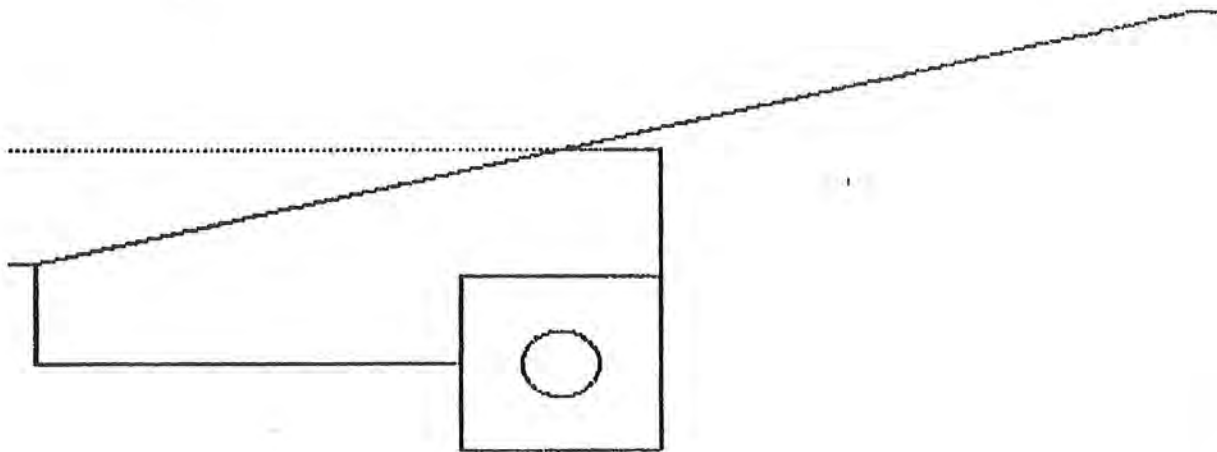
Project File: PRK&RD#1, NETWORK TOKENS

00055: Path Number 6
00056: From Node.. 6
00057: To Node.... 5
00058: Path Type.. 2
00059: *
00060: Pipe Length, feet..... 300.0000
00061: Manning Coefficient..... 0.0120
00062: Pipe Rise, feet..... 4.5000
00063: Pipe Span, feet..... 4.5000
00064: Upstream Invert..... 0.0000
00065: Forward Entrance Ke..... 0.2000
00066: Downstream Invert..... -0.2000
00067: Backflow Entrance Ke.... 0.2000
00068: Flapgate Flag..... 0
00069: *****
00070: Path Number 7
00071: From Node.. 5
00072: To Node.... 8
00073: Path Type.. 2
00074: *
00075: Pipe Length, feet..... 600.0000
00076: Manning Coefficient..... 0.0120
00077: Pipe Rise, feet..... 5.0000
00078: Pipe Span, feet..... 5.0000
00079: Upstream Invert..... -0.2000
00080: Forward Entrance Ke..... 0.2000
00081: Downstream Invert..... -0.8000
00082: Backflow Entrance Ke.... 0.2000
00083: Flapgate Flag..... 0
00084: *****
00085: Number of Nodes 9
00086: Node 1
00087: PARK-N-RIDE LOT#1
00088: Type 6
00089: PK&RDLT1
00090: Flood elevation..... 8.0000
00091: Dry Weather Base CFS.... 0.0000
00092: Initial Water Elvation. 2.3000
00093: *****
00094: Node 2
00095: DETENTION POND
00096: Type 9
00097: PK&RIDE1
00098: Flood elevation..... 8.0000
00099: Rational coefficient.... 1.0000
00100: Initial water..... 2.3000
00101: Dry Weather Base CFS.... 0.0000
00102: *****
00103: Node 3
00104: ROADWAY & OFFSITE RUNOFF
00105: Type 6
00106: PK&RD2
00107: Flood elevation..... 8.0000
00108: Dry Weather Base CFS.... 0.0000

Project File: PRK&RD#1, NETWORK TOKENS

00109: Initial Water Elwvation. 2.3000
00110: *****
00111: Node 4
00112: STRUCTURE #17
00113: Type 3
00114: Flood elevation..... 8.0000
00115: Dry Weather Base CFS.... 0.0000
00116: Initial Water Elevation. 2.3000
00117: *****
00118: Node 5
00119: S-66A
00120: Type 3
00121: Flood elevation..... 8.0000
00122: Dry Weather Base CFS.... 0.0000
00123: Initial Water Elevation. 2.3000
00124: *****
00125: Node 6
00126: STRUCTURE #54
00127: Type 3
00128: Flood elevation..... 8.0000
00129: Dry Weather Base CFS.... 0.0000
00130: Initial Water Elevation. 2.3000
00131: *****
00132: Node 7
00133: PARK-N-RIDE LOT#3
00134: Type 6
00135: PK&RD3
00136: Flood elevation..... 8.0000
00137: Dry Weather Base CFS.... 0.0000
00138: Initial Water Elwvation. 2.3000
00139: *****
00140: Node 8
00141: N.FORK NEW RIVER (C-12)
00142: Type 4
00143: Number of data points... 2
00144: Hour 0.0000 Stage 2.3000
00145: Hour 6.0000 Stage 2.3000
00146: Flood elevation..... 8.0000
00147: *****
00148: Checksum 15

SIDEDRAIN FILE: PRK&RIDE



Section Through Sand Filter and Underdrain
HW El. 4.900; LW El. 2.300 Treatment of 15307 CF
Bottom El. 2.300; CI UD El. 0.000 Underdrain Capacity 15545.80 CFH

DRAW 2.3: DSA

BRN SIDEDRAIN FILTER FILE: PRK&RIDE

SUMMARY OF RUN CONSTANTS

Total Site Acreage.....	9.900
Treatment Runoff, Inches.....	0.500
Required Volume, Cubic Feet....	17968
Filter High Water Elevation....	4.900
Filter Low Water Elevation.....	2.300
Treated Volume, Cubic Feet.....	15307
Number of Increments of Run....	7
Delta Stage of Run.....	0.371
Pond Bottom Elevation.....	2.300
Underdrain Centerline Elevation	0.000
Filter Sand Darcy K, Feet/Hour.	1.700
Maximum Horizontal Length, Feet	8.400
Length of Underdrain, Feet.....	93.000

BRN SIDEDRAIN FILTER FILE: PRK&RIDE

ESTIMATED FLOWS FROM FILTER/UNDERDRAIN GEOMETRY

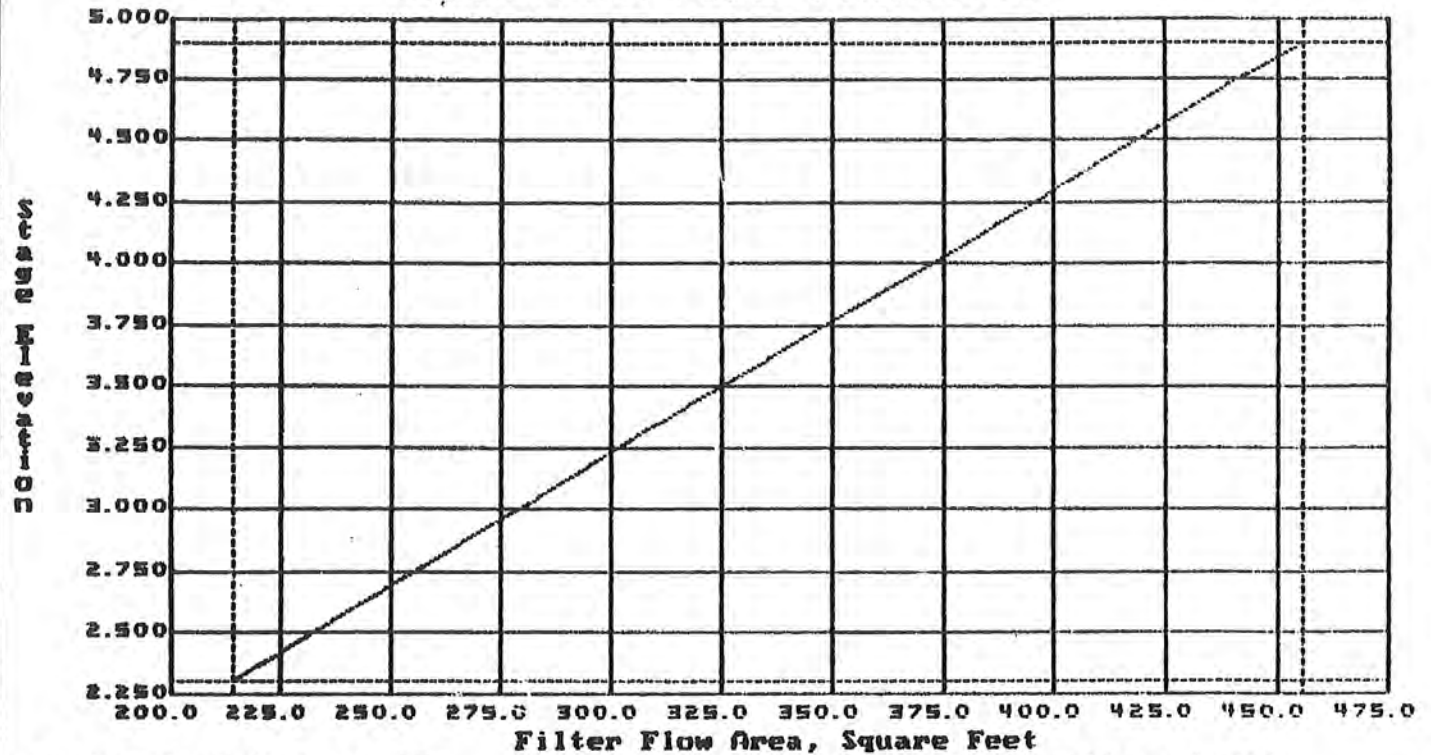
Stage El.	Pond Depth	Filter Depth	Head Feet	Lmin Feet	Lavg Feet	Lmean Feet	Gradient Ft/Ft	Area SF	Flow CFH
4.900	2.60	4.90	4.90	-2.00	3.20	5.64	0.8687	455.7	672.9
4.529	2.23	4.53	4.53	-0.51	3.94	6.21	0.7296	421.2	522.4
4.157	1.86	4.16	4.16	0.97	4.69	6.74	0.6167	386.6	405.3
3.786	1.49	3.79	3.79	2.46	5.43	7.23	0.5233	352.1	313.2
3.414	1.11	3.41	3.41	3.94	6.17	7.67	0.4450	317.5	240.2
3.043	0.74	3.04	3.04	5.43	6.91	8.04	0.3786	283.0	182.1
2.671	0.37	2.67	2.67	6.91	7.66	8.30	0.3220	249.4	136.0
2.300	-0.00	2.30	2.30	8.40	8.40	8.40	0.2738	213.9	99.6

BRN SIDEDRAIN FILTER FILE: PRK&RIDE

DRAWDOWN TIMES FROM POND GEOMETRY AND ESTIMATED FLOWS

Stage El.	Gross CF Volume	Net CF Volume	Delta CF Volume	Flow CFH	Average Flow	Delta Hours	Drawdown Hours
4.900	15307	15307		672.9			0.00
			2846		597.7	4.76	
4.529	12461	12461		522.4			4.76
			2617		463.9	5.64	
4.157	9844	9844		405.3			10.40
			2394		359.3	6.66	
3.786	7450	7450		313.2			17.07
			2176		276.7	7.86	
3.414	5274	5274		240.2			24.93
			1963		211.2	9.30	
3.043	3310	3310		182.1			34.23
			1756		159.1	11.04	
2.671	1554	1554		136.0			45.27
			1554		117.8	13.19	
2.300	-0	-0		99.6			50.46

SIDEDRAIN FILE: PRK&RIDE



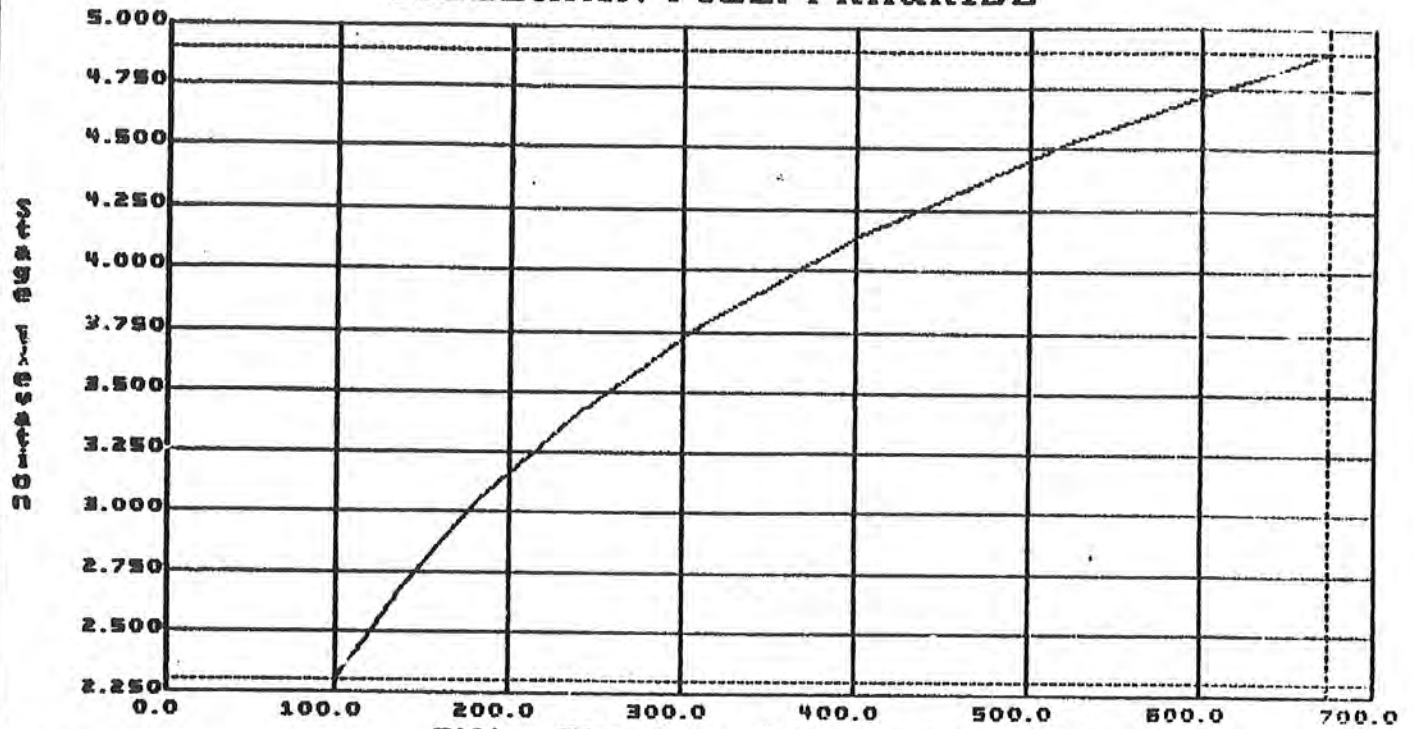
Filter High Water 4.900
Filter Low Water. 2.300

Filter Flow Area, Square Feet

Sand Darcy K, Feet/Hour 1.700
Underdrain Length, Feet 93

BRM 2.3: DSA

SIDEDRAIN FILE: PRK&RIDE

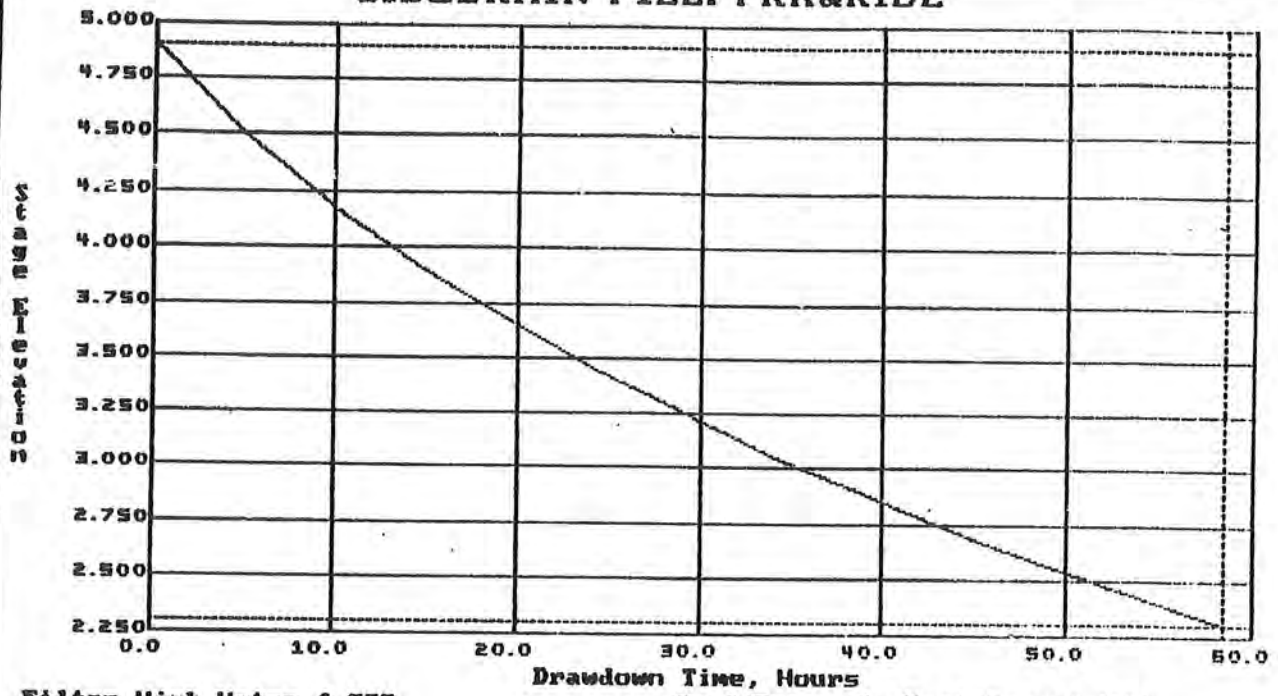


Filter High Water 4.900
Filter Low Water. 2.300

Sand Darcy K, Feet/Hour 1.700
Underdrain Length, Feet 93

BRN 2.3: DSA

SIDEDRAIN FILE: PRK&RIDE

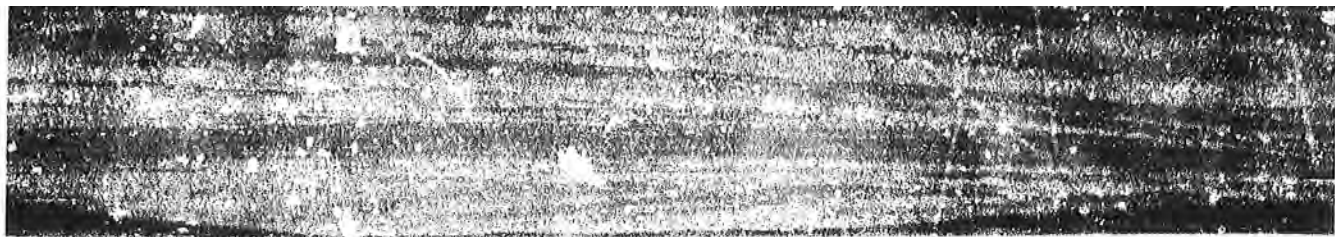


Filter High Water 4.900
Filter Low Water 2.300

Sand Darcy K, Feet/Hour 1.700
Underdrain Length, Feet 93

BN 2.3: DSA

PIPE IDERT FROM TO (STA)	D S Y I I Y S D P T R R	LENGTH (FEET)	AREA (ACRES) C1=0.95 C2=0.50 C3=0.20 INCREMENT	MIN YC (MIN)	GUTTER OR GRAVE ELEV	PIPE DIA (IN)	EXTRA FLOW (CFS)	MAX DEPTH CUT	W.G. MAX CONTROL	MAX CROWN ELEV	CROWN UPPER END	ELEV LOWER END	'N' VALUE	C O D E
51 53 142+13	154R	132	0.00 0.00 0.00	0.00	7.06	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
52 53 223+06	R	89	0.30 0.00 0.00	0.00	8.27	18	0.00	0.0	0.00	0.00	0.00	0.00	.000	
53 54 223+10	62R	35	0.40 0.00 0.00	0.00	7.48	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
54 954 223+10	127R	136	0.40 0.00 0.00	0.00	7.48	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
954 66 223+10	260R	256	0.00 0.00 0.00	0.00	8.00	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
55 56 151+50	77R	65	0.60 0.00 0.00	0.00	7.35	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
56 57 152+60	97R	120	0.40 0.00 0.00	0.00	7.35	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
57 58 40+20	102R	65	0.60 0.00 0.00	0.00	7.35	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
58 59 40+85	103R	65	0.60 0.00 0.00	0.00	7.35	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
59 64 41+89	103R	121	0.60 0.00 0.00	0.00	7.35	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
64 65 225+77	61R	65	0.50 0.00 0.00	0.00	7.35	C	0.00	0.0	0.00	0.00	0.00	0.00	.000	
60 61 39+35	20R	53	0.20 0.00 0.00	0.00	5.12	18	0.00	0.0	0.00	0.00	0.00	0.00	.000	
61 62 39+89	20R	190	0.20 0.00 0.00	0.00	5.12	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
62 63 41+00	25R	65	0.29 0.00 0.00	0.00	6.49	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
63 65 43+44	25R	186	0.30 0.00 0.00	0.00	6.49	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
65 66 225+77	61R	136	0.50 0.00 0.00	0.00	7.35	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	
66 966 225+77	R	304	0.00 0.00 0.00	0.00	8.00	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	



DATE PROCESSED

PAGE 4

TIME PROCESSED

PIPE IDNOY	D S Y 1 1 Y	LENGTH (FEET)	AREA (ACRES) C1=0.95 C2=0.50 C3=0.20 INCREMENT	MIN TC (MIN)	GUTTER OR GRATE ELEV	PIPE DIA (IN)	EXTRA FLOW (CFS)	MAX DEPTH COS	H.G. MAX CONTROL	MAX CROWN ELEV	CROWN UPPER END	ELEV LOWER END	'N' VALUE	C O D E
986 866 228+00	R	304	0.00 0.00 0.00	0.00	8.00	0	0.00	0.0	0.00	0.00	0.00	0.00	.000	

DATE PROCESSED
PROJECT 10150-1530

COST SUMMARY

TIME PROCESSED
PAGE 8

PARK-N-RIDE PARKING LOTS 1 & 3

PIPK IDRNT	COST (\$)	PIPK IDRNT	COST (\$)	PIPK IDRNT	COST (\$)
FROM TO		FROM TO		FROM TO	
2 11	2750.00	11 14	1702.35	13 14	166.72
14 15	4721.64	15 16	8190.60	16 18	6841.56
19 20	282.45	20 18	979.48	18 17	4625.28
1 17	1780.92	17 917	11971.50	917 817	12738.04
817 717	9323.72	717 54	13780.68	38 39	729.40
39 40	937.80	40 41	1649.97	41 42	1702.35
42 43	1921.41	43 44	1252.68	44 49	1284.80
45 46	521.00	46 47	1375.44	47 48	1104.52
48 49	2750.00	844 944	1167.04	944 49	3647.00
49 50	2007.80	50 51	2007.80	51 53	4239.84
52 53	1667.20	53 54	1302.50	54 954	11561.36
954 66	21782.50	55 56	1223.95	56 57	2500.80
57 58	1354.60	58 59	1354.60	59 64	3168.99
64 65	1702.35	60 61	1104.52	61 62	3959.60
62 63	1354.60	63 65	3876.24	65 66	4368.32
66 966	31890.72	966 866	31890.72		

TOTAL SYSTEM COST = 233563.03

DATE PROCESSED
PROJECT 10150-1538

SYSTEM ANALYSIS
PARK-N-RIDE PARKING LOTS 1 & 3

TIME PROCESSED
PAGE 9

MESSAGE		PIPE LINE
MAXIMUM DEPTH OF CUT (TO CROWN)	0.00 FT	2 TO 11
MAXIMUM VELOCITY (GRAVITY FLOW)	8.24 FPS	58 TO 59
MAXIMUM PIPE SLOPE	0.00 PERCENT	2 TO 11
MINIMUM VELOCITY IN MAIN (H.G. FLOW)	0.39 FPS	844 TO 944
MINIMUM VELOCITY (GRAVITY FLOW)	0.00 FPS	2 TO 11
MINIMUM HYDRAULIC GRADIENT CLEARANCE TO GUTTER	0.02 FT	40 TO 41
MINIMUM HYDRAULIC GRADIENT CLEARANCE TO CONTROL	0.01 FT	40 TO 41
TOTAL DRAINAGE AREA	17.20 ACRES	
WEIGHTED COEFFICIENT	0.88	

MAXIMUM DEPTH OF CUT CONTROL USED FOR RESTRAINT AT -
NO PIPES

DESIGN FLOW GREATER THAN 10 FPS IN THE FOLLOWING PIPE LENGTHS -
NO PIPES

COMMENTS

901109-1a
06-01469-5

THIS CONTRACT PLAN SET INCLUDES

- SUMMARY OF PAY ITEMS
- PARK-N-RIDE LOT PLANS
- ARCHITECTURAL PLANS
- LANDSCAPING PLANS
- LIGHTING PLANS
- MECHANICAL / ELECTRICAL PLANS

INDEX OF PARK-N-RIDE LOT

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	GENERAL NOTES
3	DRAINAGE MAP
4	TYPICAL SECTIONS
5	TYPICAL DETAILS
6	SUMMARY OF QUANTITIES
7	SUMMARY OF DRAINAGE STRUCTURES
8	LAYOUT AND PAVING PLANS
9	GRADING AND DRAINAGE PLANS
10	COORDINATE DATA SHEET
11	PROFILES
12	CROSS SECTION PATTERN
13	CROSS SECTIONS
14	
15	
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18	
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26	
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ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY 1990)

001	020
002	060
102	600
200	620
201	623
205	624
209	625
210	626
211	1320
217	9535
221	10965
232	11037
233	11201
270	11226
273	11660
280	11863
281	11864
282	11926
285	17302
300	17320
301	17346
302	17349
303	17352
304	17353
400	17355
410	17356
415	17500
450	17501
452	17503
453	17504
461	17505
500	17721
505	17736
511	17882
513	17882
514	
515	
516	

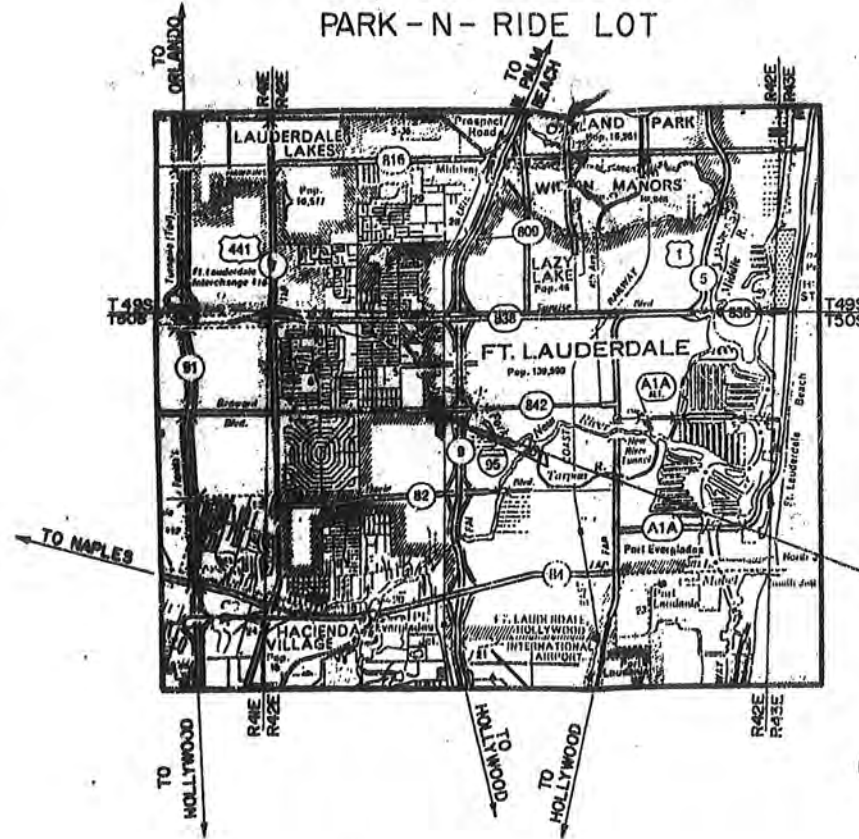
**STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION**

**PLANS OF PROPOSED
STATE HIGHWAY**

A. PROJ. N° I - 95-1(386)27 [STATE PROJ. N° 86070-3496]

BROWARD COUNTY

**BROWARD BOULEVARD
PARK-N-RIDE LOT**



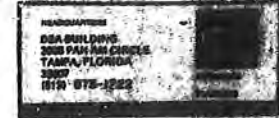
W.P.I. NO. 4140885



PROJECT LOCATION

1 MILE

PREPARED BY:



90% REVIEW
DATE 6-13-90

NOTE: THIS PROJECT TO BE LET TO CONTRACT WITH
STATE PROJECT N° 86070-3493
F.A. PROJECT N° IR-95-1(386) 27
STATE PROJECT N° 86070-3464 & 3465
F.A. PROJECT N° IR-95-1(386) 27

ATTENTION IS DIRECTED TO THE FACT THAT
THESE PLANS MAY HAVE BEEN REDUCED IN
SIZE BY REPRODUCTION. THIS MUST BE
CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA,
DEPARTMENT OF TRANSPORTATION, STANDARD
SPECIFICATIONS DATED 1988,
AND SUPPLEMENTS THERETO IF NOTED IN THE
SPECIAL PROVISIONS FOR THIS PROJECT.

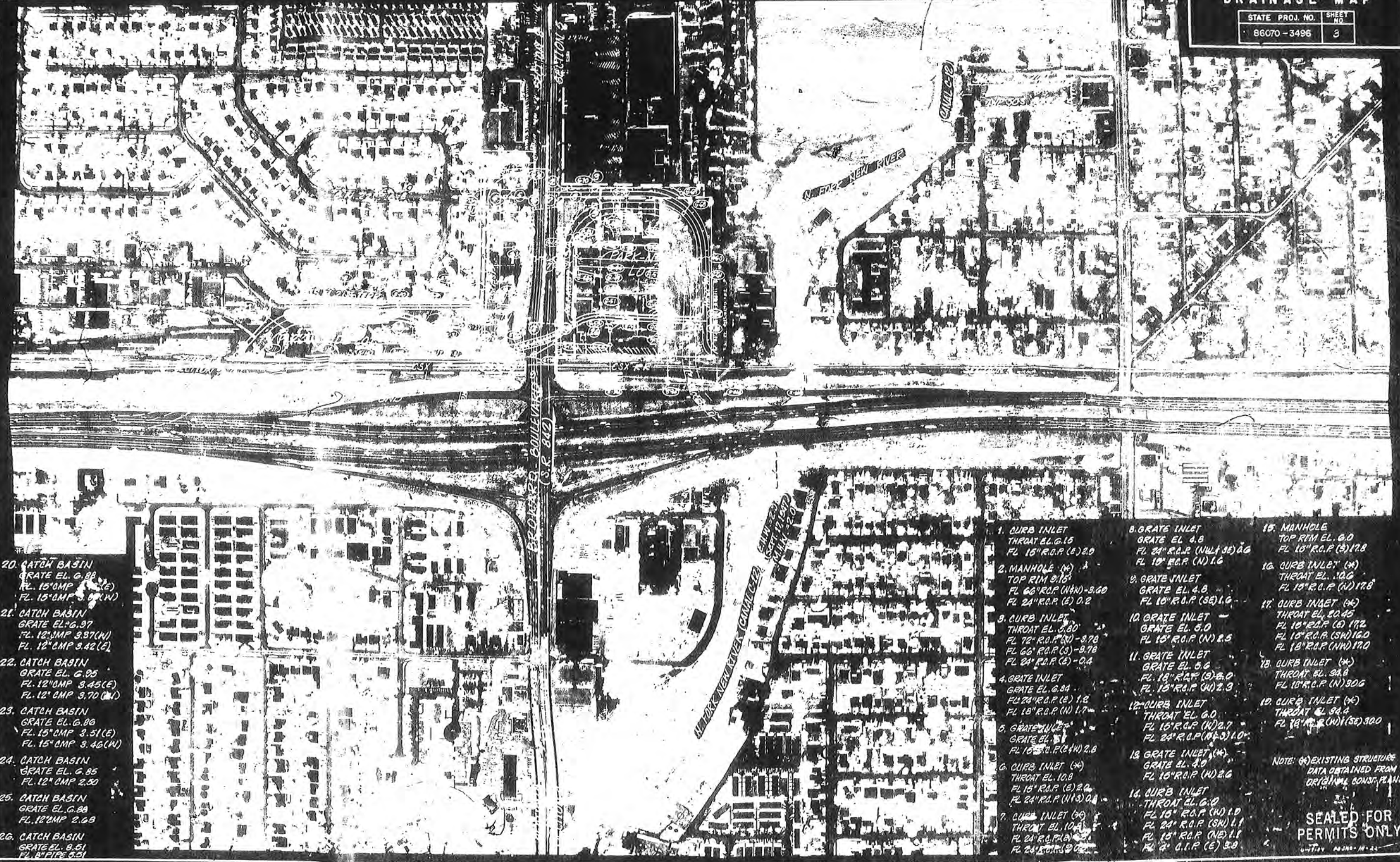
PARK-N-RIDE
LOT PLANS APPROVED BY:
[Signature]
DATE: _____

PROJECT MANAGER: GARY M. KEIFE, P.E.

SEALED FOR
RECORD

DRAINAGE MAP

STATE PROJ. NO.	SHEET NO.
86070-3496	3



- 20. CATCH BASIN
GRATE EL. 6.88
FL. 15" O.M.P. 3.12 (E)
FL. 15" O.M.P. 3.09 (W)
- 21. CATCH BASIN
GRATE EL. 6.97
FL. 12" O.M.P. 3.37 (W)
FL. 12" O.M.P. 3.42 (E)
- 22. CATCH BASIN
GRATE EL. 6.95
FL. 12" O.M.P. 3.45 (E)
FL. 12" O.M.P. 3.70 (W)
- 23. CATCH BASIN
GRATE EL. 6.86
FL. 15" O.M.P. 3.31 (E)
FL. 15" O.M.P. 3.46 (W)
- 24. CATCH BASIN
GRATE EL. 6.85
FL. 12" O.M.P. 2.50
- 25. CATCH BASIN
GRATE EL. 6.88
FL. 12" O.M.P. 2.68
- 26. CATCH BASIN
GRATE EL. 8.51
FL. 8" PIPE 2.51

- 1. CURB INLET
THROAT EL. 6.15
FL. 15" R.O.P. (E) 2.0
- 2. MANHOLE (M) A
TOP RIM 8.15
FL. 66" R.O.P. (N) - 3.60
FL. 24" R.O.P. (E) 0.2
- 3. CURB INLET
THROAT EL. 5.20
FL. 12" R.O.P. (N) - 3.78
FL. 66" R.O.P. (S) - 3.78
FL. 24" R.O.P. (E) - 0.4
- 4. GRATE INLET
GRATE EL. 6.84
FL. 24" R.O.P. (E) 1.2
FL. 18" R.O.P. (N) 1.7
- 5. GRATE INLET
GRATE EL. 5.1
FL. 15" R.O.P. (W) 2.3
- 6. CURB INLET (M)
THROAT EL. 10.8
FL. 15" R.O.P. (E) 2.2
FL. 24" R.O.P. (N) 0.4
- 7. CURB INLET (M)
THROAT EL. 10.8
FL. 24" R.O.P. (S) 2.2
FL. 24" R.O.P. (E) 2.2
- 8. GRATE INLET
GRATE EL. 4.8
FL. 24" R.O.P. (NW) SE 0.6
FL. 15" R.O.P. (N) 1.6
- 9. GRATE INLET
GRATE EL. 4.8
FL. 15" R.O.P. (SE) 1.6
- 10. GRATE INLET
GRATE EL. 5.0
FL. 15" R.O.P. (N) 2.5
- 11. GRATE INLET
GRATE EL. 5.6
FL. 18" R.O.P. (S) 2.0
FL. 15" R.O.P. (W) 2.3
- 12. CURB INLET
THROAT EL. 6.0
FL. 15" R.O.P. (N) 2.7
FL. 24" R.O.P. (NE) 1.0
- 13. GRATE INLET (M)
GRATE EL. 4.0
FL. 15" R.O.P. (N) 2.6
- 14. CURB INLET
THROAT EL. 6.0
FL. 15" R.O.P. (W) 1.0
FL. 24" R.O.P. (SW) 1.1
FL. 15" R.O.P. (NE) 1.1
FL. 24" R.O.P. (E) 2.8
- 15. MANHOLE
TOP RIM EL. 6.0
FL. 15" R.O.P. (S) 1.78
- 16. CURB INLET (M)
THROAT EL. 10.6
FL. 15" R.O.P. (N) 1.78
- 17. CURB INLET (M)
THROAT EL. 20.45
FL. 10" R.O.P. (S) 1.2
FL. 15" R.O.P. (SW) 1.60
FL. 18" R.O.P. (NW) 1.0
- 18. CURB INLET (M)
THROAT EL. 24.8
FL. 15" R.O.P. (N) 30.6
- 19. CURB INLET (M)
THROAT EL. 34.4
FL. 18" R.O.P. (W) (SE) 30.0

NOTE: (M) EXISTING STRUCTURE DATA OBTAINED FROM ORIGINAL CONST. PLANS.

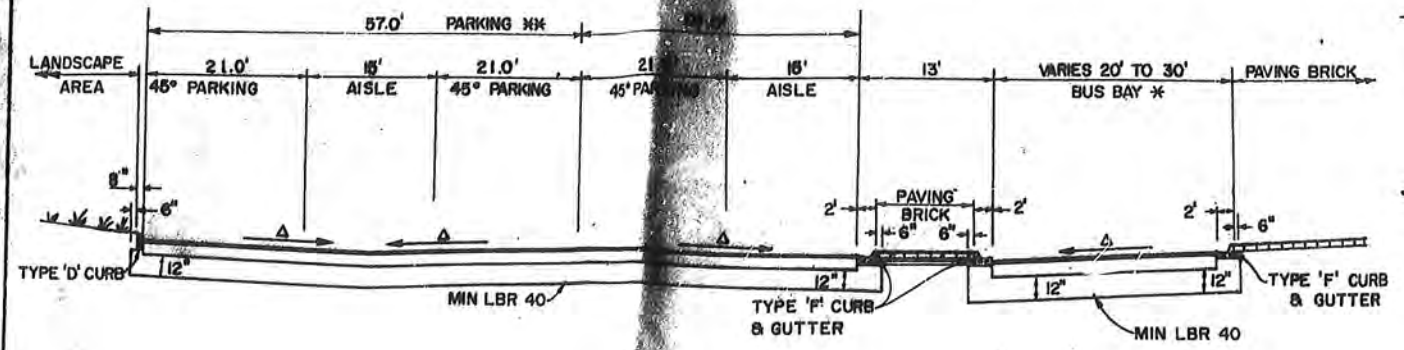
SEALED FOR PERMITS ONLY

REVISIONS		DESIGNED		DRAWN		CHECKED		APPROVED	
DATE	BY	DATE	NAME	DATE	NAME	DATE	NAME	DATE	NAME

FLORIDA DEPARTMENT OF TRANSPORTATION
DATE: 11/10

DRAINAGE MAP

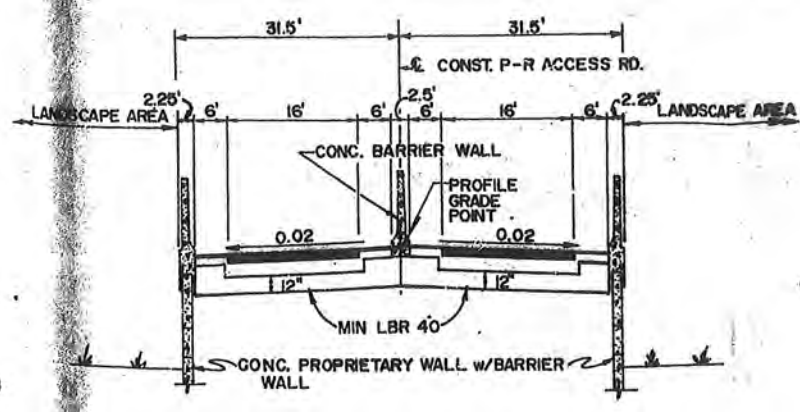
06-0146-S



KISS-N-RIDE (SOUTH LOT)
TYPICAL SECTION "A-A"

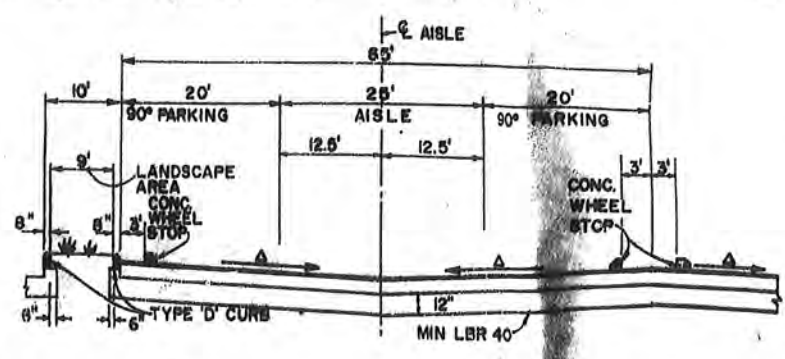
Δ SLOPE VARIES 0.02 TO 0.04

NOTE: FOR ALL TYPICAL SECTION LOCATIONS SEE LAYOUT AND PAVING PLAN



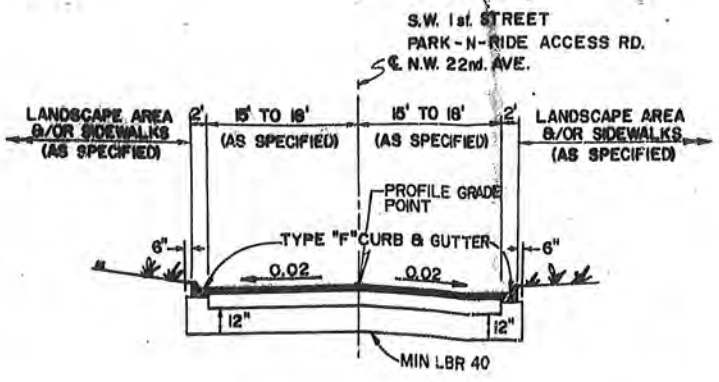
* PARK-N-RIDE ACCESS
(HIGH FILL)
TYPICAL SECTION "B-B"

- * PARK-N-RIDE LOT ROADWAYS (INCL. BUS BAYS & ACCESS ROADS)
ABC-3 (7-1/2") (1000 LB. STABILITY) WITH TYPE S STRUCTURAL COURSE (450 LB. PER SQ. YD.) AND FRICTION COURSE FC-1 OR FC-4 (1")
- ** PARK-N-RIDE LOT PARKING AREAS
ABC-3 (4") (1000 LB. STABILITY) WITH TYPE S STRUCTURAL COURSE (4")



* PARK-N-RIDE
TYPICAL SECTION "C-C"

Δ SLOPE VARIES 0.02 TO 0.04



* SW 1st STREET
PARK-N-RIDE ACCESS RD. 1
PARK-N-RIDE ACCESS RD. 2
SW 21st TERRACE
NW 22nd AVE
TYPICAL SECTION "E-E"

GENERAL NOTES

- NOTES: 1. ALL PERMANENT GRASS AREAS ARE TO RECEIVE A 6" TOPSOIL TREATMENT.
2. ALL OF THE EXISTING LIMEROCK BASE THAT IS REMOVED IS TO BE INCORPORATED IN THE STABILIZED PORTION OF THE SUBGRADE.
3. THE SUBGRADE SHALL BE FIRM, UNYIELDING AND IN SUCH CONDITION THAT UNDUE DISTORTION WILL NOT OCCUR.
4. NO BASE MATERIAL OR STABILIZATION SHALL EXTEND INTO THE LANDSCAPE AREAS.

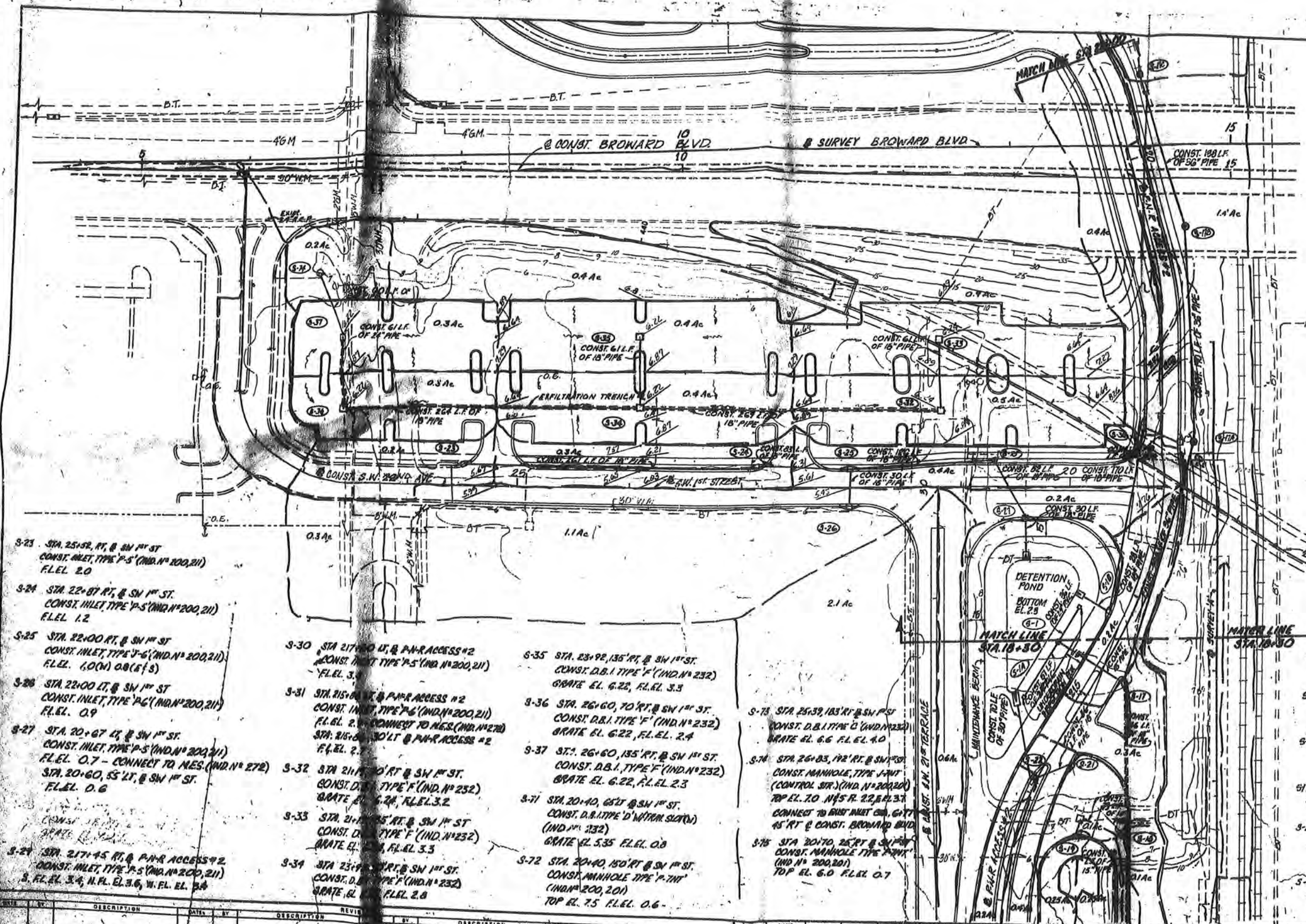
SEALED FOR PERMITS ONLY

NO.	DATE	BY	DESCRIPTION	REVISION	NO.	DATE	BY	DESCRIPTION

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE	APPROVED BY	DATE
CHECKED BY			CHECKED BY				
APPROVED BY							

TYPICAL SECTIONS (II)

CC-01693



SCALE: 1"=40'

- 9-23 STA. 25+52 RT. @ SW 1ST ST
CONST. INLET, TYPE P-5 (IND. NO. 200, 211)
F.L.E.L. 2.0
- 9-24 STA. 22+87 RT. @ SW 1ST ST
CONST. INLET, TYPE P-5 (IND. NO. 200, 211)
F.L.E.L. 1.2
- 9-25 STA. 22+00 RT. @ SW 1ST ST
CONST. INLET, TYPE P-6 (IND. NO. 200, 211)
F.L.E.L. (O.M.) 0.8 (E.F.S)
- 9-26 STA. 22+00 LT. @ SW 1ST ST
CONST. INLET, TYPE P-6 (IND. NO. 200, 211)
F.L.E.L. 0.9
- 9-27 STA. 20+67 LT. @ SW 1ST ST
CONST. INLET, TYPE P-5 (IND. NO. 200, 211)
F.L.E.L. 0.7 - CONNECT TO MES. (IND. NO. 272)
STA. 20+60, 55 LT. @ SW 1ST ST.
F.L.E.L. 0.6
- 9-28 STA. 21+45 RT. @ P.A.R. ACCESS #2
CONST. INLET, TYPE P-5 (IND. NO. 200, 211)
S. F.L.E.L. 3.4, N. F.L.E.L. 3.6, W. F.L.E.L. 3.4

- 9-30 STA. 21+00 LT. @ P.A.R. ACCESS #2
CONST. INLET, TYPE P-5 (IND. NO. 200, 211)
F.L.E.L. 3.1
- 9-31 STA. 21+00 RT. @ P.A.R. ACCESS #2
CONST. INLET, TYPE P-6 (IND. NO. 200, 211)
F.L.E.L. 2.1 - CONNECT TO MES. (IND. NO. 272)
STA. 21+00, 30 LT. @ P.A.R. ACCESS #2
F.L.E.L. 2.1
- 9-32 STA. 21+00 RT. @ SW 1ST ST
CONST. D.B.I. TYPE F (IND. NO. 232)
GRATE EL. 6.24, F.L.E.L. 3.2
- 9-33 STA. 21+00 RT. @ SW 1ST ST
CONST. D.B.I. TYPE F (IND. NO. 232)
GRATE EL. 6.24, F.L.E.L. 3.3
- 9-34 STA. 23+00 RT. @ SW 1ST ST
CONST. D.B.I. TYPE F (IND. NO. 232)
GRATE EL. 6.22, F.L.E.L. 2.8
- 9-35 STA. 23+92, 135 RT. @ SW 1ST ST
CONST. D.B.I. TYPE F (IND. NO. 232)
GRATE EL. 6.22, F.L.E.L. 3.3
- 9-36 STA. 26+60, 70 RT. @ SW 1ST ST
CONST. D.B.I. TYPE F (IND. NO. 232)
GRATE EL. 6.22, F.L.E.L. 2.4
- 9-37 STA. 26+60, 135 RT. @ SW 1ST ST
CONST. D.B.I. TYPE F (IND. NO. 232)
GRATE EL. 6.22, F.L.E.L. 2.3
- 9-38 STA. 20+40, 65 LT. @ SW 1ST ST
CONST. D.B.I. TYPE D WITH SLOTTED (IND. NO. 232)
GRATE EL. 5.35, F.L.E.L. 0.8
- 9-39 STA. 20+40, 150 RT. @ SW 1ST ST
CONST. MANHOLE TYPE P-7 (IND. NO. 200, 201)
TOP EL. 7.5, F.L.E.L. 0.6

- 9-73 STA. 25+39, 183 RT. @ SW 1ST ST
CONST. D.B.I. TYPE C (IND. NO. 232)
GRATE EL. 6.6, F.L.E.L. 4.0
- 9-74 STA. 26+03, 192 RT. @ SW 1ST ST
CONST. MANHOLE, TYPE J-WIT (CONTROL STR.) (IND. NO. 200, 200)
TOP EL. 7.0, N.F.S. R. 22, E.L. 3.7
CONNECT TO EXIST. INLET ON GUY
45 RT. @ CONST. BROWARD BLVD
- 9-75 STA. 20+70, 24 RT. @ SW 1ST ST
CONST. MANHOLE TYPE P-7 (IND. NO. 200, 201)
TOP EL. 6.0, F.L.E.L. 0.7

- 9-1 STA. 215+25 LT. @ P.A.R. ACCESS #2
CONST. TYPE E D.B.I. (INDEX # 232)
GRATE EL. 6.6, F.L.E.L. 2.3
- 9-1A STA. 21+00 RT. @ P.A.R. ACCESS #2
CONST. J-WIT MANHOLE (INDEX 200)
TOP EL. 7.0, F.L.E.L. 1.2
- 9-1B STA. 21+00 RT. @ P.A.R. ACCESS #2
CONST. J-WIT MANHOLE (INDEX 200)
TOP EL. 8.5, F.L.E.L. 1.0
- 9-1C STA. 200+75 RT. @ P.A.R. ACCESS #2
CONST. J-WIT MANHOLE (INDEX 200)
TOP EL. 7.0, F.L.E.L. 0.8
- 9-1A STA. 214+70 LT. @ P.A.R. ACCESS #2
CONST. UNDERDRAIN INSPECT. BOX
INDEX # 245
TOP EL. 5.5, F.L.E.L. 0.2
- 9-1B STA. 215+65 LT. @ P.A.R. ACCESS #2
CONST. UNDERDRAIN INSPECT. BOX
INDEX # 245
TOP EL. 5.5, F.L.E.L. 0.2

NO.	DESCRIPTION	DATE	BY	REVISION	DESCRIPTION	DATE	BY

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE	CHECKED BY	NAME	DATE	APPROVED BY	NAME	DATE

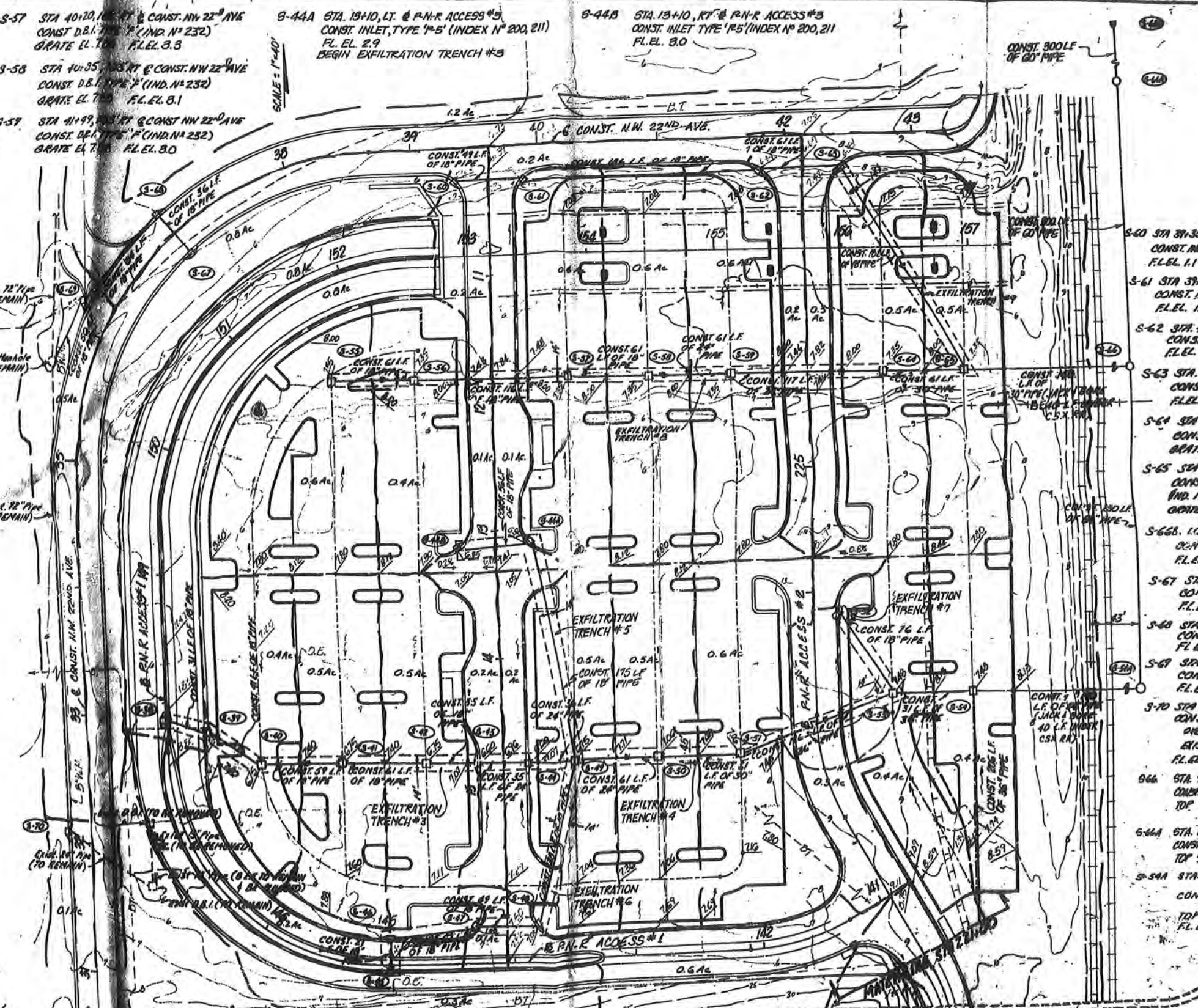
FLORIDA DEPARTMENT OF TRANSPORTATION
 PARK-N-RIDE LOT
 GRADING AND DRAINAGE PLAN

- S-38 STA 147+00, 1.5' LT @ P.N.R. ACCESS #1
CONST. M.B.I.-1 (IND. N° 217)
GRATE EL. 9.29, F.L. EL. 5.7 (E)
- S-39 STA 147+79 RT @ P.N.R. ACCESS #1
CONST. INLET TYPE 'P-5' (INDEX N° 200, 211)
F.L. EL. 4.6 (E/W)
- S-40 STA 147+43, 7.2' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 6.75 F.L. EL. 3.1
- S-41 STA 146+05, 13.5' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 6.75 F.L. EL. 3.0
- S-42 STA 144+05, 15.7' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 6.75 F.L. EL. 2.9
- S-43 STA 144+23, 15.7' RT @ P.N.R. ACCESS #1
CONST. INLET TYPE 'P-6' (IND. N° 200, 211)
F.L. EL. 2.8
- S-44 STA 143+05, 15.7' RT @ P.N.R. ACCESS #1
CONST. INLET TYPE 'P-6' (IND. N° 200, 211)
F.L. EL. 2.7
- S-45 STA 140+00, 7.5' LT @ P.N.R. ACCESS #1
CONST. M.B.I.-1 (IND. N° 217)
GRATE EL. 7.55 F.L. EL. 3.3
- S-46 STA 145+00, RT @ P.N.R. ACCESS #1
CONST. INLET TYPE 'P-6' (IND. N° 200, 211)
F.L. EL. 3.0
- S-47 STA 144+30, 20.7' RT @ P.N.R. ACCESS #1
CONST. INLET TYPE 'P-5' (INDEX N° 200, 211)
F.L. EL. 2.9
- S-48 STA 143+79, 29.7' RT @ P.N.R. ACCESS #1
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
F.L. EL. 2.8
- S-49 STA 143+45, 15.5' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'B' (IND. N° 232)
GRATE EL. 6.75 F.L. EL. 2.6
- S-50 STA 142+70, 15.5' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 7.05 F.L. EL. 2.5
- S-51 STA 142+13, 15.4' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'B' (IND. N° 232)
GRATE EL. 7.05 F.L. EL. 2.4
- S-52 STA 223+06 RT @ P.N.R. ACCESS #2
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
F.L. EL. 3.0
- S-53 STA 223+10, 6.2' RT @ P.N.R. ACCESS #2
CONST. D.B.I. TYPE 'B' (IND. N° 232)
(CONTROL STR. END EXFIL. TRENCH)
GRATE EL. 7.40 F.L. EL. 1.5
- S-54 STA 223+10, 12.7' RT @ P.N.R. ACCESS #2
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 7.40 F.L. EL. 1.2
- S-55 STA 151+50, 7.7' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 7.35 F.L. EL. 3.0
- S-56 STA 152+60, 9.7' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 7.35 F.L. EL. 3.5

- S-57 STA 40+20, 16.5' RT @ CONST. NW 22ND AVE
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 7.05 F.L. EL. 3.3
- S-58 STA 40+05, 16.5' RT @ CONST. NW 22ND AVE
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 7.05 F.L. EL. 3.1
- S-59 STA 41+49, 16.5' RT @ CONST. NW 22ND AVE
CONST. D.B.I. TYPE 'F' (IND. N° 232)
GRATE EL. 7.05 F.L. EL. 3.0

- S-44A STA. 19+10, LT. @ P.N.R. ACCESS #3
CONST. INLET TYPE 'P-5' (INDEX N° 200, 211)
FL. EL. 2.9
BEGIN EXFILTRATION TRENCH #3
- S-44B STA. 19+10, RT @ P.N.R. ACCESS #3
CONST. INLET TYPE 'P-5' (INDEX N° 200, 211)
FL. EL. 3.0

- S-60 STA 39+35, 28.7' RT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
F.L. EL. 1.1
- S-61 STA 39+09, 20.7' RT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
F.L. EL. 1.0
- S-62 STA 39+00, 25.7' RT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
F.L. EL. 0.7
- S-63 STA 42+44, 25.7' RT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
F.L. EL. 0.6
- S-64 STA 225+71, 6.1' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'P' (IND. N° 232)
GRATE EL. 7.35 F.L. EL. 2.8
- S-65 STA 225+71, 12.7' RT @ P.N.R. ACCESS #1
CONST. D.B.I. TYPE 'P' (IND. N° 232)
GRATE EL. 7.35 F.L. EL. 0.9
- S-66B LOCATION TO BE DETERMINED IN FIELD
CONST. M.E.S. (IND. N° 271)
F.L. EL. -2.9
- S-67 STA 37+00, RT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-6' (IND. N° 200, 211)
F.L. EL. 0.5
- S-68 STA 37+00, LT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
FL. EL. 0.4
- S-69 STA 36+00, 25.7' RT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
FL. EL. 0.2
- S-70 STA 32+07, LT @ CONST. NW 22ND AVE
CONST. INLET TYPE 'P-5' (IND. N° 200, 211)
OVER TOP OF EXIST. INLET (ADJUST EXIST. TOP) IND. N° 211
F.L. EL. (-3.78)
- S-66A STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66B STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66C STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66D STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66E STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66F STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66G STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66H STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66I STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66J STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66K STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66L STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66M STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66N STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66O STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66P STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66Q STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66R STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66S STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66T STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66U STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66V STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66W STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66X STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66Y STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50
- S-66Z STA. 225+80 RT @ P.N.R. ACCESS #2
CONST. J-TNT MANHOLE (INDEX 200, 201)
TOP EL. 6.5 FL. -1.50



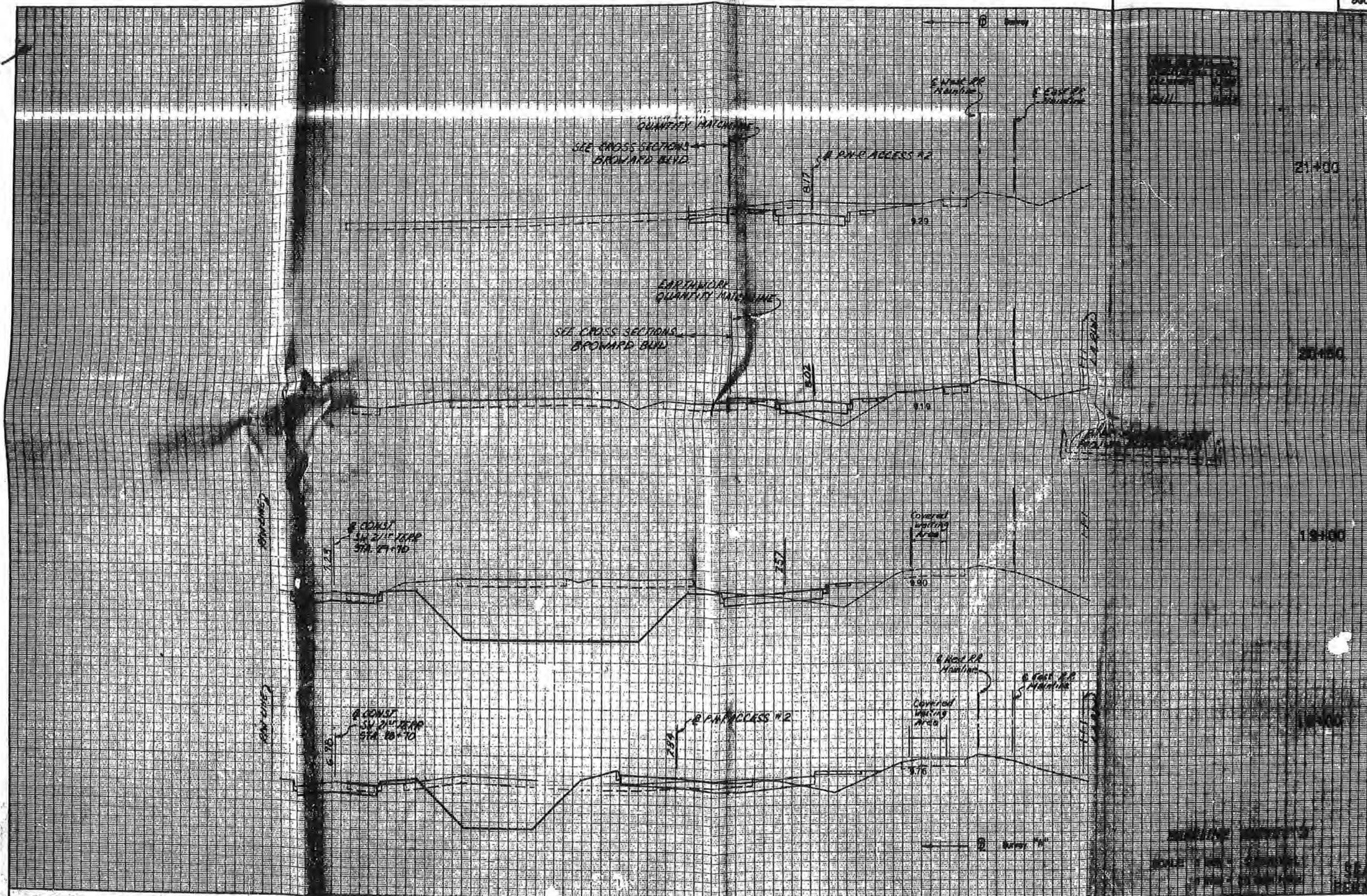
SCALE: 1"=40'

SEALED FOR PERMITS ONLY

PARK - N - RIDE
GRADING AND DRAINAGE PLAN

NO.	BY	DESCRIPTION	DATE	REVISION	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY: *[Signature]*
DATE: 11/1/00



Qty. Exc.		Fill	
A	V	A	V
0	0		
1944	0		
109	0		
2148	685		
11	37		
1204	1536		
630	47		
1722	2056		
292	64		
6352	7706		

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY: <i>[Signature]</i> DATE: 11/4/93

SEALED FOR PERMITS ONLY
 CROSS SECTIONS (3)
 DC-D416-S



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

District Headquarters: 3301 Gun Club Road, West Palm Beach, Florida 33406 (561) 686-8800 www.sfwmd.gov

Regulation
Application No.: 140815-1

September 3, 2014

FLORIDA DEPARTMENT OF TRANSPORTATION
3400 WEST COMMERCIAL BOULEVARD
FORT LAUDERDALE, FL 33309

Dear Permittee:

SUBJECT: 06-01469-S

Project : BROWARD BOULEVARD PARK AND RIDE LOT IMPROVEMENTS

Location: Broward County, S5, 8/T50S/R42E

District staff has reviewed the information submitted August 15, 2014, for the widening of SW 22nd Avenue, SW 1st Street and the I-95 Access Road (as shown in Exhibit 2). The purpose of the widening is to facilitate greater access to the adjacent FDOT Park and Ride Lot. Seventy eight (78) linear feet of exfiltration trench will be constructed which will provide water quality treatment. No adverse water quality or quantity impacts are anticipated.

Based on that information, District staff has determined that the proposed activities are in compliance with the original environmental resource permit and appropriate provisions of paragraph 40E-4.331(2)(b) or 62-330.315(2)(g), Florida Administrative Code. Therefore, these changes have been recorded in our files.

Your permit remains subject to the General Conditions and all other Special Conditions not modified and as originally issued.

Should you have any questions concerning this matter, please contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Carlos".

Carlos A. de Rojas, P.E.
Section Leader - Swm
Regulation Division

CD/js

c: Broward County Engineer

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a SFWMD decision which does or may affect their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, electronic mail, or posting that the SFWMD has or intends to take final agency action, or publication of notice that the SFWMD has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

FILING INSTRUCTIONS

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery, or e-mail. **Filings by facsimile will not be accepted after October 1, 2014.** A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the District Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by e-mail must be transmitted to the District Clerk's Office at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the District Clerk receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, SFWMD file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency decision.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

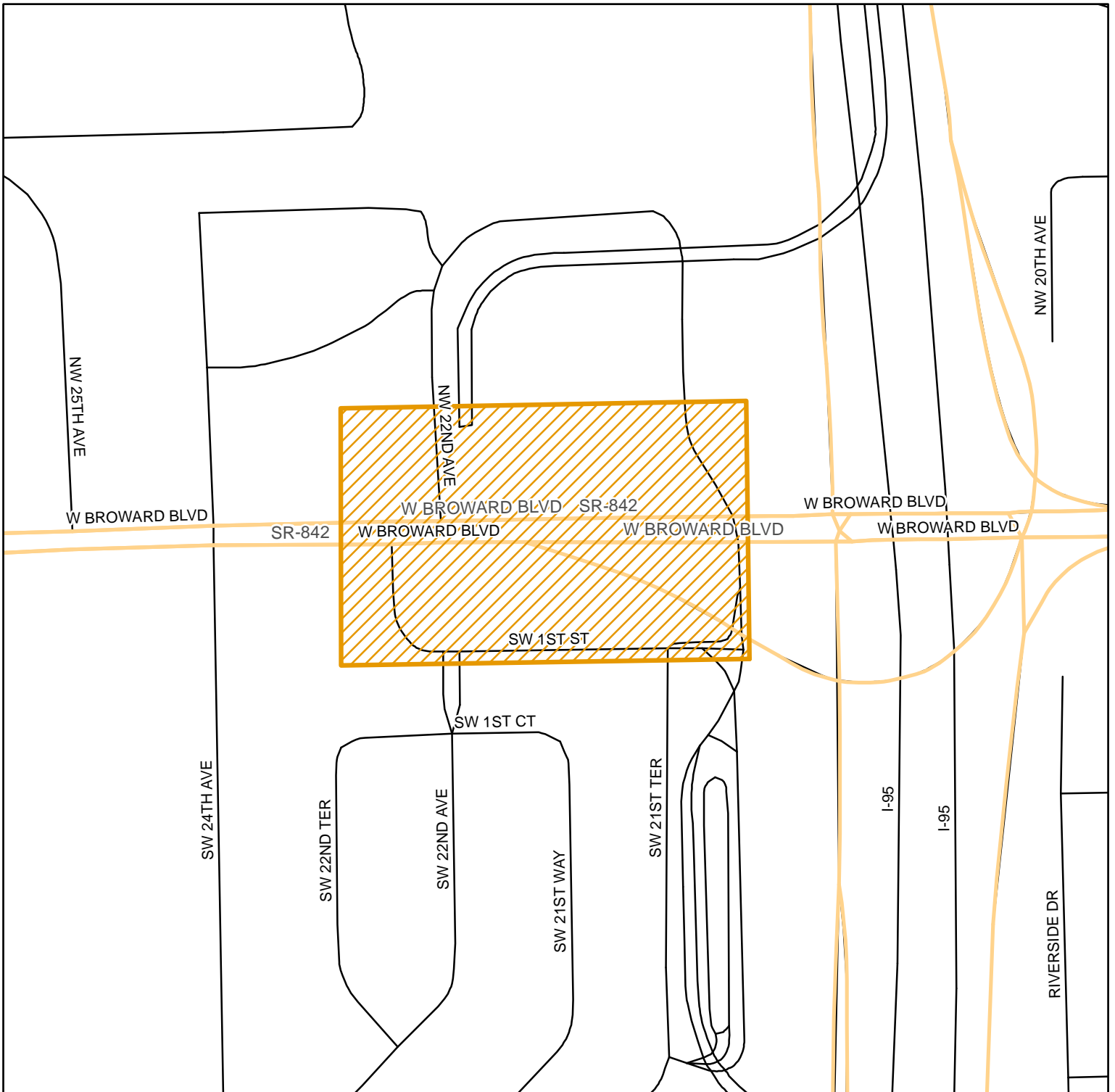
If the SFWMD takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the District Clerk within 30 days of rendering of the final SFWMD action.



BROWARD COUNTY, FLORIDA

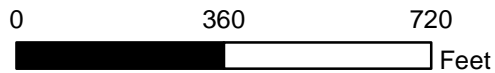
Legend

 Application

Application No: 140815-1

Sec 5, 8 / Twp 50 / Rge 42

Project Name: BROWARD BOULEVARD PARK AND RIDE LOT IMPROVEMENTS



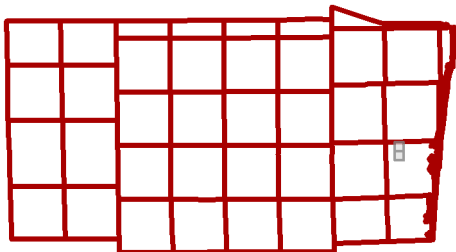
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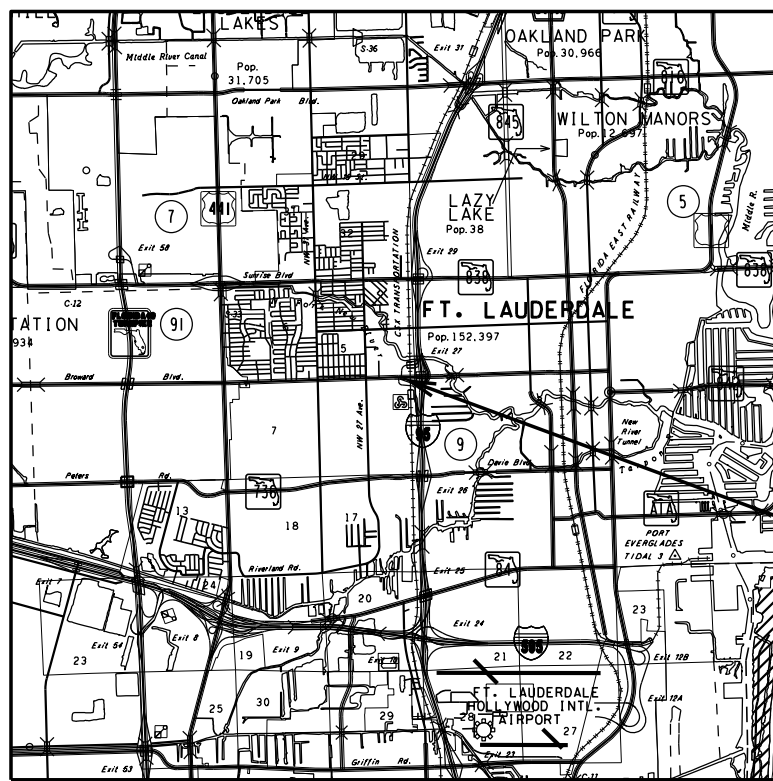


Map Date: 2014-09-02

Permit No: 06-01469-S

Exhibit Number: 1





PROJECT LOCATION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

STATE ROAD NO. 842
BROWARD BLVD PARK & RIDE SURROUNDING ROADWAYS
(SW1ST ST, SW 22ND AVE, I-95 ACCESS RD)

90% PLANS
REVIEW SUBMITTAL
7/1/2014

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET AND TABULATION OF QUANTITIES
1A	PROJECT LAYOUT
2	TYPICAL SECTION SW 1ST ST
3	TYPICAL SECTION DETAILS I-95 ACCESS ROAD
4	GENERAL NOTES
5 - 7	ROADWAY PLAN
8 - 11	DRAINAGE STRUCTURES SW 1ST ST
12	DRAINAGE DETAILS FRENCH DRAIN
13	DRAINAGE STRUCTURES I-95 ACCESS RD
14 - 21	CROSS SECTIONS SW 1ST ST
22 - 26	CROSS SECTIONS I-95 ACCESS RD
27	TRAFFIC CONTROL NOTES
28 - 29	UTILITY ADJUSTMENTS
30 - 32	SIGNING AND PAVEMENT MARKINGS
33 - 34	LIGHTING

GOVERNING STANDARDS AND SPECIFICATIONS:
Florida Department of Transportation, 2014 Design Standards and revised Index Drawings as appended herein, and 2014 Standard Specifications for Road and Bridge Construction, as amended by Contract Documents.

For Design Standards click on the "Design Standards" link at the following web site:
<http://www.dot.state.fl.us/rddesign/>
Design Standards

For the Standard Specifications for Road and Bridge Construction click on the "Specifications" link at the following web site:
<http://www.dot.state.fl.us/specificationsoffice/>
Standard Specifications

PLANS PREPARED BY:

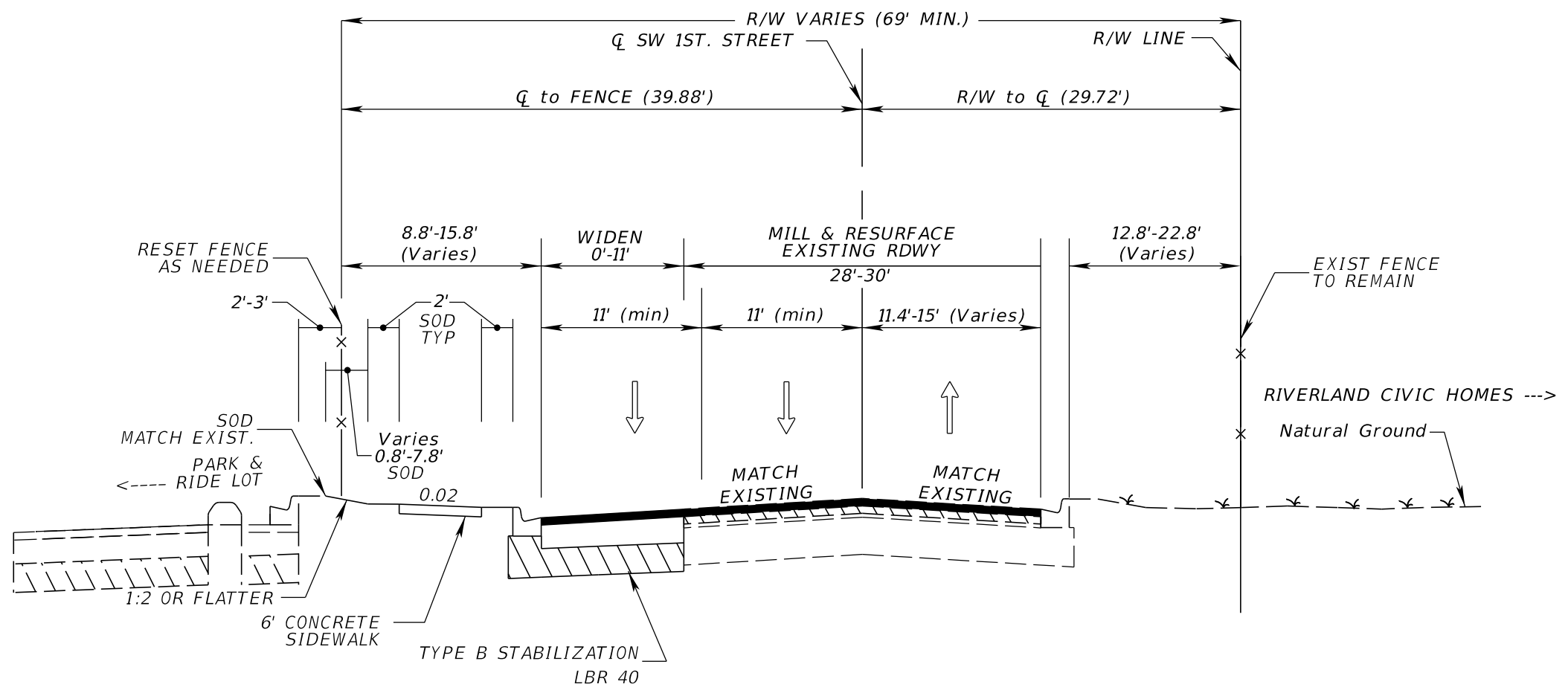
CTS ENGINEERING, INC.
3250 W COMMERCIAL BLVD, SUITE 100
FT LAUDERDALE, FL 33309
CONTRACT NO. C-9A56
VENDOR ID NO. 27-1089334
CERTIFICATE OF AUTHORIZATION NO. 28935

ROADWAY PLANS
ENGINEER OF RECORD: STEPHEN A. HUGHES, P.E. NO.64740
FDOT
PROJECT MANAGER: JOSE GUERRERO, P.E.

TABULATION OF QUANTITIES				
PAY ITEM NO.	PAY ITEM DESCRIPTION	UNIT	QUANTITY	
			P	F
102-60	WORK ZONE SIGNS	ED	2160	
102-74-1	TEMPORARY BARRICADE-TYPES I, II, DI, VP, DRUM, OR LCD	ED	9000	
102-76	ARROW BOARD / ADVANCED WARNING PANEL	ED	360	
102-77	HIGH INTENSITY FLASHING LIGHTS, TEMP, TYPE B	ED	720	
104-10-3	SEDIMENT BARRIER	LF	1050	
*104-18	INLET PROTECTION SYSTEM	EA	14	
*107-1	LITTER REMOVAL	AC	0.63	
*107-2	MOWING	AC	0.63	
110-2-1	CLEARING & GRUBBING (PUSH BUTTON CONTRACT)	AC	0.39	
110-4	REMOVAL OF EXIST. CONC. PAVEMENT	SY	1161	
120-1	REGULAR EXCAVATION	CY	1170	
120-6	EMBANKMENT	CY	4	
160-4	TYPE B STABILIZATION	SY	1656	
285-709	OPTIONAL BASE, BASE GROUP 09	SY	1318	
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	SY	10331	
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	TN	672.6	
337-7-42	ASPH CONC FC, TRAFFIC C, FC-9.5, PG 76-22	TN	112.7	
425-1-351	INLETS, CURB, TYPE P-5,	EA	2	
425-1-361	INLETS, CURB, TYPE P-6,	EA	3	
425-2-41	MANHOLES, P-7, <10'	EA	3	
425-2-43	MANHOLES, P-7, PARTIAL	EA	1	
425-2-71	MANHOLES, J-7, <10'	EA	1	
425-5	MANHOLE, ADJUST	EA	1	
*425-11	DRAINAGE STRUCTURE - MODIFY EXISTING	EA	2	
430-175-118	PIPE CULV, OPT MATL, ROUND, 18" S/CD	LF	114	
430-175-124	PIPE CULV, OPT MATL, ROUND, 24" S/CD	LF	8	
*443-70-3	FRENCH DRAIN, 18"	LF	78	
520-1-10	CONCRETE CURB & GUTTER, TYPE F	LF	1401	
522-1	CONC SIDEWALK AND DRIVEWAYS, 4" THICK	SY	769	
522-2	CONC SIDEWALK AND DRIVEWAYS, 6" THICK	SY	63	
527-2	DETECTABLE WARNINGS	SF	58	
*550-10-220	Fencing, Type B, 5.1- 6.0' Height,	LF	341	
*550-10-228	Fencing, Type B, 5.1- 6.0', Reset Existing	LF	255	
*550-60-225	Fence Gate, Type B, Double, 20.1-24.0', Opening	LF	1	
*550-60-227	Fence Gate, Type B, Double, Greater than 30.0', Opening	EA	2	
570-1-2	PERFORMANCE TURF, SOD	SY	670	
635-2-11	PULL & SPLICE BOX, F&I, 13"X24" COVER SIZE	EA	9	
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA	145	
700-1-11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	EA	14	
700-1-12	SINGLE POST SIGN, F&I GROUND MOUNT, 12-20 SF	EA	1	
700-1-50	SINGLE POST SIGN, RELOCATE	EA	4	
700-1-60	SINGLE POST SIGN, REMOVE	EA	16	
710-11-111	PAINTED PAVT MARK, STD, WHITE, SOLID, 6"	NM	1.022	
710-11-122	PAINTED PAVT MARK, STD, WHITE, SOLID, 8"	LF	76	
710-11-123	PAINTED PAVT MARK, STD, WHITE, SOLID, 12"	LF	607	
710-11-124	PAINTED PAVT MARK, STD, WHITE, SOLID, 18"	LF	60	
710-11-125	PAINTED PAVT MARK, STD, WHITE, SOLID, 24"	LF	416	
710-11-131	PAINTED PAVT MARK, STD, WHITE, SKIP, 6" (10/30)	GM	0.168	
710-11-151	PAINTED PAVT MARK, STD, WHITE, SKIP, GUIDELINE, 6" (6/10)	LF	126	
*710-11-151	PAINTED PAVT MARK, STD, WHITE, SKIP, GUIDELINE, 6" (2/4)	LF	174	
710-11-160	PAINTED PAVT MARK, STD, WHITE, PAVEMENT MESSAGE	EA	14	
710-11-170	PAINTED PAVT MARK, STD, WHITE, ARROWS	EA	34	
710-11-211	PAINTED PAVT MARK, STD, YELLOW, SOLID, 6"	NM	0.930	
710-11-224	PAINTED PAVT MARK, STD, YELLOW, SOLID, 18"	LF	574	
*710-11-251	PAINTED PAVT MARK, STD, YELLOW, SKIP, GUIDELINE, 6" (2/4)	LF	17	
710-11-251	PAINTED PAVT MARK, STD, YELLOW, SKIP, GUIDELINE, 6" (6/10)	LF	146	
715-440-0	LIGHT POLE COMPLETE, RELOCATE	EA	9	

* PAY ITEM NOT IN CONTRACT. PAY ITEM TO BE CONSTRUCTED BY LATEST DESIGN STANDARDS (2014)

REVISIONS				ENGINEER OF RECORD: STEPHEN A. HUGHES, P.E. P.E. NO. 64740 CTS ENGINEERING, INC. 3250 W COMMERCIAL BLVD, SUITE 100 FT LAUDERDALE, FL 33309	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			KEY SHEET AND TABULATION OF QUANTITIES	SHEET NO. 1
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					842	BROWARD	228229-9-52-01		



**TYPICAL SECTION
SW 1ST STREET
(ADDITION OF 2ND WB THRU LANE)**

WIDENING - SW 1ST STREET & I-95 ACCESS RD

OPTIONAL BASE GROUP 9 (TYPE B-12.5 ONLY) WITH
TYPE SP STRUCTURAL COURSE (TRAFFIC C) (3")

***RESURFACING - SW 1ST STREET & I-95 ACCESS RD**

MILL EXISTING ASPHALT PAVEMENT (1")
RESURFACE WITH TYPE SP STRUCTURAL COURSE (TRAFFIC C) (1")

****RESURFACING - BROWARD BLVD**

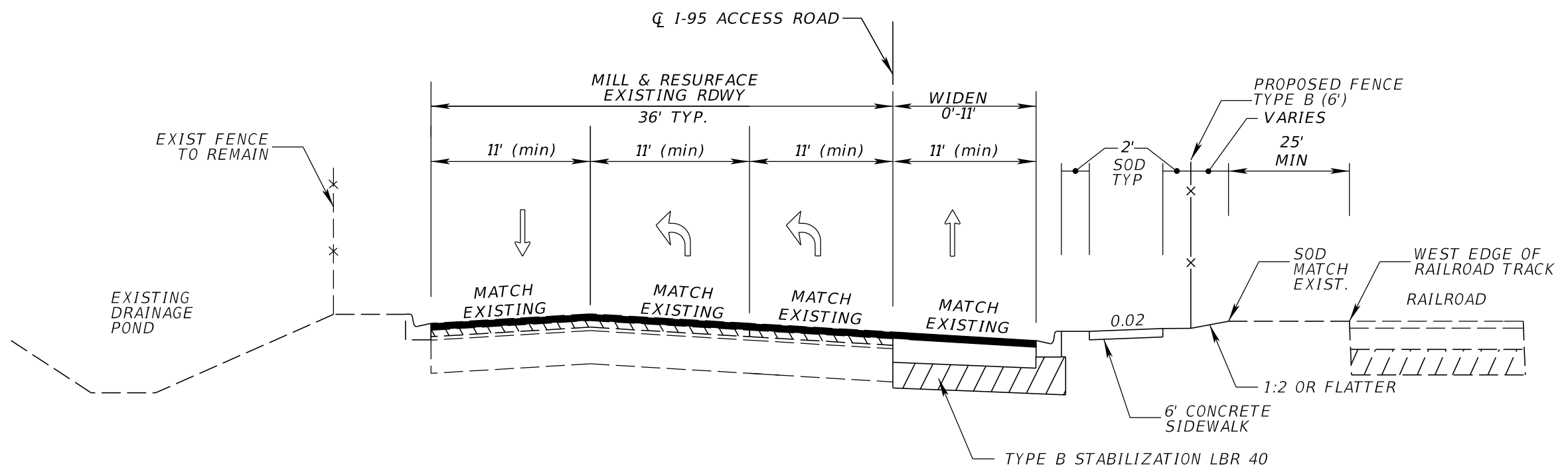
MILL EXISTING ASPHALT PAVEMENT (1")
RESURFACE WITH FRICTION COURSE FC-9.5 (1") (TRAFFIC C, PG76-22, ARB)

TRAFFIC DATA

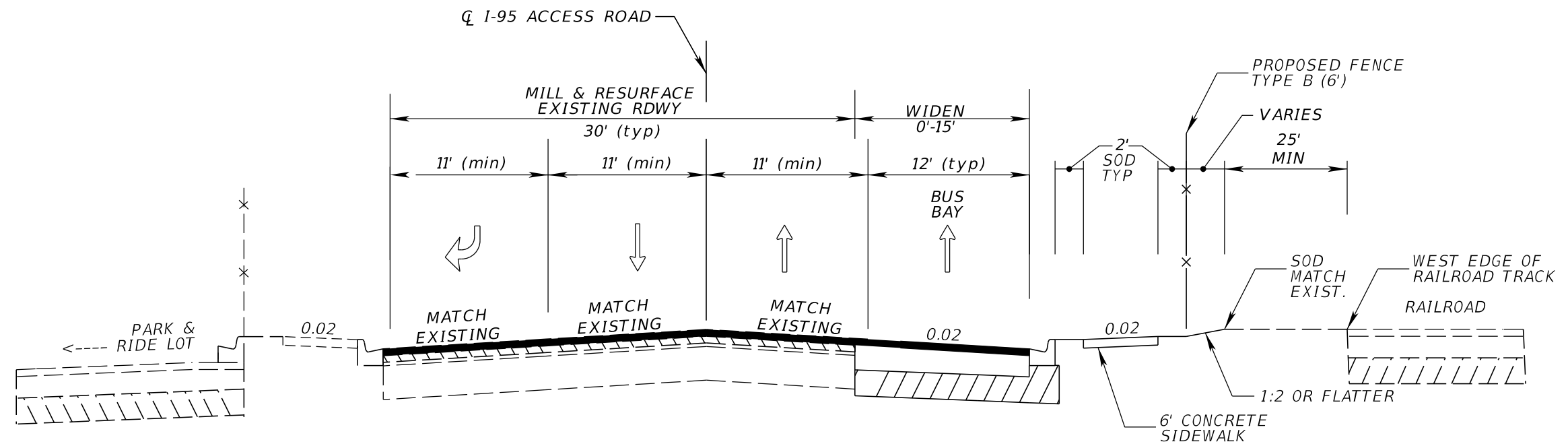
CURRENT YEAR = 2014 AADT = 3500
ESTIMATED OPENING YEAR = 2015 AADT = 4200
ESTIMATED DESIGN YEAR = 2035 AADT = 10900
K = 9% D = 50%
DESIGN SPEED = 20 MPH

NOTES:
* INCLUDES ALL LOCATIONS EXCEPT BROWARD BLVD (SEE PLANS FOR LIMITS)
** BROWARD BLVD ONLY (SEE PLANS FOR LIMITS)

REVISIONS				ENGINEER OF RECORD: STEPHEN A. HUGHES, P.E. P.E. NO. 64740 CTS ENGINEERING, INC. 3250 W. COMMERCIAL BLVD., SUITE 100 FORT LAUDERDALE, FL 33309	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO. 2
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					842	BROWARD	228229-9-52-01	

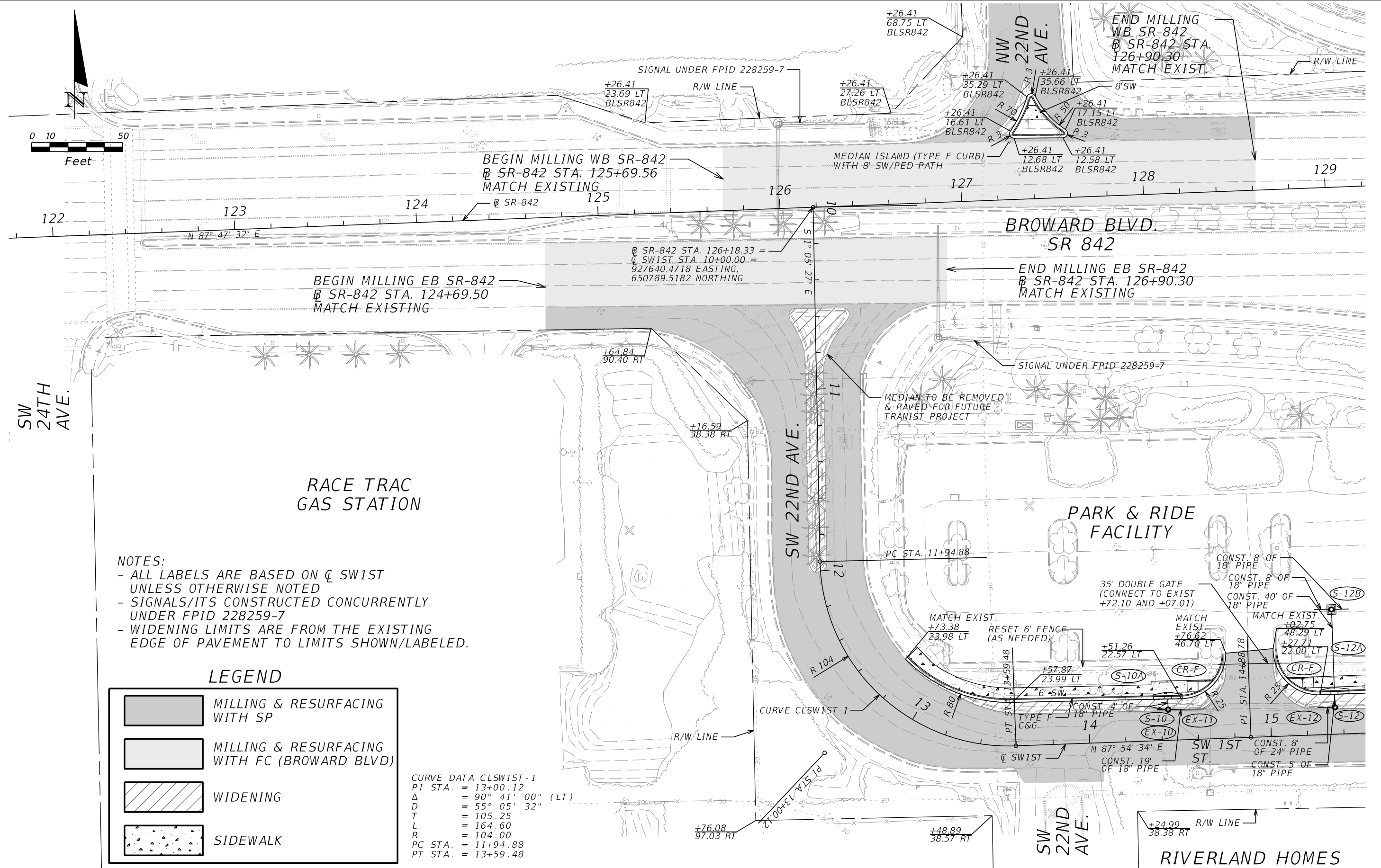


TYPICAL SECTION DETAILS
I-95 ACCESS ROAD
(SOUTH OF SW 1ST STREET)



TYPICAL SECTION DETAILS
I-95 ACCESS ROAD
(NORTH OF SW 1ST STREET)

REVISIONS				ENGINEER OF RECORD: STEPHEN A. HUGHES, P.E. P.E. NO. 64740 CTS ENGINEERING, INC. 3250 W. COMMERCIAL BLVD., SUITE 100 FORT LAUDERDALE, FL 33309	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			TYPICAL SECTION DETAILS I-95 ACCESS ROAD	SHEET NO. 3
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					842	BROWARD	228229-9-52-01		



REVISIONS		REVISIONS		ENGINEER OF RECORD: STEPHEN A. HUGHES, P.E. P.E. NO. 64740 CTS ENGINEERING, INC. 3250 W. COMMERCIAL BLVD., SUITE 100 FORT LAUDERDALE, FL 33309	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ROADWAY PLAN	SHEET NO. 5
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					842	BROWARD	228229-9-52-01		

BROWARD BLVD.
SR 842

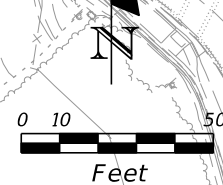
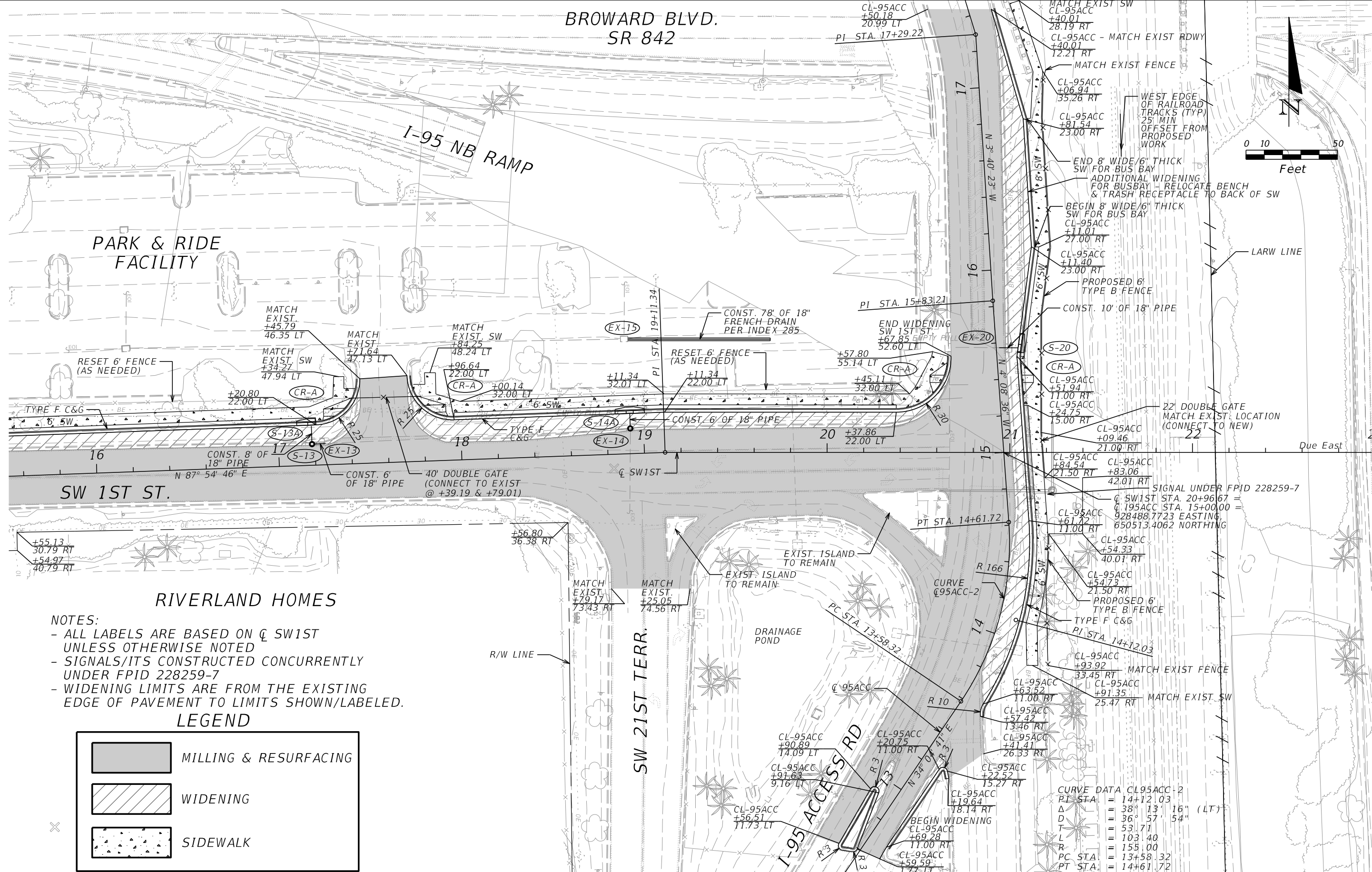


Exhibit 2

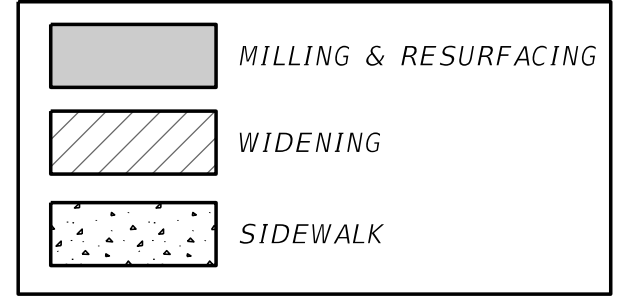
Application No. 140815-1

Page 5 of 11



NOTES:
 - ALL LABELS ARE BASED ON ϕ SW1ST UNLESS OTHERWISE NOTED
 - SIGNALS/ITS CONSTRUCTED CONCURRENTLY UNDER FPID 228259-7
 - WIDENING LIMITS ARE FROM THE EXISTING EDGE OF PAVEMENT TO LIMITS SHOWN/LABELED.

LEGEND



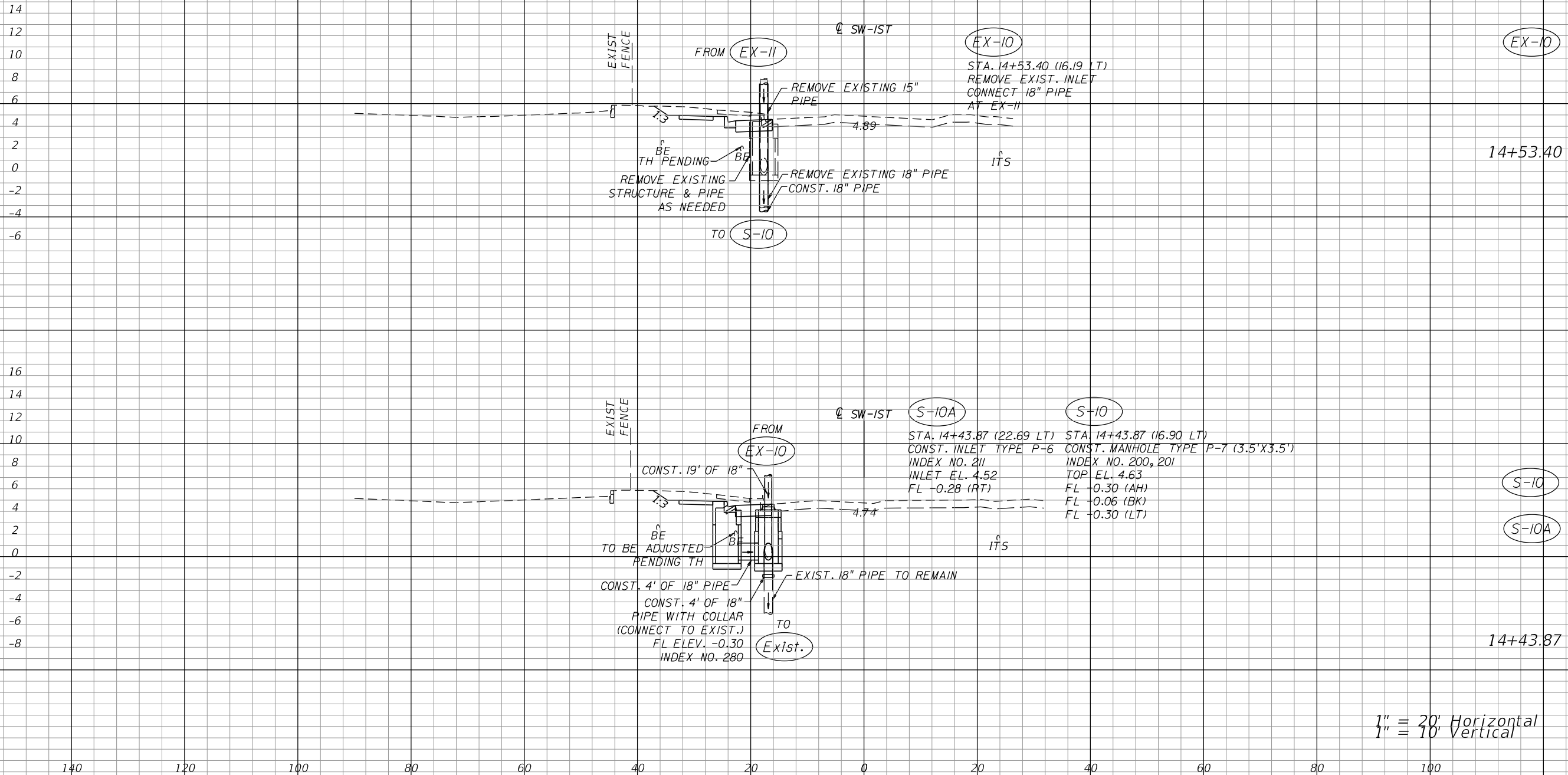
REVISIONS		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD:
 STEPHEN A. HUGHES, P.E.
 P.E. NO. 64740
 CTS ENGINEERING, INC.
 3250 W. COMMERCIAL BLVD., SUITE 100
 FORT LAUDERDALE, FL 33309

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
842	BROWARD	228229-9-52-01

ROADWAY PLAN

SHEET NO. 6



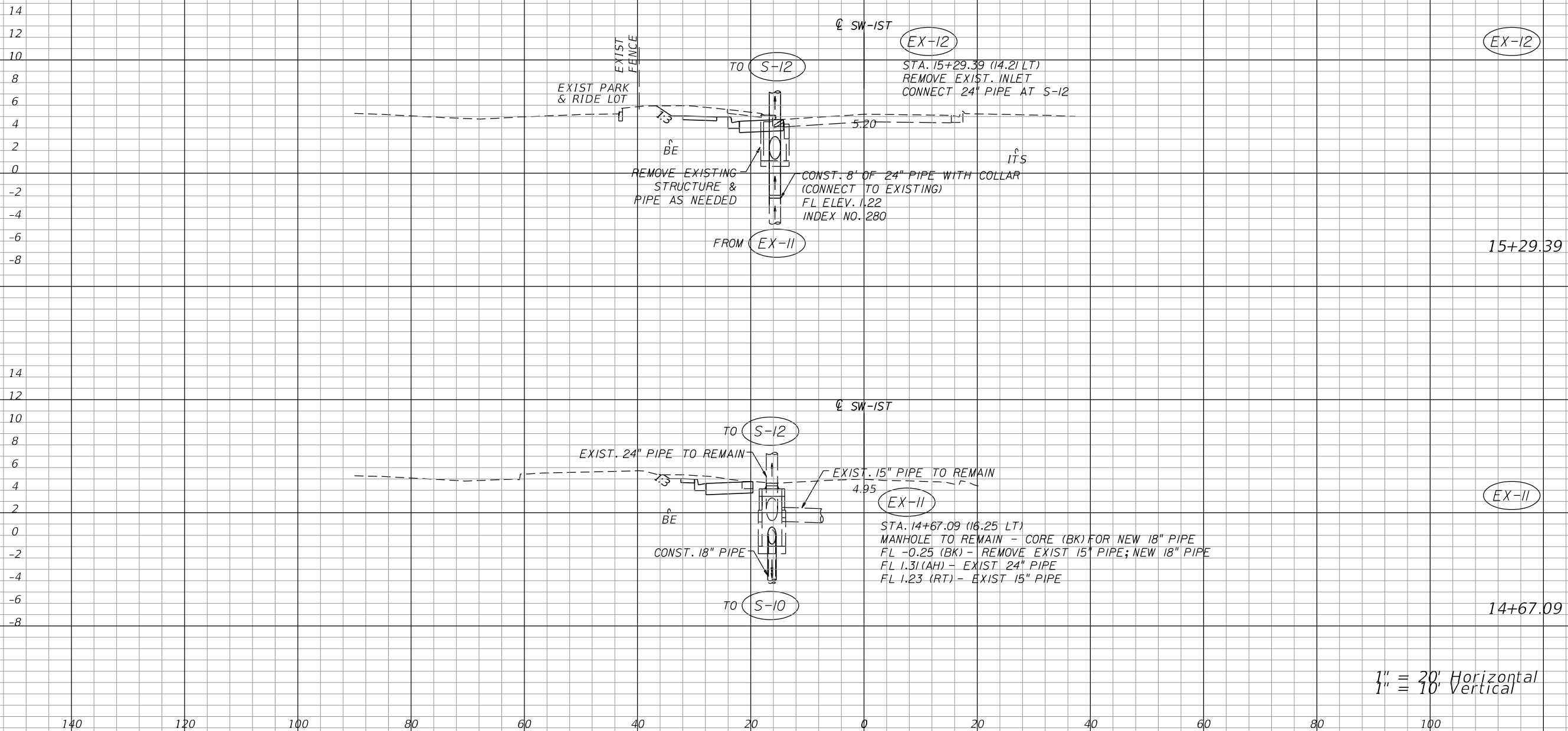
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD:
 STEPHEN A. HUGHES, P.E.
 P.E. NO. 64740
 CTS ENGINEERING, INC.
 3250 W. COMMERCIAL BLVD., SUITE 100
 FORT LAUDERDALE, FL 33309

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
842	BROWARD	228229-9-52-01

DRAINAGE STRUCTURES
SWIST STREET

SHEET NO.
8



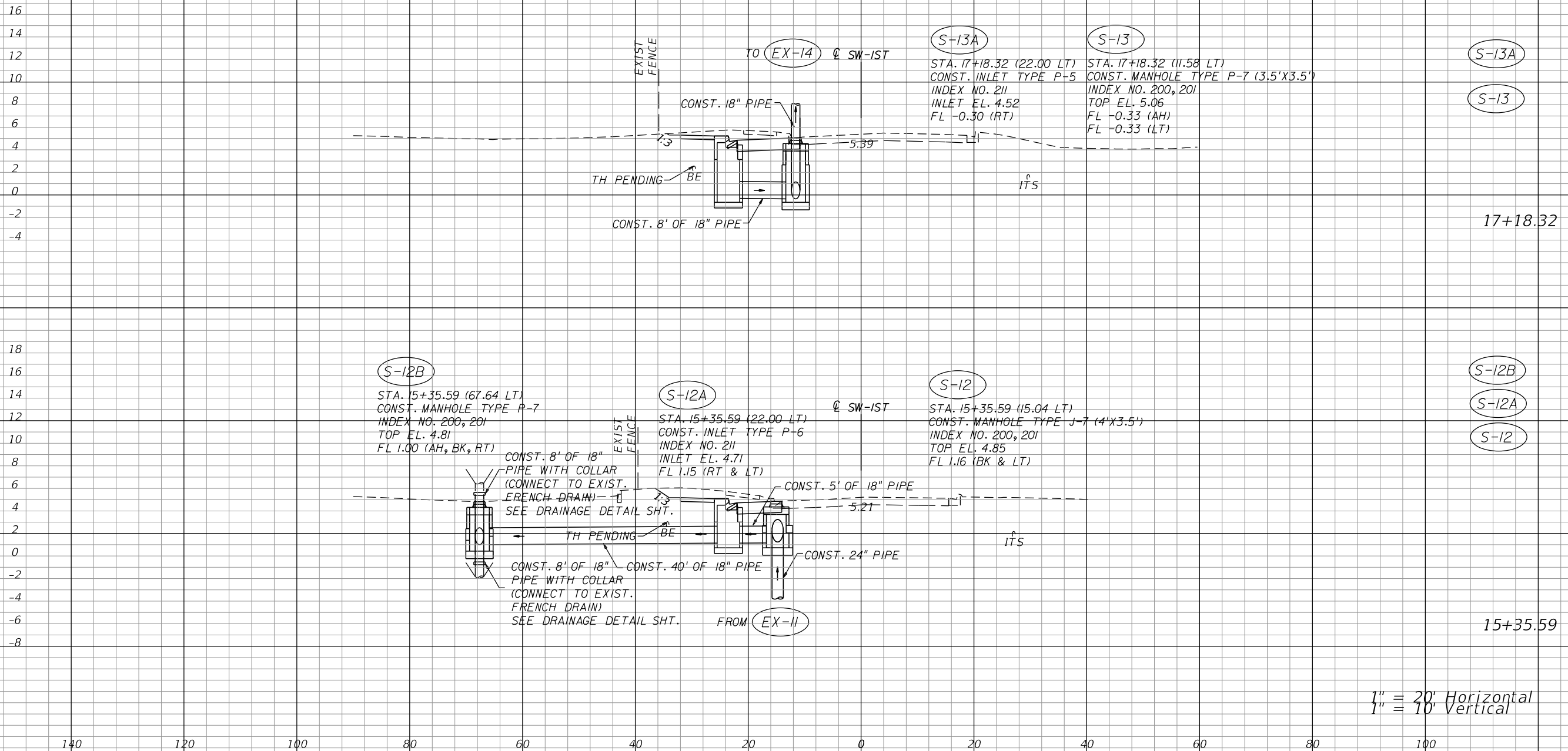
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD:
 STEPHEN A. HUGHES, P.E.
 P.E. NO. 64740
 CTS ENGINEERING, INC.
 3250 W. COMMERCIAL BLVD., SUITE 100
 FORT LAUDERDALE, FL 33309

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
842	BROWARD	228229-9-52-01

DRAINAGE STRUCTURES
SWIST STREET

SHEET NO.
 9



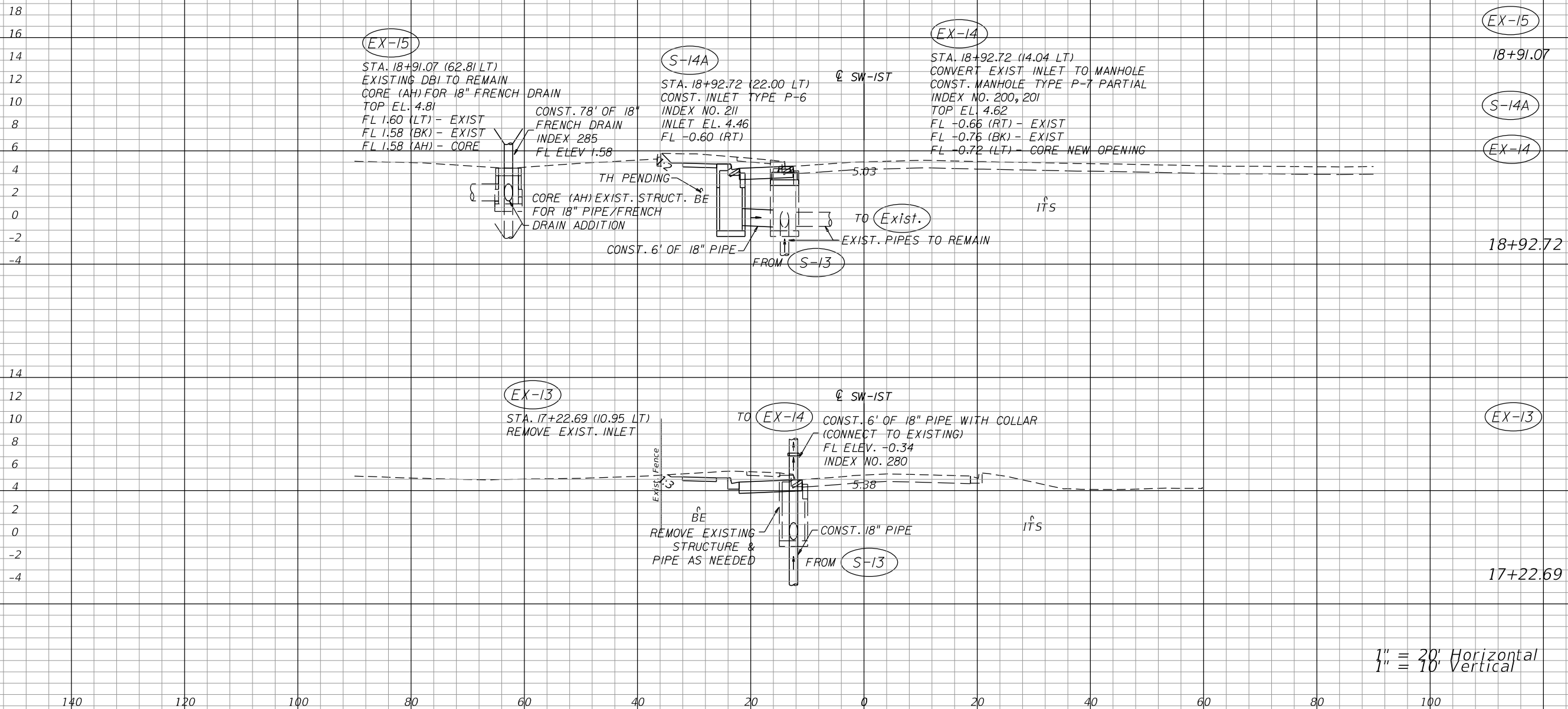
REVISIONS		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD:
 STEPHEN A. HUGHES, P.E.
 P.E. NO. 64740
 CTS ENGINEERING, INC.
 3250 W. COMMERCIAL BLVD., SUITE 100
 FORT LAUDERDALE, FL 33309

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
842	BROWARD	228229-9-52-01

DRAINAGE STRUCTURES
SWIST STREET

SHEET NO.
10



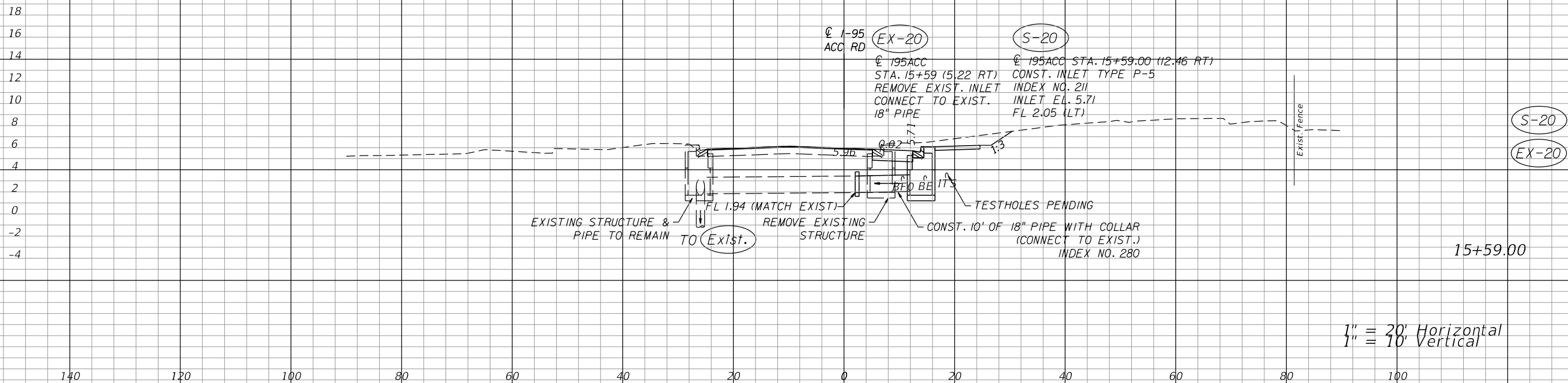
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD:
STEPHEN A. HUGHES, P.E.
P.E. NO. 64740
CTS ENGINEERING, INC.
3250 W. COMMERCIAL BLVD., SUITE 100
FORT LAUDERDALE, FL 33309

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
842	BROWARD	228229-9-52-01

DRAINAGE STRUCTURES
SW 1ST STREET

SHEET NO.
11



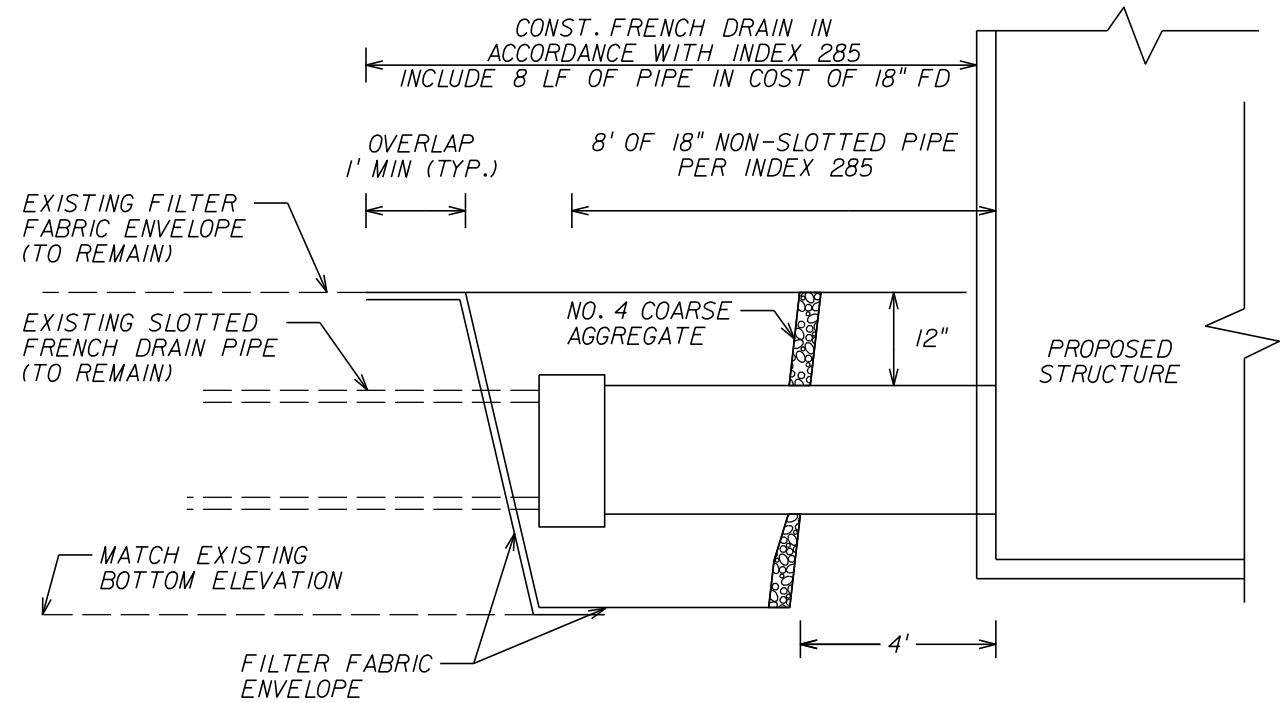
ENGINEER OF RECORD:
 STEPHEN A. HUGHES, P.E.
 P.E. NO. 64740
 CTS ENGINEERING, INC.
 3250 W. COMMERCIAL BLVD., SUITE 100
 FORT LAUDERDALE, FL 33309

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
842	BROWARD	228229-9-52-01

DRAINAGE STRUCTURES
I-95 ACCESS ROAD

SHEET NO.
 12

FRENCH DRAIN CONNECTION DETAILS - DRAINAGE STRUCTURE S-12B



NOTE: REFER TO DRAINAGE STRUCTURES SHEET FOR ELEVATIONS

N.T.S.

REVISIONS				ENGINEER OF RECORD: STEPHEN A. HUGHES, P.E. P.E. NO. 64740 CTS ENGINEERING, INC. 3250 W. COMMERCIAL BLVD., SUITE 100 FORT LAUDERDALE, FL 33309	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DRAINAGE DETAILS FRENCH DRAIN	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					842	BROWARD	228229-9-52-01		13

**Broward Park and Ride Lot
Interim Improvements
Preliminary Drainage and Permitting Evaluation**

Purpose:

The purpose of this drainage analysis is to evaluate the existing drainage conditions of the Broward Boulevard Park and Ride (PNR) lot and to provide a preliminary drainage concept that can be implemented by CTS in the plans being prepared for the Interim Broward PNR Improvements Push-Button Project.

Existing Drainage Conditions:

The total area of the PNR lot is 30.20 acres. The water quality treatment provided consists of exfiltration trenches and wet retention pond, with no surplus water quality being provided. Please refer to Table 1 for existing land use and water quality calculations.

The southernmost drainage system collects runoff from the parking lot located just west of the Amtrak Station and is controlled by existing drainage structure S-17 which has a weir elevation set at 5 ft NGVD. The roadway runoff from SW 1st Street is collected by curb inlets and discharges to a wet retention pond. The control structure S-1 was constructed within the wet retention pond with a weir elevation set at 4.5 ft NGVD, with no orifice. These two systems are connected at S-17 and then conveyed north via a 36" pipe.

The runoff from the parking lot located between SW 1st Street and Broward Boulevard is accommodated within an existing exfiltration system (Exfiltration Trench No. 2). The runoff from the parking lot located north of Broward Boulevard consists of exfiltration systems, ultimately controlled by control structures S-53 and S-65. These structures discharge to the North Fork of the New River via a 60" pipe.

Based on field reviews, some of the curb inlets shown in the existing plans were not constructed per plan and previous permit approvals. Please refer to attached Figure for illustration of existing drainage per existing plans versus actual conditions.

Proposed Drainage Conditions:

The proposed improvements will result in approximately 0.33 acres of additional impervious area and physical impact to the existing drainage collection and conveyance along the north side of SW 1st Street and west side of the PNR access road (north of SW 1st Street), as well as the 36" pipe located along the east side of the PNR access road.

To accommodate the additional impervious area within the system along SW 1st Street and the PNR access road which drains to the existing wet retention pond, an equivalent drainage area from SW 1st Street can effectively be removed from the existing drainage system and connected to the existing exfiltration system parking lot located between SW 1st Street and Broward Boulevard. The existing exfiltration trench system could then be modified to accommodate the additional inflow based on the same parameters used in the permit calculations for Exfiltration Trench No. 2. The net additional length of exfiltration trench required would be 78 ft, connected just east of S-32. Please refer to Table 2 and the Figure for schematic.

The proposed drainage improvements associated with this preliminary drainage include the furnishing and installation of one manhole, approximately 50 ft of 18-inch pipe, 78 ft of 18-inch French drain, and modification (coring) of one existing ditch bottom inlet drainage structure (S-32)

Park-N-Ride Lot

BROWARD COUNTY, FLORIDA

Table 1: Land Use and Water Quality - Existing Conditions

Treatment Provided	Basin Area (acres)	Pervious Area (acres)	Impervious Area (acres)	Offsite Area (acres)	Existing Trench Length (ft)	Required Volume (ac-in)	Required Volume (ac-ft)	Provided Volume (ac-in)	Provided Volume (ac-ft)	Surplus Water Quality Provided (ac-ft)							
Exfiltration Trench No. 1	3.20	0.60	2.60	0.00	345	2.60	0.22	2.80	0.23	0.02							
Exfiltration Trench No. 2	2.80	0.40	2.40	0.00	594	2.60	0.22	3.30	0.28	0.06							
Exfiltration Trench No. 3	14.30	1.30	13.00	0.00	298	14.70	1.23	2.40	0.20	0.02							
Exfiltration Trench No. 4					248			2.00	0.17								
Exfiltration Trench No. 5					231			1.90	0.16								
Exfiltration Trench No. 6					260			2.10	0.18								
Exfiltration Trench No. 7					76			0.60	0.05								
Exfiltration Trench No. 8					477			3.90	0.33								
Exfiltration Trench No. 9					243			2.00	0.17								
Sub-Total					20.30			2.30	18.00		0.00	2772	19.90	1.66	21.00	1.75	0.09
Wet Detention Pond					9.90			0.40	4.30		5.20	0	5.40	0.45	4.20	0.35	-0.10
Sub-Total	9.90	0.40	4.30	5.20	0	5.40	0.45	4.20	0.35	-0.10							
TOTAL	30.20	2.70	22.30	5.20	2772.00	25.30	2.11	25.20	2.10	-0.01							

Notes:

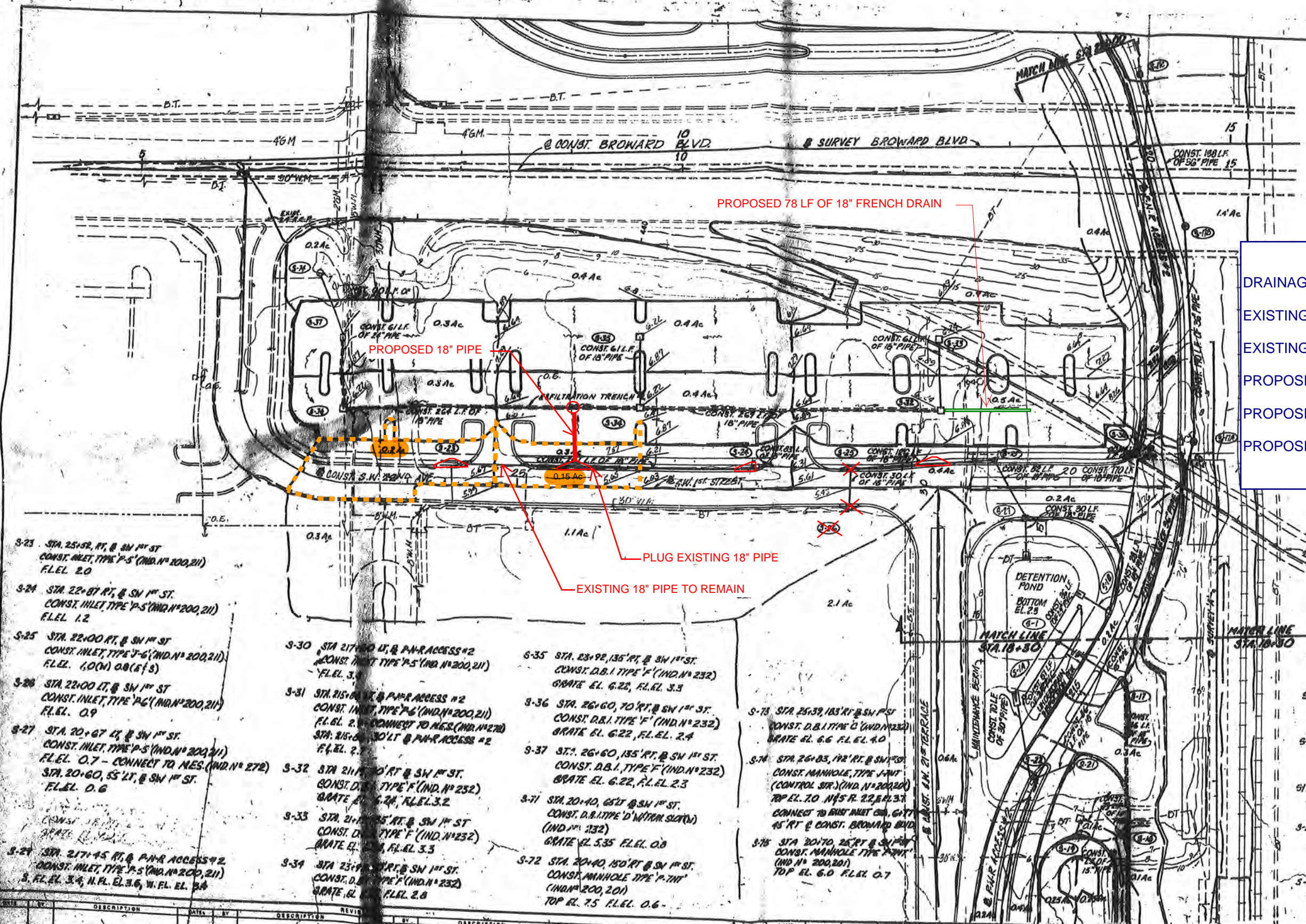
1. Information taken from SFWMD ERP No. 06-01469-S.
2. Current water quality treatment provided is equal to the water quality treatment required.

Park-N-Ride Lot
 BROWARD COUNTY, FLORIDA

Table 2: French Drain Length Calculation - Post-Development Conditions

Additional Impervious Area (ac): 0.33
Equivalent Existing Impervious Area (ac): 0.35
Required Water Quality Treatment Volume (ac-ft): 0.04 *2.5" over additional impervious area.*

Ground Elevation	=	6.22	ft.	
Weir Elev.	=	5.00	ft.	
Water Table	=	2.30	ft.	
Invert Elevation	=	2.30	ft.	
Pipe Diameter	(d) =	18	(in)	
Top of Trench Elev.	=	5.00	ft.	
Bottom of Trench Elev.	=	0.70	ft.	
Depth of Percolation Test used (ft)	=		(ft)	
F.D. k_{avg}	Hydraulic Conductivity (K_{10}) =	9.40E-05	cfs/sf/ft-head	
Required Treatment Volume	V =	0.44	(Ac-in)	.04 ac-ft
Depth to Water table	(H_2)	4.00	(ft)	
Trench Width	W	4.00	(ft)	
Non-Saturated Trench Depth	D_u	2.40	(ft)	
Saturated Trench Depth	D_s	2.00	(ft)	
		16.00		
		19.20		
		5.76		
		16.00		
		0.0013344		
		v		
Length of French Drain Required for Treatment:	L =	$W + 2H_2D_u - \frac{D_u^2}{4} + 2H_2D_s + (1.39 \times 10^{-4}) \times \frac{V}{WD_u}$	=	78 ft



LEGEND

- DRAINAGE BASIN -----
- EXISTING CURB INLET TYPE 5 ▲
- EXISTING CURB INLET TYPE 6 ▴
- PROPOSED MANHOLE ○
- PROPOSED 18" PIPE ———
- PROPOSED 18" FRENCH DRAIN ———

- S-23 STA. 25+52 RT. @ SW 1ST ST
CONST. INLET TYPE P-5 (IND. N° 200, 211)
F.L.E.L. 2.0
- S-24 STA. 22+87 RT. @ SW 1ST ST.
CONST. INLET TYPE P-5 (IND. N° 200, 211)
F.L.E.L. 1.2
- S-25 STA. 22+00 RT. @ SW 1ST ST
CONST. INLET TYPE P-6 (IND. N° 200, 211)
F.L.E.L. (0.0) 0.8 (1.5)
- S-26 STA. 22+00 LT. @ SW 1ST ST
CONST. INLET TYPE P-6 (IND. N° 200, 211)
F.L.E.L. 0.9
- S-27 STA. 20+67 RT. @ SW 1ST ST.
CONST. INLET TYPE P-5 (IND. N° 200, 211)
F.L.E.L. 0.7 - CONNECT TO MES. (IND. N° 272)
STA. 20+60, 55 LT. @ SW 1ST ST.
F.L.E.L. 0.6
- S-28 STA. 21+45 RT. @ P.A.R. ACCESS #2
CONST. INLET TYPE P-5 (IND. N° 200, 211)
S. F.L.E.L. 3.4, N. F.L.E.L. 3.6, W. F.L.E.L. 3.4

- S-30 STA. 21+00 LT. @ P.A.R. ACCESS #2
CONST. INLET TYPE P-5 (IND. N° 200, 211)
F.L.E.L. 3.1
- S-31 STA. 21+00 RT. @ P.A.R. ACCESS #2
CONST. INLET TYPE P-6 (IND. N° 200, 211)
F.L.E.L. 2.1 - CONNECT TO MES. (IND. N° 272)
STA. 21+00, 30 LT. @ P.A.R. ACCESS #2
F.L.E.L. 2.1
- S-32 STA. 21+00 RT. @ SW 1ST ST.
CONST. D.B.I. TYPE F (IND. N° 232)
GRATE EL. 6.24, F.L.E.L. 3.2
- S-33 STA. 21+00 RT. @ SW 1ST ST
CONST. D.B.I. TYPE F (IND. N° 232)
GRATE EL. 6.24, F.L.E.L. 3.3
- S-34 STA. 23+00 RT. @ SW 1ST ST.
CONST. D.B.I. TYPE F (IND. N° 232)
GRATE EL. 6.22, F.L.E.L. 2.8

- S-35 STA. 23+92, 135 RT. @ SW 1ST ST.
CONST. D.B.I. TYPE F (IND. N° 232)
GRATE EL. 6.22, F.L.E.L. 3.3
- S-36 STA. 26+60, 70 RT. @ SW 1ST ST.
CONST. D.B.I. TYPE F (IND. N° 232)
GRATE EL. 6.22, F.L.E.L. 2.4
- S-37 STA. 26+60, 135 RT. @ SW 1ST ST.
CONST. D.B.I. TYPE F (IND. N° 232)
GRATE EL. 6.22, F.L.E.L. 2.3
- S-71 STA. 20+40, 65 LT. @ SW 1ST ST.
CONST. D.B.I. TYPE D WITH SLOTTED (IND. N° 232)
GRATE EL. 5.35 F.L.E.L. 0.8
- S-72 STA. 20+40, 150 RT. @ SW 1ST ST.
CONST. MANHOLE TYPE P-7HT (IND. N° 200, 201)
TOP EL. 7.5 F.L.E.L. 0.6

- S-73 STA. 25+39, 183 RT. @ SW 1ST ST
CONST. D.B.I. TYPE C (IND. N° 232)
GRATE EL. 6.6 F.L.E.L. 4.0
- S-74 STA. 26+03, 192 RT. @ SW 1ST ST
CONST. MANHOLE TYPE J-INT (CONTROL STR.) (IND. N° 200, 200)
TOP EL. 7.0 N. F.L. 2.2, E.L. 3.7
CONNECT TO GUT INLET CH. @ 15 RT. @ CONST. BROWARD BLVD
- S-75 STA. 20+70, 25 RT. @ SW 1ST ST
CONST. MANHOLE TYPE P-7HT (IND. N° 200, 201)
TOP EL. 6.0 F.L.E.L. 0.7

- S-1 STA. 215+25 LT. @ P.A.R. ACCESS #2
CONST. TYPE E D.B.I. (INDEX N° 232)
GRATE EL. 6.6, F.L.E.L. N. F.L. 2.3
- S-1A STA. 21+00 RT. @ P.A.R. ACCESS #2
CONST. J-INT MANHOLE (INDEX 200)
TOP EL. 7.0 F.L. N. F.L. 1.2
- S-1B STA. 21+00 RT. @ P.A.R. ACCESS #2
CONST. J-INT MANHOLE (INDEX 200)
TOP EL. 8.5 F.L. N. F.L. 1.0
- S-1C STA. 200+75 RT. @ P.A.R. ACCESS #2
CONST. J-INT MANHOLE (INDEX 200)
TOP EL. 7.0 F.L. N. F.L. 0.8
- S-1A STA. 21+70 LT. @ P.A.R. ACCESS #2
CONST. UNDERDRAIN INSPECT. BOX (INDEX N° 245)
TOP EL. 5.5 F.L.E.L. 0.2
- S-1B STA. 215+65 LT. @ P.A.R. ACCESS #2
CONST. UNDERDRAIN INSPECT. BOX (INDEX N° 245)
TOP EL. 5.5 F.L.E.L. 0.2

NO.	DESCRIPTION	DATE	BY	NO.	DESCRIPTION	DATE	BY
DESIGNED BY				CHECKED BY			
DRAWN BY				APPROVED BY			
DATE				DATE			

FLORIDA DEPARTMENT OF TRANSPORTATION
PARK - N - RIDE LOT
GRADING AND DRAINAGE PLAN

GENERAL NOTES:

- GRADES SHOWN ARE FINISHED GRADES.
- UTILITIES TO BE ADJUSTED BY OTHERS IN ACCORDANCE W/ FDOT UTILITY ACCOMMODATION GUIDE & UTILITY ADJUST. PLANS.
- B. M. DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD-'29).
- EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.
- BUILDINGS TO BE REMOVED BY OTHERS UNLESS OTHERWISE NOTED.
- ANY N.G.V.D. - '29 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE THE PROJECT ENGINEER SHOULD NOTIFY:

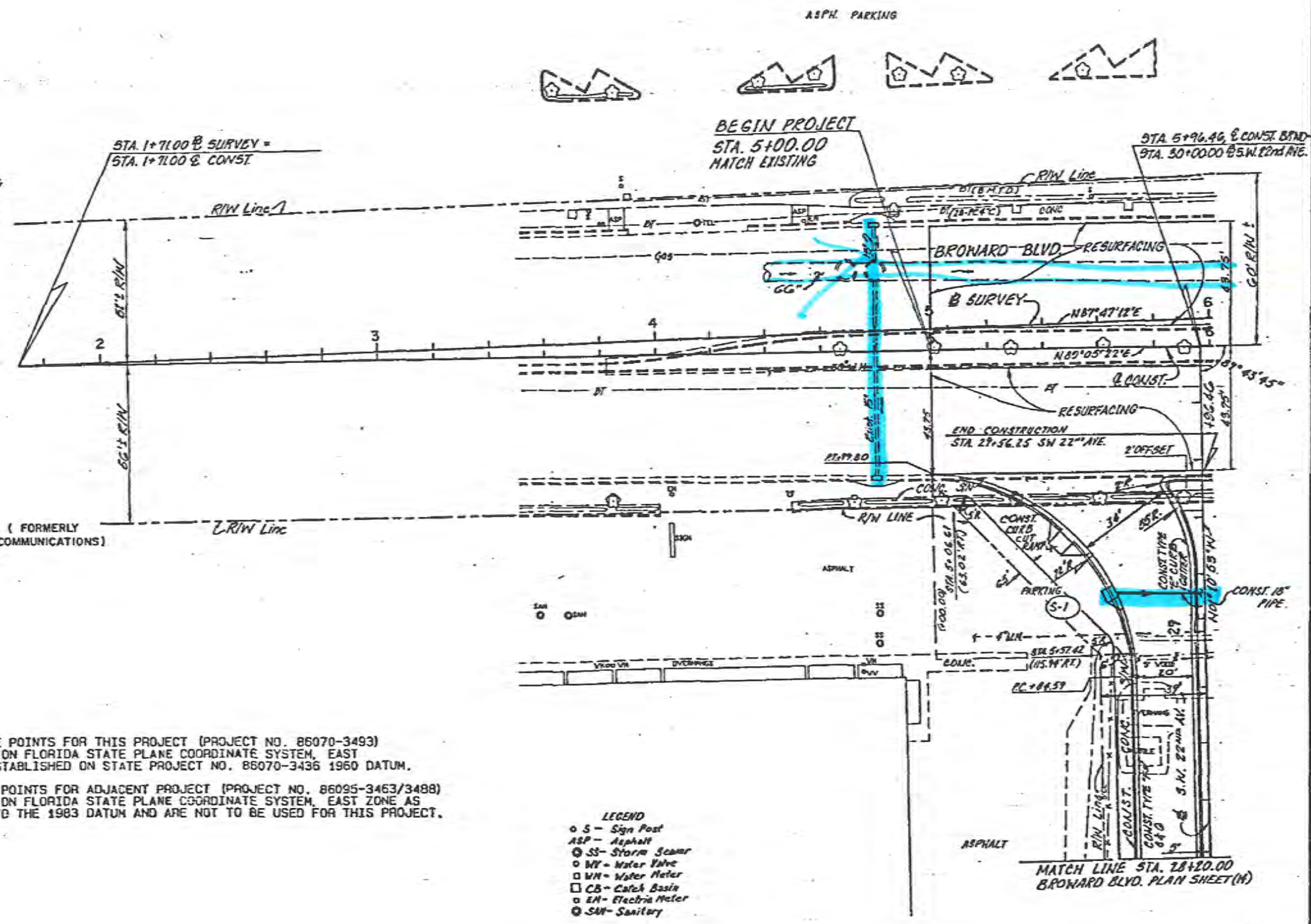
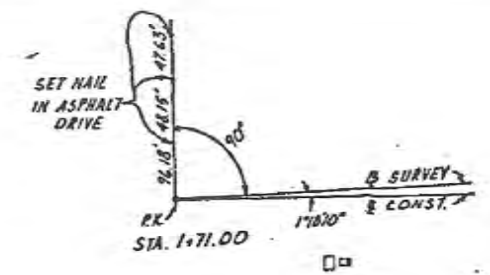
GEODETIC INFORMATION CENTER
ATTN.: MARK MAINTENANCE SECTION
ATTN: N/C6-162
6001 EXECUTIVE BOULEVARD
ROCKVILLE, MARYLAND 20852
TELEPHONE: (301) 443-8319

- PERMANENT TURNOUTS AND DRIVEWAY CONNECTIONS TO PRIVATE PROPERTY THAT LIE OUTSIDE THE LIMITS OF LIMITED ACCESS RIGHT-OF-WAY AND WHERE ACCESS RIGHTS HAVE NOT BEEN ACQUIRED SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TURNOUT DETAILS AND STATE STANDARD SPECIFICATIONS REFERENCED ON THE KEY SHEET OF THESE PLANS. THE DEPARTMENT, OR THE DEPARTMENT'S CONTRACTOR, SHALL NOT ISOLATE ADJACENT AND/OR REMAINDER PROPERTY UNLESS ACCESS RIGHTS ARE ACQUIRED. ACCESS SHALL BE PROVIDED TO SUCH PROPERTY WHENEVER CONSTRUCTION INTERFERES WITH THE EXISTING MEANS OF ACCESS.
- ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE PROJECT ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEYOR WITHOUT DELAY BY TELEPHONE.
- THE LOCATION OF THE PROPOSED UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY; THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR & OWNER DURING CONSTRUCTION.
- EXISTING GUARDRAIL PANELS TO BE REUSED UPON APPROVAL BY THE ENGINEER. THE CONTRACTOR SHALL REMOVE AND STOCKPILE THE PANELS AS DIRECTED BY THE ENGINEER. ALL GUARDRAIL POSTS TO BE REPLACED IN ACCORDANCE WITH THE 1990 STANDARD SPECIFICATIONS.
- IF POSSIBLE, EXISTING LANDSCAPING IS TO BE SAVED BY THE CONTRACTOR, TO BE REUSED THROUGHOUT THE PROJECT.

UTILITY OWNERS

- ELECTRIC - FLORIDA POWER AND LIGHT COMPANY (305) 765-3646
- TELEPHONE - SOUTHERN BELL (305) 476-2733
MCI TELECOMMUNICATIONS CORP (800) MCI-WORK
- NATURAL GAS - PEOPLES GAS SYSTEM, INC. (305) 763-8900
- SEWER & WATER - CITY OF FORT LAUDERDALE (305) 776-5151
- CABLE TELEVISION - SELKIRK CABLE TELEVISION (305) 527-6620
- CSX R.R. - (305) 836-3003
- AMTRAK - (800) 872-7245
- TRI COUNTY R.R. - (800) 232-0149

COORDINATE POINTS FOR THIS PROJECT (PROJECT NO. 86070-3493) ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, AS ESTABLISHED ON STATE PROJECT NO. 86070-3436 1960 DATUM.
REFERENCE POINTS FOR ADJACENT PROJECT (PROJECT NO. 86095-3463/3488) ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE AS ADJUSTED TO THE 1983 DATUM AND ARE NOT TO BE USED FOR THIS PROJECT.

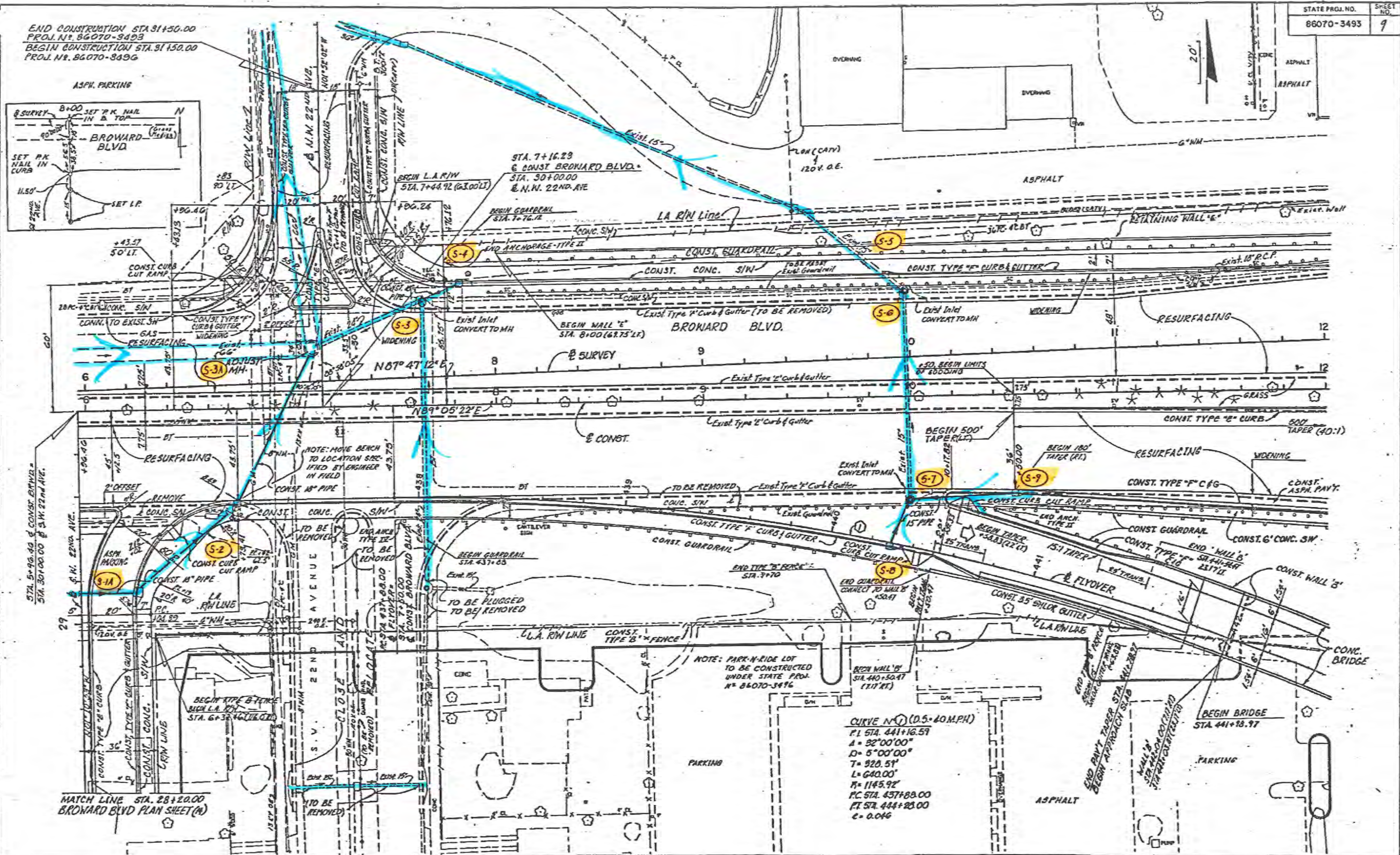
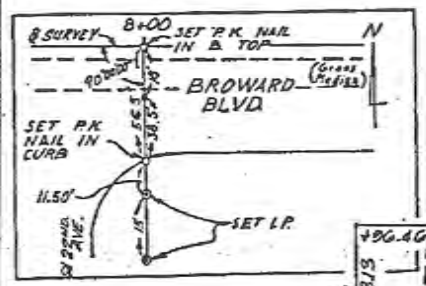


- LEGEND**
- S - Sign Post
 - ASP - Asphalt
 - SS - Storm Sewer
 - W - Water Pipe
 - M - Water Meter
 - CB - Catch Basin
 - EM - Electric Meter
 - SM - Sanitary

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	NAME	DATE	DESIGN BY	DATE	DESIGN BY	FLORIDA DEPARTMENT OF TRANSPORTATION	APPROVED BY	DATE

**BROWARD BLVD.
PLAN (1)**

END CONSTRUCTION STA 31+50.00
PROJ. NO. 86070-3493
BEGIN CONSTRUCTION STA 91+50.00
PROJ. NO. 86070-3496



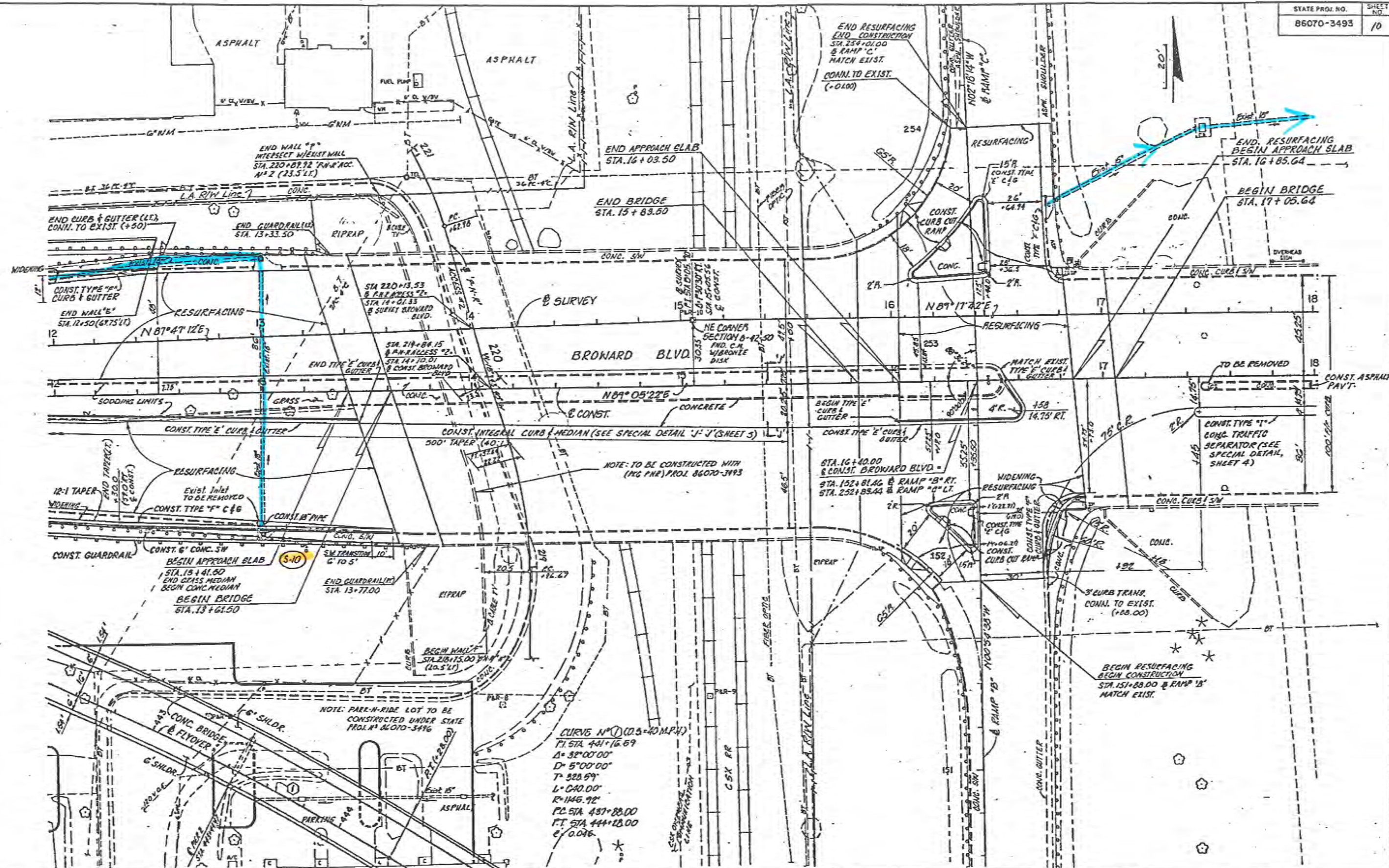
CURVE NO. 7 (D.S. 40 MPH)
 P.I. STA. 441+16.59
 A = 92°00'00"
 D = 5°00'00"
 T = 320.51'
 L = 640.00'
 M = 1145.92'
 P.C. STA. 437+88.00
 P.T. STA. 444+23.00
 E = 0.046

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DESIGNED BY	CHECKED BY	DATE	DATE	DATE
W. H. ...	C. E. ...	1/81	1/81	10/87

APPROVED BY	DATE
James M. ...	11/79

BROWARD BLVD.
PLAN (2)



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

NAME	DATE	NAME	DATE
DESIGNED BY: CR	1-83	DRAWN BY: CR	10/87
CHECKED BY: [Signature]	1/89	CHECKED BY: CR	1-89
APPROVED BY: [Signature]		DATE: 4/1/89	

FLORIDA DEPARTMENT OF TRANSPORTATION

BROWARD BLVD. PLAN (3)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY

F.A. PROJECT NO. **M-6724(I)**

BROWARD COUNTY

STATE ROAD NO. 842

BROWARD BOULEVARD

THIS CONTRACT PLAN SET INCLUDES

- ROADWAY PLANS
 - SIGNING PLANS
 - SIGNALIZATION PLANS
 - LIGHTING PLANS
 - IRRIGATION PLANS
- A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH GROUP OF PLANS

INDEX OF ROADWAY PLANS

SHEET NO.	DESCRIPTION
1	KEY MAP
2-3	DRAINAGE MAP
4	TYPICAL SECTION
5	SUMMARY OF QUANTITIES
6	SUMMARY OF DRAINAGE STRUCTURES
7	MASS DIAGRAM
8-19 & 19A	PLAN AND PROFILE SHEETS & SPECIAL REPORTS
20-21	INTERSECTION PLATEAUS
22-33	DRAINAGE STRUCTURES
34-37	SIDE STREET PROFILES
38-40	ROADWAY SOIL SURVEY
41-57	ROADWAY CROSS SECTIONS
58	MAINTENANCE OF TRAFFIC PLANS
59-70	UTILITY ADJUSTMENT SHEETS
71	TEMPORARY BARRIER WALL DETAILS

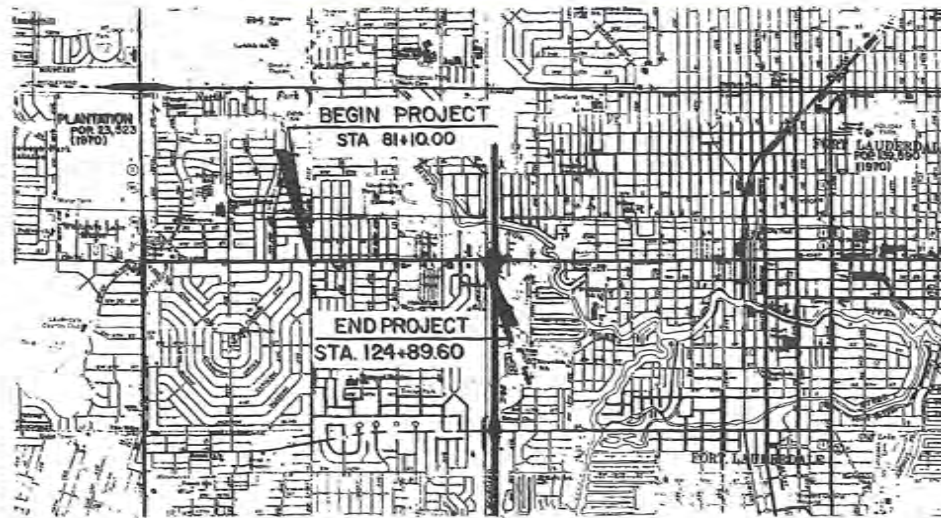
STANDARD DRAWINGS

INDEX NO.	DESCRIPTION
SSA-01	STANDARD ABBREVIATIONS
SSS-01	STANDARD SYMBOLS FOR KEY MAP AND PLAN SHEETS (3 SHEETS)
GRC-01-1	MISCELLANEOUS ROADWAY CONSTRUCTION DETAILS (2 SHEETS)
DSB-01	SUPPLEMENTARY DETAILS FOR MANHOLES AND INLETS (2 SHEETS)
SMG-01	DETAILS FOR MUNICIPAL CONSTRUCTION
DDJ-04	DITCH BOTTOM INLETS-TYPE F AND G
DSB-01	INLET, MANHOLE, JUNCTION BOX-TYPES J AND P
GTU-01-1	TURNOUT DETAILS
DCI-02-2	CURB INLET-TYPES 5 AND 6
DMD-01	MISCELLANEOUS DRAINAGE DETAILS (3 SHEETS)
FCG-01	CURB, CURB AND GUTTER
GEC-04	EROSION CONTROL DEVICES, SILT BARRIER
PTS-01	TRAFFIC SEPARATORS
PMS-01	MEDIAN STORAGE LANES
PCR-01	CURB CUT RAMP FOR PHYSICALLY HANDICAPPED
DSD-01	SUPPLEMENTARY DETAILS FOR MANHOLES AND INLETS (2 SHEETS)

REVISIONS

- SHEETS 18 & 56 (REVISED 3-1-77) REVISED BY H. BUCKBEE 11-29-77
- SHEET 71 (ADDED TO PLANS 3-1-77)
- SHEETS 1 & 5 (REVISED 3-21-77)
- SHEETS I-1 Thru I-10 (ADDED 3-21-77)
- SHEETS 1 Thru 4 & 6 & 8 Thru 12 & 20 & 23 Thru 29 & 34 Thru 36 & 41 Thru 48 (REVISED 11-29-77)
- SHEET 19A (ADDED TO PLANS 11-29-77)

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS, DATED 1973
A.R. SUPPLEMENT THEREON, DATED JUNE, 1975



	LENGTH OF PROJECT	
	LIN. FT.	MILES
ROADWAY	4379.60	0.829
BRIDGES	0.00	0.000
NET LENGTH OF PROJECT	4379.60	0.829
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJECT	4379.60	0.829

SECTION LEADER: M.J. BRICHE



LOCATION OF PROJECT



Revised 3-1-77
Revised 3-21-77
Revised 11-29-77

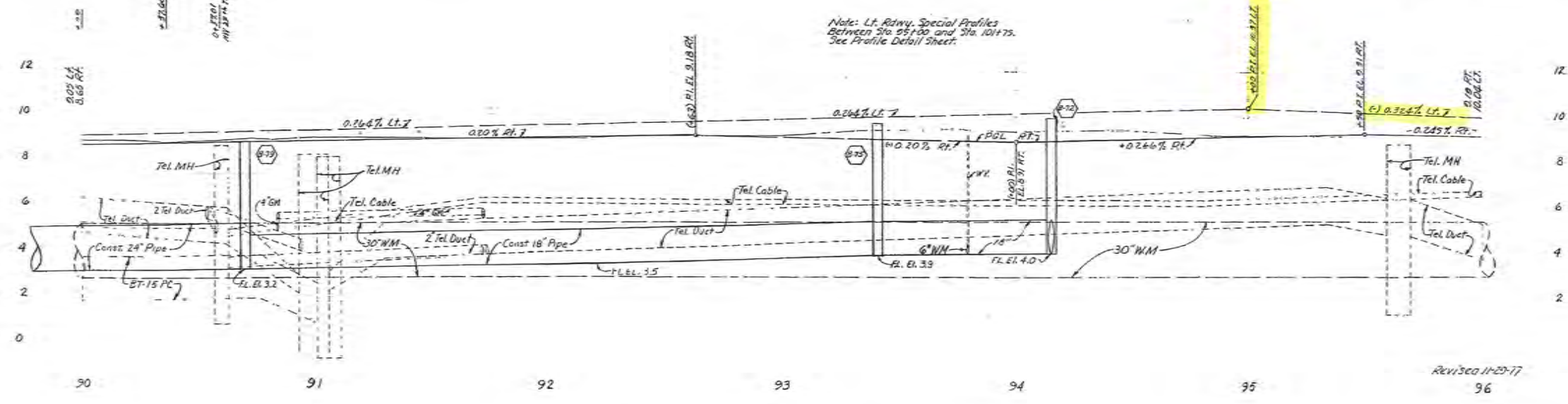
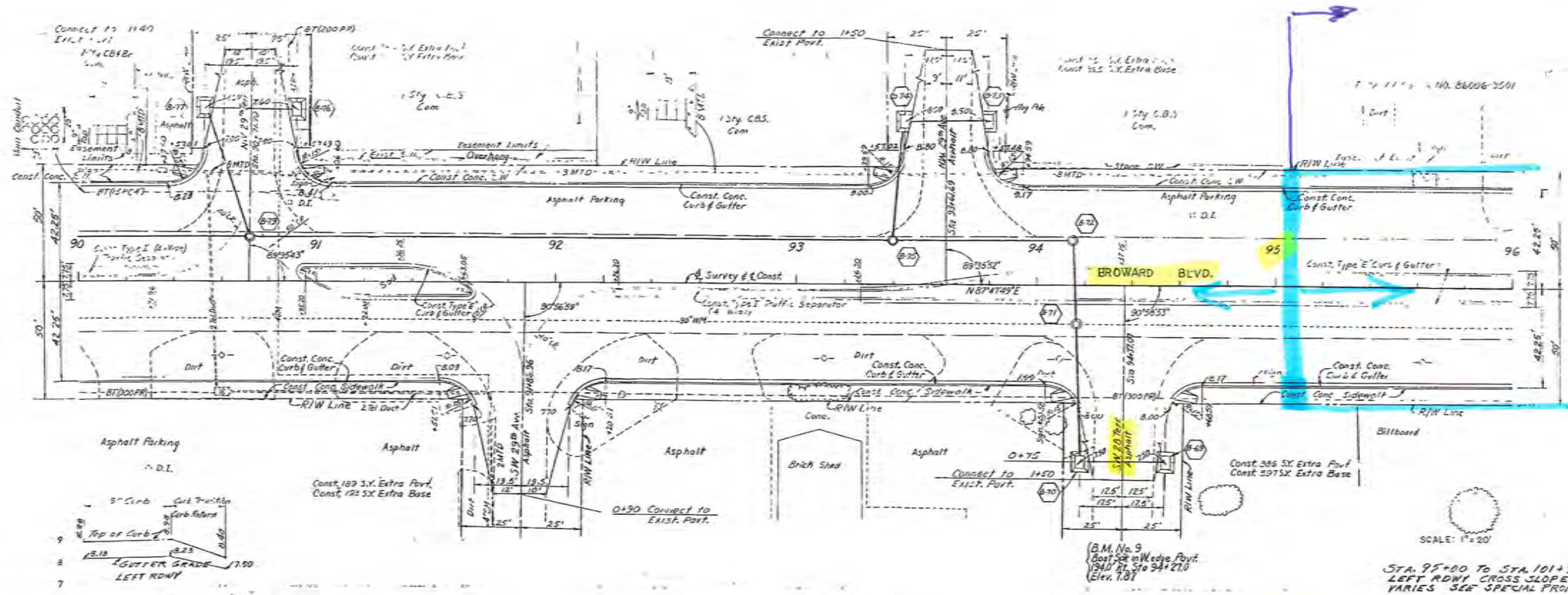
ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

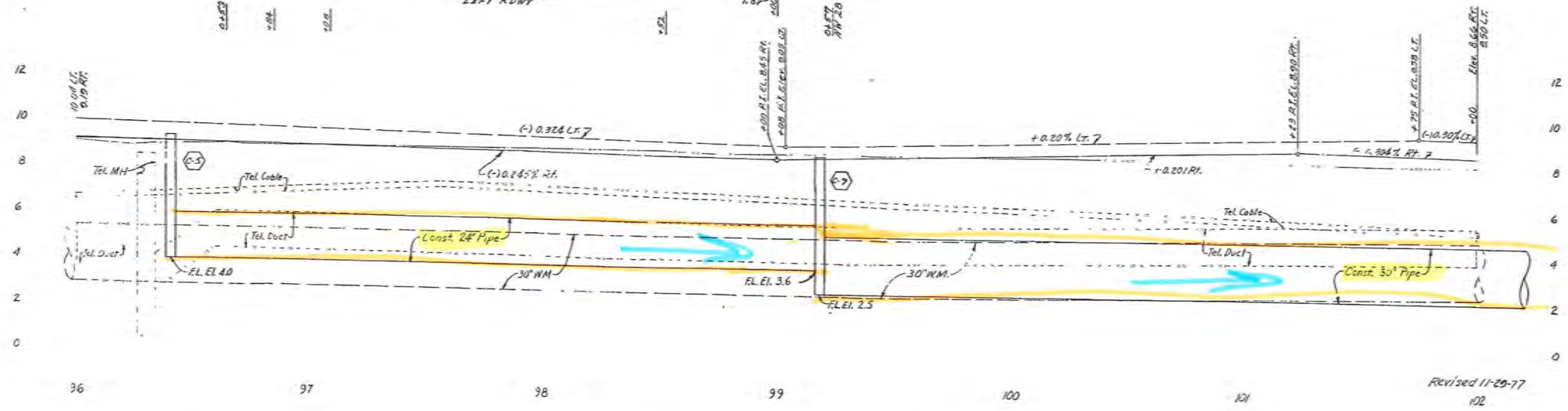
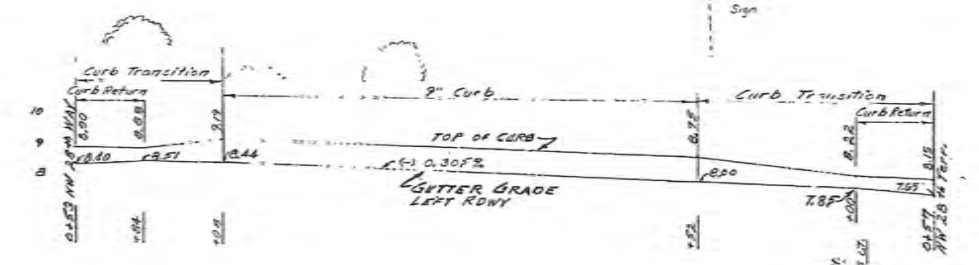
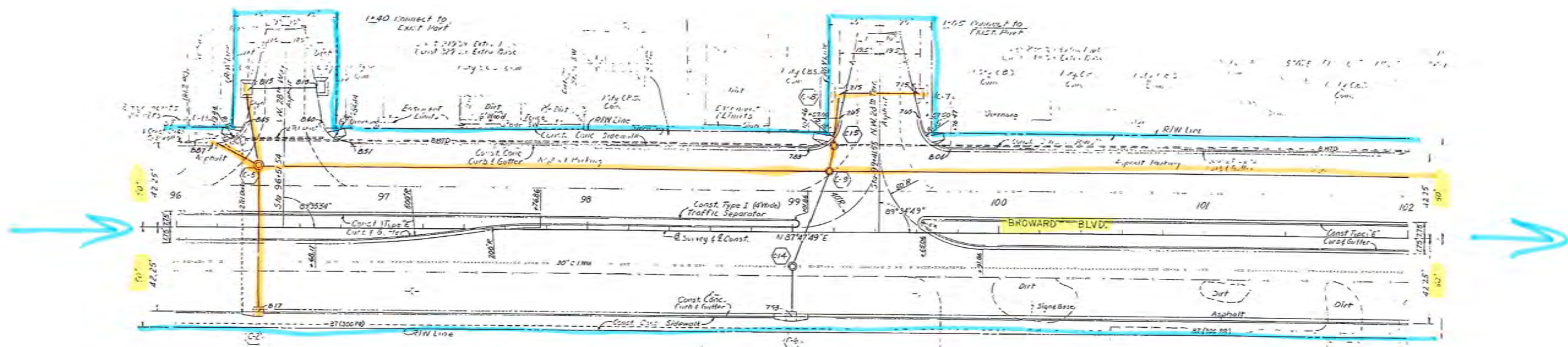
APPROVED: [Signature] DATE: [Blank]
DIVISION ENGINEER
FEDERAL HIGHWAY ADMINISTRATION

SUBMITTED BY:

DIRECTOR OF ROAD OPERATIONS

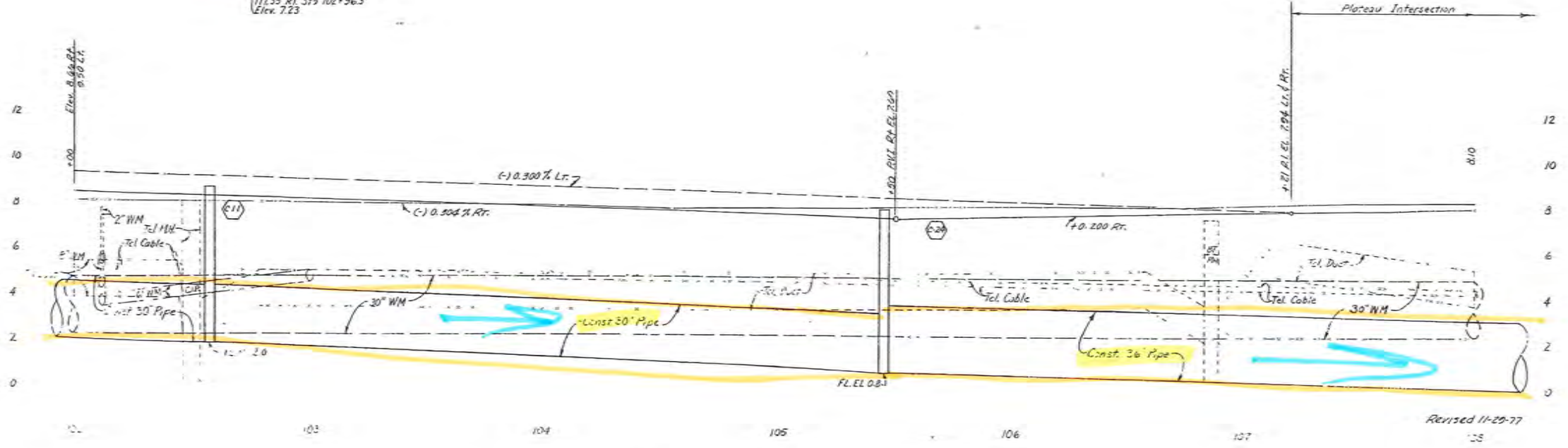
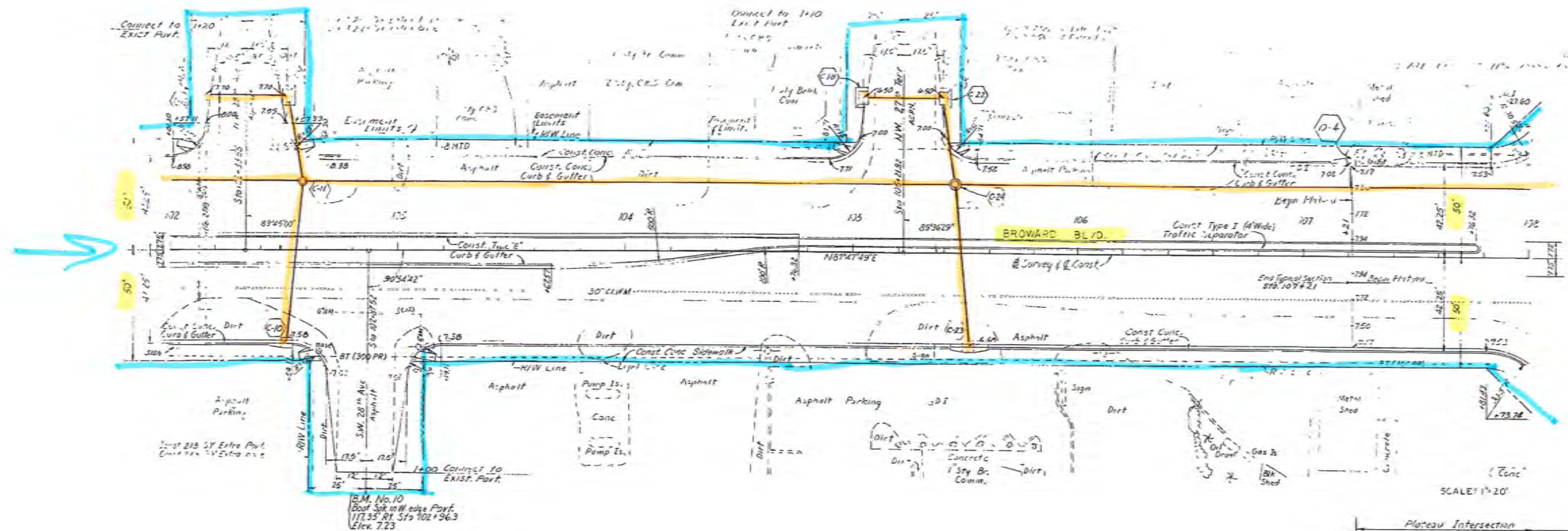
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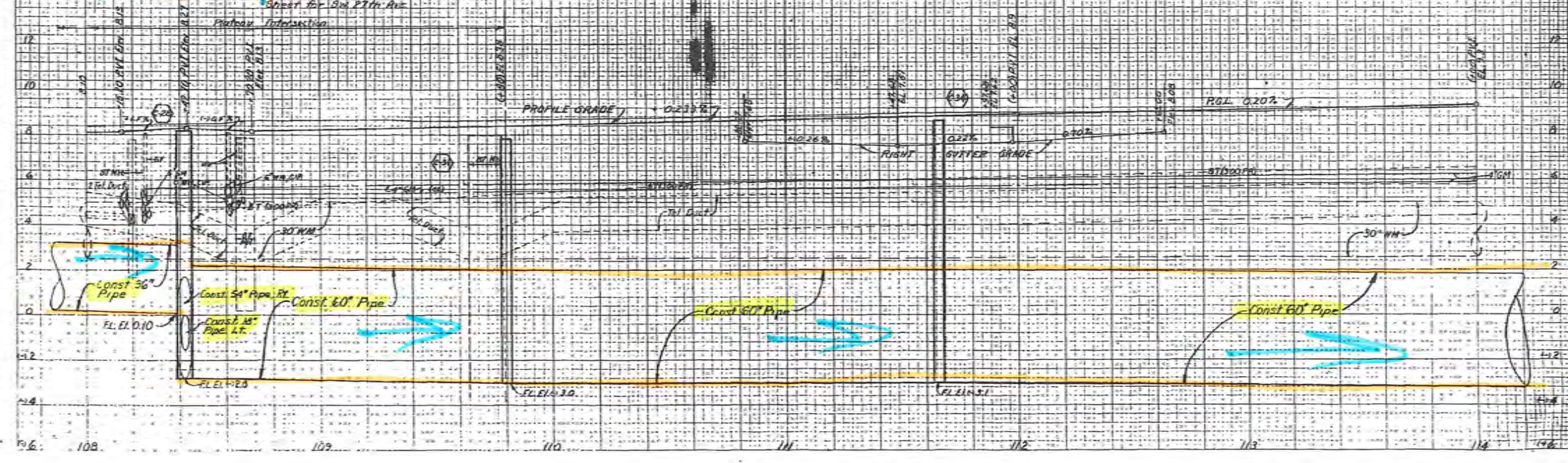
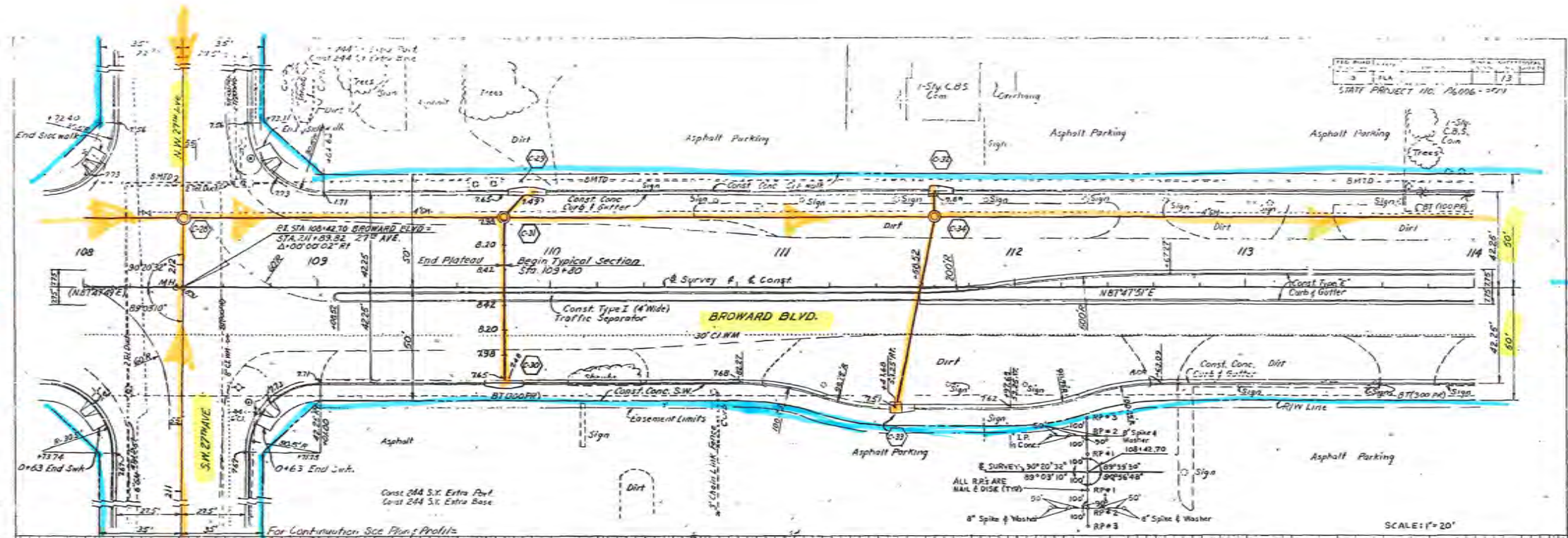




Revised 11-20-77
102

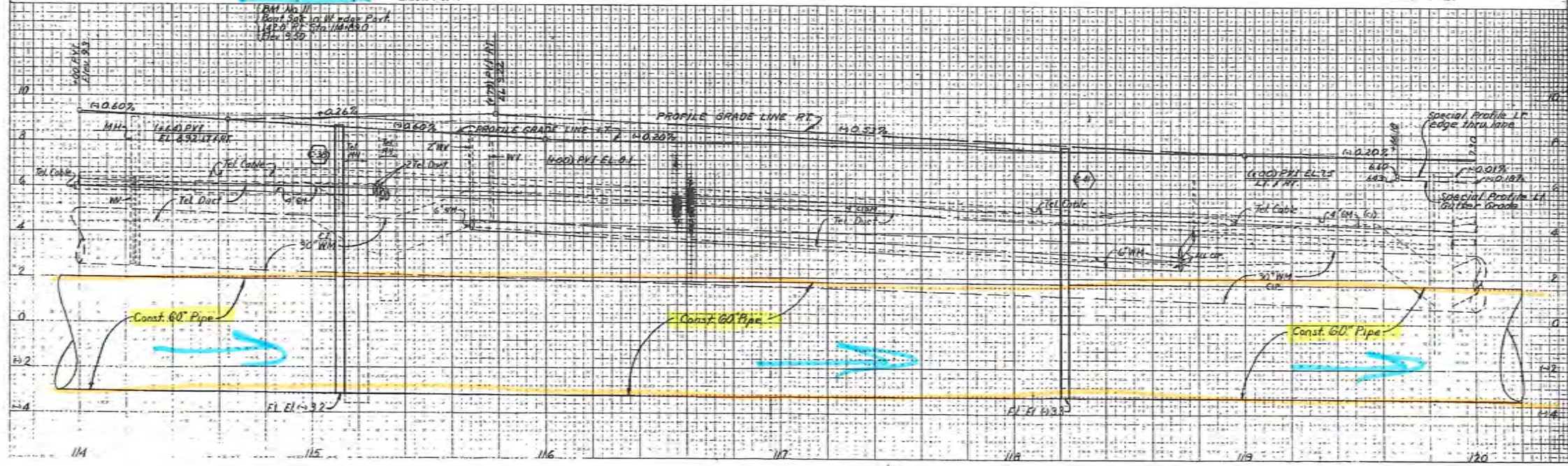
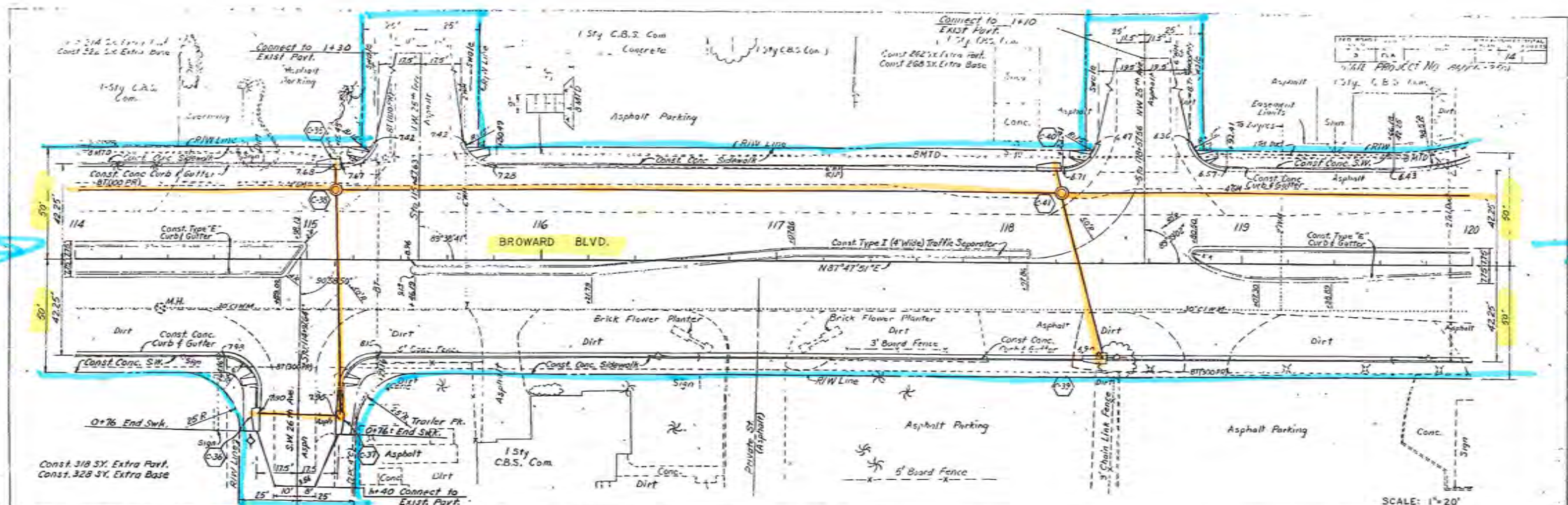




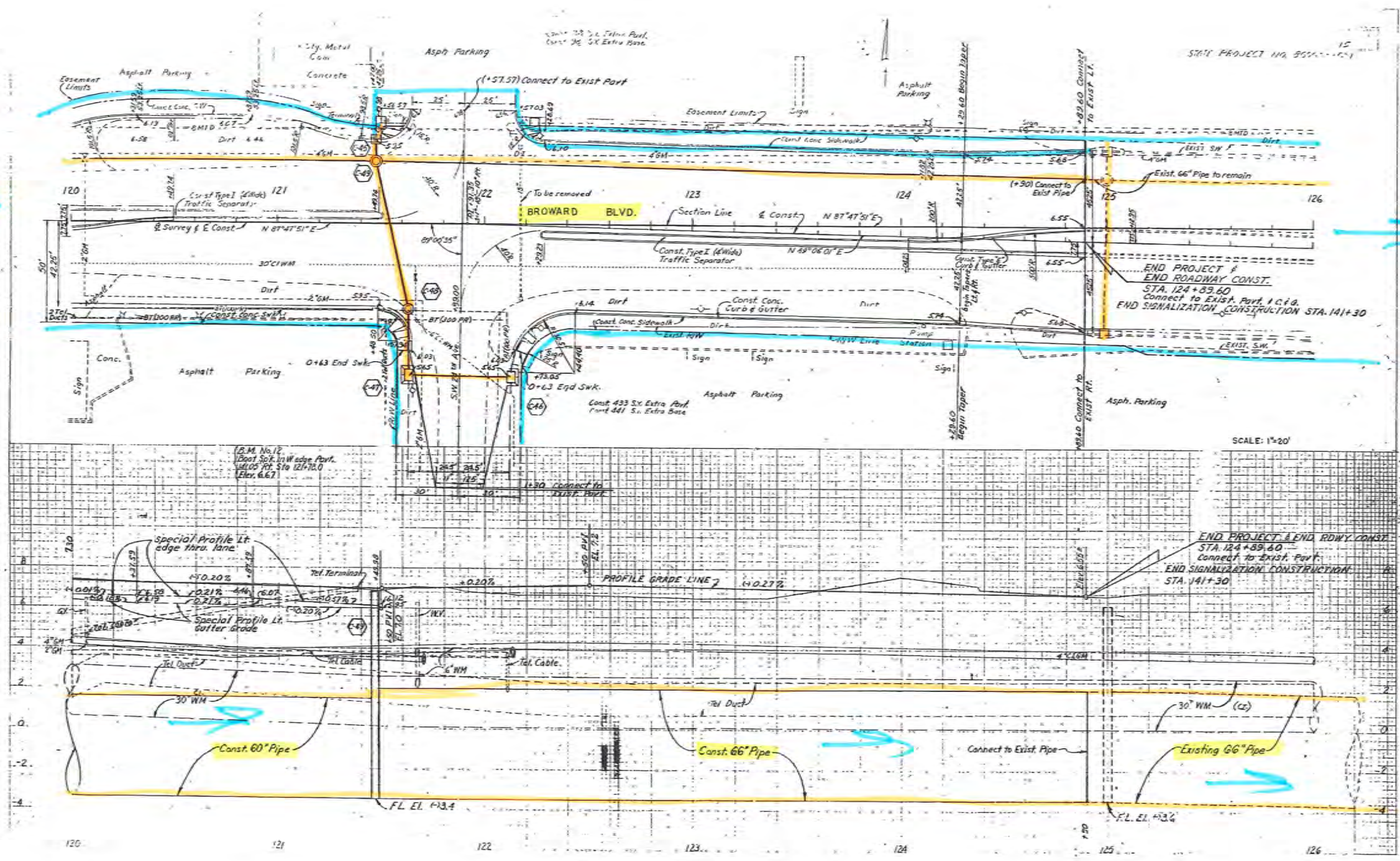


STATE PROJECT NO. 16006-071

SCALE: 1" = 20'

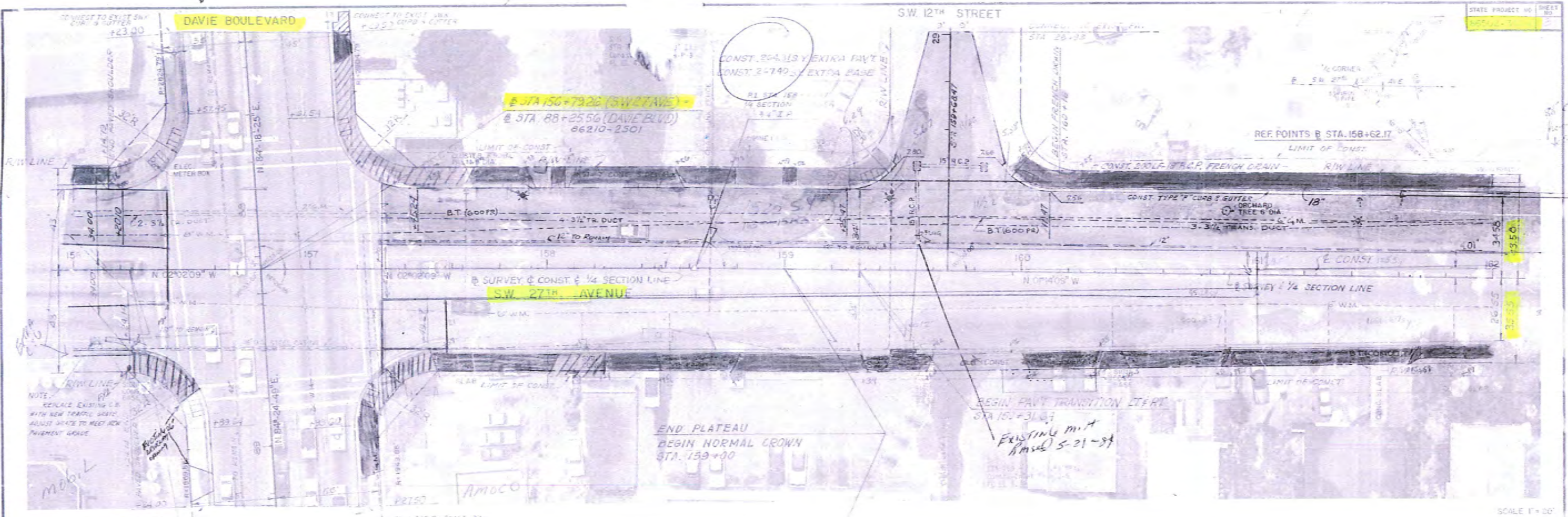


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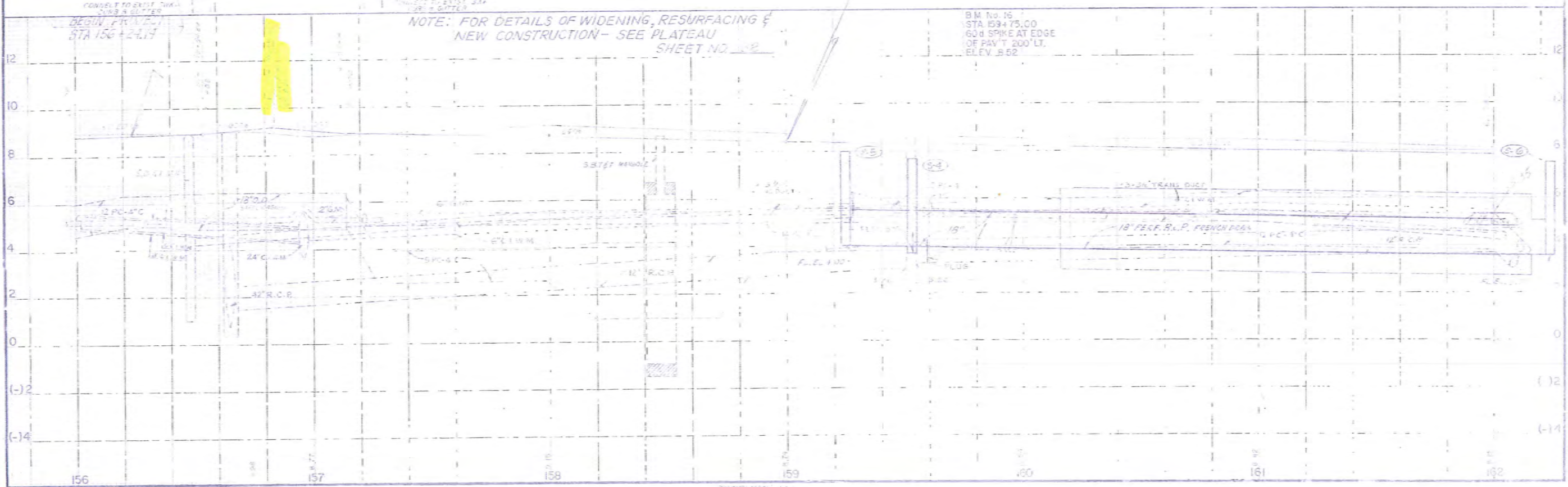


From here

Utility
370
1025
20219-2017-24



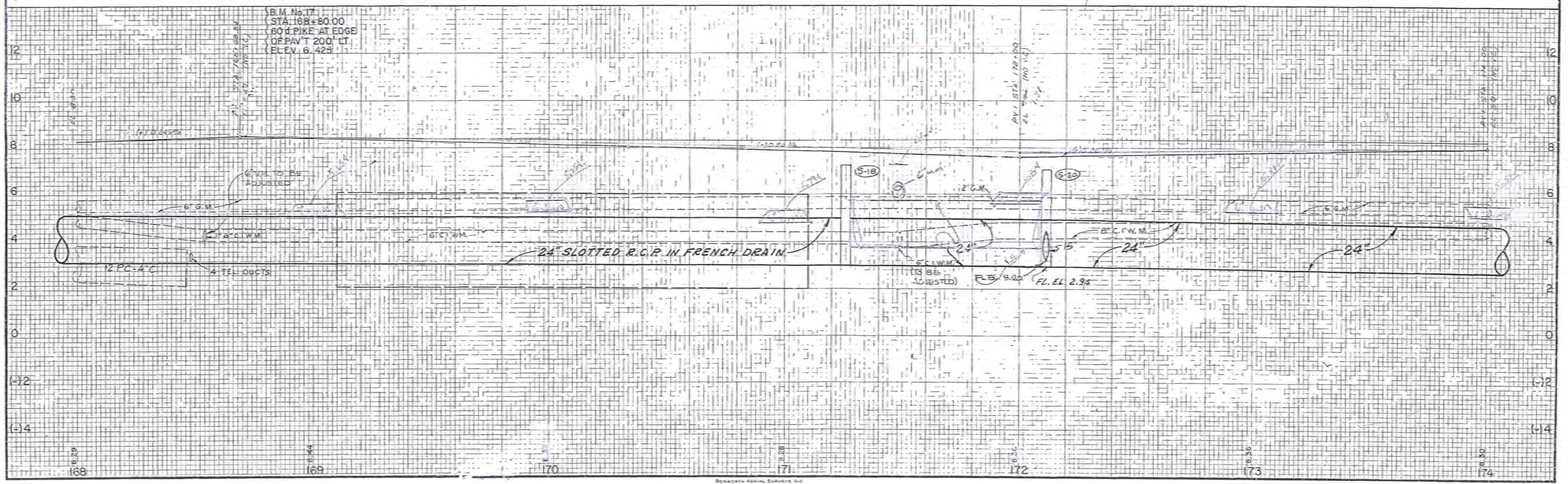
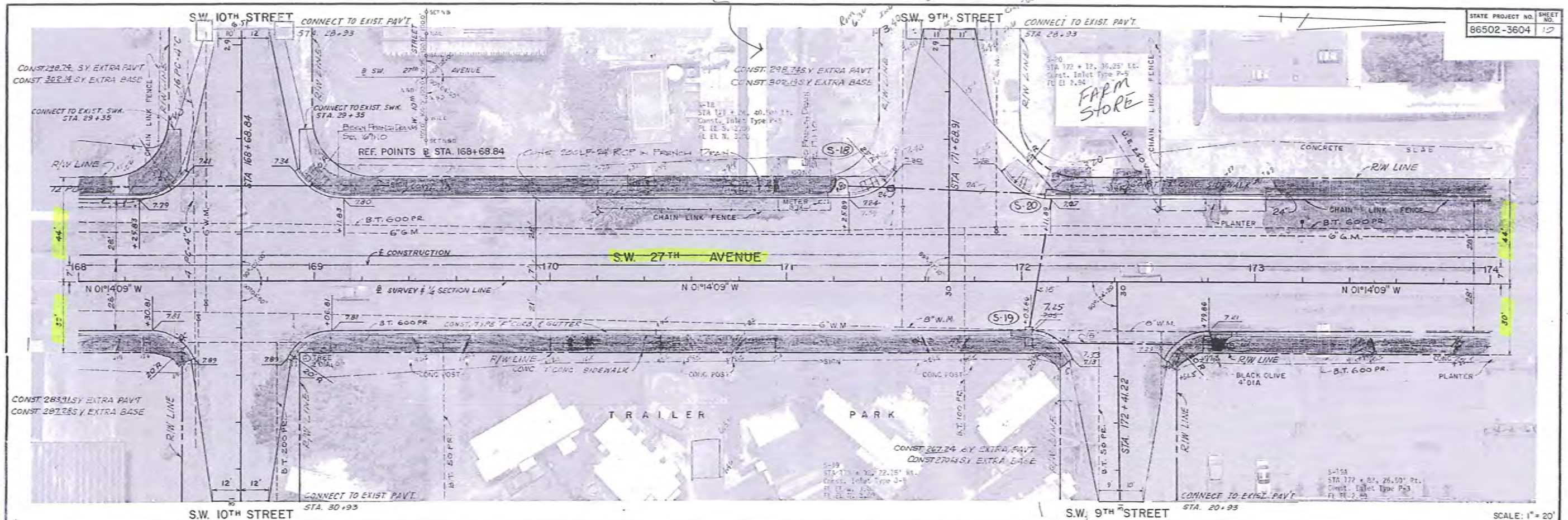
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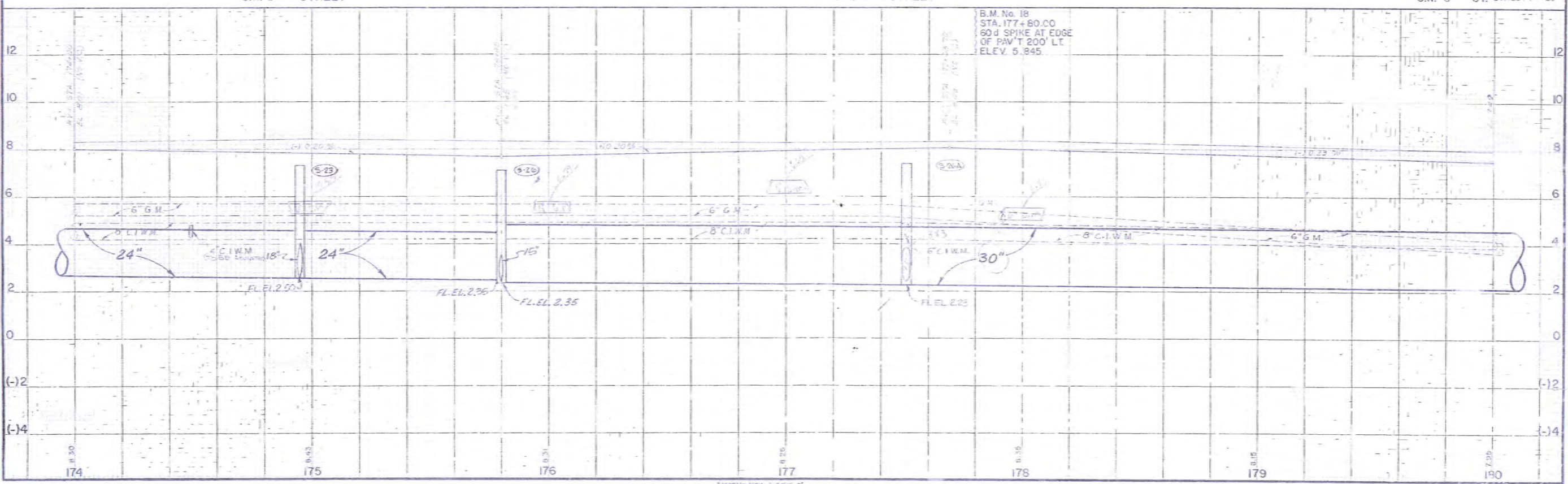
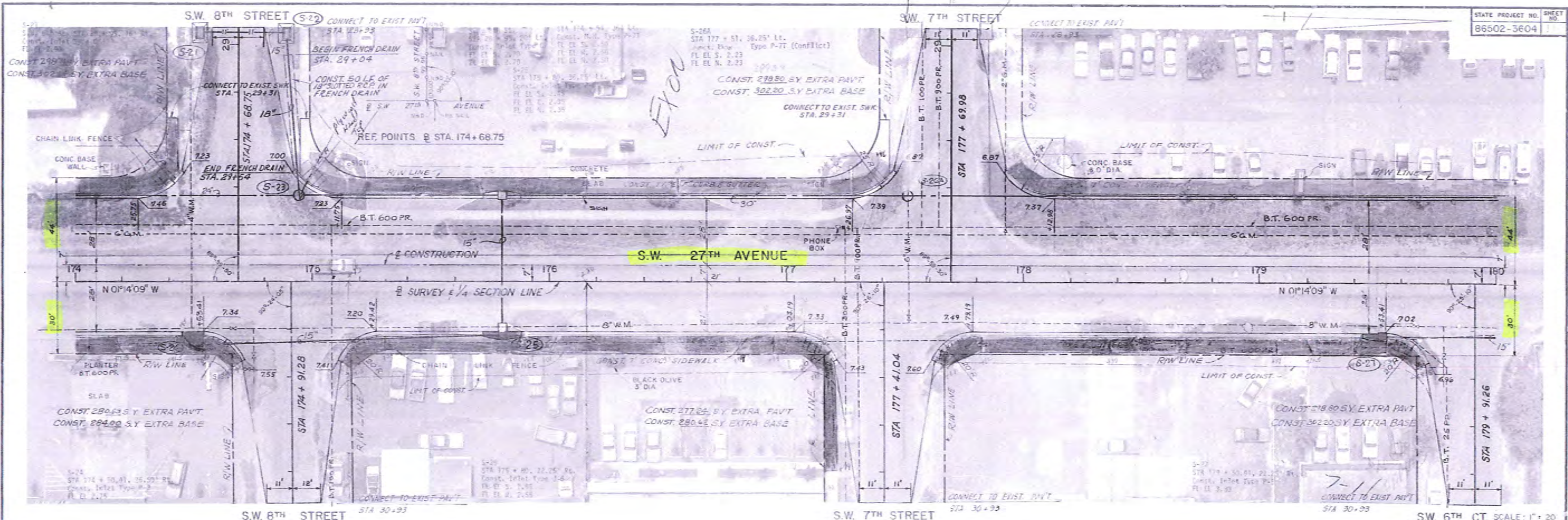


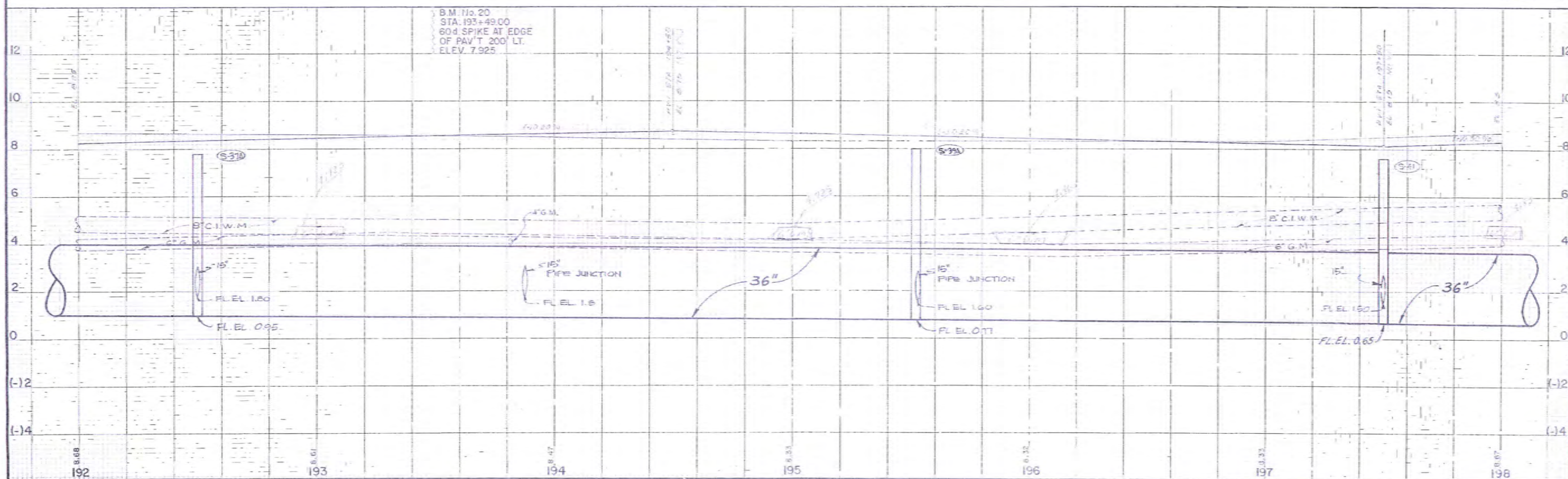
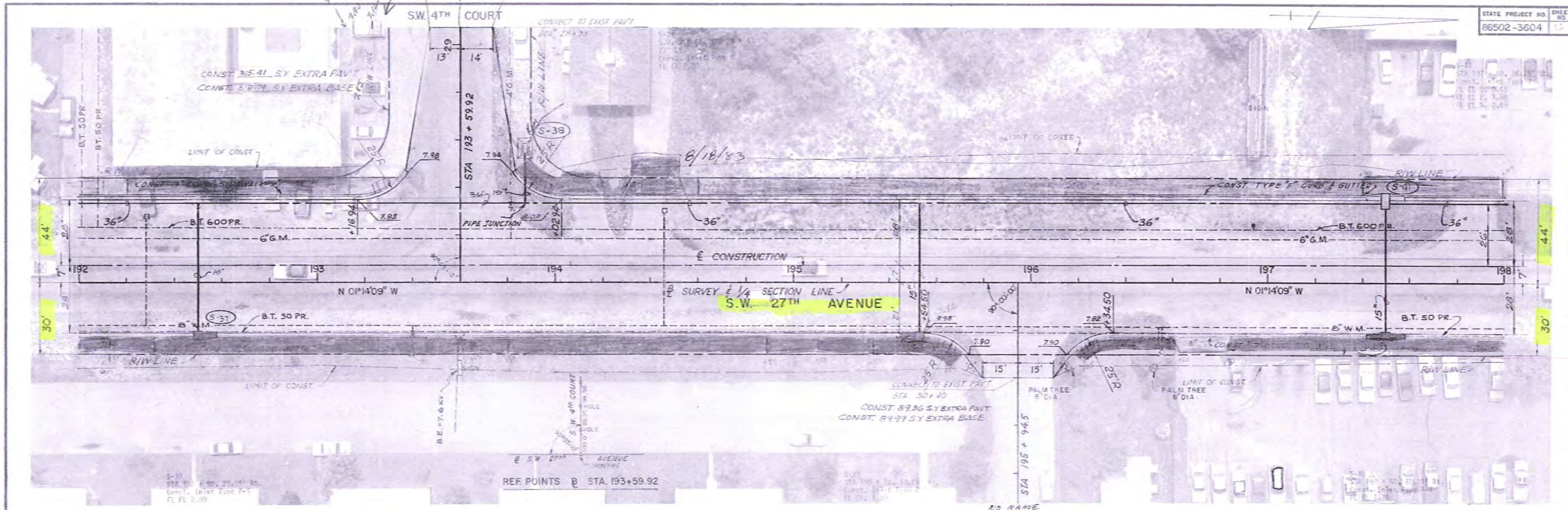
2-TYPE C
96" DIA RCP

Queue
Loadage

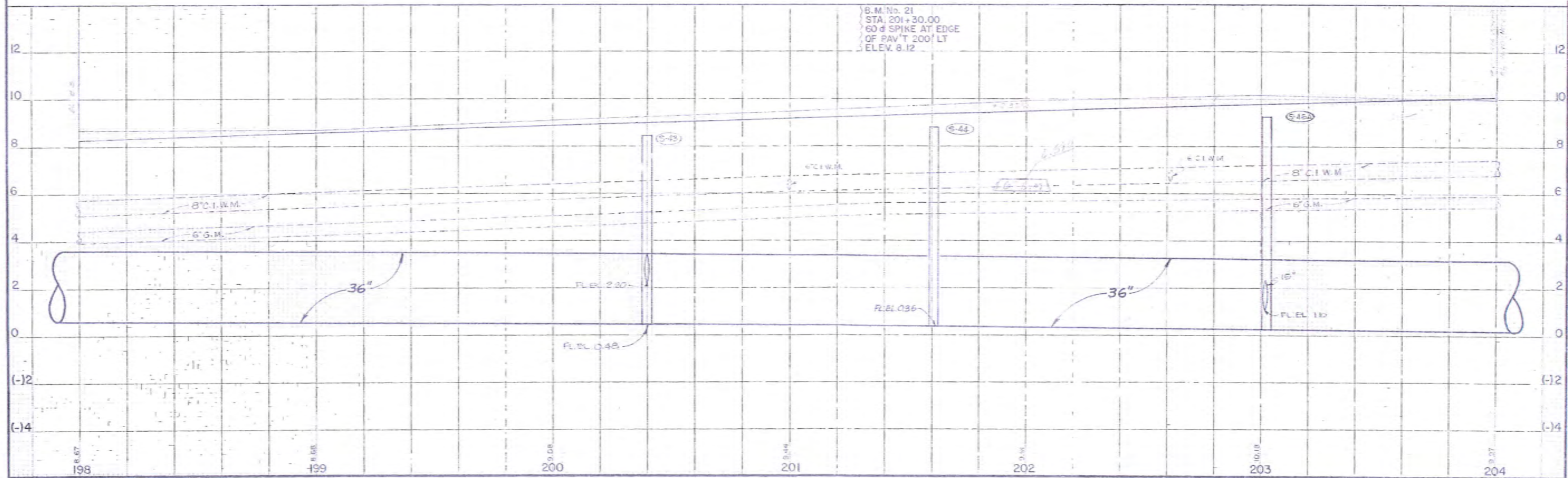
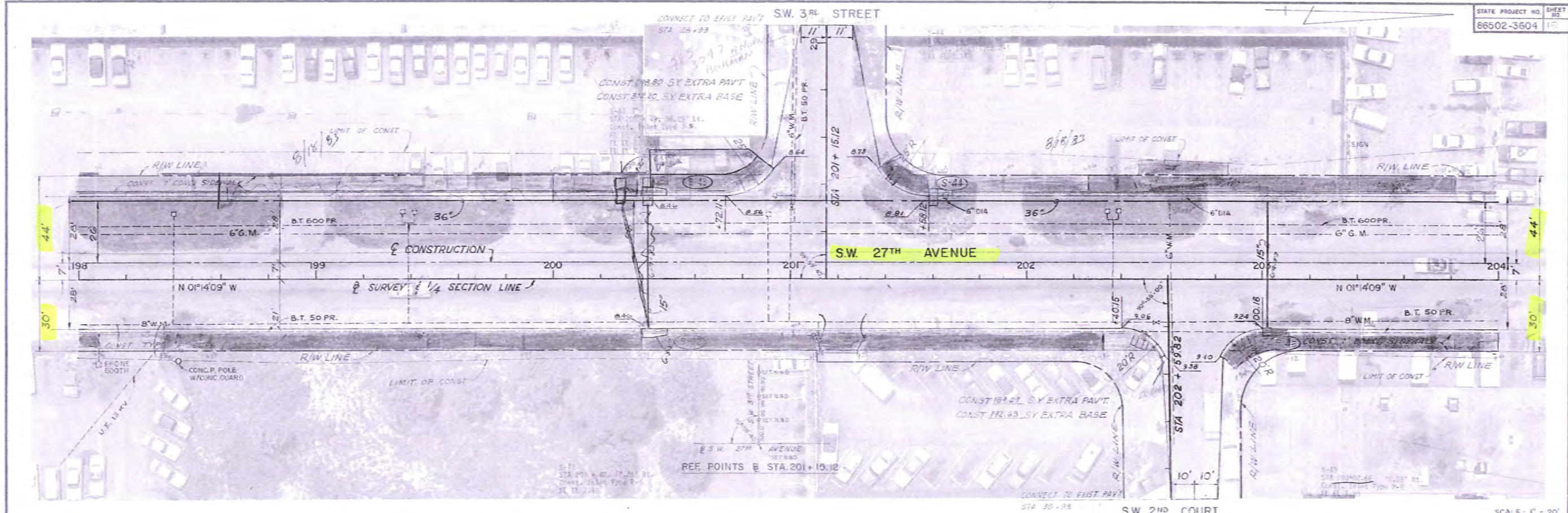
2 TYPE C
15" DIA RCP
CONST. INLET TYPE P-5
FL. EL. 2.94



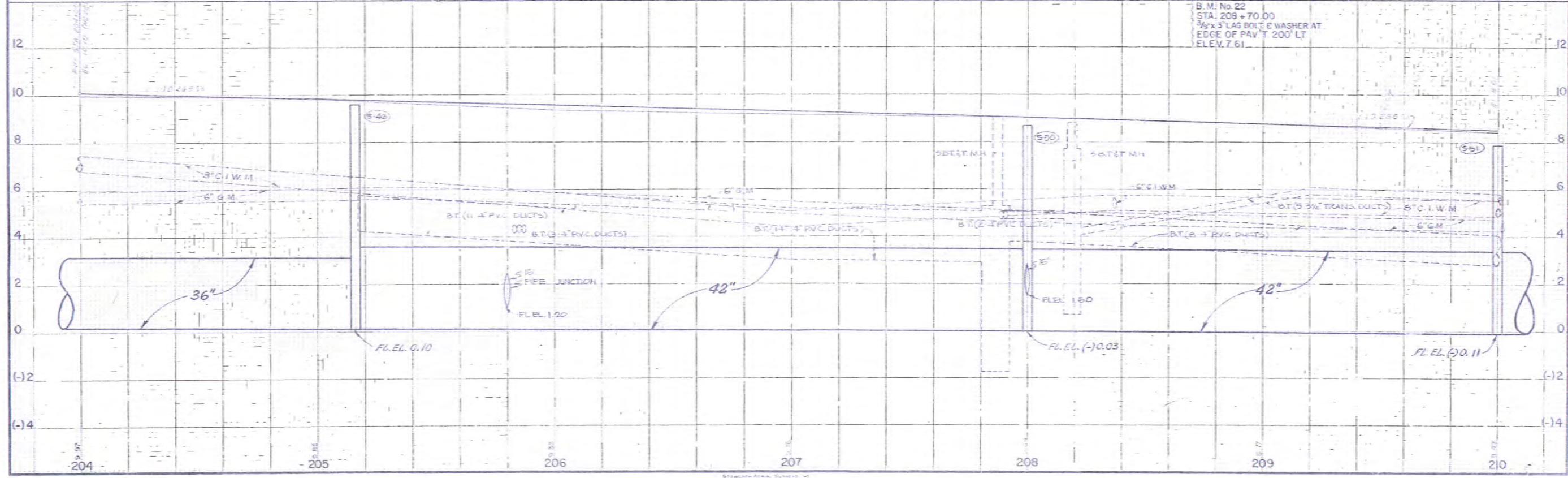
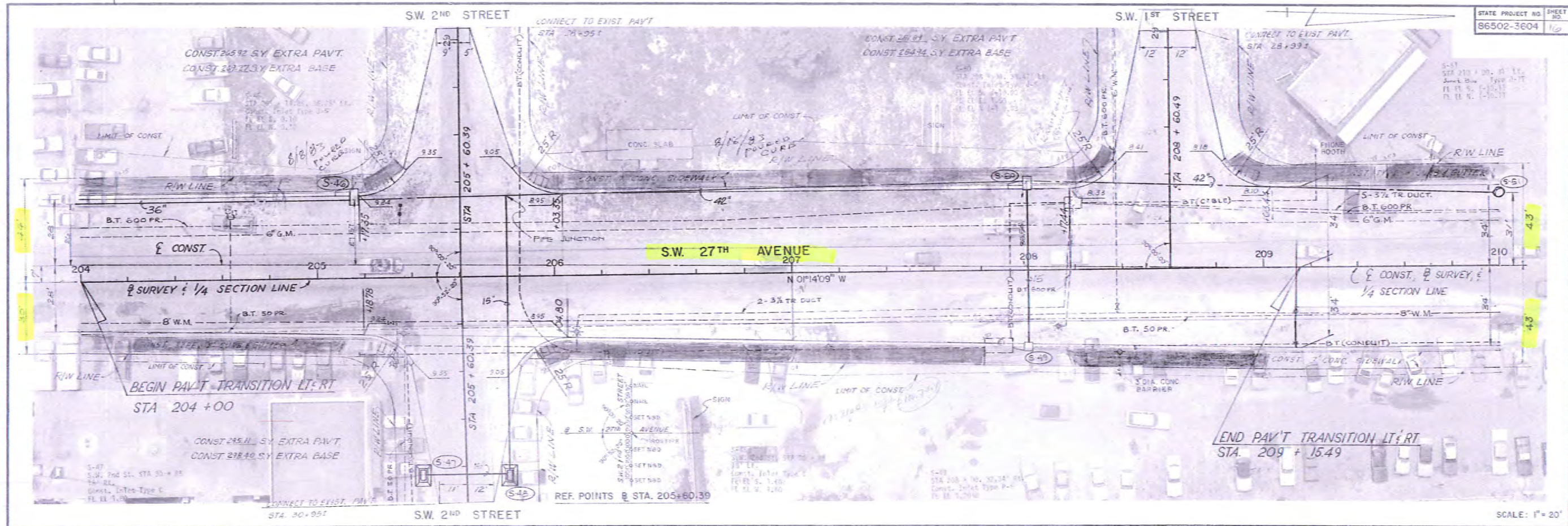




PLAN PEN



PLAN PEN





Appendix I
Geotechnical Report

Date: April 7, 2017

Prepared by: **GCME, Inc.**

TO: HDR
3125 W Commercial Blvd, Suite 130
Fort Lauderdale, FL 33309

Attention: Mr. Will Suero, P.E.
Project Manager

SUBJECT: **Geotechnical Services Report**
PD&E Services for I-95 at Broward Boulevard Interchange
Broward County, Florida
FPID No.: 435513-1-22-01
GCME Project No.: 2000-01-16004

Dear Mr. Suero,

GCME, Inc. has completed the Geotechnical Service Report, which included review of all existing geotechnical information in connection with the subject project and completed six (6) borehole permeability tests (BHP) at the project site as requested by your office. The purpose of this report is to provide geotechnical information to the roadway / drainage / bridge engineers and for preparation of the plans for the proposed alternatives / improvements.

The BHP tests were performed using the usual open-hole, constant head methodology as advocated by the South Florida Water Management District (SFWMD). The boreholes were 10 feet deep and completed as an open well with gravel pack (6-20 silica sand). The well screen slot width was 0.020 inches. Water from the drill rig tank was then pumped into the open well, and the amount of water required to maintain a constant head in the pipe was recorded. The approximate locations of the borehole permeability tests are presented on Plate 1. The soil profiles are presented on Figure 1 and the BHP test results are presented in Table 1. The laboratory test results are presented in Table 2. The corrosion test results are presented in Table 3.

We have collected and reviewed the available geotechnical information along the project corridor, and are detailed as follows:

A. USDA, SCS Soil Information

Research of the U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS) Soil Survey of the Broward County area indicates the presence of different soil map units along the roadway sections.

The soil map units present along the project corridor are as follows:

- Arents-Urban land complex
- Basinger fine sand
- Duette-Urban land complex
- Immokalee, limestone substratum-Urban land complex
- Immokalee-Urban land complex
- Udorthents
- Urban land

➤ Based on the SCS Maps; no unsuitable soils are found in this area.

A segment of the USDA Soils Map showing the proposed roadway section and the surrounding areas is presented in Appendix – A.

B. Existing Soil Boring Information from Previous Projects along the Project Corridor:

Based on the existing geotechnical information received from your office, we have separated the available information proximate to the proposed project corridor into three (3) sections as follows:

Section-1: Double Ring Infiltration Tests and Percolation Tests

Section-2: Roadway

Section-3: Structures

The existing soil boring information applicable to each Sections 1, 2 and 3 are accordingly presented in Appendix – B.

Based on existing information and our experience along the corridor, we understand that the project corridor is chiefly underlain by mineral soils (i.e., sands with some silt). We anticipate that the proposed improvements will not encounter major organic/unsuitable subsoil deposits, which will require special consideration during the design phase. We understand that the subsoils have moderate to high capacity to transmit water. Bridge structures within the corridor could be replaced or widened using prestressed concrete pile (PSC) foundations.

-00000-

We are pleased to be of continued service to HDR, Inc. and the Florida Department of Transportation (FDOT). If you have any questions or comments regarding the contents of the following report, please call.

Very truly yours,

GCME, INC.



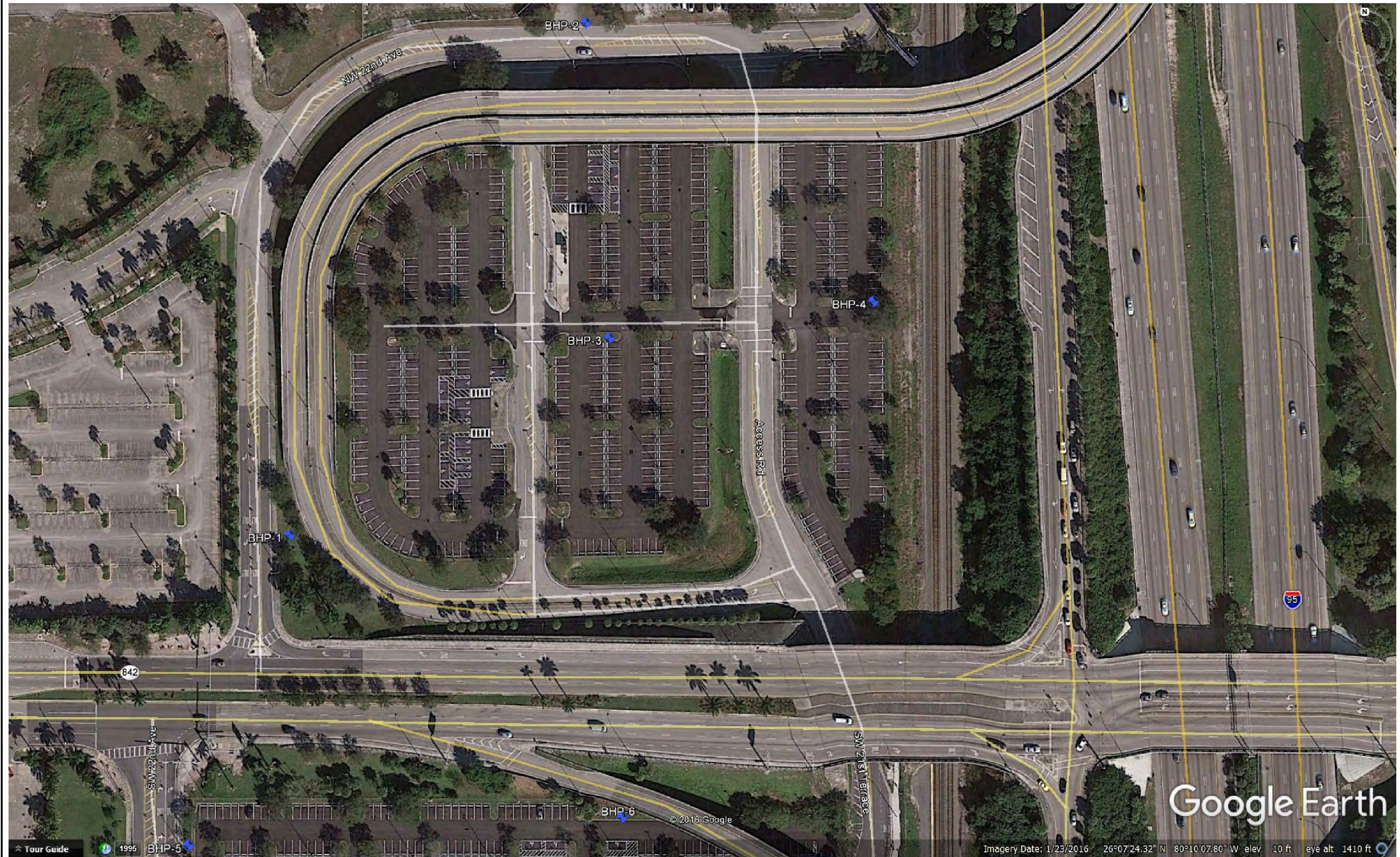
Zhijun Pan
Project Geotechnical Engineer
FL. Reg. No. 70634

A handwritten signature in blue ink, appearing to read "Partha Ghosh", written over a diagonal line.

Partha Ghosh, P.E.
Principal Engineer
FL Registration No. 51377

Appendices:

Plate 1	Approximate Boring Location Plan
Figure 1	Soil Profiles
Table 1	Borehole Permeability Test Results
Table 2	Laboratory Test Results
Table 3	Corrosion Test Results
Appendix - A	USDA, SCS Soil Information
Appendix - B	Existing Soil Boring Information from Previous Projects Along the Project Corridor



REVISIONS						ENGINEER OF RECORD: PARTHA GHOSH, P.E. LICENSE NO. 51377 GCME, INC. 1730 W. 10TH STREET RIVIERA BEACH, FLORIDA 33404 CERTIFICATE OF AUTHORIZATION NO. 9076	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			APPROXIMATE BORING LOCATION PLAN PLATE-1	SHEET NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					LEGEND: BHP - Borehole Permeability Test	842	BROWARD	435513-1-22-01			

BORING NO.
STATION
OFFSET
ELEVATION
LATITUDE
LONGITUDE
HAMMER
DATE

BHP-1
-
-
-
26° 7' 19.90"N
80° 10' 19.80"W
AUTOMATIC
3/15/17

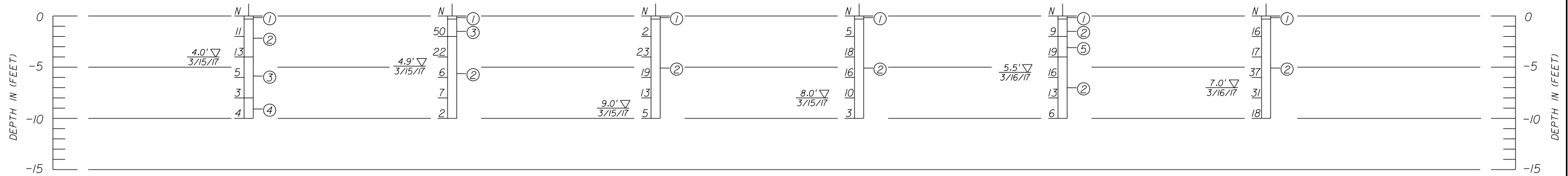
BHP-2
-
-
-
26° 7' 25.70"N
80° 10' 16.08"W
AUTOMATIC
3/15/17

BHP-3
-
-
-
26° 7' 22.16"N
80° 10' 15.74"W
AUTOMATIC
3/15/17

BHP-4
-
-
-
26° 7' 22.60"N
80° 10' 12.36"W
AUTOMATIC
3/15/17

BHP-5
-
-
-
26° 7' 16.40"N
80° 10' 21.04"W
AUTOMATIC
3/16/17

BHP-6
-
-
-
26° 7' 16.80"N
80° 10' 15.50"W
AUTOMATIC
3/16/17



LEGEND

1. DARK BROWN SAND WITH TRACE ROOTS (TOPSOIL / A-8)
2. LIGHT BROWN TO BROWN SAND (A-3)
3. LIGHT BROWN SILTY SAND AND SOME LIMEROCK FRAGMENTS (A-1-b/A-2-4)
4. LIGHT BROWN SANDY TO SILTY LIMESTONE
5. DARK BROWN SAND WITH TRACE ORGANIC (A-3)

NOTES

- ▽ GROUNDWATER LEVEL RECORDED ON THE DATE OF DRILLING.
- GNE: WATER TABLE NOT ENCOUNTERED WITHIN THE DEPTH OF EXPLORATION.
- DRILLED BY: JIMMY
- COORDINATES INFORMATION ARE MEASURED BY HANDHELD GPS.
- STATION / OFFSET / ELEVATION INFORMATION ARE NOT AVAILABLE.
- N - STANDARD PENETRATION RESISTANCE IN BLOWS PER 12 INCHES.
- (A-3) - AASHTO SOIL SYMBOL

SCALE: 1"=10'V

GCME PROJECT NO. 2000-01-16004

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
PARTHA GHOSH, P.E. LICENSE NO. 51377
GCME, INC.
1730 W. 10TH STREET
RIVIERA BEACH, FLORIDA 33404
CERTIFICATE OF AUTHORIZATION NO. 9076

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
842	BROWARD	435513-1-22-01

SHEET NO.

SOIL PROFILES

FIGURE: 1 NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G05-23.004, F.A.C.

TABLE - 1

BOREHOLE PERMEABILITY TEST RESULTS

Project: PD&E Services for I-95 at Broward Boulevard Interchange

BHP No.	Date	Bore Hole Dia. (in)	Depth of Hole (ft)	GWT Depth (ft)	Flow Rate Q [gal/min]	K [cfs/ft²]	K [ft/day]
BHP-1	03/15/17	8.00	10.0	4.00	0.50	1.63E-05	1.41
BHP-2	03/15/17	8.00	10.0	4.75	4.00	1.15E-04	9.93
BHP-3	03/15/17	8.00	10.0	9.00	18.00	3.75E-04	32.44
BHP-4	03/15/17	8.00	10.0	8.00	10.00	2.16E-04	18.63
BHP-5	03/16/17	8.00	10.0	5.50	3.00	7.82E-05	6.76
BHP-6	03/16/17	8.00	10.0	7.00	3.00	6.84E-05	5.91

TABLE - 2**SUMMARY OF LABORATORY TESTING RESULTS****Project: PD&E Services for I-95 at Broward Boulevard Interchange**

Boring No.	Sample Depth (ft)		Stratum	AASHTO Symbol	Natural Moisture Content (%)	Organic Content (%)	Atterberg Limits			Sieve Analysis								
							LL (%)	PL (%)	PI (%)	3/4"	3/8"	#4	#10	#20	#40	#60	#100	#200
BHP-1	4.0	- 6.0	3	A-1-b	13.67					100.00	70.93	58.79	53.02	49.47	41.18	27.29	20.20	13.76
BHP-1	6.0	- 8.0	3	A-2-4	17.64					93.56	79.05	71.66	68.14	65.88	59.27	35.71	19.73	14.17
BHP-2	0.0	- 2.0	3	A-1-b	4.17					82.87	70.16	60.15	47.61	37.75	31.93	26.67	19.45	14.06
BHP-2	6.0	- 8.0	2	A-3	21.05					100.00	100.00	99.51	99.41	98.57	79.82	37.38	11.71	6.44
BHP-3	4.0	- 6.0	2	A-3	1.68					100.00	100.00	100.00	100.00	99.79	91.74	52.28	5.00	2.80
BHP-3	8.0	- 10.0	2	A-3	21.52					100.00	100.00	100.00	100.00	99.72	91.90	49.26	5.04	1.34
BHP-4	2.0	- 4.0	2	A-3	0.48					100.00	100.00	100.00	100.00	99.28	90.42	38.84	6.60	1.08
BHP-4	8.0	- 10.0	2	A-3	24.10					100.00	100.00	100.00	100.00	99.71	91.30	34.02	3.63	1.32
BHP-5	2.0	- 4.0	5	A-3	17.20	2.16												
BHP-5	4.0	- 6.0	2	A-3	20.65					100.00	100.00	100.00	100.00	99.68	91.53	37.39	5.38	1.11
BHP-5	8.0	- 10.0	2	A-3	24.13					100.00	100.00	100.00	99.89	99.39	91.11	63.84	13.50	1.41
BHP-6	2.0	- 4.0	2	A-3	4.58					100.00	92.04	88.92	87.27	85.85	77.16	48.86	8.10	4.80
BHP-6	6.0	- 8.0	2	A-3	20.45					100.00	100.00	100.00	100.00	99.69	92.59	63.97	11.14	1.31

TABLE - 2**SUMMARY OF LABORATORY TESTING RESULTS****Project: PD&E Services for I-95 at Broward Boulevard Interchange**

Boring No.	Sample Depth (ft)		Stratum	AASHTO Symbol	Natural Moisture Content (%)	Organic Content (%)	Atterberg Limits			Sieve Analysis							
							LL (%)	PL (%)	PI (%)	3/4"	3/8"	#4	#10	#20	#40	#60	#100
BHP-2	6.0	- 8.0	2	A-3	21.05				100.00	100.00	99.51	99.41	98.57	79.82	37.38	11.71	6.44
BHP-3	4.0	- 6.0	2	A-3	1.68				100.00	100.00	100.00	100.00	99.79	91.74	52.28	5.00	2.80
BHP-3	8.0	- 10.0	2	A-3	21.52				100.00	100.00	100.00	100.00	99.72	91.90	49.26	5.04	1.34
BHP-4	2.0	- 4.0	2	A-3	0.48				100.00	100.00	100.00	100.00	99.28	90.42	38.84	6.60	1.08
BHP-4	8.0	- 10.0	2	A-3	24.10				100.00	100.00	100.00	100.00	99.71	91.30	34.02	3.63	1.32
BHP-5	4.0	- 6.0	2	A-3	20.65				100.00	100.00	100.00	100.00	99.68	91.53	37.39	5.38	1.11
BHP-5	8.0	- 10.0	2	A-3	24.13				100.00	100.00	100.00	99.89	99.39	91.11	63.84	13.50	1.41
BHP-6	2.0	- 4.0	2	A-3	4.58				100.00	92.04	88.92	87.27	85.85	77.16	48.86	8.10	4.80
BHP-6	6.0	- 8.0	2	A-3	20.45				100.00	100.00	100.00	100.00	99.69	92.59	63.97	11.14	1.31

TABLE - 2

SUMMARY OF LABORATORY TESTING RESULTS

Project: PD&E Services for I-95 at Broward Boulevard Interchange

Boring No.	Sample Depth (ft)		Stratum	AASHTO Symbol	Natural Moisture Content (%)	Organic Content (%)	Atterberg Limits			Sieve Analysis								
							LL (%)	PL (%)	PI (%)	3/4"	3/8"	#4	#10	#20	#40	#60	#100	#200
BHP-1	4.0	- 6.0	3	A-1-b	13.67				100.00	70.93	58.79	53.02	49.47	41.18	27.29	20.20	13.76	
BHP-1	6.0	- 8.0	3	A-2-4	17.64				93.56	79.05	71.66	68.14	65.88	59.27	35.71	19.73	14.17	
BHP-2	0.0	- 2.0	3	A-1-b	4.17				82.87	70.16	60.15	47.61	37.75	31.93	26.67	19.45	14.06	

TABLE - 2

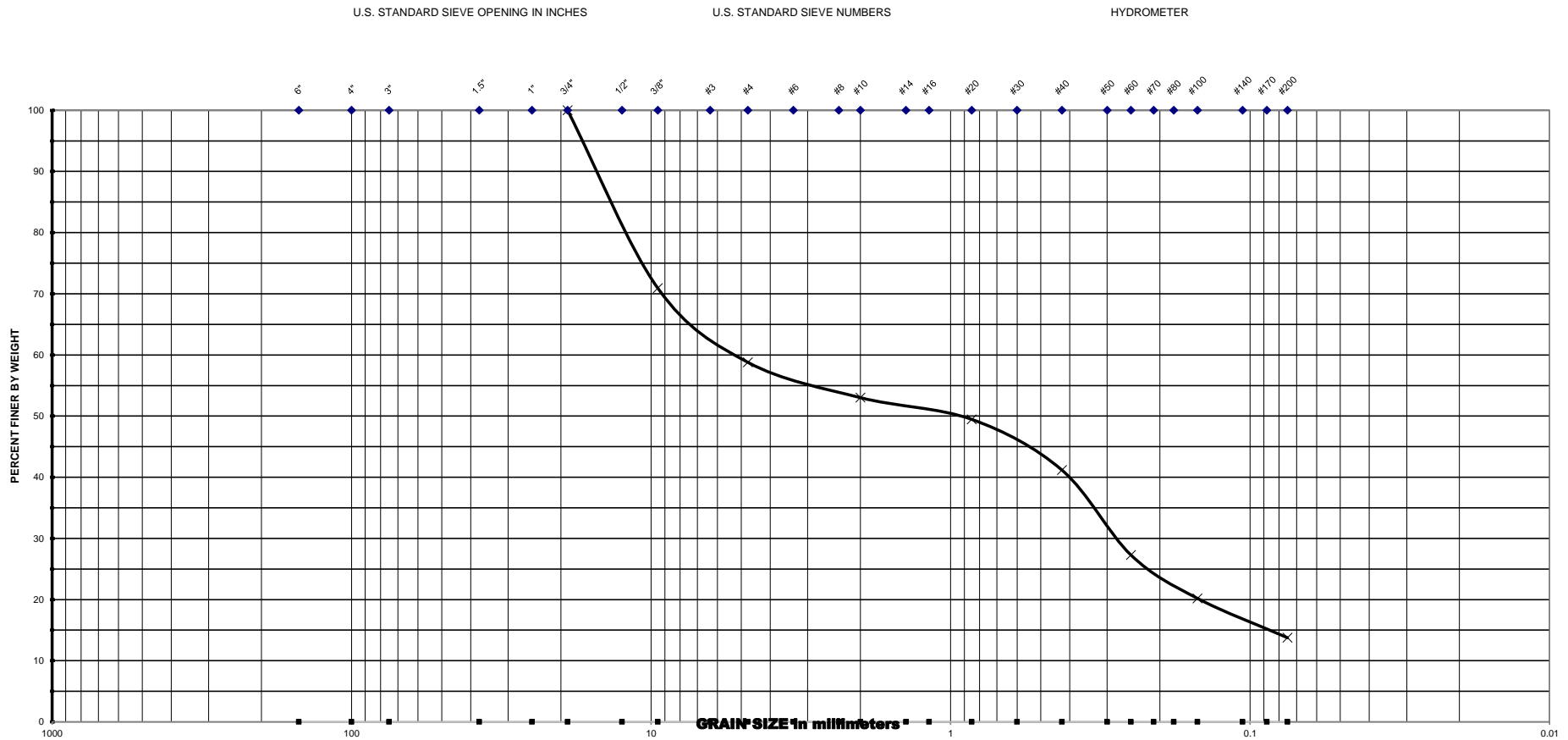
SUMMARY OF LABORATORY TESTING RESULTS

Project: PD&E Services for I-95 at Broward Boulevard Interchange

Boring No.	Sample Depth (ft)		Stratum	AASHTO Symbol	Natural Moisture Content (%)	Organic Content (%)	Atterberg Limits			Sieve Analysis									
							LL (%)	PL (%)	PI (%)	3/4"	3/8"	#4	#10	#20	#40	#60	#100	#200	
BHP-5	2.0	- 4.0	5	A-3	17.20	2.16													

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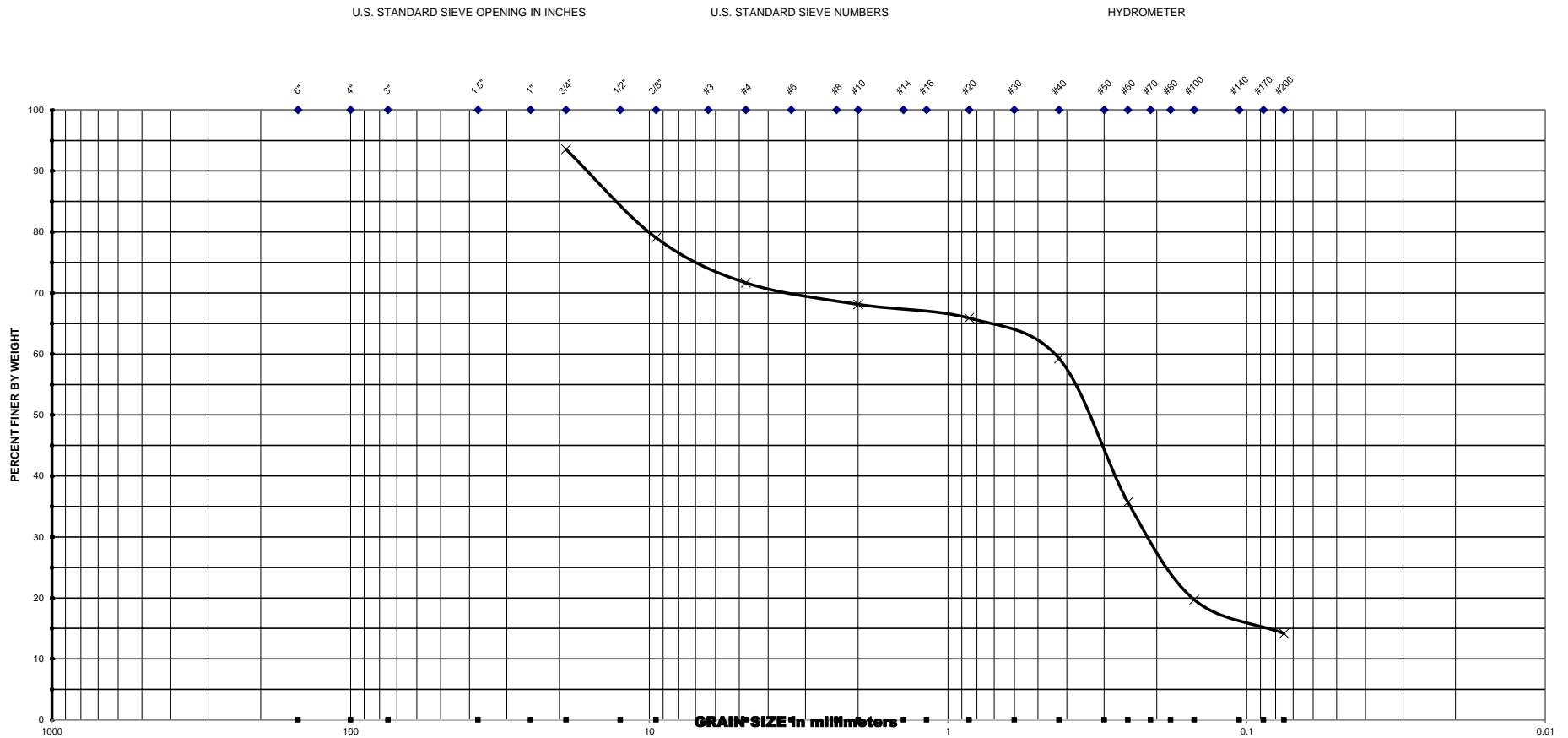


Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S. SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u> Date : <u>3/20/2017</u>					3/4"	100.0
					3/8"	70.9
					#4	58.8
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#10	53.0
BHP-1	4.0 - 6.0	A-1-b	13.7		#20	49.5
					#40	41.2
					#60	27.3
					#100	20.2
					#200	13.8

Note : MC - Moisture Content (%)
OC - Organic Content (%)

GCME

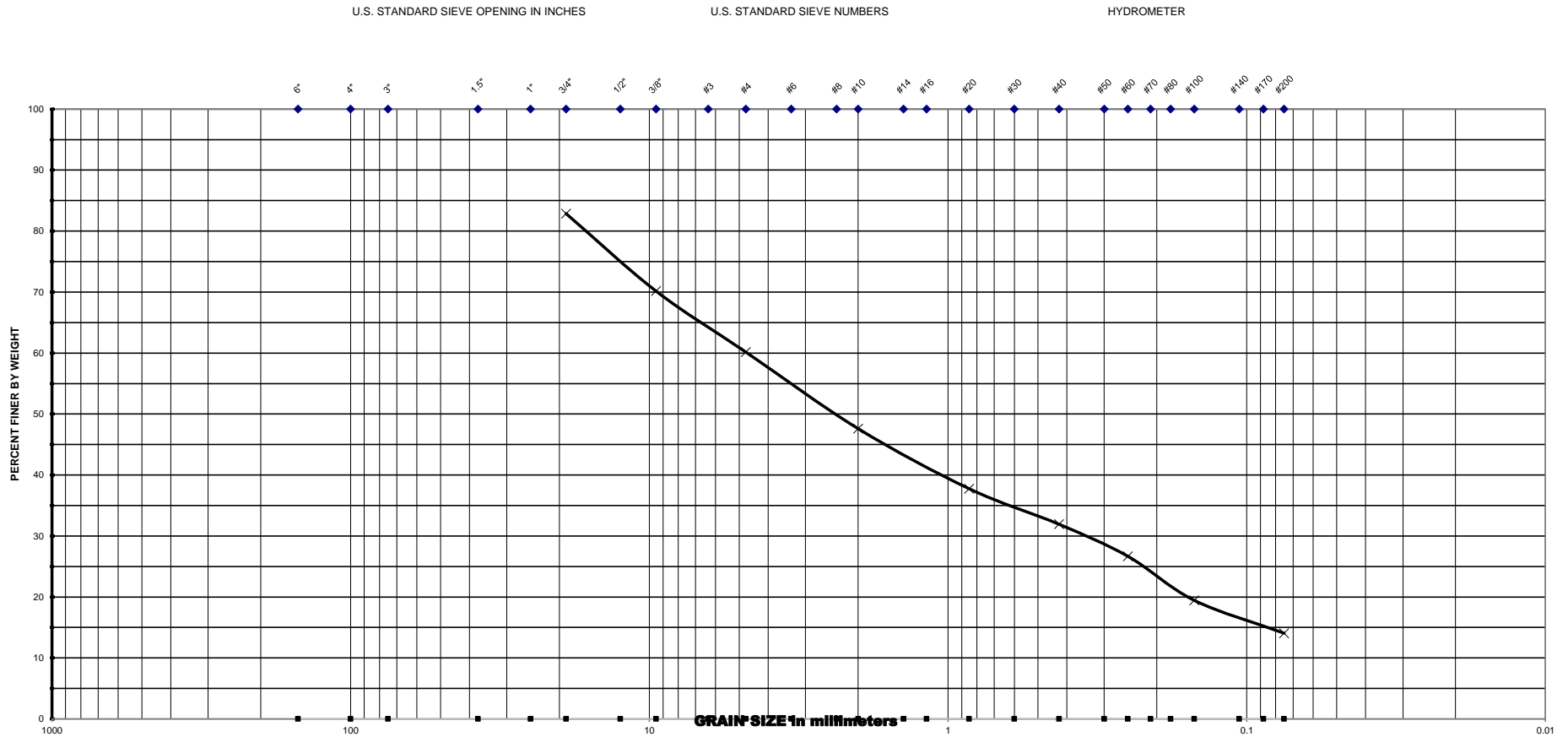
Geotechnical - Consulting - Engineering - Testing



Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S. SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u> Date : <u>3/20/2017</u>					3/4"	93.6
					3/8"	79.1
					#4	71.7
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#10	68.1
BHP-1	6.0 - 8.0	A-2-4	17.6		#20	65.9
					#40	59.3
					#60	35.7
Note : MC - Moisture Content (%) OC - Organic Content (%)					#100	19.7
					#200	14.2

GCME

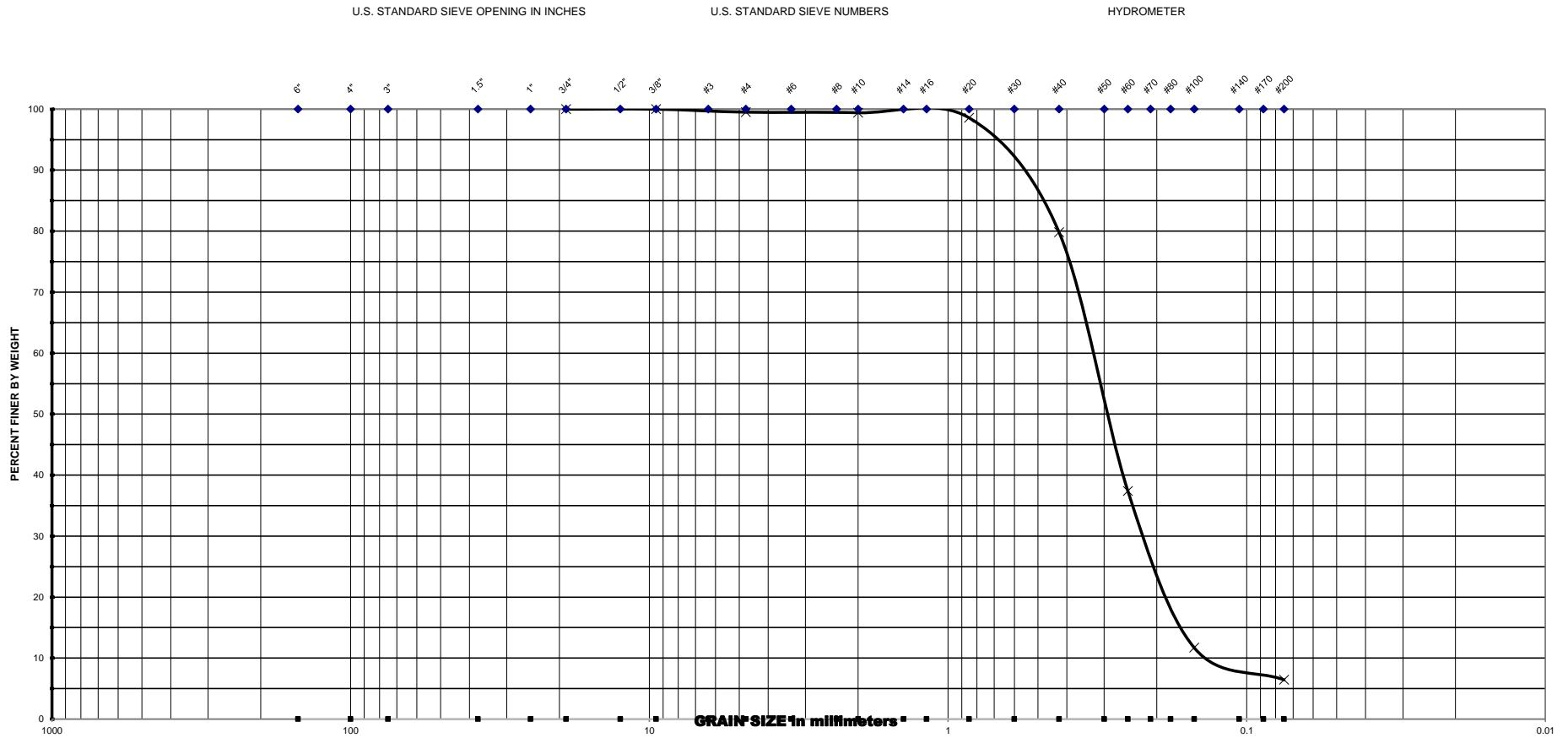
Geotechnical - Consulting - Engineering - Testing



Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u> Date : <u>3/20/2017</u>					3/4"	82.9
					3/8"	70.2
					#4	60.2
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#10	47.6
BHP-2	0.0 - 2.0	A-1-b	4.2		#20	37.8
					#40	31.9
					#60	26.7
Note : MC - Moisture Content (%) OC - Organic Content (%)					#100	19.5
					#200	14.1

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Geotechnical - Consulting - Engineering - Testing

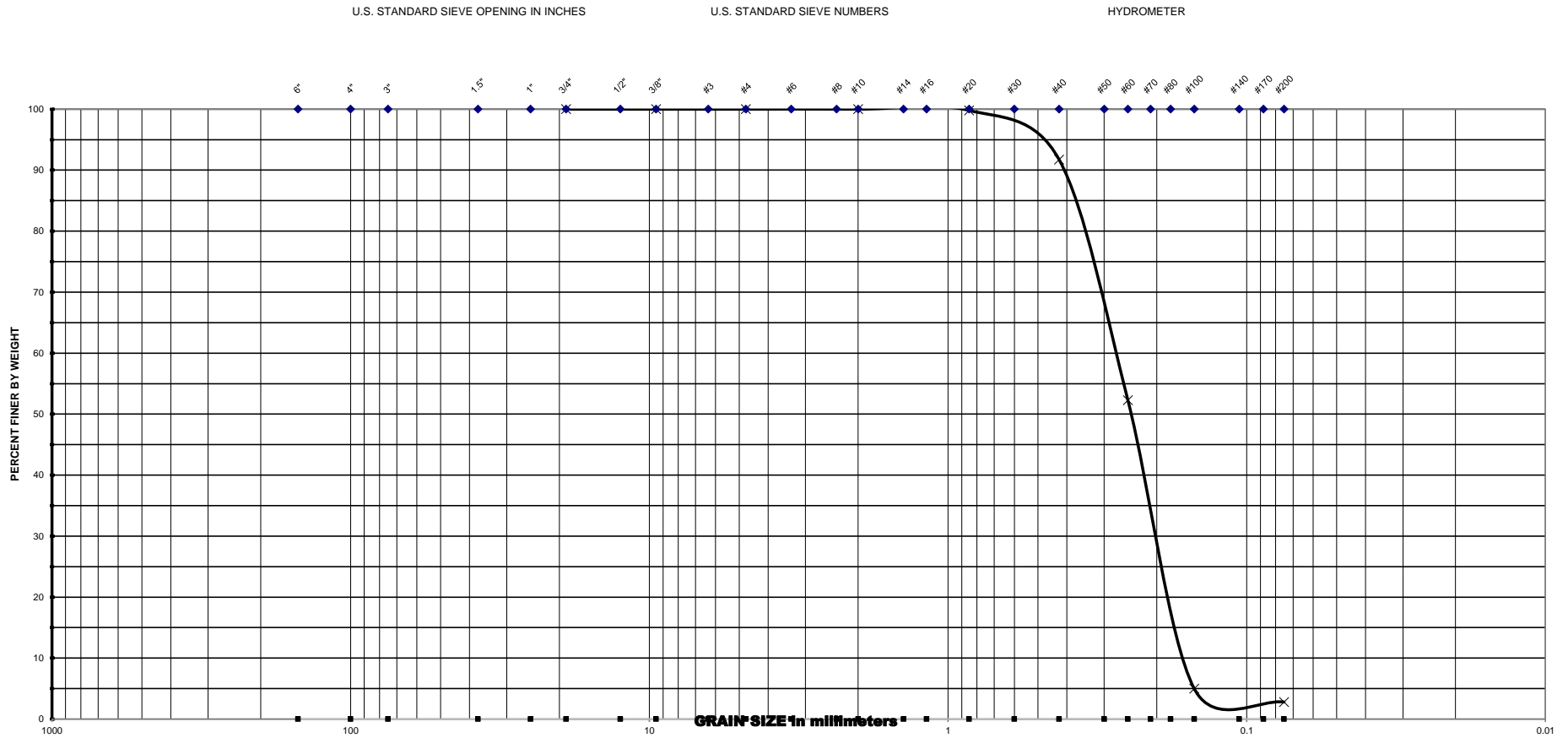


Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u> Date : <u>3/20/2017</u>					3/4"	100.0
					3/8"	100.0
					#4	99.5
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#10	99.4
BHP-2	6.0 - 8.0	A-3	21.1		#20	98.6
					#40	79.8
					#60	37.4
					#100	11.7
					#200	6.4

Note : MC - Moisture Content (%)
OC - Organic Content (%)

GCME

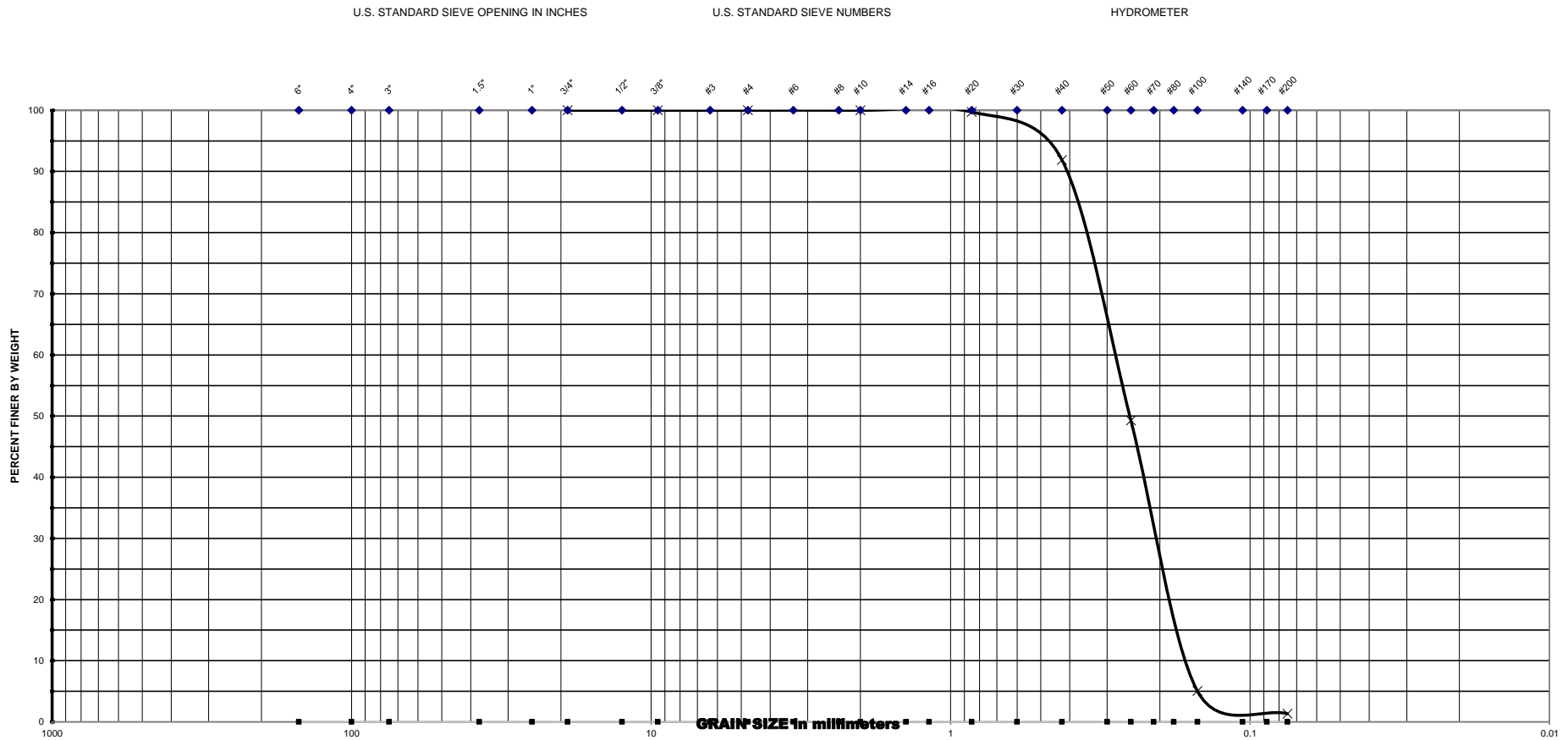
Geotechnical - Consulting - Engineering - Testing



Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u> Date : <u>3/20/2017</u>					3/4"	100.0
					3/8"	100.0
					#4	100.0
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#10	100.0
BHP-3	4.0 - 6.0	A-3	1.7		#20	99.8
					#40	91.7
					#60	52.3
<p style="text-align: right;">Note : MC - Moisture Content (%) OC - Organic Content (%)</p>					#100	5.0
					#200	2.8

GCME

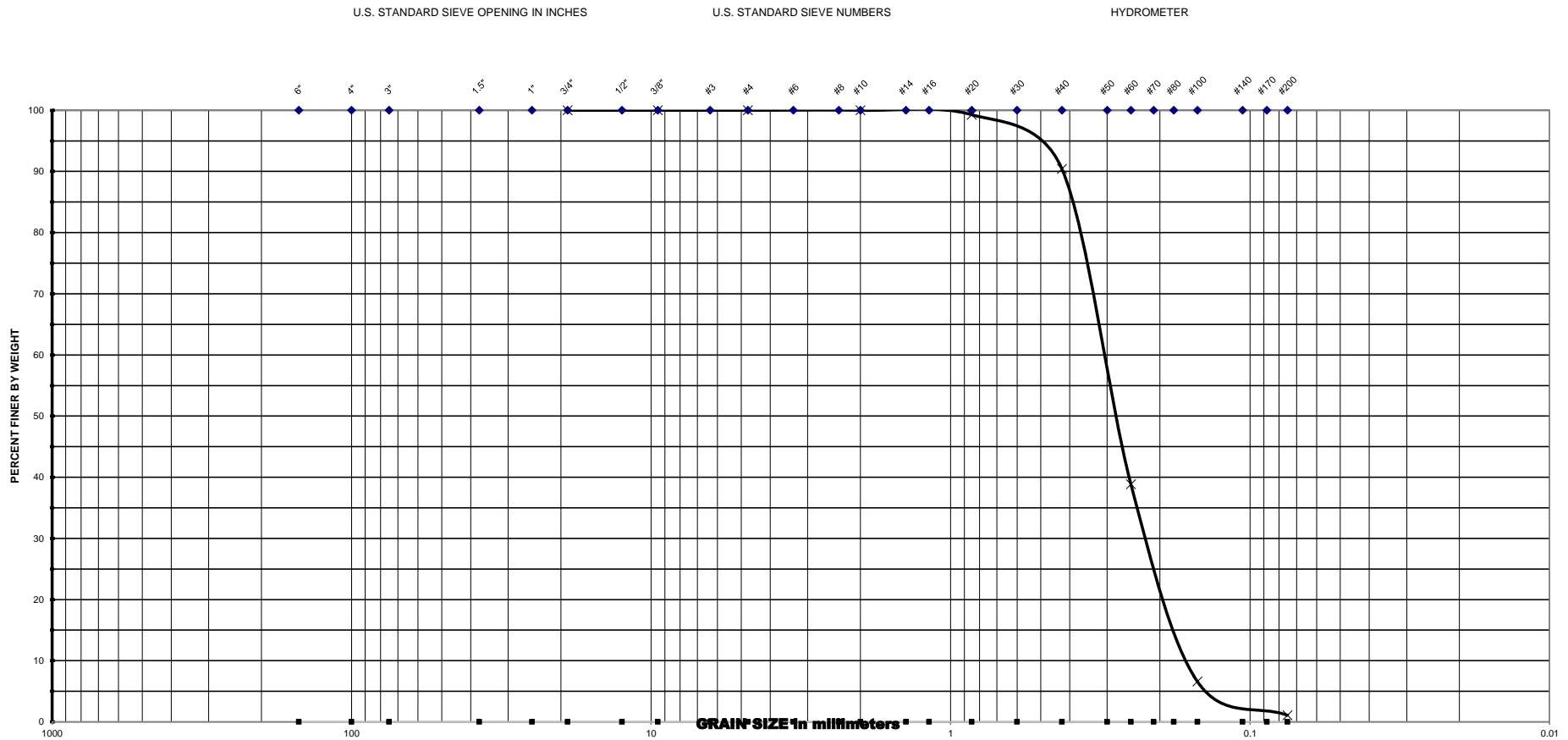
Geotechnical - Consulting - Engineering - Testing



Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u>					3/4"	100.0
Date : <u>3/20/2017</u>					3/8"	100.0
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#4	100.0
BHP-3	8.0 - 10.0	A-3	21.5		#10	100.0
					#20	99.7
					#40	91.9
					#60	49.3
Note : MC - Moisture Content (%) OC - Organic Content (%)					#100	5.0
					#200	1.3

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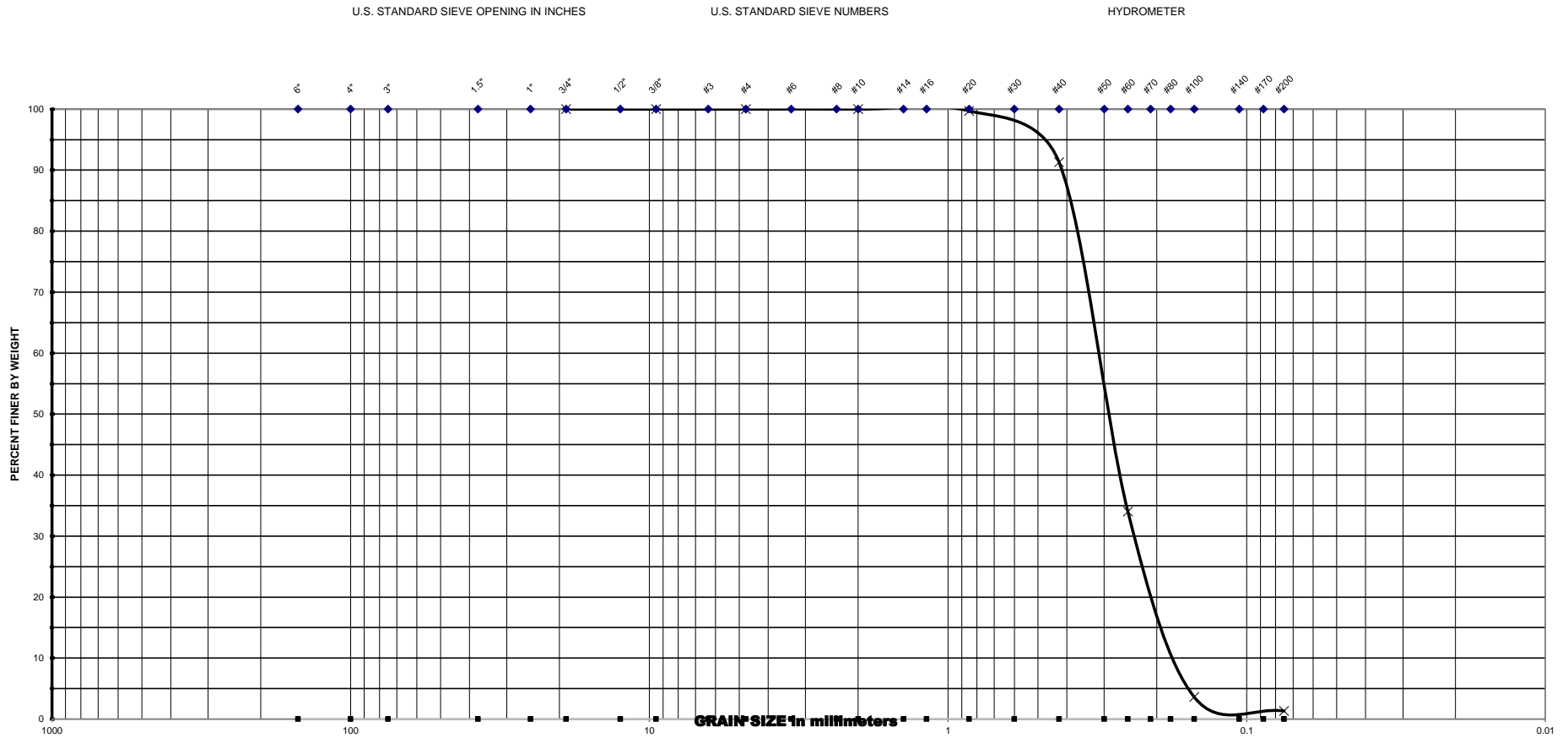


Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S. SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u>						
Date : <u>3/20/2017</u>						
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	U.S. SIEVE NO.	CUMM. % PASSING
BHP-4	2.0 - 4.0	A-3	0.5		#10	100.0
					#20	99.3
					#40	90.4
					#60	38.8
					#100	6.6
					#200	1.1

Note : MC - Moisture Content (%)
OC - Organic Content (%)

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Geotechnical - Consulting - Engineering - Testing



Project Name : PD&E Services for I-95 at Broward Boulevard Interchange

Project No. : 2000-01-16004

Date : 3/20/2017

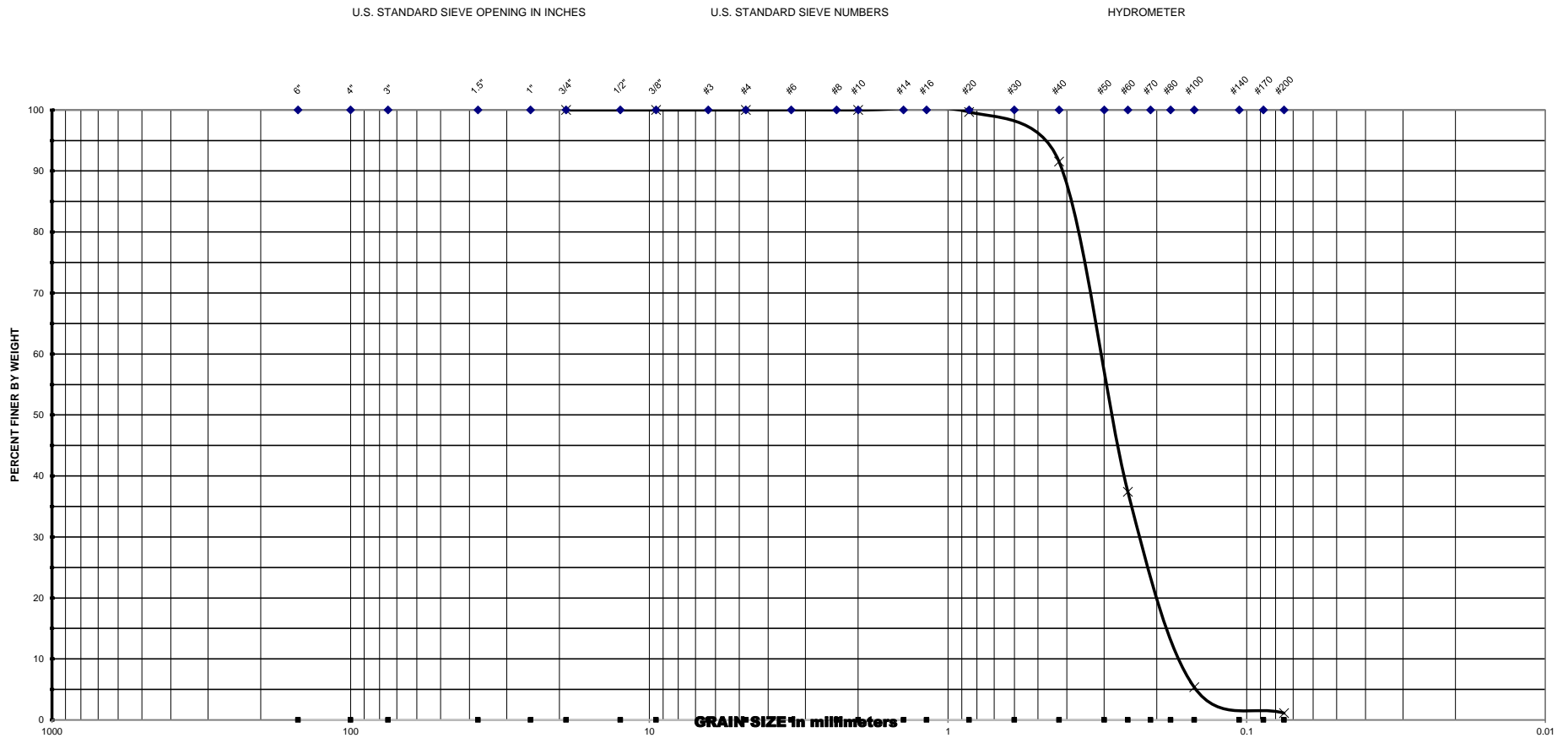
U.S. SIEVE NO.	CUMM. % PASSING
3/4"	100.0
3/8"	100.0
#4	100.0
#10	100.0
#20	99.7
#40	91.3
#60	34.0
#100	3.6
#200	1.3

BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC
BHP-4	8.0 - 10.0	A-3	24.1	

Note : MC - Moisture Content (%)
OC - Organic Content (%)

GCME

Geotechnical - Consulting - Engineering - Testing

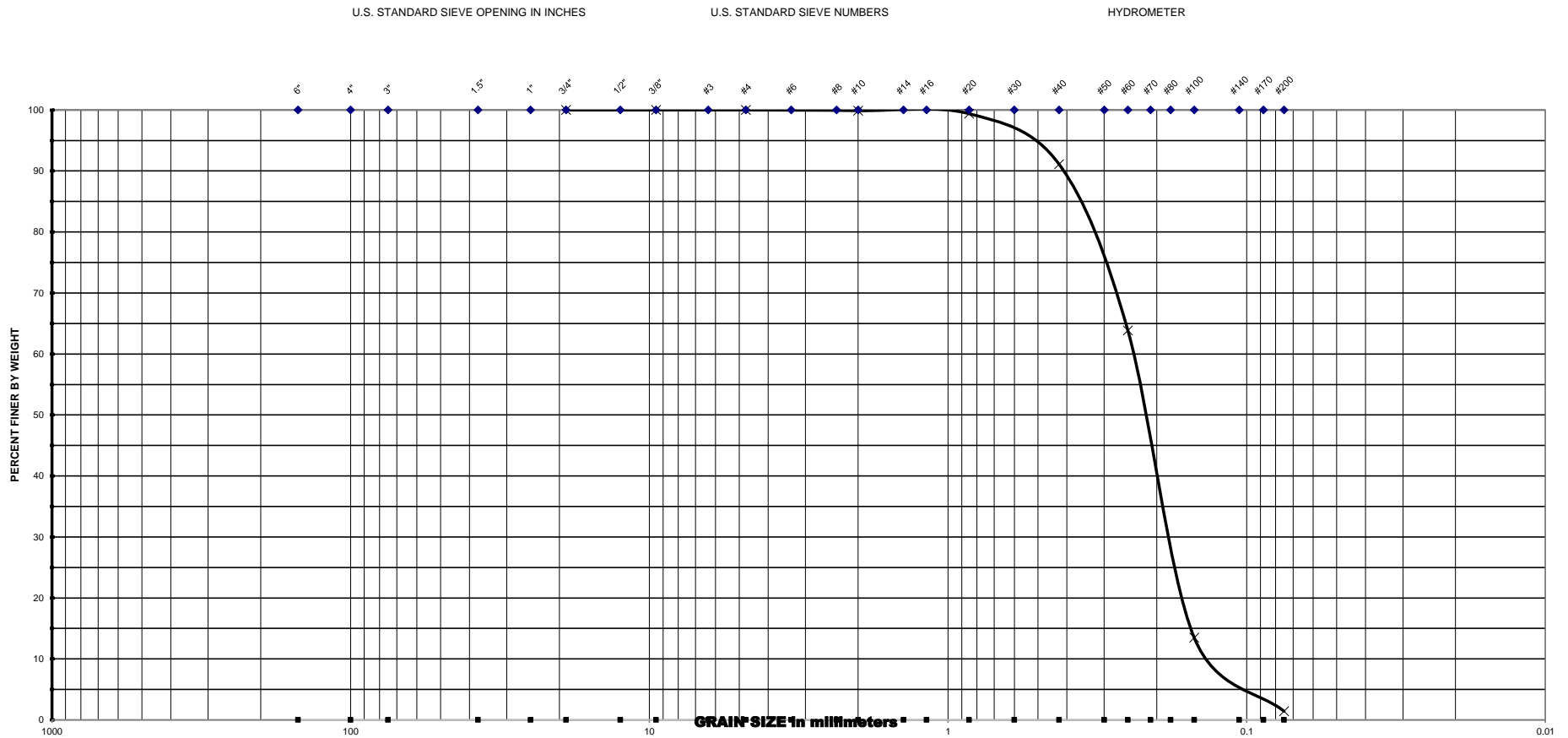


Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u>						
Date : <u>3/20/2017</u>						
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC		
BHP-5	4.0 - 6.0	A-3	20.7		#10	100.0
					#20	99.7
					#40	91.5
					#60	37.4
					#100	5.4
					#200	1.1

Note : MC - Moisture Content (%)
OC - Organic Content (%)

GCME

Geotechnical - Consulting - Engineering - Testing

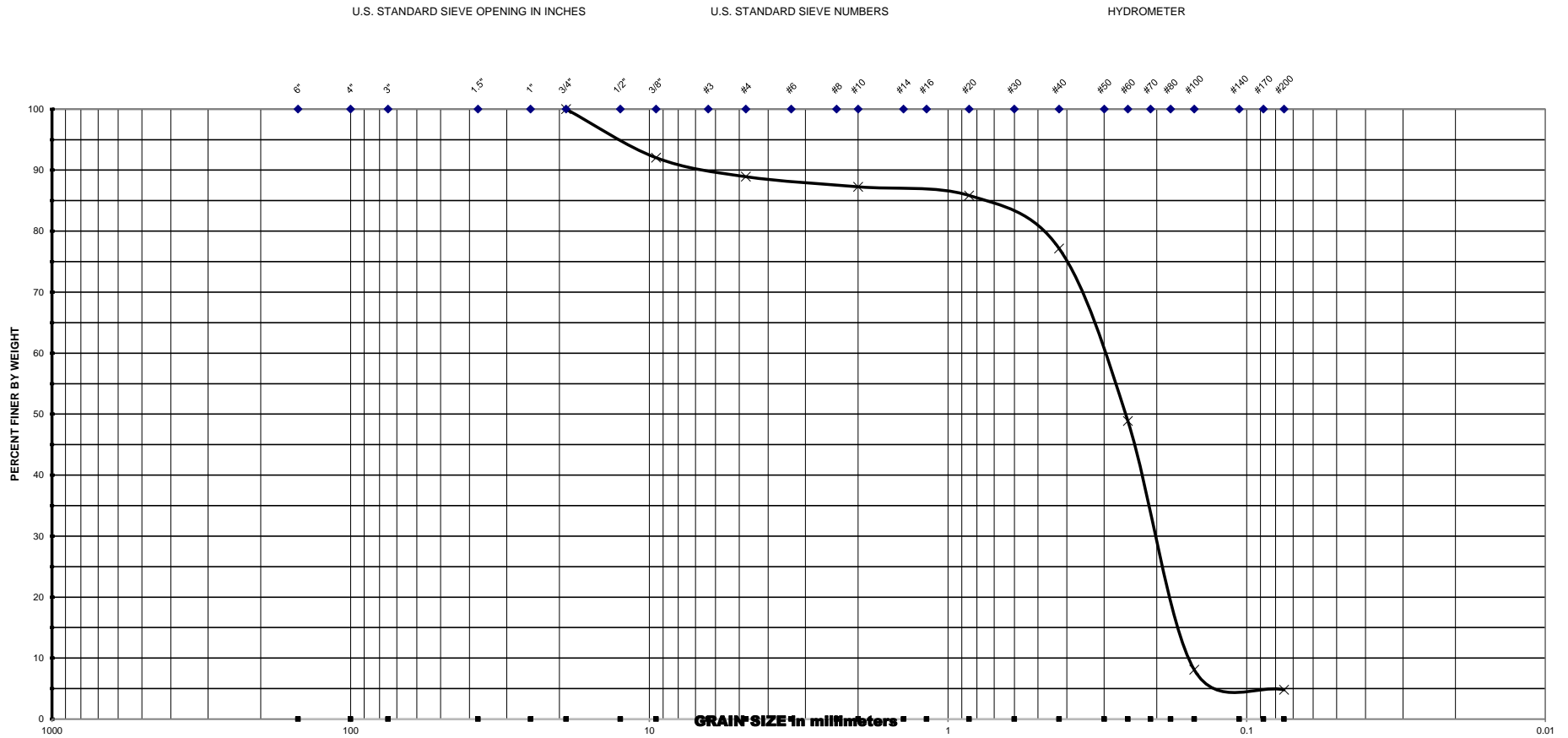


Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u>						
Date : <u>3/20/2017</u>					3/4"	100.0
					3/8"	100.0
					#4	100.0
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#10	99.9
BHP-5	8.0 - 10.0	A-3	24.1		#20	99.4
					#40	91.1
					#60	63.8
					#100	13.5
					#200	1.4

Note : MC - Moisture Content (%)
OC - Organic Content (%)

GCME

Geotechnical - Consulting - Engineering - Testing



Project Name : PD&E Services for I-95 at Broward Boulevard Interchange

Project No. : 2000-01-16004

Date : 3/20/2017

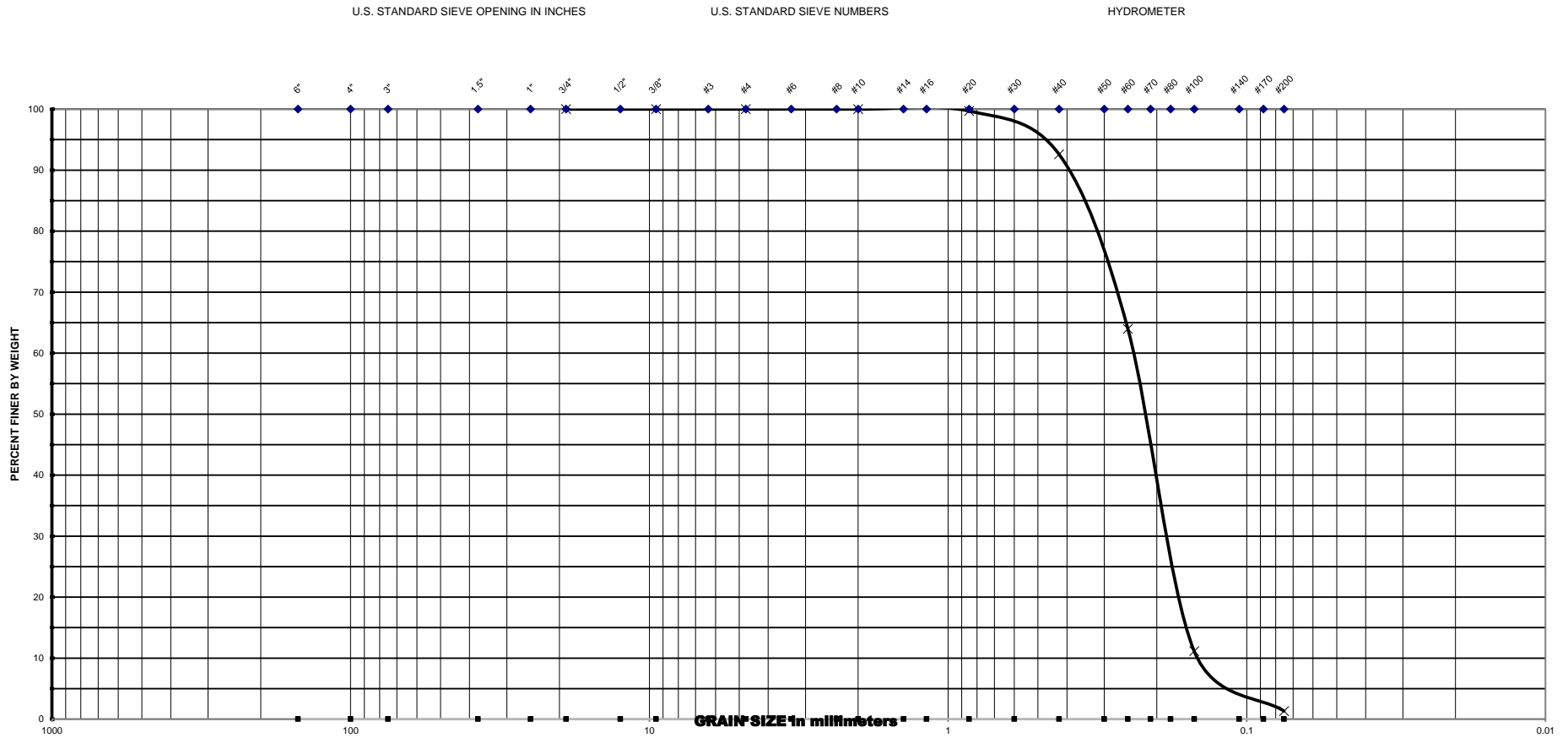
U.S. SIEVE NO.	CUMM. % PASSING
3/4"	100.0
3/8"	92.0
#4	88.9
#10	87.3
#20	85.8
#40	77.2
#60	48.9
#100	8.1
#200	4.8

BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC
BHP-6	2.0 - 4.0	A-3	4.6	

Note : MC - Moisture Content (%)
OC - Organic Content (%)

GCME

Geotechnical - Consulting - Engineering - Testing



Project Name : <u>PD&E Services for I-95 at Broward Boulevard Interchange</u>					U.S SIEVE NO.	CUMM. % PASSING
Project No. : <u>2000-01-16004</u> Date : <u>3/20/2017</u>					3/4"	100.0
					3/8"	100.0
					#4	100.0
					#10	100.0
BORING NO.	DEPTH INTERVAL [FT]	SOIL DESCRIPTION	MC	OC	#20	99.7
BHP-6	6.0 - 8.0	A-3	20.4		#40	92.6
					#60	64.0
					#100	11.1
					#200	1.3

Note : MC - Moisture Content (%)
OC - Organic Content (%)

TABLE - 3**SUMMARY OF CORROSION TEST RESULTS****Project Name: PD&E Services for I-95 at Broward Boulevard Interchange**

Boring No.	Stratum	Sample	Depth Interval	pH	Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)	Environmental Classification (Substructure)	
								Steel	Concrete
BHP-3	2	Soil	6.0 - 8.0	7.8	8540	3.9	10.4	Slightly Arrgessive	Slightly Aggressive
BHP-6	2	Soil	8.0 - 10.0	7.9	9530	4.8	6.2	Extremely Aggressive	Moderately Aggressive

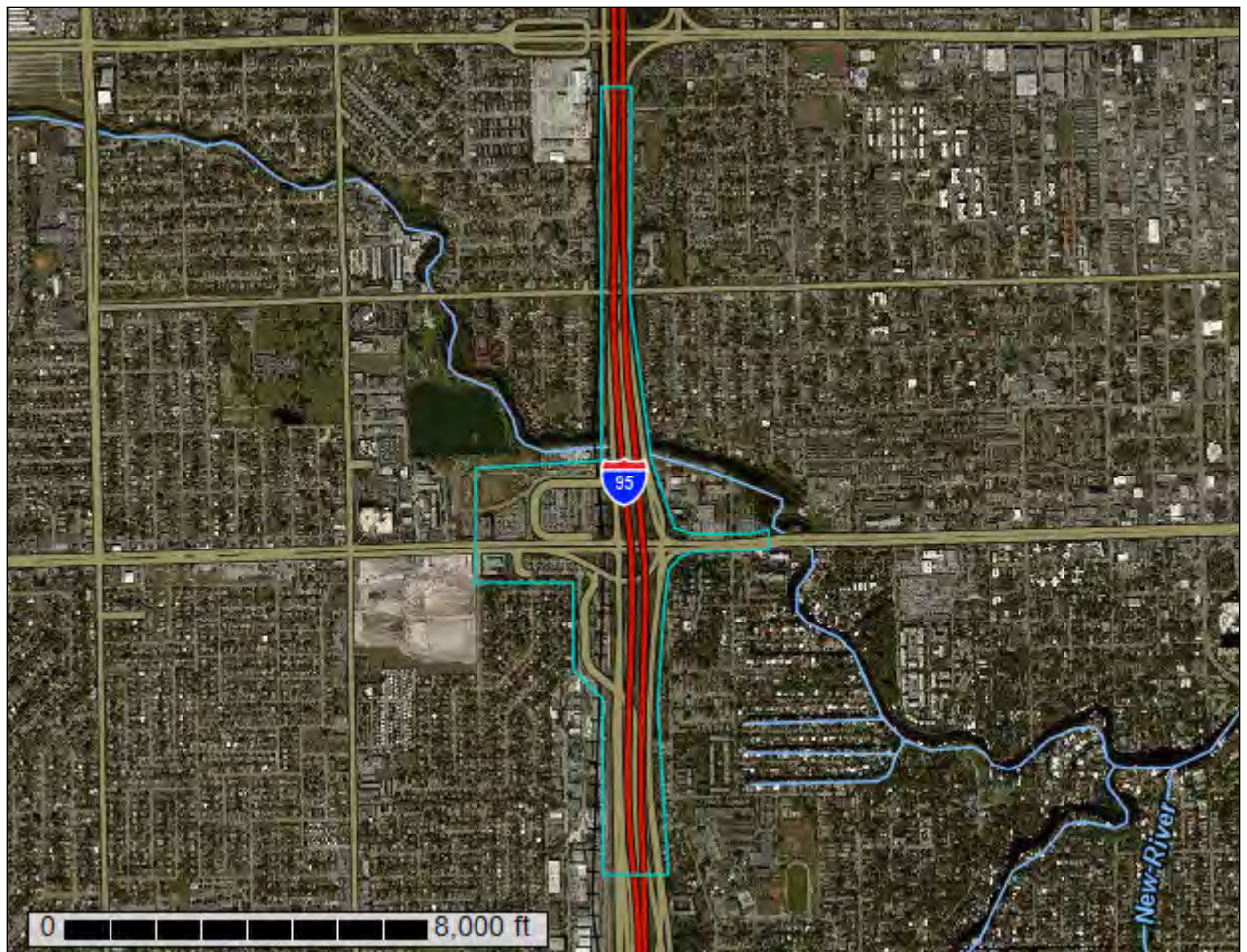
Table 1.3.2-1 Criteria for Substructure Environmental Classifications

Classification	Environmental Condition	Units	Steel		Concrete	
			Water	Soil	Water	Soil
Extremely Aggressive (If any of these conditions exist)	pH		< 6.0		< 5.0	
	Cl	ppm	> 2000		> 2000	
	SO ₄	ppm	N.A.		> 1500	> 2000
	Resistivity	Ohm-cm	< 1000		< 500	
Slightly Aggressive (If all of these conditions exist)	pH		> 7.0		> 6.0	
	Cl	ppm	<500		< 500	
	SO ₄	ppm	N.A.		< 150	< 1000
	Resistivity	Ohm-cm	> 5000		> 3000	
Moderately Aggressive	This classification must be used at all sites not meeting requirements for either slightly aggressive or extremely aggressive environments.					
pH = acidity (-log ₁₀ H ⁺ ; potential of Hydrogen), Cl = chloride content, SO ₄ = Sulfate content.						

APPENDIX – A

USDA, SCS Soil Information

Custom Soil Resource Report for Broward County, Florida, East Part



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

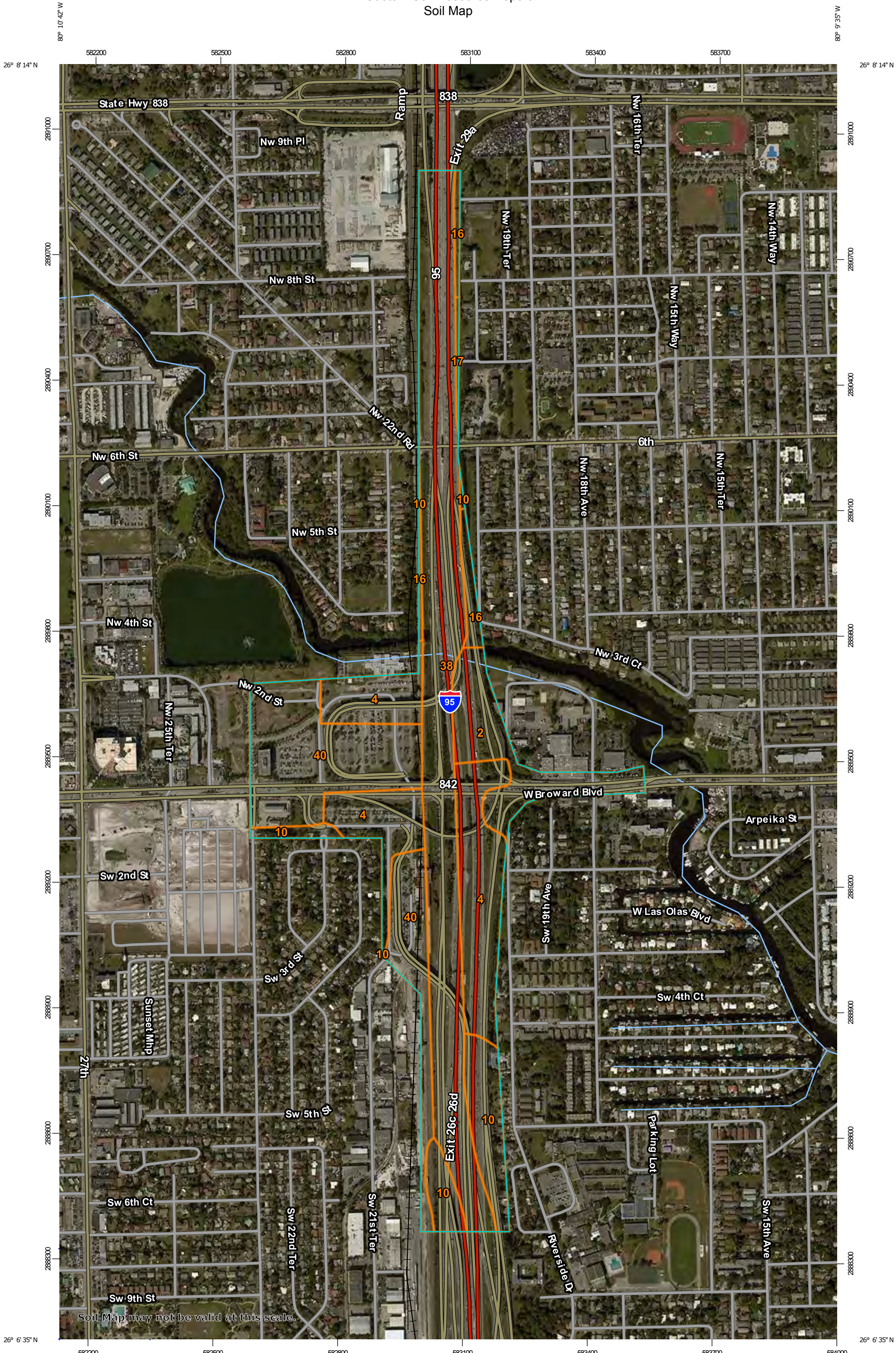
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

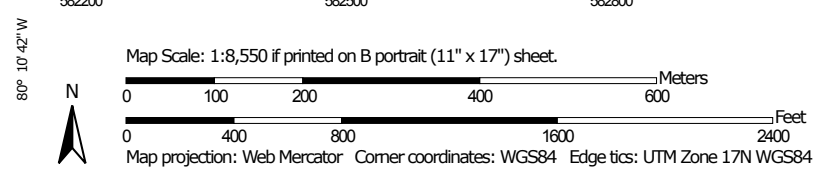
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map




Soil Map may not be valid at this scale.




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broward County, Florida, East Part
 Survey Area Data: Version 12, Sep 14, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 17, 2014—Feb 11, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Broward County, Florida, East Part (FL606)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Arents-Urban land complex	14.0	9.4%
4	Basinger fine sand, 0 to 2 percent slopes	30.9	20.6%
10	Duette-Urban land complex	12.9	8.6%
16	Immokalee, limestone substratum-Urban land complex	3.6	2.4%
17	Immokalee-Urban land complex	0.5	0.3%
38	Udorthents, shaped	53.2	35.5%
40	Urban land	34.6	23.1%
Totals for Area of Interest		149.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

Custom Soil Resource Report

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Broward County, Florida, East Part

2—Arents-Urban land complex

Map Unit Setting

National map unit symbol: 1hn8f
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Arents and similar soils: 55 percent
Urban land: 40 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arents

Setting

Landform: Rises on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

A - 0 to 4 inches: cobbly sand
C1 - 4 to 9 inches: cobbly sand
C2 - 9 to 32 inches: sand
2C - 32 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A/D
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: Unranked

Minor Components

Arents, organic substratum

Percent of map unit: 3 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: No

Udorthents, marly substratum

Percent of map unit: 2 percent
Landform: Marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: No

4—Basinger fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2svym
Elevation: 0 to 20 feet
Mean annual precipitation: 38 to 62 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Basinger and similar soils: 90 percent
Minor components: 10 percent

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Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Basinger

Setting

Landform: Drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Convex, concave
Across-slope shape: Linear, concave
Parent material: Sandy marine deposits

Typical profile

Ag - 0 to 2 inches: fine sand
Eg - 2 to 18 inches: fine sand
Bh/E - 18 to 36 inches: fine sand
Cg - 36 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 2 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Minor Components

Eaugallie

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: South Florida Flatwoods (R155XY003FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Margate

Percent of map unit: 3 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Tread, dip

Custom Soil Resource Report

Down-slope shape: Convex, linear

Across-slope shape: Linear, concave

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

Hydric soil rating: Yes

Placid, depressional

Percent of map unit: 3 percent

Landform: Depressions on marine terraces

Landform position (three-dimensional): Tread, dip

Down-slope shape: Concave, convex

Across-slope shape: Concave, linear

Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)

Hydric soil rating: Yes

10—Duette-Urban land complex

Map Unit Setting

National map unit symbol: 1hn8p

Mean annual precipitation: 60 to 68 inches

Mean annual air temperature: 72 to 79 degrees F

Frost-free period: 358 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Duette and similar soils: 55 percent

Urban land: 40 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Duette

Setting

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Sandy marine deposits

Typical profile

A - 0 to 3 inches: sand

E - 3 to 66 inches: sand

Bh - 66 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Moderately well drained

Runoff class: Negligible

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Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: About 48 to 72 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces

Landform position (three-dimensional): Interfluve, talf

Down-slope shape: Linear

Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: Unranked

Minor Components

Basinger

Percent of map unit: 2 percent

Landform: Drainageways on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Concave

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: Yes

Immokalee

Percent of map unit: 1 percent

Landform: Flatwoods on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: No

Dade

Percent of map unit: 1 percent

Landform: Rises on marine terraces

Custom Soil Resource Report

Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: No

St. lucie

Percent of map unit: 1 percent
Landform: Flats on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: No

16—Immokalee, limestone substratum-Urban land complex

Map Unit Setting

National map unit symbol: 1hn8w
Elevation: 10 to 100 feet
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Immokalee, limestone substratum, and similar soils: 50 percent
Urban land: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Immokalee, Limestone Substratum

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 48 inches: fine sand
Bh - 48 to 58 inches: fine sand
2R - 58 to 62 inches: weathered bedrock

Properties and qualities

Slope: 0 to 2 percent

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Depth to restrictive feature: 40 to 72 inches to paralithic bedrock
Natural drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Unranked

Minor Components

Basinger

Percent of map unit: 3 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Yes

Immokalee

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: No

Margate

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Yes

Pompano

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned (G156AC999FL)
Hydric soil rating: Yes

17—Immokalee-Urban land complex

Map Unit Setting

National map unit symbol: 1hn8x
Elevation: 10 to 100 feet
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Immokalee and similar soils: 45 percent
Urban land: 45 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Immokalee

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
E - 6 to 35 inches: fine sand
Bh - 35 to 54 inches: fine sand

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BC - 54 to 72 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: B/D

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces

Landform position (three-dimensional): Interfluve, talf

Down-slope shape: Linear

Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: Unranked

Minor Components

Basinger

Percent of map unit: 3 percent

Landform: Drainageways on marine terraces

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Concave

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: Yes

Hallandale

Percent of map unit: 3 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

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Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: Yes

Pompano

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: Yes

Margate

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)
Hydric soil rating: Yes

38—Udorthents, shaped

Map Unit Setting

National map unit symbol: 1hn9l
Mean annual precipitation: 60 to 68 inches
Mean annual air temperature: 72 to 79 degrees F
Frost-free period: 358 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, shaped and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Shaped

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

C1 - 0 to 30 inches: gravelly sand
C2 - 30 to 50 inches: sand

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2R - 50 to 54 inches: weathered bedrock

Properties and qualities

Slope: 0 to 45 percent

Depth to restrictive feature: 40 to 72 inches to paralithic bedrock

Natural drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)

Depth to water table: About 24 to 48 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 4.0

Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: No

Minor Components

Udorthents

Percent of map unit: 10 percent

Landform: Marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Forage suitability group not assigned (G156AC999FL)

Hydric soil rating: No

40—Urban land

Map Unit Setting

National map unit symbol: 1hn9n

Mean annual precipitation: 60 to 68 inches

Mean annual air temperature: 72 to 79 degrees F

Frost-free period: 358 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Marine terraces

Landform position (three-dimensional): Interfluve, talf

Down-slope shape: Linear

Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified

Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)

Hydric soil rating: Unranked

Minor Components

Matlacha, limestone substratum

Percent of map unit: 5 percent

Landform: Flats on marine terraces

Landform position (three-dimensional): Talf

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Forage suitability group not assigned
(G156AC999FL)

Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission

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rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

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index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

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Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
2—Arents-Urban land complex														
Arents	55	A/D	0-4	Cobbly sand	SP, SP-SM	A-1-b, A-2-4, A-3	—	0-0-0	75-90-95	60-73-85	40-47-60	2-8-12	0-7-14	NP
			4-9	Cobbly sand	SP, SP-SM	A-1-b, A-2-4, A-3	—	0-0-0	75-90-95	60-73-85	40-47-60	2-8-12	0-7-14	NP
			9-32	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	80-88-95	2-7-12	0-7-14	NP
			32-60	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	80-88-95	2-7-12	0-7-14	NP
Arents, organic substratum	3	A	0-12	Gravelly sand	SP, SP-SM	A-1-b, A-2-4, A-3	—	0-0-0	60-88-93	50-73-80	40-48-70	2-7-12	0-7-14	NP
			12-38	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	80-88-95	2-7-12	0-7-14	NP
			38-52	Muck	PT	A-8	0-0-0	0-0-0	100-100-100	100-100-100	100-100-100	100-100-100	—	—
			52-72	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	80-88-95	2-7-12	0-7-14	NP
Udorthents, marly substratum	2	A	0-32	Gravelly sand	SP, SP-SM	A-1-b, A-2-4, A-3	0-1-2	5-10-15	70-80-90	50-68-80	40-55-70	2-6-12	0-7-14	NP
			32-60	Marly silt loam	ML	A-4	0-0-0	0-0-0	100-100-100	100-100-100	95-97-99	85-90-95	0-18-35	NP-3-5

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Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
4—Basinger fine sand, 0 to 2 percent slopes														
Basinger	90	A/D	0-2	Fine sand	SP-SM	A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	86-95-1 00	5- 9- 10	0-0 -14	NP
			2-18	Fine sand	SP-SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	88-95- 99	5- 9- 11	0-0 -14	NP
			18-36	Fine sand	SP-SM	A-3, A-2-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	89-95-1 00	7-10- 12	0-0 -14	NP
			36-80	Fine sand	SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	89-95- 98	6- 9- 11	0-0 -14	NP
Eaugallie	4	A/D	0-5	Fine sand	SP-SM	A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	84-89- 95	6- 7- 14	0-0 -39	NP-0 -2
			5-28	Fine sand	SP-SM	A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	86-90- 98	7- 7- 16	0-0 -19	NP-0 -2
			28-42	Fine sand	SP-SM	A-2-4	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	90-95-1 00	10-12- 19	0-21 -26	NP-1 -3
			42-50	Sandy clay loam	SC	A-6	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	75-85- 97	30-41- 49	21-33 -38	6-15-19
			50-65	Fine sand	SP-SM	A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	92-93-1 00	7-10- 23	0-0 -33	NP-0 -15
Margate	3	A/D	0-8	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	2- 5- 8	0-7 -14	NP
			8-16	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	2- 5- 8	0-7 -14	NP
			16-28	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100 -100	100-100 -100	95-98-1 00	2- 5- 8	0-7 -14	NP
			28-32	Gravelly fine sand	GC, GM, SC, SM	A-3	0- 0- 0	0-15- 30	60-70- 80	45-53- 60	40-48- 55	5-15- 35	0-20 -40	NP-8 -15

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Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
			32-36	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Placid, depressional	3	A/D	0-3	Fine sand	SP, SP-SM, SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	1- 6- 15	0-7 -14	NP
			3-11	Fine sand	SP-SM, SM, SP	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	1- 6- 15	0-7 -14	NP
			11-80	Sand, fine sand, loamy fine sand	SM, SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	1-10- 20	0-7 -14	NP

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Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
10—Duette-Urban land complex														
Duette	55	A	0-3	Sand	SP	A-3	0-0-0	0-0-0	100-100-100	100-100-100	60-80-100	1-3-4	0-7-14	NP
			3-66	Fine sand, sand	SP	A-3	0-0-0	0-0-0	100-100-100	100-100-100	60-80-100	1-3-4	0-7-14	NP
			66-80	Fine sand, sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	60-80-100	4-8-12	0-7-14	NP
Basinger	2	A/D	0-6	Fine sand	SP	A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	1-3-4	0-7-14	NP
			6-23	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	2-7-12	0-7-14	NP
			23-52	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	2-7-12	0-7-14	NP
			52-60	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	2-7-12	0-7-14	NP
Dade	1	A	0-6	Fine sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	1-4-6	0-7-14	NP
			6-27	Fine sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	1-4-6	0-7-14	NP
			27-35	Fine sand, sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	2-5-8	0-7-14	NP

Custom Soil Resource Report

Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
			35-39	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Immokalee	1	A/D	0-6	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	2- 6- 10	0-7 -14	NP
			6-40	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	2- 6- 10	0-7 -14	NP
			40-65	Fine sand, sand	SM, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	5-13- 21	0-7 -14	NP
			65-72	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	2- 6- 10	0-7 -14	NP
St. lucie	1	A	0-3	Fine sand	SP	A-3	0- 0- 0	0- 0- 0	100-100-100	90-95-100	80-90-99	1- 3- 4	0-7 -14	NP
			3-80	Sand, fine sand	SP	A-3	0- 0- 0	0- 0- 0	100-100-100	90-95-100	80-90-99	1- 3- 4	0-7 -14	NP

Custom Soil Resource Report

Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
16—Immokalee, limestone substratum-Urban land complex														
Immokalee, limestone substratum	50	A/D	0-5	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-92-99	2- 6- 10	0-7 -14	NP
			5-48	Sand, fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-92-99	2- 6- 10	0-7 -14	NP
			48-58	Sand, fine sand	SM, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-90-99	5-10- 15	0-7 -14	NP
			58-62	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Basinger	3	A/D	0-6	Fine sand	SP	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-93-100	1- 3- 4	0-7 -14	NP
			6-23	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-93-100	2- 7- 12	0-7 -14	NP
			23-52	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-93-100	2- 7- 12	0-7 -14	NP
			52-60	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-93-100	2- 7- 12	0-7 -14	NP
Immokalee	3	A/D	0-6	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	2- 6- 10	0-7 -14	NP
			6-40	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	2- 6- 10	0-7 -14	NP
			40-65	Fine sand, sand	SM, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	5-13- 21	0-7 -14	NP

Custom Soil Resource Report

Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
			65-72	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-85-100	2- 6- 10	0-7 -14	NP
Margate	2	A/D	0-8	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	2- 5- 8	0-7 -14	NP
			8-16	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	2- 5- 8	0-7 -14	NP
			16-28	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	2- 5- 8	0-7 -14	NP
			28-32	Gravelly fine sand	GC, GM, SC, SM	A-3	0- 0- 0	0-15- 30	60-70-80	45-53-60	40-48-55	5-15- 35	0-20 -40	NP-8 -15
			32-36	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Pompano	2	A/D	0-5	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	75-88-100	1- 7- 12	0-7 -14	NP
			5-80	Sand, fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	75-88-100	1- 7- 12	0-7 -14	NP

Custom Soil Resource Report

Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
17—Immokalee-Urban land complex														
Immokalee	45	B/D	0-6	Fine sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	70-85-100	2-6-10	0-7-14	NP
			6-35	Fine sand, sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	70-85-100	2-6-10	0-7-14	NP
			35-54	Fine sand, sand	SM, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	70-85-100	5-13-21	0-7-14	NP
			54-72	Fine sand, sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	70-85-100	2-6-10	0-7-14	NP
Basinger	3	A/D	0-6	Fine sand	SP	A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	1-3-4	0-7-14	NP
			6-23	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	2-7-12	0-7-14	NP
			23-52	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	2-7-12	0-7-14	NP
			52-60	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	85-93-100	2-7-12	0-7-14	NP
Hallandale	3	B/D	0-4	Fine sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	2-4-6	0-7-14	NP
			4-10	Fine sand	SP, SP-SM	A-3	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	2-4-6	0-7-14	NP
			10-14	Fine sand, sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	2-7-12	0-7-14	NP
			14-16	Fine sand, sand	SP, SP-SM	A-2-4, A-3	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	2-7-12	0-7-14	NP

Custom Soil Resource Report

Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
			16-20	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Margate	2	A/D	0-8	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	2- 5- 8	0-7 -14	NP
			8-16	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	2- 5- 8	0-7 -14	NP
			16-28	Fine sand, sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	2- 5- 8	0-7 -14	NP
			28-32	Gravelly fine sand	GC, GM, SC, SM	A-3	0- 0- 0	0-15- 30	60-70-80	45-53-60	40-48-55	5-15- 35	0-20 -40	NP-8 -15
			32-36	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Pompano	2	A/D	0-5	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	75-88-100	1- 7- 12	0-7 -14	NP
			5-80	Sand, fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	75-88-100	1- 7- 12	0-7 -14	NP
38—Udorthents, shaped														
Udorthents, shaped	90	A	0-30	Gravelly sand	SP, SP-SM, GP-GM	A-1-b, A-2-4, A-3	0- 1- 2	10-15-40	50-65-80	40-55-70	30-45-60	2- 7- 12	0-7 -14	NP
			30-50	Sand, fine sand	SP, SP-SM	A-2-4, A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	80-88-95	2- 7- 12	0-7 -14	NP
			50-54	Weathered bedrock	—	—	—	—	—	—	—	—	—	—
Udorthents	10	A	0-57	Cobbly sand	GP-GM, SP, SP-SM	A-1-b	0- 1- 2	5-10- 15	50-60-70	40-50-60	30-40-50	2- 7- 12	0-7 -14	NP

Custom Soil Resource Report

Engineering Properties—Broward County, Florida, East Part														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
40—Urban land														
Matlacha, limestone substratum	5	B	0-23	Gravelly fine sand	SP, SP-SM	A-3	—	0- 8- 15	70-78-85	70-78-85	60-70-80	2- 6- 10	0-7 -14	NP
			23-27	Fine sand	SP, SP-SM	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-93-100	2- 6- 10	0-7 -14	NP
			27-48	Fine sand	SP-SM, SP	A-3	0- 0- 0	0- 0- 0	100-100-100	100-100-100	85-93-100	2- 6- 10	0-7 -14	NP
			48-52	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—

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APPENDIX – B

Existing Soil Boring Information from Previous Projects along the Project Corridor

PD&E Services for I-95 at Broward Boulevard Interchange Improvements

Broward County, Florida

FPID No.: 435513-1-22-01

Section - 1 (Please refer to Appendix - B1)				
Existing Borings & Tests - Drainage				
Test	#	Depth	Boring Soil Profiles	Comments
Percolation Tests (BHP)	P-8			These tests were performed in 2012.
	P-9			
	P-10			
	P-11			
	P-12			
	P-13			
Double Ring Infiltration Tests	DR-7			These tests were performed in 2012.
	DR-8			
	DR-9			
	DR-10			
	DR-11			
Section - 2 (Please refer to Appendix - B1)				
Existing Borings - Roadway				
	#	Depth	Boring Soil Profiles	
Roadway	RB-1248R through RB-2096L	10	Mostly A-3 with trace A-2-4, A-4 and A-8 soils	These 29 borings were drilled in 2014.

PD&E Services for I-95 at Broward Boulevard Interchange Improvements

Broward County, Florida

FPID No.: 435513-1-22-01

Section - 3 (Please refer to Appendix - B1)				
Existing Borings - Bridge & MSE Wall Structures				
	#	Depth	Boring Soil Profiles	Comments
Bridge	B-1	100	Mostly Sand (0-70') and Limestone (70'-100')	These borings were drilled in 2014
	B-2	100		
	B-3	100		
	B-4	100		
	B-5	100		
	#	Depth	Boring Soil Profiles	Comments
MSE	WB-2060L	40	Mostly Sand (0-40') with trace limestone	These borings were drilled in 2014.
	WB-2072L	40		
	WB-2076L	40		
	WB-2076R	40		
	WB-2080L	40		
	WB-2080R	40		
	WB-2084R	40		

PD&E Services for I-95 at Broward Boulevard Interchange Improvements

Broward County, Florida

FPID No.: 435513-1-22-01

Section - 3 (Please refer to Appendix - B2)				
Existing Borings - Bridge Structures				
	#	Depth	Boring Soil Profiles	Comments
Bridge # 860600, 860601, 860602	B-1	59	Mostly Sand	These borings were drilled in 1991.
	B-2	59		
	B-3	59		
	B-4	59		
	B-34	59		
	B-35	59		
	B-54	59		
	B-55	59		
	B-11	59		
	B-12	59		
	B-13	59		
	B-14	59		
	B-7	59		
	B-8	59		
	B-9	59		
	B-10	59		
	B-28	59		
	B-29	59		
	B-30	59		
	B-31	59		
B-51	59			
B-49	59			
B-50	59			
B-57	59			
B-58	59			

PD&E Services for I-95 at Broward Boulevard Interchange Improvements

Broward County, Florida

FPID No.: 435513-1-22-01

Section - 3 (Please refer to Appendix - B3)				
Existing Borings - Bridge Structures				
	#	Depth	Boring Soil Profiles	Comments
Bridge # 860598	B-20	59	Mostly Sand	These borings were drilled in 1991.
	B-21	59		
	B-22	59		
	B-23	59		
	B-24	59		
	B-26	59		
	B-27	59		
	B-32	59		
	B-33	59		
	B-47	59		
	B-48	59		
	B-56	59		

PD&E Services for I-95 at Broward Boulevard Interchange Improvements

Broward County, Florida

FPID No.: 435513-1-22-01

Section - 3 (Please refer to Appendix - B4)				
Existing Borings - Bridge Structures				
	#	Depth	Boring Soil Profiles	Comments
Bridge # 860260	Hole No. 1	52	Mostly Sand	These borings were drilled in 1970.
	Hole No. 2	52		
	Hole No. 3	52		
	Hole No. 4	52.5		
	Hole No. 5	52		
	Hole No. 6	52		
	Hole No. 7	54		
	Hole No. 8	54		
	Hole No. 9	55		
	Hole No. 10	52		
	Hole No. 11	52		
	Hole No. 12	53.5		
	Hole No. 13	50		
	Hole No. 14	52		
	Hole No. 15	52		
	Hole No. 16	73		
	Hole No. 17	55		

PD&E Services for I-95 at Broward Boulevard Interchange Improvements

Broward County, Florida

FPID No.: 435513-1-22-01

Section - 3 (Please refer to Appendix - B5)				
Existing Borings - Bridge Structures				
	#	Depth	Boring Soil Profiles	Comments
Bridge # 860257	Hole No. 1	45	Mostly Sand	These borings were drilled in 1970.
	Hole No. 2	50		
	Hole No. 3	52		
	Hole No. 4	50		
	Hole No. 5	45		
Section - 3 (Please refer to Appendix - B6)				
Existing Borings - Bridge Structures				
	#	Depth	Boring Soil Profiles	Comments
Bridge # 860269	Hole No. 1	45	Mostly Sand	These borings were drilled in 1970.
	Hole No. 2	52		
	Hole No. 3	45		
	Hole No. 4	45		
	Hole No. 5	42		
	Hole No. 6	42		

APPENDIX – B1

Existing Soil Boring Information from Previous Projects along the Project Corridor

I-95 Broward Blvd PD&E - Summary of Prior Geotechnical Data

Source	Available Data	Date	Samples (qty)	Locations
PD&E Study for SR 9/I-95, from SR 848/Stirling Rd. to North of SR 816/Oakland Park Blvd.	Percolation Test - Corrosion Classification	April/May-12	3	P-8, P-9, P-10, P-11, P-12, P-13
	Double Ring Infiltration Test	Apr-12	2	DR-7, DR-8, DR-9, DR-10, DR-11
SR 9/I-95 CDC, From S. of Davie Blvd. to N. of W. Commercial Blvd. – Phase 3A-1 – Roadway	Grain size analysis	Dec-14	3	RB-1248R, RB-1252R, RB-2002R, RB-2006R, RB-2010R, RB 2014R, RB-2026CL, RB-2028CR, RB-2032CR, RB-2036CR, RB-2036L, RB2036R, RB-2038R, RB-2040CL, RB-2040R, RB-2042CL, RB-2042CR, RB-2046CL, RB-2046CR, RB-2050CL, RB-2050CR, RB-2058R, RB-2062CR, RB-2066CL, RB-2084L, RB-2088CR, RB-2092CR RB-2096CR, RB-2096L
	Corrosion classification test	Sep-14	3	B-2, B-3, B-5
	Moisture and Organic content by Loss on Ignition	Nov-14	4	RB-2006R, RB-2014R, RB-2036CR, RB-2036R, RB-2038R, RB-2088CR, RB-2092CR
	Moisture and Percent passing the No.200 sieve	Nov-14	9	RB-2006R, RB-2010R, RB-2014R, RB-2036CR, RB-2036R, RB-2038R, RB-2040CL, RB-2040R, RB-2046CR, RB-2088CR, RB-2092CR, RB-2092R,
SR 9/I-95 CDC, From S. of Davie Blvd. to N. of W. Commercial Blvd. – Phase 3A-1 –Structures	Corrosion classification test		1	P-10
	SPT borings	Dec-14	12	Bridge over North Fork River: B-1, B-2, B-3, B-4
				Bridge over NW 6th street: B-5
				Retaining wall borings: WB-2060L, WB-2072L, WB-2076L, WB-2080L, WB-2076R, WB-2080R, WB-2084R,
	Moisture and Percent passing the No.200 sieve	sept/nov-14	15	B-1, B-2, B-3, B-4, WB-2060L, B-5, WB-2072L, WB-2076L, WB-2080L
Moisture and Organic content by Loss on Ignition	sept/nov-14	4	WB-2072L, WB-2076L, WB-2080L	

PD&E Study for SR 9/I-95, from SR
848/Stirling Rd. to North of SR
816/Oakland Park Blvd.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

3.1 GENERAL

The primary purpose of this study was to generally define the subsurface conditions present along the area of study and to identify any subsurface issues that may be an obstacle to the development of the project.

A discussion of the subsurface conditions encountered along the alignment is provided in Section 4.2 of this report.

3.2 PERCOLATION TESTING

18 constant percolation tests were performed at selected locations. The percolation tests were performed to one depth interval in general accordance with the test procedures outlined in Appendix A. The hydraulic conductivity values ranged as follows:

0 to 15 feet: 1.1E-05 to 3.2E-04 cfs/ft²-ft. of head.

A summary of the percolation test results is presented in Appendix A.

3.3 DOUBLE RING INFILTRMETER TESTING

15 double ring infiltrometer tests were performed at selected locations. The double-ring infiltrometer tests were performed in general accordance with the test procedures outlined in Appendix A. The effective infiltration rate values ranged from 0.4 to 4.5 inches/hour for a project average of 1.9 inches/hour.

A summary of double ring infiltrometer test results is presented in Appendix A.

3.4 LABORATORY TESTING

3.4.1 Corrosivity Classification Testing

The Florida Department of Transportation Requirements Manual, Section 1.3 Environmental Classifications outlines the ranges of groundwater chemical properties considered corrosive to reinforced concrete substructure. In addition, that section environmentally classifies the superstructure based on factors located near the structure location. Based on this classification, an environment may be Slightly Aggressive, Moderately Aggressive, or Extremely Aggressive. The

testing was performed on water samples retrieved from the percolation test boreholes indicated below. The corrosion testing was performed by HRES in general accordance with Florida Method of Test Corrosion Series in Soil and Water, Designation FM 5-550. The following table summarizes the corrosivity classification test results:

Table 3.4.1 Corrosion Classification

Percolation Test No.	Resistivity ohms-cm	pH	Sulfates ppm	Chlorides ppm	Substructure Environmental Classification	
					Steel	Concrete
P-2	2,079	7.8	39	71	MA	MA
P-4	3,290	8.1	27	11	MA	SA
P-6	2,780	7.6	36	56	MA	MA
P-8	1,996	7.6	42	39	MA	MA
P-10	2,528	7.6	31	32	MA	MA
P-12	1,042	7.0	77	51	MA	MA
P-14	1,991	7.3	14	29	MA	MA
P-16	1,812	7.9	12	26	MA	MA
P-18	2,815	7.6	23	24	MA	MA

Based on these results, the substructures (both steel and concrete) will be in a Moderately Aggressive environment. Due to their locations, the superstructures are considered to be in a Slightly Aggressive environment.

sediments were deposited during several glacial and interglacial stages during the Pleistocene Epoch.

Within the explored depths of this study, one distinct geological formation was encountered below the structural fills, muck and sand layers. This formation is The Miami Limestone Formation.

4.2.3 Miami Limestone

The Miami Limestone can be described as a soft tan white porous to very porous fossiliferous quartz sandy fine-grained slightly oolitic limestone. The solution channels in the limestone may be up to 2 inches in diameter at some locations, are filled with quartz fine sand and uncemented calcareous materials. The limestone varies in both thickness and competency within the investigated area.

The Miami Limestone was deposited in a shallow near-shore marine carbonate bank environment. Spherical carbonate sand grains called oolites formed and were deposited in this environment. Near shore, processes transported quartz sand into the area and reworked some of the carbonate material. Encrusting organisms called bryozoans were locally abundant and formed patches on the substrate. After sea level receded, the carbonate deposit was exposed to fresh water and the cementation process was initiated. The degree of cementation, and therefore the competency of the rock, was influenced by both the abundance and the type of calcareous material in the original deposit.

4.2.4 Groundwater Conditions

The groundwater levels in the percolation tests were measured at the time of drilling. Groundwater levels in the percolation tests typically ranged from 1.6 to 12.0 feet deep.

In order to estimate the Seasonal High Water Table (SHGWT), HRES consulted the USGS National Water Information System and the water wells installed and monitored along the project's limits. HRES selected 13 wells located adjacent to I-95 (located east and west) and based on the monitoring data for a period of several years (1975 to 2011) estimated an average

groundwater elevation ranging from 1.5 to 2.0 feet, NGVD29 and a maximum (peak) groundwater elevation ranging from 2.5 to 4.5 feet, NGVD29.

In addition, HRES reviewed the groundwater data provided by Broward County Office of Environmental Services, Water Management Division – Water Table Map, Average Wet Season dated February 17, 2000 (Attached in Appendix A). Based on this map, the average wet season groundwater ranges along the project as follows:

From SR 848/Stirling Road to I-595: 1.5 to 2.0 feet, NGVD29. Recommended SHGWT: 3.0 feet, NGVD29.

From I-595 to Davie Boulevard: 2.0 to 3.0 feet, NGVD29. Recommended SHGWT: 3.5 feet, NGVD29.

From Davie Boulevard to SR 816/Oakland Boulevard: 2.5 to 3.0 feet, NGVD29: Recommended SHGWT: 3.5 feet, NGVD29.

The Seasonal High Ground Water Table (SHGWT) was estimated by adding 6 to 12 inches over the average wet season.

Fluctuation in the observed groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, surface water runoff and other site-specific factors such as water elevation variations at the nearby canals. Since groundwater level variations are anticipated, design drawing and specifications should accommodate such possibilities and construction planning should be based on the assumption that variations will occur.

APPENDIX A

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FIELD TESTING PROCEDURES	A-20



LEGEND:


- PERCOLATION TEST LOCATION
- DOUBLE RING TEST LOCATION



feet
meters

2000
600

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

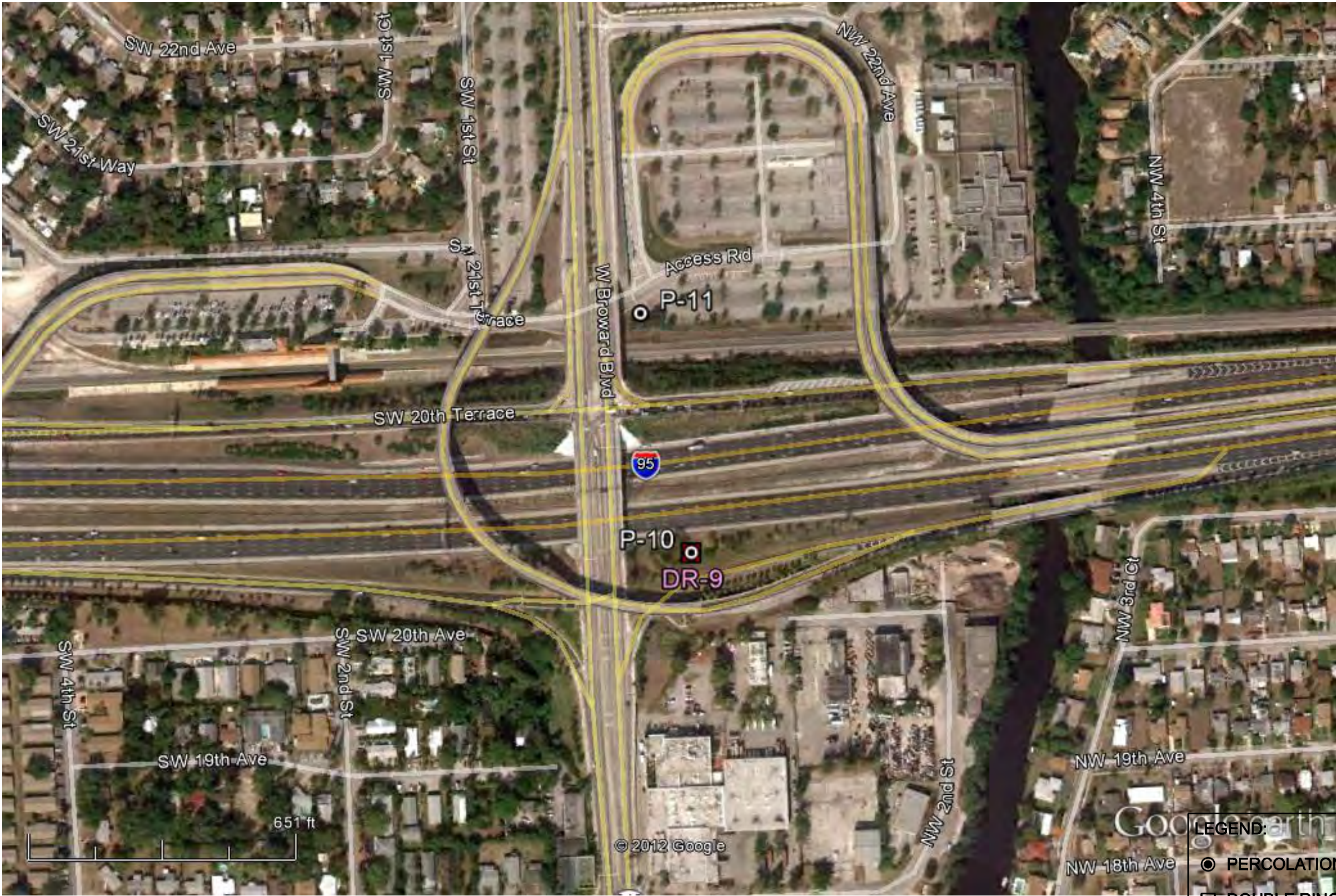


HERNANDEZ R. RAMOS
 P.E. License No. 42045
HR ENGINEERING SERVICES, INC.
 7815 NW 72nd Avenue
 Medley, Florida 33166
 Phone: (305) 888-8880
 Fax: (305) 888-8770
 Cert. of Authorization No. 7991

DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	429804-1-22-01

FIELD EXPLORATION PLANS

SHEET NO.
A-6



LEGEND:

- PERCOLATION TEST LOCATION
- DOUBLE RING TEST LOCATION



feet
meters

2000
600

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION


 Hermando R. Ramos
 HR ENGINEERING SERVICES, INC.
 7815 NW 72nd Avenue
 Medley, Florida 33166
 Phone: (305) 888-8880
 Fax: (305) 888-8770
 Cert. of Authorization No. 7991

FLORIDA		
DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	429804-1-22-01

FIELD EXPLORATION PLANS

SHEET NO.
A-7



LEGEND:


- PERCOLATION TEST LOCATION
- DOUBLE RING TEST LOCATION



feet
meters

2000
600

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



HERNANDEZ R. RAMOS
 P.E. License No. 42046
HR ENGINEERING SERVICES, INC.
 7815 NW 72nd Avenue
 Medley, Florida 33166
 Phone: (305) 888-8880
 Fax: (305) 888-8770
 Cert. of Authorization No. 7991

DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	429804-1-22-01

FIELD EXPLORATION PLANS

SHEET NO.
A-8

**SUMMARY OF PERCOLATION AND DOUBLE RING
INFILTROMETER TEST LOCATIONS
PD&E STUDY FOR SR 9/I-95, FROM SR 848/STIRLING ROAD
TO NORTH OF SR 816/OAKLAND PARK BOULEVARD
FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT 4
FINANCIAL PROJECT ID No. 429804-1-22-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR11-779R
MAY 29, 2012**

Test No.	PLANE COORDINATES		STATION	OFFSET, ft.
	NORTHING	EASTING		
P-1/DR-1	624244.247	931120.031	N/A	N/A
P-2	629034.356	930601.074	N/A	N/A
P-3/DR-2	629638.821	930596.214	N/A	N/A
P-4/DR-3	633236.758	929351.939	N/A	N/A
P-5/DR-4	636311.858	928767.701	N/A	N/A
P-6/DR-5	636642.192	929835.705	N/A	N/A
P-7/DR-6	639008.727	929292.100	N/A	N/A
P-8/DR-7	645185.148	928812.862	N/A	N/A
P-9/DR-8	647114.153	929197.642	N/A	N/A
P-10/DR-9	651020.863	929054.534	N/A	N/A
P-11	650912.769	928464.236	N/A	N/A
P-12/DR-10	653554.932	928559.274	N/A	N/A
P-13/DR-11	656037.225	928494.215	N/A	N/A
P-14	657277.441	928771.086	N/A	N/A
P-15/DR-12	659864.902	928496.027	N/A	N/A
P-16/DR-13	664204.412	930088.843	N/A	N/A
P-17/DR-14	667712.330	931798.224	N/A	N/A
P-18/DR-15	668618.604	932536.943	N/A	N/A

Notes:

N/A: Not Available

Plane coordinates were taken using a hand-held GPS and are approximate within 10 feet.

SUMMARY OF PERCOLATION TEST RESULTS
USUAL OPEN-HOLE - FDOT METHOD
PD&E STUDY FOR SR 9/I-95, FROM SR 848/STIRLING RD. TO N. OF SR 816/OAKLAND PARK BLVD.
FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT 4
FINANCIAL PROJECT No. 429804-1-22-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT NO. HR11-779R
APRIL 29, 2012

A-18

TEST No.	TEST DATE	LOCATION	DEPTH TO WATER BEFORE TEST, H ft	DEPTH TO WATER DURING TEST ft	HEAD, Du ft	HOLE DEPTH ft	HOLE DIAMETER, d inches	RATE OF FLOW, P		k, HYDRAULIC CONDUCTIVITY cfs/ft ² -ft. Head
								gpm	cfs	
P-1	03/29/12		6.7	0.0	6.7	15.0	6.0	4.4	0.00980	8.0E-05
P-2	04/02/12		6.5	0.0	6.5	15.0	6.0	0.6	0.00134	1.1E-05
P-3	03/29/12		7.5	0.0	7.5	15.0	6.0	1.9	0.00423	3.2E-05
P-4	04/02/12		3.0	0.0	3.0	15.0	6.0	1.6	0.00357	5.6E-05
P-5	04/05/12		1.6	0.0	1.6	15.0	6.0	1.0	0.00223	6.3E-05
P-6	04/09/12		2.8	0.0	2.8	15.0	6.0	2.1	0.00468	8.0E-05
P-7	04/09/12		7.1	0.0	7.1	15.0	6.0	18.2	0.04055	3.2E-04
P-8	04/02/12		11.2	0.0	11.2	15.0	6.0	4.5	0.01003	6.1E-05
P-9	04/02/12	See Attached Field	10.7	0.0	10.7	15.0	6.0	7.6	0.01693	1.0E-04
P-10	04/03/12	Exploration Plans	5.8	0.0	5.8	15.0	6.0	1.7	0.00379	3.5E-05
P-11	04/05/12		8.4	0.0	8.4	15.0	6.0	15.0	0.03342	2.3E-04
P-12	04/05/12		10.4	0.0	10.4	15.0	6.0	19.0	0.04234	2.6E-04
P-13	04/04/12		6.8	0.0	6.8	15.0	6.0	1.0	0.00223	1.8E-05
P-14	04/03/12		9.7	0.0	9.7	15.0	6.0	12.9	0.02874	1.9E-04
P-15	04/04/12		12.0	0.0	12.0	15.0	6.0	20.0	0.04456	2.6E-04
P-16	04/04/12		10.6	0.0	10.6	15.0	6.0	12.0	0.02674	1.7E-04
P-17	04/03/12		3.0	0.0	3.0	15.0	6.0	1.9	0.00423	6.7E-05
P-18	04/03/12		4.0	0.0	4.0	15.0	6.0	0.5	0.00111	1.4E-05

for 0 to 15 ft., $K_{15} = P / 3.1416 * d * Du \{ Du/2 + Ds \}$, where $Ds = \text{Hole Depth} - H$

**SUMMARY OF DOUBLE RING INFILTRATION TEST RESULTS
 PD&E STUDY FOR SR 9/I-95, FROM SR 848/STIRLING ROAD
 TO NORTH OF SR 816/OAKLAND PARK BOULEVARD
 FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT 4
 FINANCIAL PROJECT No. 429804-1-22-01
 BROWARD COUNTY, FLORIDA
 HR ENGINEERING SERVICES, INC.
 HRES PROJECT NO. HR11-779R
 APRIL 29, 2012**

TEST No.	TEST DATE	NORTHING	EASTING	EFFECTIVE INFILTRATION RATE in/hr.
DR-1	03/20/12	624244.247	931120.031	1.8
DR-2	03/21/12	629638.821	930596.214	0.9
DR-3	04/09/12	633236.758	929351.939	1.7
DR-4	03/21/12	636311.858	928767.701	1.0
DR-5	03/22/12	636642.192	929835.705	0.4
DR-6	03/27/12	639008.727	929292.100	1.9
DR-7	03/27/12	645185.148	928812.862	0.5
DR-8	04/10/12	647114.153	929197.642	3.4
DR-9	03/28/12	651020.863	929054.534	1.6
DR-10	04/10/12	653554.932	928559.274	1.6
DR-11	03/28/12	656037.225	928494.215	1.7
DR-12	03/29/12	659864.902	928496.027	2.0
DR-13	04/11/12	664204.412	930088.843	1.4
DR-14	03/29/12	667712.330	931798.224	4.5
DR-15	04/11/12	668618.604	932536.943	3.9

SR 9/I-95 CDC, From S. of Davie
Blvd. to N. of W. Commercial Blvd. –
Phase 3A-1 – Roadway

1.0 INTRODUCTION

The purpose of this geotechnical exploration was to obtain information concerning the site and subsurface conditions along the proposed roadway improvements. This report discusses our exploratory and testing procedures, presents our findings and includes the following items:

Field exploration Performed by GCME, Inc.

This report present the field test data performed by GCME, Inc. (GCME) for FDOT District 4, Project SR 9/I-95, from North of Oakland Park Boulevard to South of Glades Road. Broward and Palm Beach Counties, Florida; report dated October 26, 2012. The field exploration presented in this report includes:

- A total of 20 test borings, to depths ranging from 5 to 20 feet. The test borings were performed to help characterize the subsurface conditions along the proposed roadway improvements. The test borings subsurface information is presented in the Soil Profiles in Appendix A.
- A total of 8 test borings, each to a depth of 85 feet. The test borings were performed to help characterize the subsurface conditions at the proposed bridges widening along the roadway improvements. The test borings subsurface information is presented in the Report of a Geotechnical Exploration – Structures, a separate report.

Field exploration Performed by HRES, Inc.

This report present the field test data performed by HRES, Inc. for FDOT District 4, Project SR 9/I-95 CDC for Broward County; report dated October 1, 2013. The field exploration presented in this report includes:

- A total of 11 constant head percolation tests, each to one depth interval, from 0 to 15 feet. The percolation test results are presented in appendix A.

Additional Field Services Performed by HRES, Inc.

- Performed a total of 76 roadway borings, to depths ranging from 10 to 15 feet. The roadway borings were performed to help characterize the subsurface conditions along the proposed roadway improvements. The test borings subsurface information is presented in the Soil Profiles in Appendix A.
- Performed a total of 6 constant head percolation tests, each to one depth interval, from 0 to 15 feet. The percolation test results are presented in Appendix A.

- Obtained soil samples from the bottom of the North Fork New River (CB-1 and CB-2) and C-13 Canal (CB-3 and CB-4). The soil samples were tested to obtain the D_{50} to be used in the scour evaluation.
- In addition to the above listed field tests, a total of 63 test borings, to depths ranging from 40 to 100 feet were performed to help characterize the subsurface conditions at the proposed bridges widening, retaining walls and gantry structures along the roadway improvements. The test borings subsurface information is presented in the Report of a Geotechnical Exploration – Structures, a separate report.

Evaluation

- Soil Profiles.
- Broward County Soil Survey Map.

Laboratory Testing

- The results of laboratory tests performed on selected soil samples obtained from the test boring and percolation tests.
- Corrosion classification testing on selected water and soil samples.
- A brief description of our laboratory testing procedures.

3.3 LABORATORY TESTING

3.3.1 Soil Testing

In order to aid in classifying and estimate engineering characteristics of the subsurface materials encountered, laboratory classification tests were performed on representative soil samples obtained from the test borings and percolation tests. The laboratory testing program included the following:

- 62 Grain size distribution analyses
- 41 Fines content analyses
- 47 Organic content tests

In addition, a total of 105 moisture content tests were performed in conjunction with the classification tests. The soil laboratory test results were classified following the AASHTO Classification System. The test results are presented in Appendix B.

3.3.2 Test Results for Scour Evaluation

Soil samples were taken at the bottom of the North Fork River and C-13 Canal for D_{50} determination. The soil samples were taken at two locations per canal; at each location two soils samples were taken. The test results are presented in Appendix B. The grain size test results are summarized as follows:

Table 3.3.2 Summary of Grain Size Analysis - D_{50}

Sample Location	Sample Depth Below Bottom of Canal, ft.	D_{50} , mm
CB-1	0.0-2.0	0.25
CB-1	2.0-3.0	0.22
CB-2	0.0-1.3	0.30
CB-2	1.3-2.0	0.29
CB-3	0.0-1.1	0.69
CB-3	1.1-2.0	0.29
CB-4	0.0-1.8	0.28
CB-4	1.8-3.0	0.27

3.3.3 Corrosivity Classification Testing

Corrosivity classification testing was performed by HRES on eight water samples and one soil sample and GCME on four soil samples. This testing included pH, chlorides, sulfates contents, and resistivity results.

The Florida Department of Transportation Requirements Manual, Section 1.3 Environmental Classifications outlines the ranges of groundwater chemical properties considered corrosive to reinforced concrete substructure. In addition, that section environmentally classifies the superstructure based on factors located near the structure location. Based on this classification, an environment may be Slightly Aggressive, Moderately Aggressive, or Extremely Aggressive. The following table summarizes the laboratory test results:

Table 3.3.3 Summary of Corrosion Classification Test Results

Sample Location	Resistivity ohms-cm	pH	Sulfates ppm	Chlorides ppm	Environmental Classification (Substructure)		Performed by
					Steel	Concrete	
B-2 (water)	1,856	7.4	30	58	Moderately Aggressive	Moderately Aggressive	HRES
B-3 (water)	2,220	7.6	26	35	Moderately Aggressive	Moderately Aggressive	HRES
B-7 (water)	2,417	7.3	38	23	Moderately Aggressive	Moderately Aggressive	HRES
B-8 (water)	1,927	7.6	33	33	Moderately Aggressive	Moderately Aggressive	HRES
B-11 (water)	985	7.2	40	180	Extremely Aggressive	Moderately Aggressive	HRES
B-12 (water)	970	7.3	34	191	Extremely Aggressive	Moderately Aggressive	HRES
Northeast Sunrise Blvd. Pond (water)	1,952	7.5	30	55	Moderately Aggressive	Moderately Aggressive	HRES
C-13 Canal (water)	2,427	7.3	77	15	Moderately Aggressive	Moderately Aggressive	HRES
B-5 (soil)	3,133	7.5	77	25	Moderately Aggressive	Slightly Aggressive	HRES
B-102 (soil)	1,400	6.4	370	23	Moderately Aggressive	Moderately Aggressive	GCME

limerock/limestone lenses. Stratum 7 consists of the natural limestone. For a detailed subsurface condition at a particular borehole location, please refer to the Soil Profiles in Appendix A.

4.2.3 Groundwater Conditions

HRES reviewed the groundwater data provided by Broward County Office of Environmental Services, Water Management Division – Water Table Map, Average Wet Season dated February 17, 2000 (Attached in Appendix A). Based on this map, the average wet season groundwater along the project is at 1.5 feet, NAVD88: A Seasonal High Ground Water Table (SHGWT) of 2.5 feet NAVD88 may be used for design. The Seasonal High Ground Water Table (SHGWT) was estimated by adding 12 inches over the average wet season. Fluctuation in the groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, surface water runoff and other site-specific factors such as water elevation variations at the canals. Since groundwater level variations are anticipated, design drawing and specifications should accommodate such possibilities and construction planning should be based on the assumption that variations will occur.

APPENDIX A

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I-95 CDC, FROM SOUTH OF DAVIE BLVD.
 TO NORTH OF W. COMMERCIAL BLVD. – PHASE 3A-1
 FLORIDA DEPARTMENT OF TRANSPORTATION–D4
 BROWARD COUNTY, FLORIDA

HRES
 HR Engineering Services, Inc.

SITE LOCATION MAP

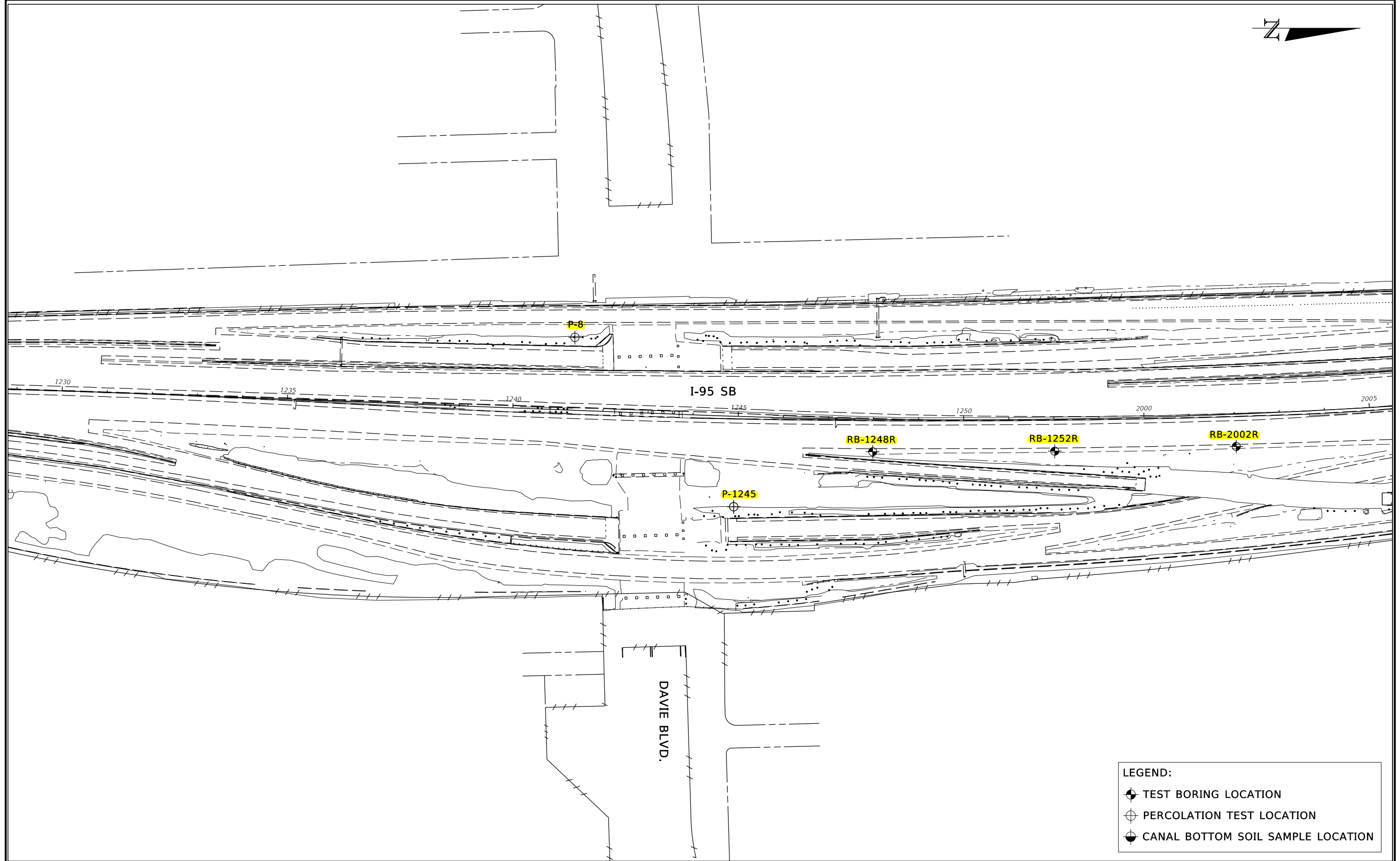
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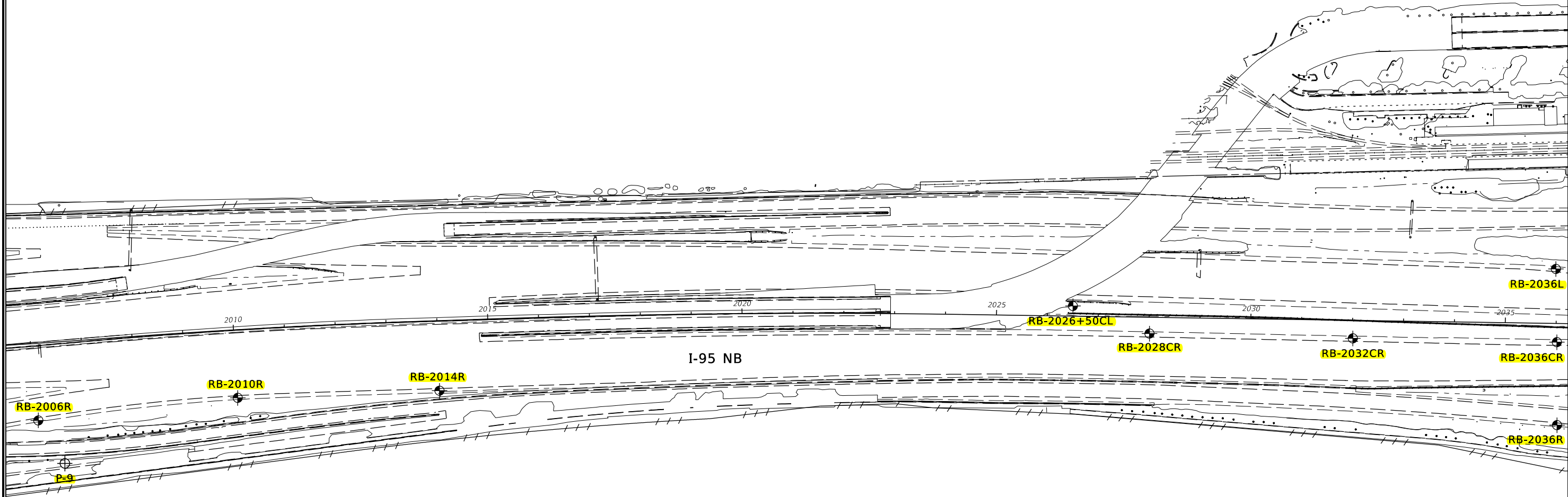
DATE: 12/03/14

PROJECT No: HR12-891R

SCALE: NTS



REVISIONS						HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7815 NW 72nd Avenue Medley, Florida 33166 Phone: (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7991	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE: FIELD EXPLORATION PLANS		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	A-2		SHEET NO.
						SR 9	BROWARD	433108-4-52-01	PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1			
						<small>HRESUser</small>			<small>12/3/2014 11:08:00 AM f:\drive6\HR12-891R I 95 CDC\TASK 2\Roadway\Phase 3A-1\FINAL\FIELD EXPLORATION P</small>			



LEGEND:

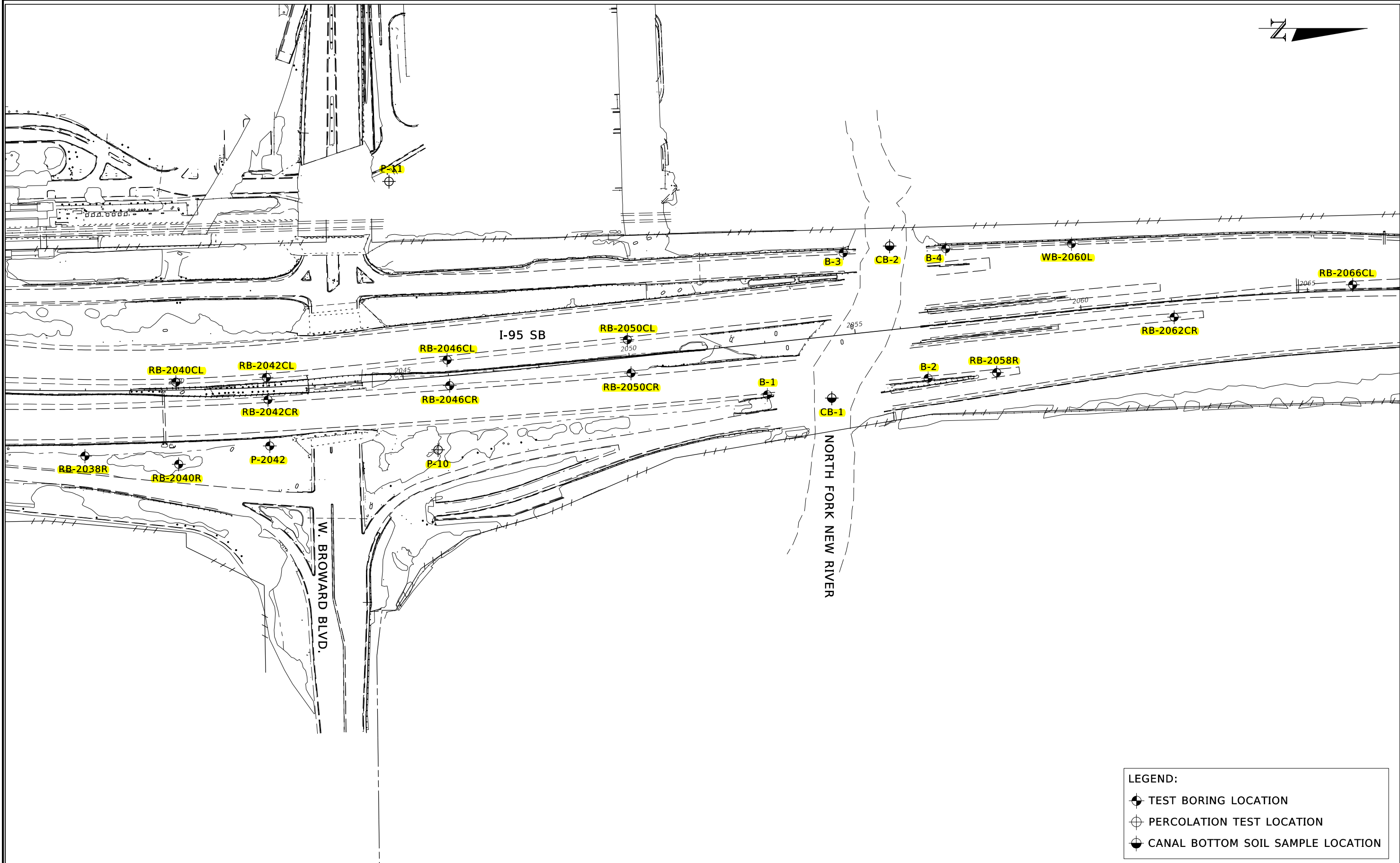
- TEST BORING LOCATION
- ⊕ PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

DRAWN BY: ME 12-14	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	
CHECKED BY: RAC 12-14	ROAD NO.	COUNTY
DESIGNED BY: RAC 12-14	SR 9	BROWARD
CHECKED BY: HRR 12-14	FINANCIAL PROJECT ID 433108-4-52-01	

SHEET TITLE: FIELD EXPLORATION PLANS	REF. DWG. NO.
PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1	A-3
SHEET NO.	



LEGEND:

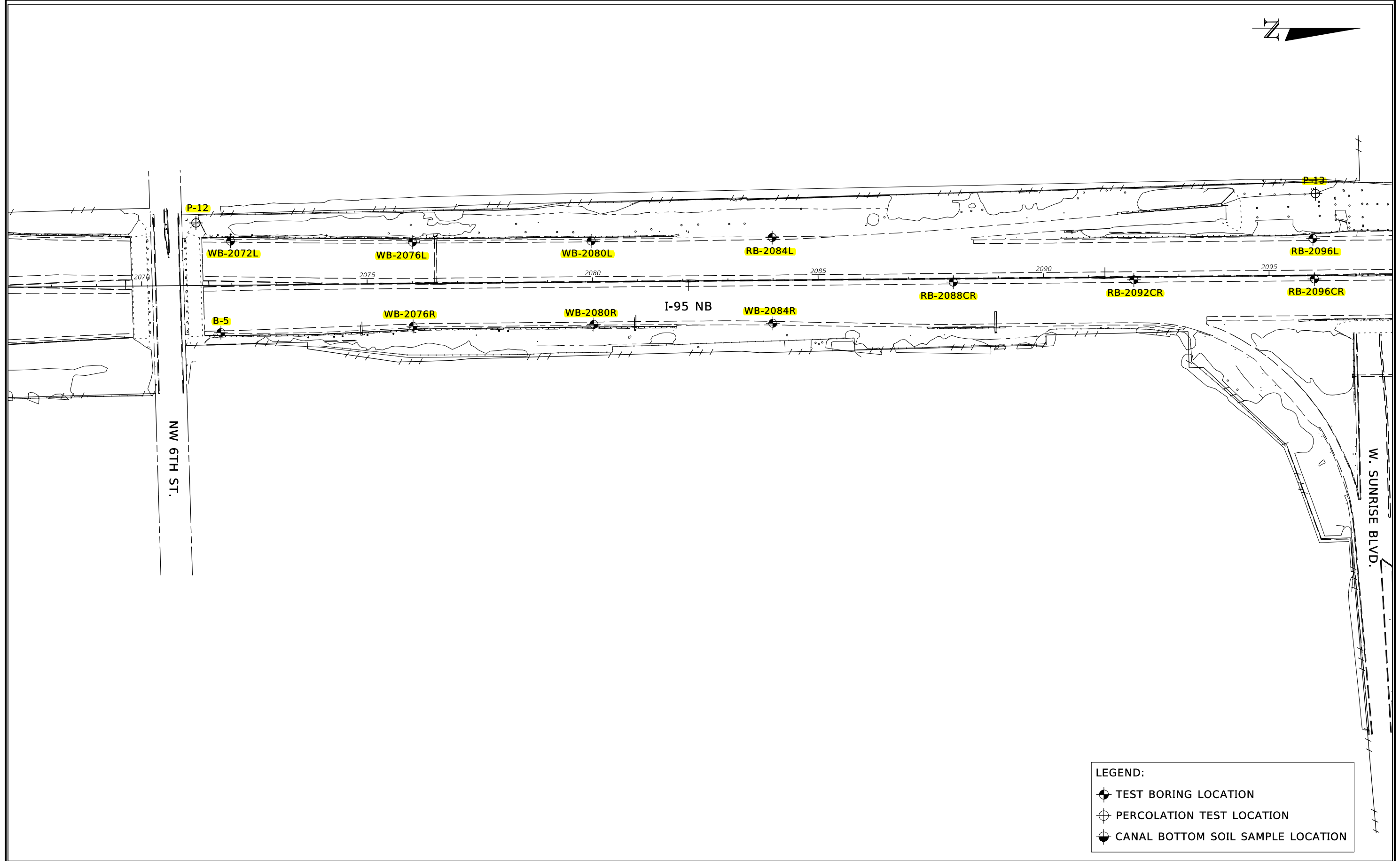
- TEST BORING LOCATION
- ⊕ PERCOLATION TEST LOCATION
- ⊙ CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
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 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
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DRAWN BY: ME 12-14	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	
CHECKED BY: RAC 12-14	ROAD NO.	COUNTY
DESIGNED BY: RAC 12-14	SR 9	BROWARD
CHECKED BY: HRR 12-14	FINANCIAL PROJECT ID 433108-4-52-01	

SHEET TITLE: FIELD EXPLORATION PLANS	REF. DWG. NO.
PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1	A-4
SHEET NO.	



LEGEND:

- TEST BORING LOCATION
- PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

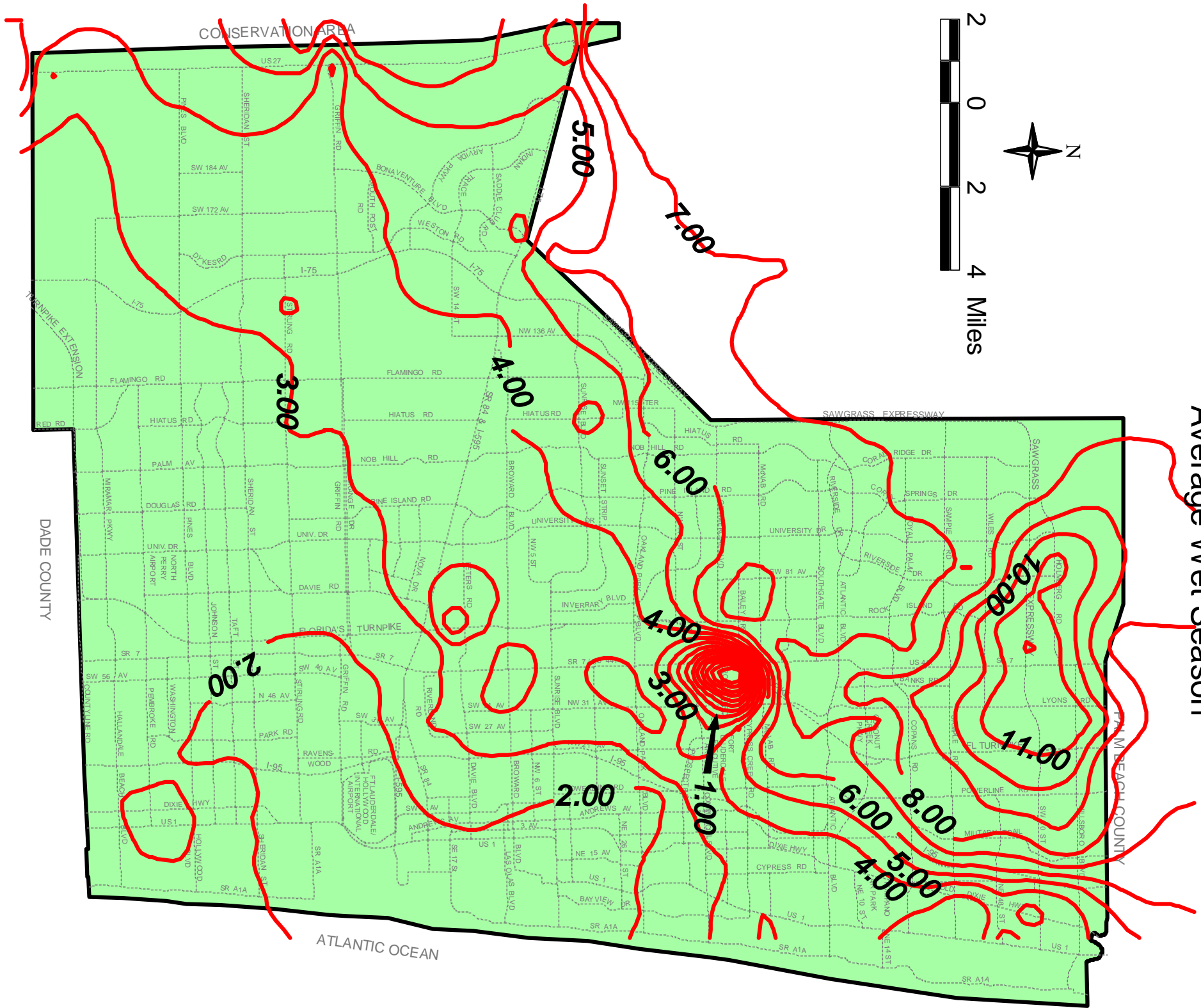
REVISIONS						HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7815 NW 72nd Avenue Medley, Florida 33166 Phone: (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7991	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			FIELD EXPLORATION PLANS A-5		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME:	SHEET NO.	
						SR 9	BROWARD	433108-4-52-01	I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1			



**Broward County Office of
Environmental Services
Water Management Division**

February 17, 2000

averagewet.apr



WATER TABLE MAP
Average Wet Season

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
Hernando R. Ramos
P.E. License No. 42045
7815 NW 72nd Avenue Medley, Florida 33166
Phone: (305) 888-8880 - Fax: (305) 888-8770
Certificate of Authorization No. 7991

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ME 12-14
CHECKED BY:
RAC 12-14
DESIGNED BY:
RAC 12-14
CHECKED BY:
HRR 12-14

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE:
**BROWARD COUNTY WATER TABLE MAP
AVERAGE WET SEASON**

PROJECT NAME:
**I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO
NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1**

REF. DWG. NO. **A-14**

SHEET NO.

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

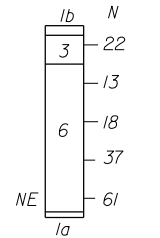
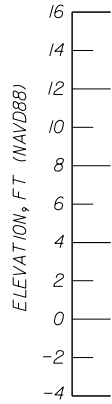
TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
P-8	645185.148	928812.862	1241+25	370.0 L
P-1245	645537.960	929188.353	1245+00	210.0 R
RB-1248R	645845.429	929066.601	1248+00	75.0 R
RB-1252R	646249.269	929065.334	1252+00	80.0 R
RB-2002R	646651.596	929054.888	2002+00	70.0 R
RB-2006R	647061.997	929113.306	2006+00	150.0 R
P-9	647114.153	929197.642	2006+35	115.0 R
RB-2010R	647453.929	929068.796	2010+00	135.0 R
RB-2014R	647850.418	929054.777	2014+00	140.0 R
RB-2026CL	649095.068	928888.323	2026+50	35.0 L
RB-2028CR	649245.540	928942.493	2028+00	25.0 R
RB-2032CR	649645.085	928951.754	2032+00	30.0 R
RB-2036L	650044.064	928815.320	2036+00	110.0 L
RB-2036CR	650046.074	928959.366	2036+00	25.0 R
RB-2036R	650046.389	929122.455	2036+00	205.0 R
RB-2038R	650243.788	929068.361	2038+00	145.0 R
RB-2040CL	650443.764	928905.634	2040+00	5.0 L
RB-2040R	650450.008	929086.404	2040+00	140.0 R
RB-2042CL	650642.897	928895.502	2042+00	20.0 L
RB-2042CR	650646.481	928944.373	2042+00	20.0 R
P-2042	650650.402	929046.073	2042+00	130.0 R
P-11	650912.769	928464.236	2045+20	550.0 L
P-10	651020.863	929054.534	2045+65	50.0 R
RB-2046CL	651040.683	928856.865	2046+00	30.0 L
RB-2046CR	651046.495	928913.269	2046+00	10.0 R
RB-2050CL	651437.340	928812.330	2050+00	30.0 L
RB-2050CR	651445.443	928885.781	2050+00	25.0 R
B-1	651745.635	928933.413	2052+70	110.0 R
CB-1	651887.447	928940.710	2054+40	135.0 R

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
B-3	651912.669	928621.271	2054+50	190.0 L
CB-2	652014.717	928606.182	2056+00	180.0 L
B-2	652099.452	928897.026	2056+50	110.0 R
B-4	652138.344	928611.956	2057+50	160.0 L
RB-2058R	652250.225	928884.578	2058+00	140.0 R
WB-2060L	652414.897	928601.003	2060+00	150.0 L
RB-2062CR	652640.936	928762.642	2062+00	10.0 R
RB-2066CL	653033.789	928691.554	2066+00	15.0 L
P-12	653554.932	928559.274	2071+35	100.0 L
B-5	653610.282	928802.389	2071+80	110.0 R
WB-2072L	653631.523	928599.473	2072+00	100.0 L
WB-2076L	654035.024	928601.819	2076+00	95.0 L
WB-2076R	654036.579	928788.510	2076+00	95.0 R
WB-2080L	654431.223	928599.290	2080+00	90.0 L
WB-2080R	654437.130	928784.310	2080+00	90.0 R
RB-2084L	654832.478	928591.479	2084+00	110.0 L
WB-2084R	654834.057	928781.775	2084+00	100.0 R
RB-2088CR	655234.050	928690.301	2088+00	5.0 R
RB-2092CR	655634.597	928685.447	2092+00	10.0 R
RB-2096L	656031.683	928593.994	2096+00	90.0 L
RB-2096CR	656034.799	928683.547	2096+00	10.0 R
P-13	656037.225	928494.215	2096+10	160.0 L
RB-2100L	656434.421	928590.767	2100+00	90.0 L
RB-2100CR	656434.178	928666.560	2100+00	5.0 R
RB-2104L	656832.060	928585.931	2104+00	95.0 L
RB-2104R	656835.669	928752.582	2104+00	90.0 R
GB-2108L	657221.644	928571.960	2108+00	110.0 L
GB-2108R	657224.254	928753.052	2108+00	110.0 R
P-14	657277.441	928771.086	2108+50	115.0 R

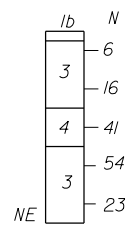
RB-1248R

NORTHING: 645845.429
 EASTING: 929066.601
 STATION: 1248+00
 OFFSET: 75.0 R
 ELEVATION: 15.3 FT
 DATE: 9/09/14



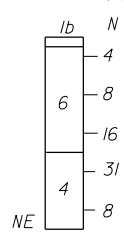
RB-1252R

NORTHING: 646249.269
 EASTING: 929065.334
 STATION: 1252+00
 OFFSET: 80.0 R
 ELEVATION: 15.0 FT
 DATE: 9/09/14



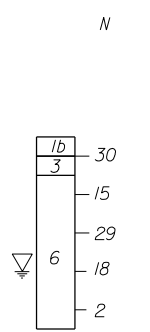
RB-2002R

NORTHING: 646651.596
 EASTING: 929054.888
 STATION: 2002+00
 OFFSET: 70.0 R
 ELEVATION: 14.7 FT
 DATE: 9/09/14



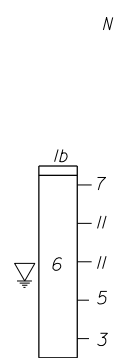
RB-2006R

NORTHING: 647061.997
 EASTING: 929113.306
 STATION: 2006+00
 OFFSET: 150.0 R
 ELEVATION: 9.5 FT
 DATE: 9/09/14



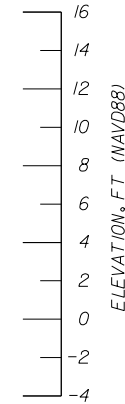
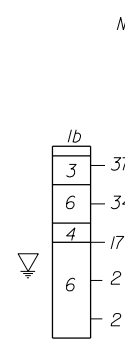
RB-2010R

NORTHING: 647453.929
 EASTING: 929068.796
 STATION: 2010+00
 OFFSET: 135.0 R
 ELEVATION: 8.0 FT
 DATE: 9/09/14



RB-2014R

NORTHING: 647850.418
 EASTING: 929054.777
 STATION: 2014+00
 OFFSET: 140.0 R
 ELEVATION: 9.0 FT
 DATE: 9/09/14



LEGEND:

- 1a. ASPHALT
- 1b. DARK ORGANIC SILTY FINE SAND (TOPSOIL), A-8
- 2. ORGANIC SILTY FINE SAND, A-8
- 3. LIMEROCK BASE OR SILTY FINE SAND WITH SOME LIMEROCK (FILL), A-1-b
- 4. SILTY FINE SAND WITH TRACES OF LIMEROCK (FILL) OR SILTY FINE SAND (FILL), A-2-4
- 5. SANDY SILT, A-4
- 6. FINE SAND WITH TRACES OF LIMEROCK/ LIMEROCK LENSES OR ORGANIC STAINED TO SLIGHTLY ORGANIC FINE SAND, A-3
- 7. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

▽ GROUND WATER LEVEL AT BORING COMPLETION

NE: NOT ENCOUNTERED

N: SPT VALUE FOR 12-INCH PENETRATION (AUTOMATIC HAMMER)

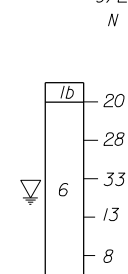
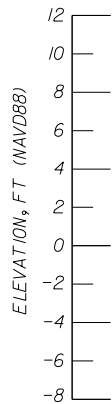
THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG

NOTE:

(1) STATIONS AND OFFSETS ARE REFERENCED TO SR 9 CONSTRUCTION BASELINE

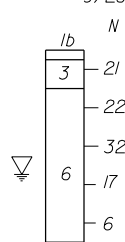
RB-2026CL

NORTHING: 649095.068
 EASTING: 928888.323
 STATION: 2026+50
 OFFSET: 35.0 L
 ELEVATION: 8.5 FT
 DATE: 9/26/14



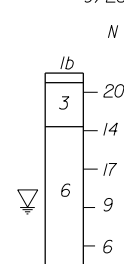
RB-2028CR

NORTHING: 649245.540
 EASTING: 928942.493
 STATION: 2028+00
 OFFSET: 25.0 R
 ELEVATION: 10.2 FT
 DATE: 9/26/14



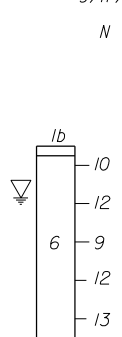
RB-2032CR

NORTHING: 649645.085
 EASTING: 928951.754
 STATION: 2032+00
 OFFSET: 30.0 R
 ELEVATION: 9.0 FT
 DATE: 9/26/14



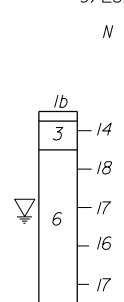
RB-2036L

NORTHING: 650044.064
 EASTING: 928815.320
 STATION: 2036+00
 OFFSET: 110.0 L
 ELEVATION: 5.2 FT
 DATE: 9/17/14



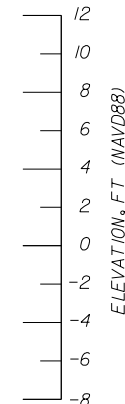
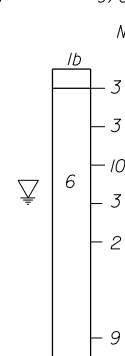
RB-2036CR

NORTHING: 650046.074
 EASTING: 928959.366
 STATION: 2036+00
 OFFSET: 25.0 R
 ELEVATION: 7.0 FT
 DATE: 9/26/14



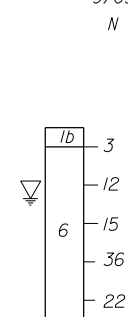
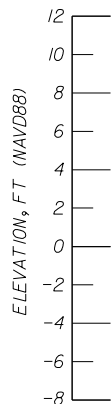
RB-2036R

NORTHING: 650046.389
 EASTING: 929122.455
 STATION: 2036+00
 OFFSET: 205.0 R
 ELEVATION: 9.2 FT
 DATE: 9/09/14



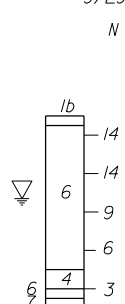
RB-2038R

NORTHING: 650243.788
 EASTING: 929068.361
 STATION: 2038+00
 OFFSET: 145.0 R
 ELEVATION: 6.2 FT
 DATE: 9/09/14



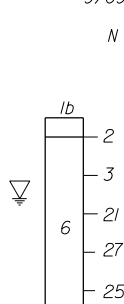
RB-2040CL

NORTHING: 650443.764
 EASTING: 928905.634
 STATION: 2040+00
 OFFSET: 5.0 L
 ELEVATION: 6.8 FT
 DATE: 9/29/14



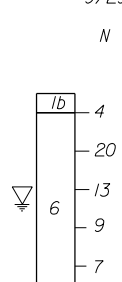
RB-2040R

NORTHING: 650450.008
 EASTING: 929086.404
 STATION: 2040+00
 OFFSET: 140.0 R
 ELEVATION: 6.7 FT
 DATE: 9/09/14



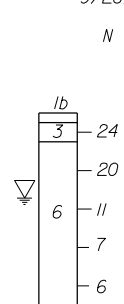
RB-2042CL

NORTHING: 650642.897
 EASTING: 928895.502
 STATION: 2042+00
 OFFSET: 20.0 L
 ELEVATION: 8.0 FT
 DATE: 9/29/14



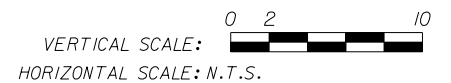
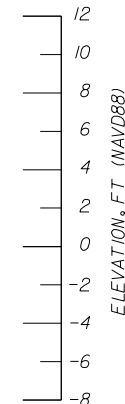
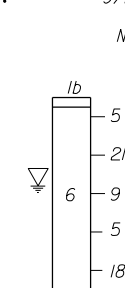
RB-2042CR

NORTHING: 650646.481
 EASTING: 928944.373
 STATION: 2042+00
 OFFSET: 20.0 R
 ELEVATION: 7.0 FT
 DATE: 9/26/14



RB-2046CL

NORTHING: 651040.683
 EASTING: 928856.865
 STATION: 2046+00
 OFFSET: 30.0 L
 ELEVATION: 7.8 FT
 DATE: 9/29/14



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

HR ENGINEERING SERVICES, INC.

Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

**STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION**

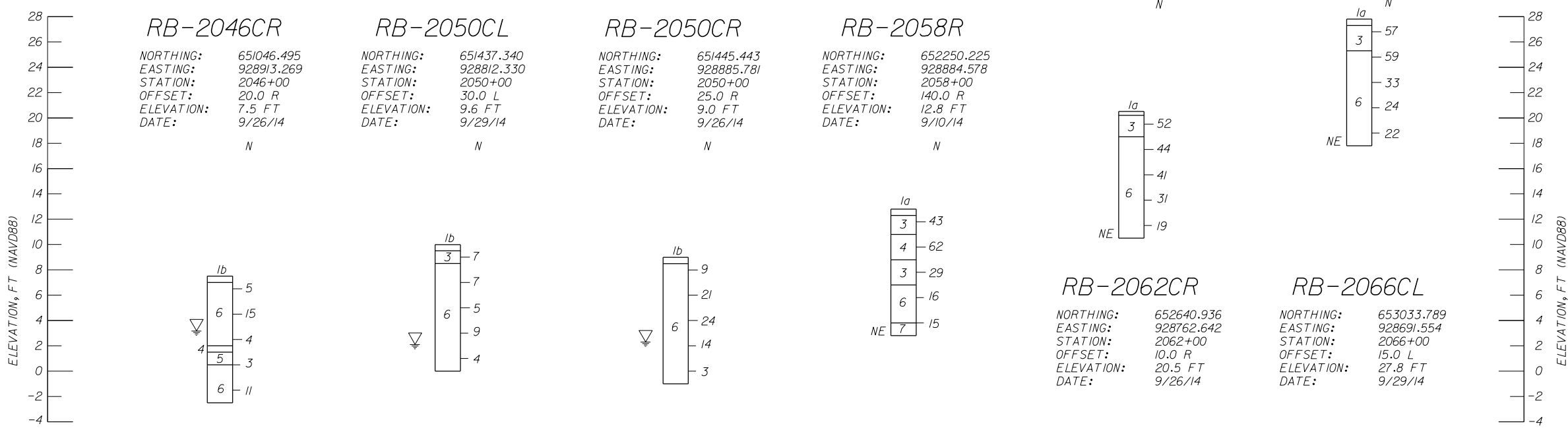
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SOIL PROFILES

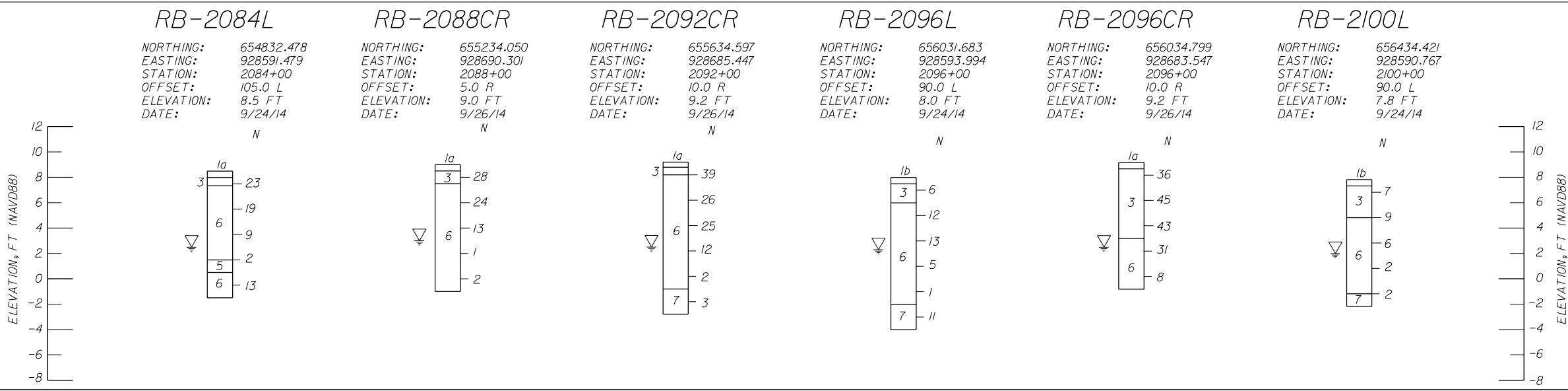
SHEET NO.

A-22

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.



- LEGEND:**
- 1a. ASPHALT
 - 1b. DARK ORGANIC SILTY FINE SAND (TOPSOIL), A-B
 - 2. ORGANIC SILTY FINE SAND, A-B
 - 3. LIMEROCK BASE OR SILTY FINE SAND WITH SOME LIMEROCK (FILL), A-I-b
 - 4. SILTY FINE SAND WITH TRACES OF LIMEROCK (FILL) OR SILTY FINE SAND (FILL), A-2-4
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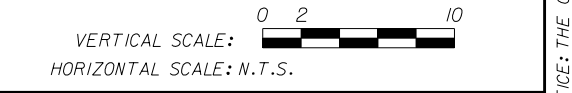
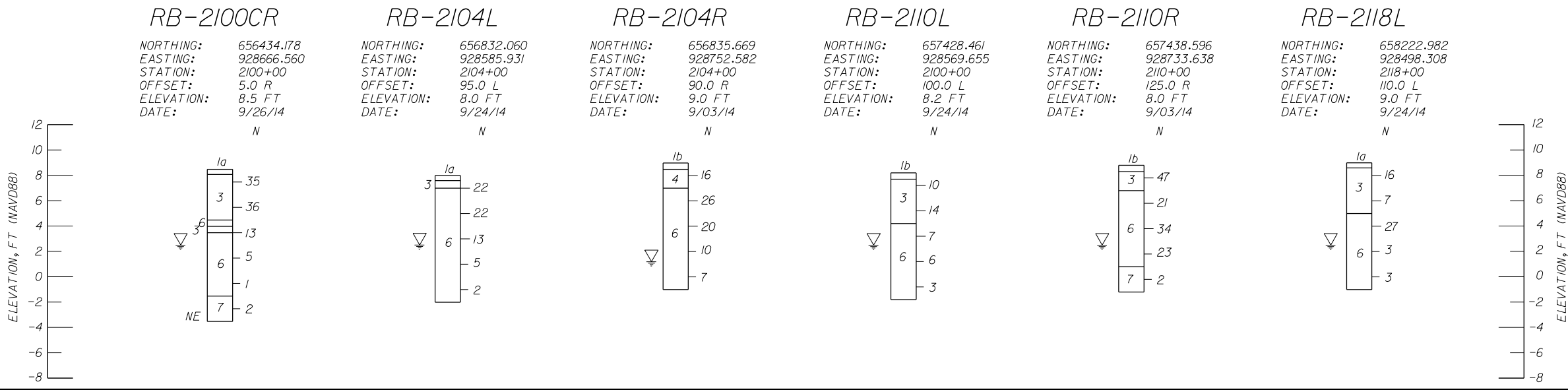
▽ GROUND WATER LEVEL AT BORING COMPLETION

NE: NOT ENCOUNTERED

N: SPT VALUE FOR 12-INCH PENETRATION (AUTOMATIC HAMMER)

THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG

NOTE:
 (1) STATIONS AND OFFSETS ARE REFERENCED TO SR 9 CONSTRUCTION BASELINE



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SOIL PROFILES

SHEET NO.
A-23

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

APPENDIX B

**SUMMARY OF LABORATORY TEST RESULTS
LABORATORY TESTING PROCEDURES
LABORATORY TEST RESULTS**

- SOIL TESTING**
- CORROSION TESTING**
- GRAIN SIZE – D₅₀ RESULTS**

**B-1 THRU B-6
B-7**

SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-1248R	A-1-b	3	0.5-2.0	95	83	69	55	39	33	23	17	-	6	31	52	17
RB-1248R	A-3	6	8.0-9.7	100	97	94	93	85	67	22	8	-	13	6	86	8
RB-1252R	A-1-b	3	2.0-4.0	78	68	59	54	47	41	20	8	-	3	41	51	8
RB-1252R	A-2-4	4	4.0-6.0	100	96	91	86	77	64	31	17	-	7	9	74	17
RB-1252R	A-1-b	3	7.5-8.0	100	76	64	48	33	28	21	15	-	4	36	49	15
RB-1252R	A-1-b	3	8.0-10.0	90	78	69	59	46	35	21	13	-	5	31	56	13
RB-2002R	A-3	6	0.5-2.0	87	86	83	80	71	48	12	4	-	4	17	79	4
RB-2002R	A-3	6	2.0-4.0	100	98	93	89	77	52	12	5	-	5	7	88	5
RB-2002R	A-3	6	4.0-6.0	100	99	97	94	84	58	17	8	-	7	3	89	8
RB-2002R	A-2-4	4	6.0-8.0	99	88	80	74	61	44	20	12	-	8	20	68	12
RB-2006R	A-1-b	3	1.0-2.0	100	57	55	49	36	31	22	15	-	1	45	40	15
RB-2006R	A-3	6	2.0-4.0	-	-	-	-	-	-	-	4	-	11	-	-	4
RB-2006R	A-3	6	8.0-10.0	-	-	-	-	-	-	-	3	2	23	-	-	3
RB-2010R	A-3	6	2.0-3.2	-	-	-	-	-	-	-	3	-	16	-	-	3
RB-2010R	A-3	6	3.2-4.0	-	-	-	-	-	-	-	9	-	21	-	-	9
RB-2014R	A-1-b	3	0.5-2.0	98	94	83	69	50	43	31	23	-	3	17	60	23
RB-2014R	A-3	6	2.0-3.0	100	85	79	75	63	44	19	10	-	5	21	69	10
RB-2014R	A-2-4	4	4.0-5.0	88	74	67	63	52	35	16	11	-	5	33	56	11

B-1

SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %			
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines	
RB-2014R	A-3	6	8.0-10.0	-	-	-	-	-	-	-	-	4	4	1	-	-	4
RB-2026CL	A-3	6	1.0-2.0	100	97	94	92	78	55	28	5	5	-	12	6	89	5
RB-2028CR	A-1-b	3	0.5-2.0	97	85	73	63	48	36	16	8	8	-	8	27	65	8
RB-2028CR	A-3	6	2.0-4.0	95	87	84	80	67	43	17	8	8	-	7	16	76	8
RB-2032CR	A-1-b	3	0.5-2.0	91	73	60	48	34	29	20	14	14	-	8	40	46	14
RB-2032CR	A-1-b	3	2.0-2.8	89	76	66	57	45	36	21	12	12	-	9	34	54	12
RB-2036CR	A-1-b	3	0.5-2.0	90	79	67	54	36	31	21	15	15	-	9	33	52	15
RB-2036CR	A-3	6	6.0-8.0	-	-	-	-	-	-	-	6	6	2	22	-	-	6
RB-2036L	A-3	6	2.0-4.0	100	100	100	100	98	82	28	4	4	-	26	0	96	4
RB-2036R	A-3	6	4.0-6.0	-	-	-	-	-	-	-	3	3	1	4	-	-	3
RB-2038R	A-3	6	1.0-2.0	-	-	-	-	-	-	-	8	8	2	1	-	-	8
RB-2040CL	A-3	6	0.5-2.0	92	87	79	75	59	39	17	10	10	-	7	21	69	10
RB-2040CL	A-3	6	2.0-4.0	93	91	90	89	73	37	13	4	4	-	6	10	86	4
RB-2040CL	A-2-4	4	8.0-9.0	-	-	-	-	-	-	-	15	15	-	26	-	-	15
RB-2040R	A-3	6	1.0-2.0	-	-	-	-	-	-	-	4	4	-	1	-	-	4
RB-2040R	A-3	6	2.0-3.0	-	-	-	-	-	-	-	4	4	-	3	-	-	4
RB-2042CL	A-3	6	2.0-4.0	100	97	95	94	84	50	18	5	5	-	6	5	90	5
RB-2042CR	A-1-b	3	0.5-1.5	77	70	61	53	37	26	18	13	13	-	6	39	48	13

B-2

SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-2046CL	A-3	6	4.0-6.0	100	100	99	99	96	81	37	7	-	25	1	92	7
RB-2046CR	A-2-4	4	5.5-6.0	-	-	-	-	-	-	-	29	-	37	-	-	29
RB-2046CR	A-4	5	6.0-7.0	-	-	-	-	-	-	-	57	-	48	-	-	57
RB-2050CL	A-1-b	3	0.5-1.5	95	86	73	59	44	35	22	15	-	5	27	58	15
RB-2050CR	A-3	6	0.5-2.0	94	87	78	72	60	41	17	10	-	8	22	68	10
RB-2058R	A-1-b	3	0.5-2.0	76	74	65	57	45	33	18	10	-	5	35	55	10
RB-2058R	A-2-4	4	2.0-4.0	100	96	88	79	65	53	36	23	-	3	12	65	23
RB-2058R	A-1-b	3	4.0-6.0	85	77	68	58	45	36	20	9	-	4	32	59	9
RB-2062CR	A-1-b	3	0.3-2.0	89	79	69	57	40	34	26	19	-	10	31	50	19
RB-2066CL	A-1-b	3	0.5-2.0	100	90	76	61	43	37	28	20	-	25	24	56	20
RB-2084L	A-3	6	1.5-2.0	100	99	98	97	91	72	25	6	-	9	2	92	6
RB-2088CR	A-3	6	2.0-4.0	100	95	94	93	85	60	20	6	-	4	6	88	6
RB-2088CR	A-3	6	8.0-10.0	-	-	-	-	-	-	-	5	1	31	-	-	5
RB-2092CR	A-3	6	4.0-6.0	-	-	-	-	-	-	-	8	2	8	-	-	8
RB-2092CR	A-3	6	8.0-10.0	-	-	-	-	-	-	-	6	2	18	-	-	6
RB-2096CR	A-1-b	3	0.5-2.0	-	-	-	-	-	-	-	9	2	11	-	-	9
RB-2096L	A-3	6	2.0-4.0	-	-	-	-	-	-	-	3	2	7	-	-	3
RB-2096L	A-3	6	8.0-10.0	-	-	-	-	-	-	-	3	2	21	-	-	3

B-3

HR ENGINEERING SERVICES, INC.
 7815 N.W. 72nd Avenue - Medley, Florida 33166
 Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-1248R		Sample No.: 1B				
Date: 10/16/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	26.70	26.70	5	95	
3/8"	9.51	59.90	86.60	17	83	
4	4.76	67.30	153.90	31	69	AASHTO Classification:
10	2.00	64.90	218.80	45	55	
40	0.420	79.70	298.50	61	39	A-1-b
60	0.250	29.10	327.60	67	33	
100	0.149	48.50	376.10	77	23	
200	0.074	31.70	407.80	83	17	
PAN						

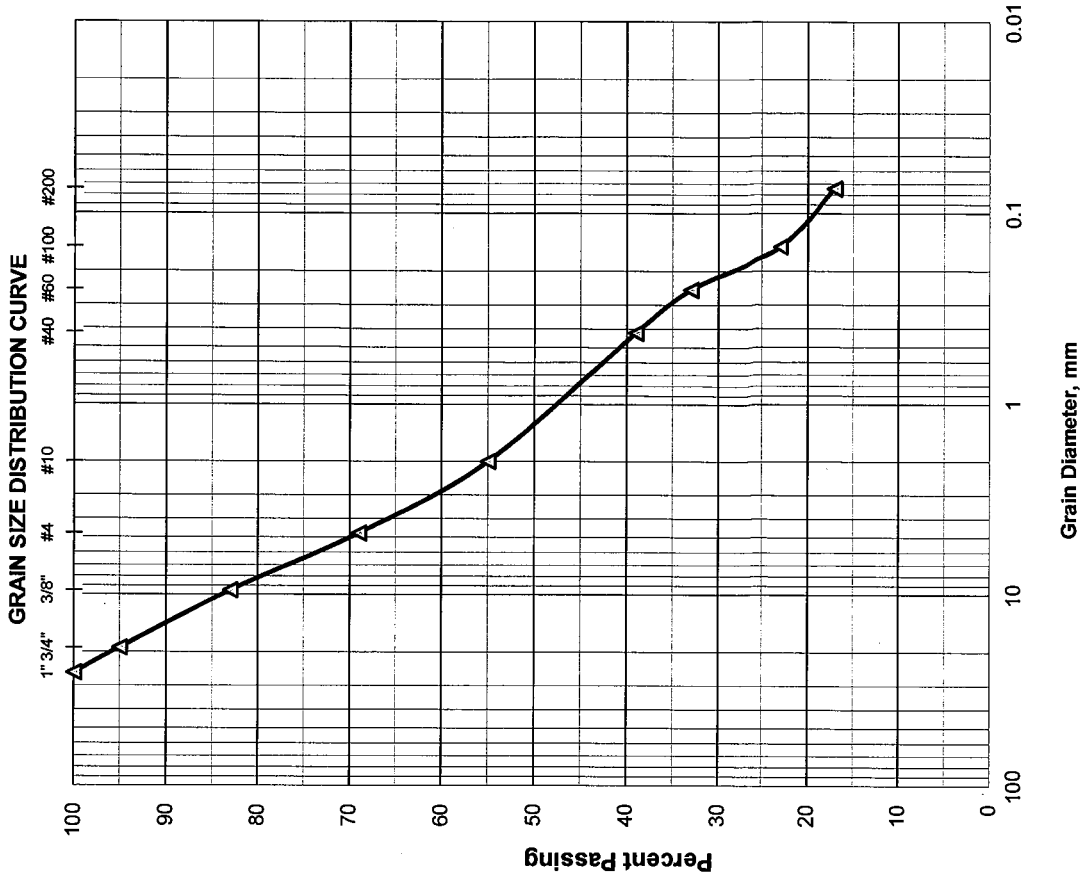
Total Dry Weight Before Wash, (gr) = **486.00**
 Percent Finer than No. 200 Sieve by Wash Method = **17%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	31
Coarse Sand	>No. 4-≤ No. 40	30
Fine Sand	>No. 40-≤ No. 200	22
Silt and Clays	>No. 200	17
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-991R				
Boring No.: RB-1248R		Sample No.: 5A				
Date: 10/16/2014		Depth: 8.0'-9.7'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	13.60	13.60	3	97	
4	4.76	8.60	22.20	6	94	AASHTO Classification:
10	2.00	5.10	27.30	7	93	
40	0.420	27.90	55.20	15	85	A-3
60	0.250	67.90	123.10	33	67	
100	0.149	164.50	287.60	78	22	
200	0.074	50.60	338.20	92	8	
PAN						

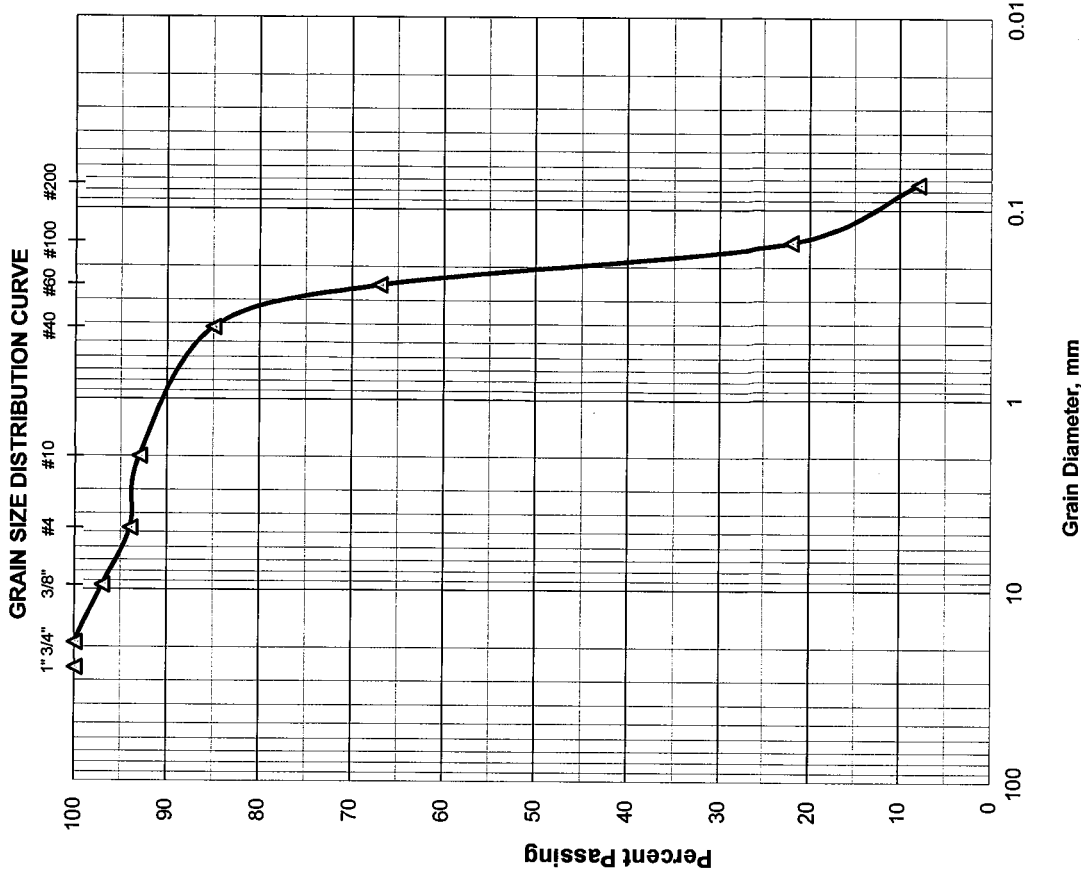
Total Dry Weight Before Wash, (gr) = **365.10**
 Percent Finer than No. 200 Sieve by Wash Method = **8%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	6
Coarse Sand	>No. 4 ≤ No. 40	9
Fine Sand	>No. 40 ≤ No. 200	77
Silt and Clays	>No. 200	8
Water Content		13%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-1252R		Depth: 2.0'-4.0'	
Date: 10/16/2014		Tested By: H.C.	
Sample No.: 2			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	104.50	104.50	22	78	
3/8"	9.51	45.10	149.60	32	68	
4	4.76	40.50	190.10	41	59	
10	2.00	23.50	213.60	46	54	
40	0.420	31.90	245.50	53	47	
60	0.250	27.20	272.70	59	41	
100	0.149	99.10	371.80	80	20	
200	0.074	54.00	425.80	92	8	
PAN						

AASHTO Classification: **A-1-b**

Total Dry Weight Before Wash, (gr) =	460.70
Percent Finer than No. 200 Sieve by Wash Method=	8%

Total Dry Weight Before Wash, (gr) = **460.70**
 Percent Finer than No. 200 Sieve by Wash Method= **8%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

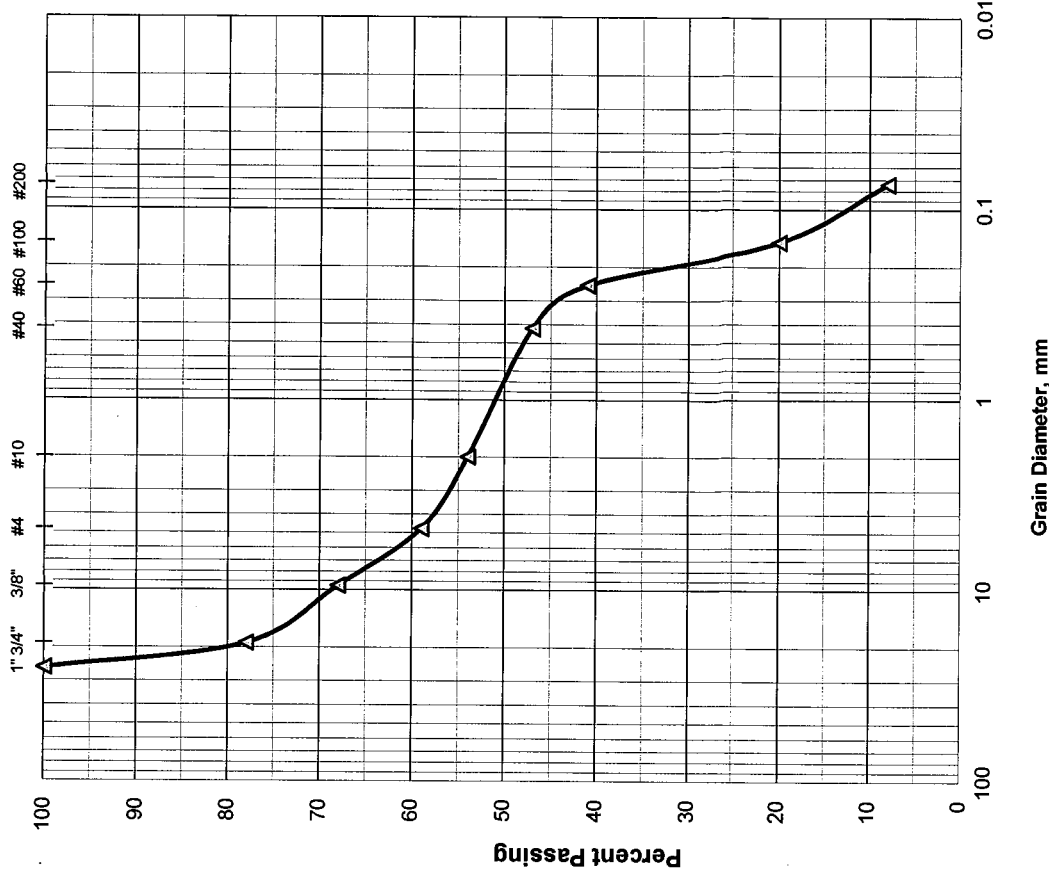
Material in Sample (%)	
Gravel	≤ No. 4 41
Coarse Sand	>No. 4-≤ No. 40 12
Fine Sand	>No. 40-≤ No. 200 39
Silt and Clays	>No. 200 8
Water Content	
	3%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045

GRAIN SIZE DISTRIBUTION CURVE



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-1252R		Depth: 4.0'-6.0'	
Date: 10/16/2014		Tested By: H.C.	
Sample No.: 3			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	19.20	19.20	4	96	
4	4.76	23.30	42.50	9	91	AASHTO Classification:
10	2.00	21.20	63.70	14	86	A-2-4
40	0.420	38.70	102.40	23	77	
60	0.250	56.60	159.00	36	64	
100	0.149	141.10	300.10	69	31	
200	0.074	59.00	359.10	83	17	
PAN						

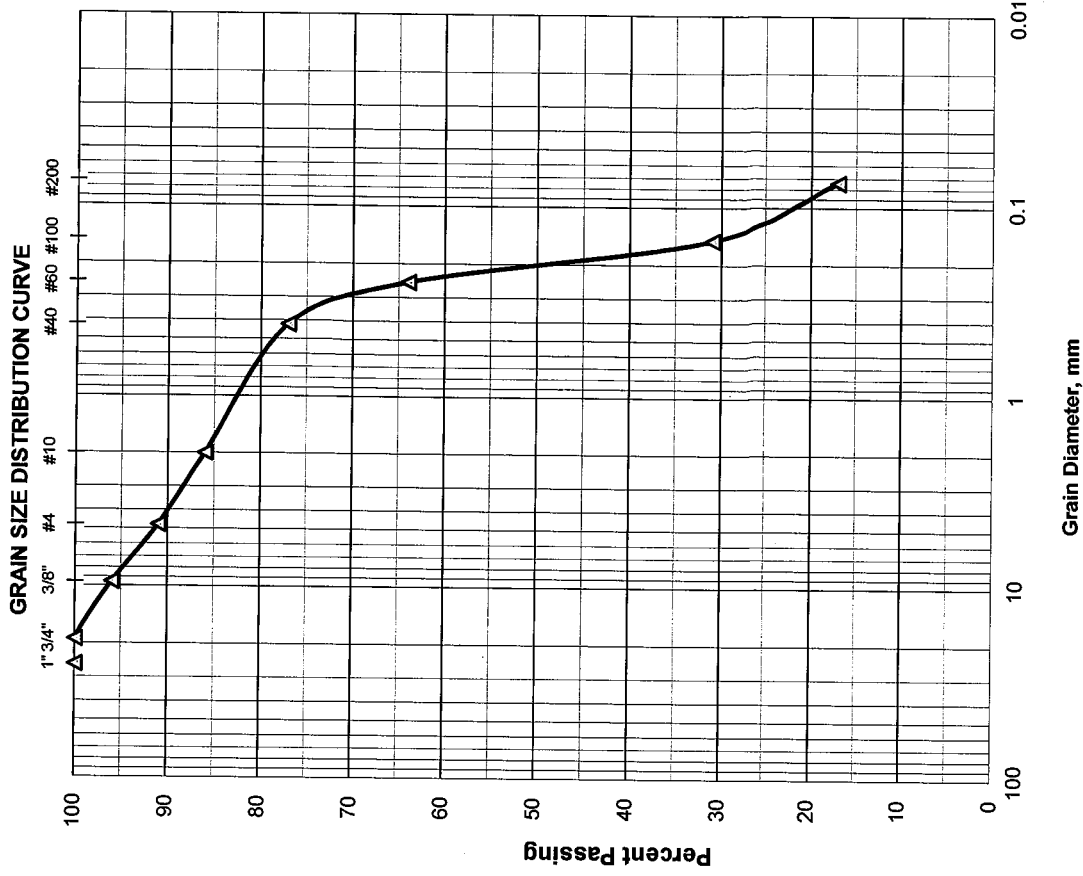
Total Dry Weight Before Wash, (gr) =	432.00
Percent Finer than No. 200 Sieve by Wash Method=	17%

Sieve Analysis Test performed in general accordance with ASTM C-136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	9
Coarse Sand	>No. 4 ≤ No. 40	14
Fine Sand	>No. 40 ≤ No. 200	60
Silt and Clays	>No. 200	17
Water Content		7%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-1252R		Sample No.: 4C				
Date: 10/16/2014		Depth: 7.5'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	26.50	26.50	24	76	
4	4.76	13.80	40.30	36	64	AASHTO Classification:
10	2.00	16.90	57.20	52	48	
40	0.420	17.30	74.50	67	33	A-1-b
60	0.250	4.90	79.40	72	28	
100	0.149	7.50	86.90	79	21	
200	0.074	7.60	94.50	85	15	
PAN						

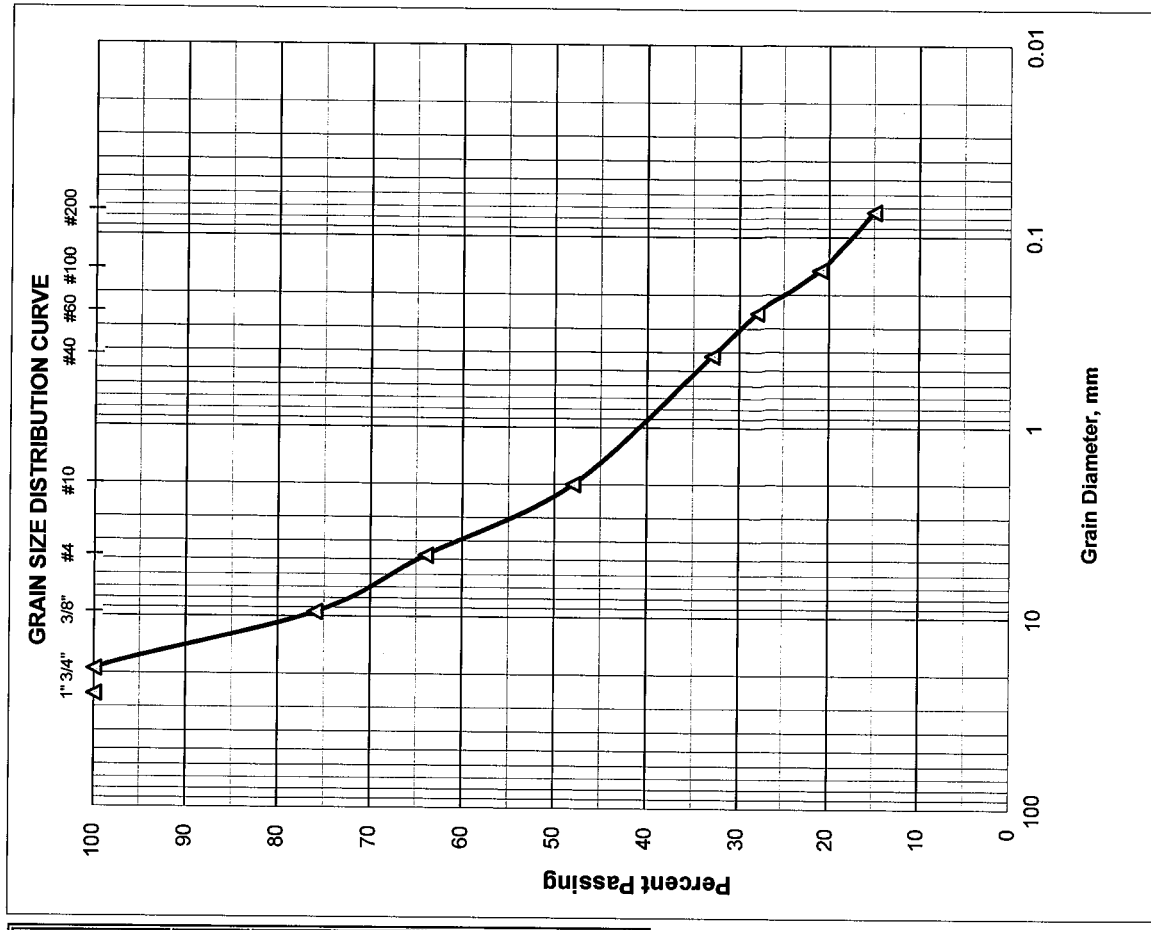
Total Dry Weight Before Wash, (gr) =	109.90
Percent Finer than No. 200 Sieve by Wash Method=	15%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 36
Coarse Sand	>No. 4 ≤ No. 40 31
Fine Sand	>No. 40 ≤ No. 200 18
Silt and Clays	>No. 200 15
Water Content	4%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-1252R		Depth: 8.0'-10.0'	
Date: 10/16/2014		Sample No.: 5	
		Tested By: H.C.	

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	12.10	12.10	10	90	
3/8"	9.51	14.80	26.90	22	78	
4	4.76	10.20	37.10	31	69	AASHTO Classification:
10	2.00	11.40	48.50	41	59	
40	0.420	16.00	64.50	54	46	A-1-b
60	0.250	12.30	76.80	65	35	
100	0.149	16.60	93.40	79	21	
200	0.074	8.90	102.30	87	13	
PAN						

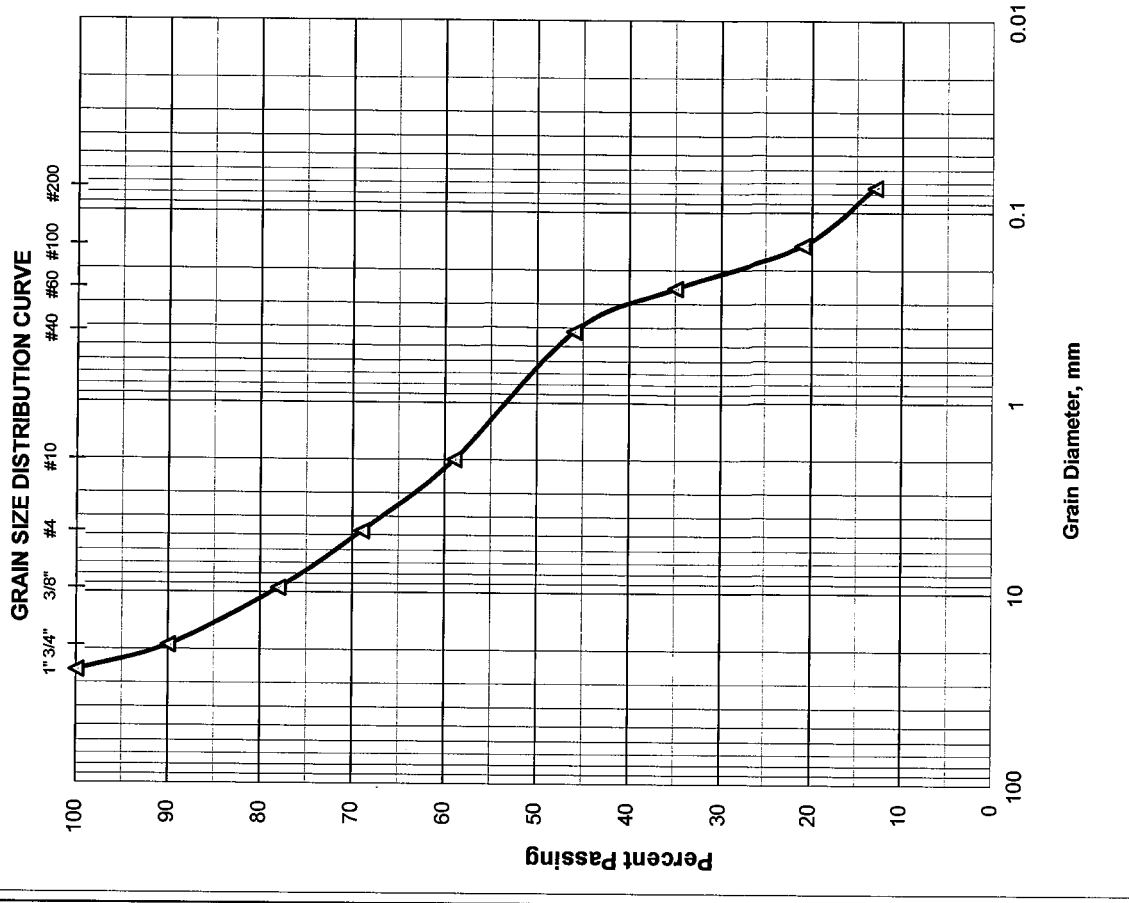
Total Dry Weight Before Wash, (gr) =	117.40
Percent Finer than No. 200 Sieve by Wash Method =	13%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel \leq No. 4	31
Coarse Sand $>$ No. 4- \leq No. 40	23
Fine Sand $>$ No. 40- \leq No. 200	33
Silt and Clays $>$ No. 200	13
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2002R		Depth: 0.5'-2.0'				
Date: 10/16/2014		Sample No.: 1B				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	52.00	52.00	13	87	
3/8"	9.51	6.70	58.70	14	86	
4	4.76	11.70	70.40	17	83	AASHTO Classification:
10	2.00	10.30	80.70	20	80	A-3
40	0.420	37.80	118.50	29	71	
60	0.250	88.30	206.80	52	48	
100	0.149	144.40	351.20	88	12	
200	0.074	32.90	384.10	96	4	
PAN						

Total Dry Weight Before Wash, (gr) =	397.50
Percent Finer than No. 200 Sieve by Wash Method =	4%

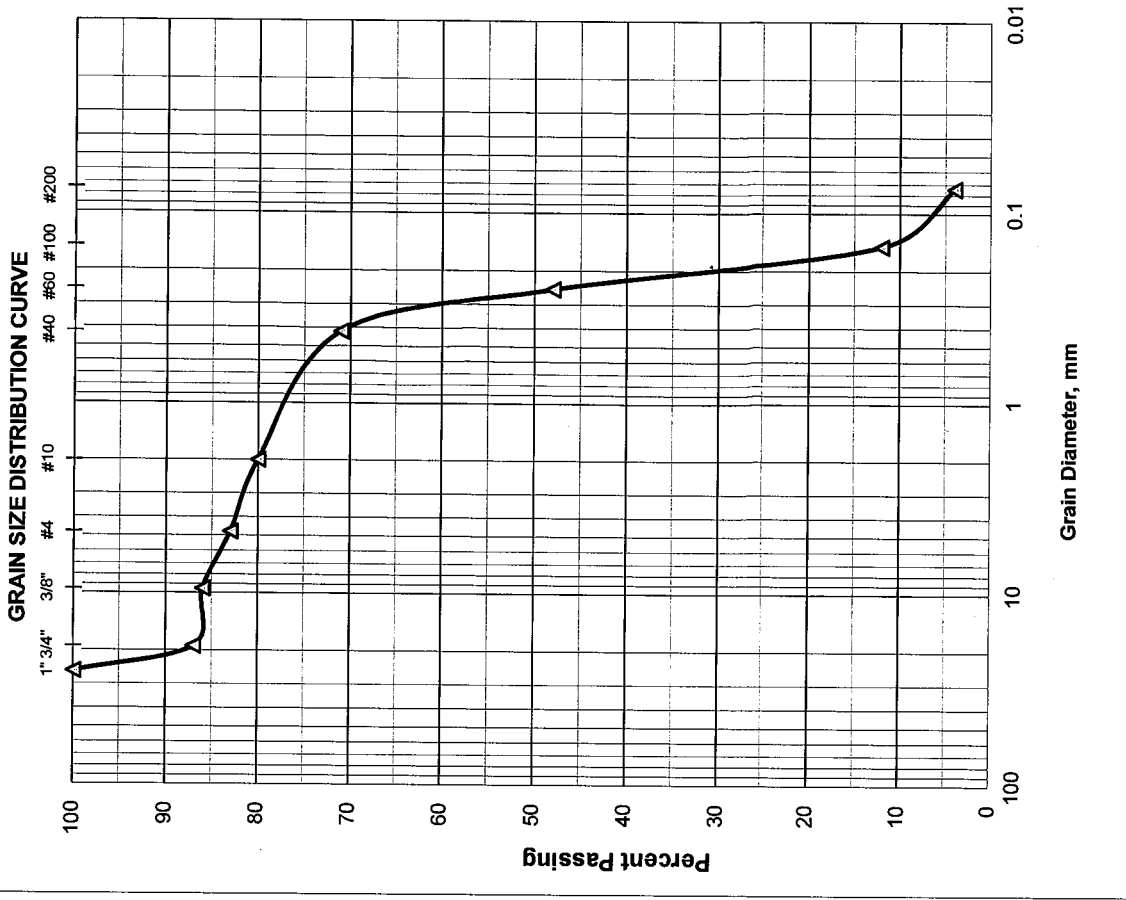
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	17
Coarse Sand	>No. 4 ≤ No. 40	12
Fine Sand	>No. 40 ≤ No. 200	67
Silt and Clays	>No. 200	4
Water Content		4%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2002R		Depth: 2.0'-4.0'	
Date: 10/16/2014		Tested By: H.C.	
Sample No.: 2			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	8.50	8.50	2	98	
4	4.76	18.70	27.20	7	93	
10	2.00	11.90	39.10	11	89	
40	0.420	41.50	80.60	23	77	
60	0.250	89.20	169.80	48	52	
100	0.149	136.80	306.60	88	12	
200	0.074	25.50	332.10	95	5	
PAN						

AAASHTO Classification: **A-3**

Total Dry Weight Before Wash, (gr) =	347.80
Percent Finer than No. 200 Sieve by Wash Method =	5%

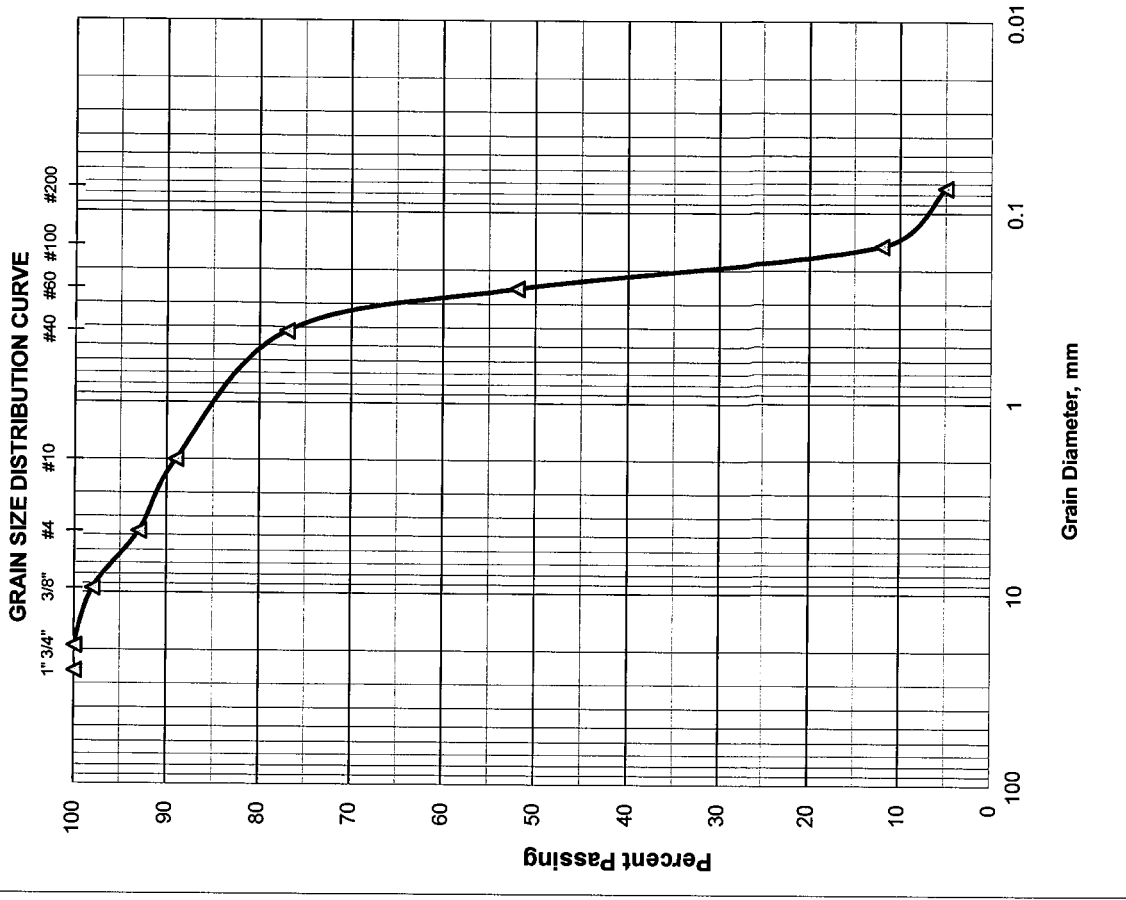
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	7
Coarse Sand	>No. 4-≤ No. 40	16
Fine Sand	>No. 40-≤ No. 200	72
Silt and Clays	>No. 200	5
Water Content		5%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2002R		Depth: 4.0'-6.0'				
Sample No.: 3		Tested By: H.C.				
Date: 10/16/2014						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	6.30	6.30	1	99	
4	4.76	11.20	17.50	3	97	
10	2.00	9.70	27.20	6	94	
40	0.420	45.40	72.60	16	84	
60	0.250	115.30	187.90	42	58	
100	0.149	177.30	365.20	83	17	
200	0.074	41.30	406.50	92	8	
PAN						

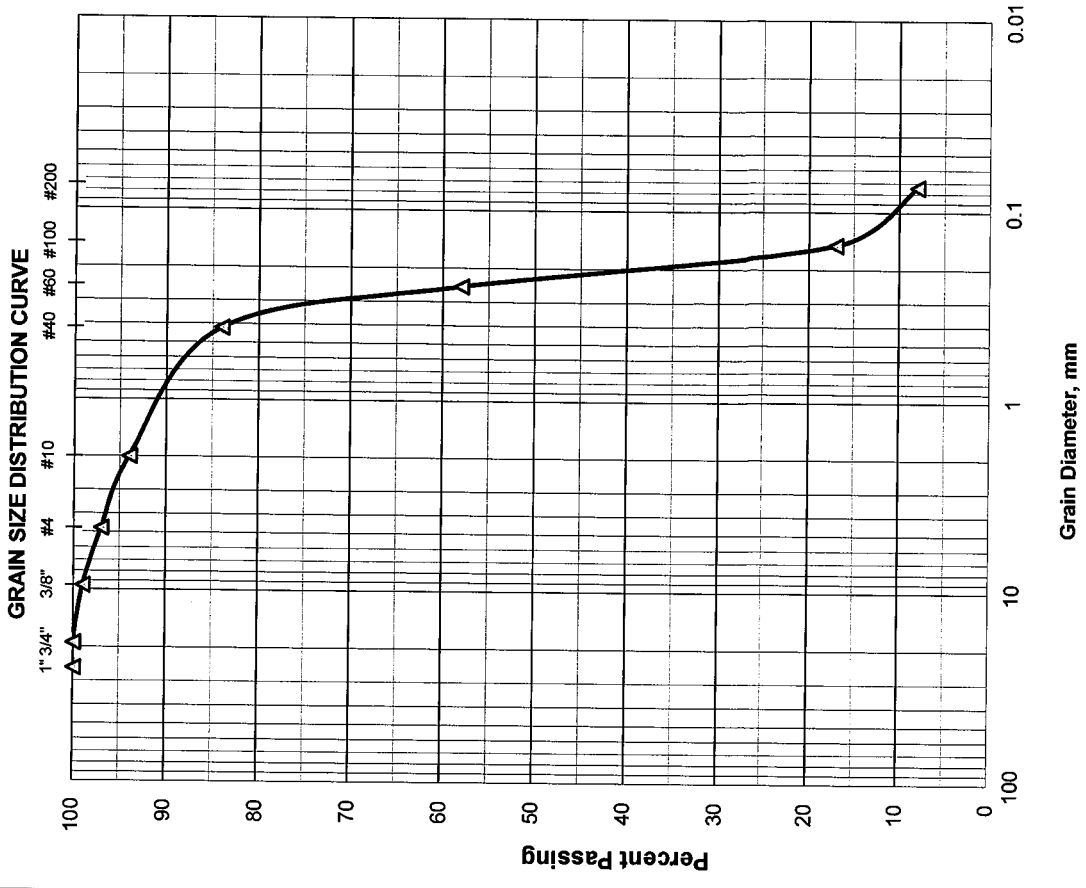
Total Dry Weight Before Wash, (gr) = **437.80**
 Percent Finer than No. 200 Sieve by Wash Method = **8%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	3
Coarse Sand	>No. 4-≤ No. 40	13
Fine Sand	>No. 40-≤ No. 200	76
Silt and Clays	>No. 200	8
Water Content		7%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2002R		Depth: 6.0'-8.0'	
Date: 10/16/2014		Sample No.: 4	
		Tested By: H.C.	

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-2-4
3/4"	19.00	9.80	9.80	1	99	
3/8"	9.51	52.90	62.70	12	88	
4	4.76	41.80	104.50	20	80	
10	2.00	34.60	139.10	26	74	
40	0.420	66.50	205.60	39	61	
60	0.250	86.80	292.40	56	44	
100	0.149	121.10	413.50	80	20	
200	0.074	42.20	455.70	88	12	
PAN						

Total Dry Weight Before Wash, (gr) =	516.00
Percent Finer than No. 200 Sieve by Wash Method =	12%

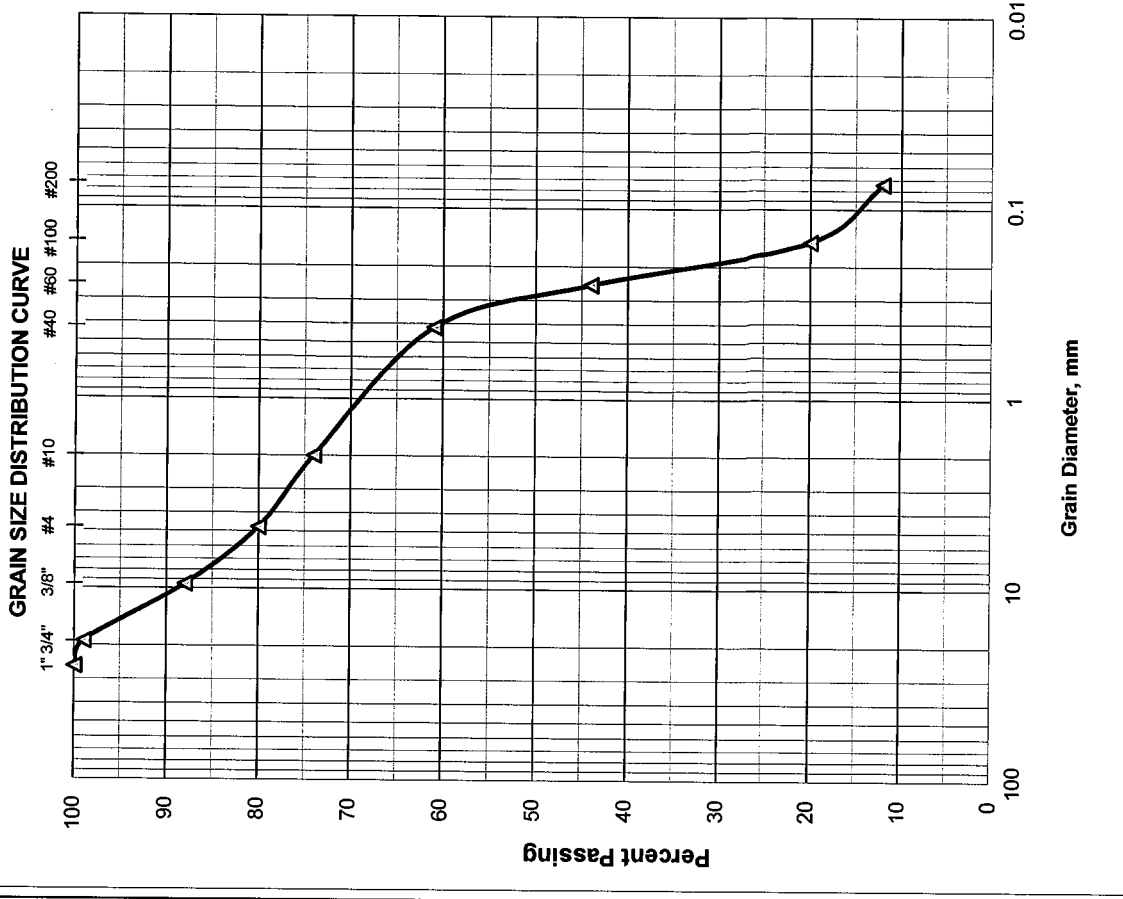
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	20
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	49
Silt and Clays	>No. 200	12
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2006R		Depth: 1.0'-2.0'	
Date: 10/16/2014		Sample No.: 1B	
		Tested By: H.C.	

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	21.10	21.10	43	57	
4	4.76	1.10	22.20	45	55	
10	2.00	2.90	25.10	51	49	
40	0.420	6.10	31.20	64	36	
60	0.250	2.50	33.70	69	31	
100	0.149	4.10	37.80	78	22	
200	0.074	3.30	41.10	85	15	
PAN						

Total Dry Weight Before Wash, (gr) =	48.30
Percent Finer than No. 200 Sieve by Wash Method =	15%

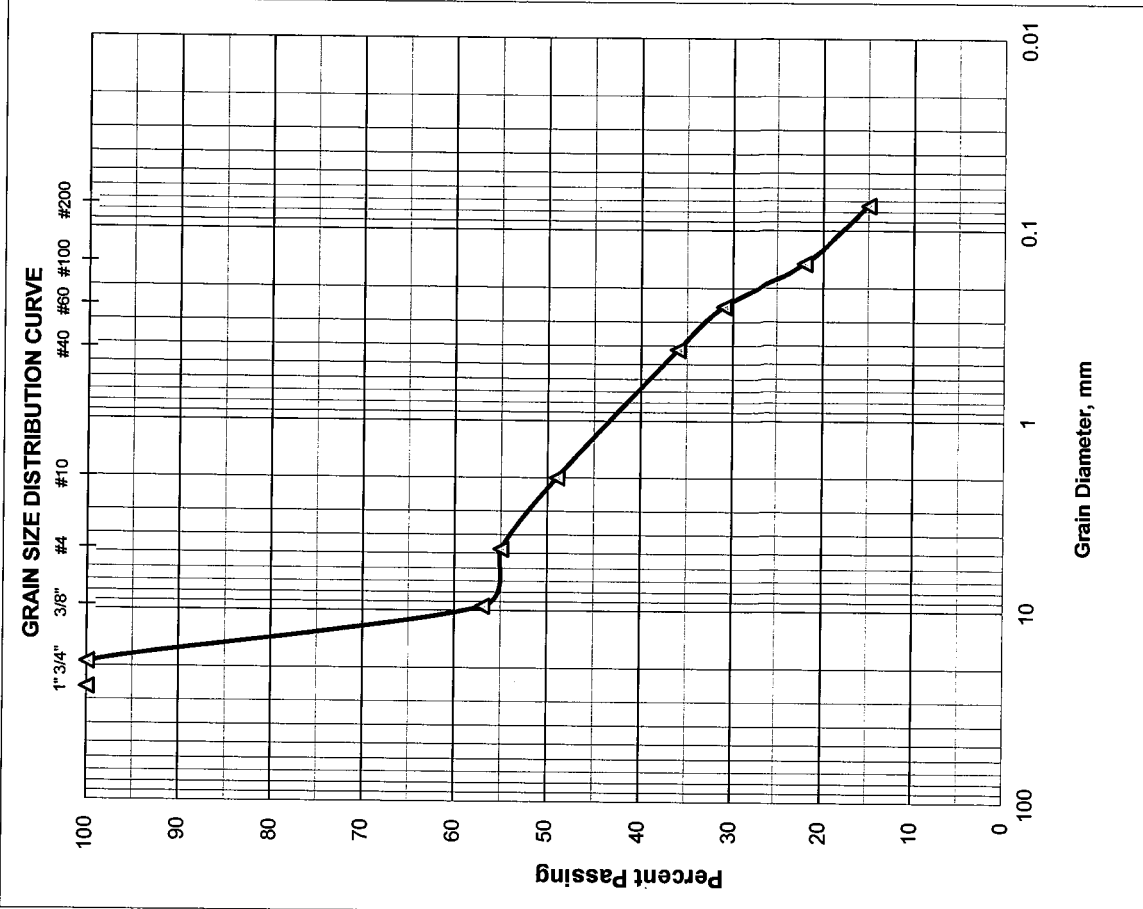
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	45
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	21
Silt and Clays	>No. 200	15
Water Content		1%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2006R Sample No.: 2 Depth: 2.0'-4.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	446.50
Wt. of Dry Soil + Can, grams	401.60
Wt. of Can, grams No. 711	9.00
Wt. of Dry Soil, grams	392.60
Wt. of Moisture, grams	44.90
Water Content, w%	11%
Wt. of Dry Soil + Can Before Wash, grams	401.60
Wt. of Can, grams No. 711	9.00
Wt. of Dry Soil Before Wash, grams	392.60
Time in / Out of Oven :	10/15/14 7:00 AM TO 10/16/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	385.70
Wt. of Dry Soil After Wash, grams	376.70
Total Loss, grams	15.90
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,

AASHTO Classification:

HR Engineering Services, Inc.

A-3



Hernando R. Ramos, P.E.

Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2006R Sample No.: 5 Depth: 8.0'-10.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	524.30
Wt. of Dry Soil + Can, grams	428.50
Wt. of Can, grams No. 712	8.10
Wt. of Dry Soil, grams	420.40
Wt. of Moisture, grams	95.80
Water Content, w%	23%
Date Sample Placed in Furnace:	10/15/14
Time in / out of furnace (minimum 6 hrs):	10/15/14 5:00 AM TO 10/15/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	29.90
Weight of Crucible and Sample After Ignition:	29.60
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	14.30
Weight Loss due to Ignition:	0.30
Percent Organics:	2%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2006R Sample No.: 5 Depth: 8.0'-10.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	524.30
Wt. of Dry Soil + Can, grams	428.50
Wt. of Can, grams No. 712	8.10
Wt. of Dry Soil, grams	420.40
Wt. of Moisture, grams	95.80
Water Content, w%	23%
Wt. of Dry Soil + Can Before Wash, grams	412.20
Wt. of Can, grams No. 712	8.10
Wt. of Dry Soil Before Wash, grams	404.10
Time in / Out of Oven :	10/15/14 7:00 AM TO 10/16/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	398.90
Wt. of Dry Soil After Wash, grams	390.80
Total Loss, grams	13.30
Percent Finer Than No. 200 Sieve	3%

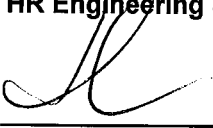
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2010R Sample No.: 2A Depth: 2.0'-3.2'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	394.80
Wt. of Dry Soil + Can, grams	340.30
Wt. of Can, grams No. 713	8.90
Wt. of Dry Soil, grams	331.40
Wt. of Moisture, grams	54.50
Water Content, w%	16%
Wt. of Dry Soil + Can Before Wash, grams	340.30
Wt. of Can, grams No. 713	8.90
Wt. of Dry Soil Before Wash, grams	331.40
Time in / Out of Oven :	10/15/14 9:00 AM TO 10/16/14 9:00 AM
Wt. of Dry Soil + Can After Wash, grams	328.80
Wt. of Dry Soil After Wash, grams	319.90
Total Loss, grams	11.50
Percent Finer Than No. 200 Sieve	3%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2010R Sample No.: 2B Depth: 3.2'-4.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 1:00 PM TO 10/14/14 1:00 PM
Wt. of Wet Soil + Can, grams	221.50
Wt. of Dry Soil + Can, grams	184.50
Wt. of Can, grams No. 714	9.00
Wt. of Dry Soil, grams	175.50
Wt. of Moisture, grams	37.00
Water Content, w%	21%
Wt. of Dry Soil + Can Before Wash, grams	184.50
Wt. of Can, grams No. 714	9.00
Wt. of Dry Soil Before Wash, grams	175.50
Time in / Out of Oven :	10/15/14 9:00 AM TO 10/16/14 9:00 AM
Wt. of Dry Soil + Can After Wash, grams	168.30
Wt. of Dry Soil After Wash, grams	159.30
Total Loss, grams	16.20
Percent Finer Than No. 200 Sieve	9%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2014R		Sample No.: 1B				
Date: 10/16/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	12.10	12.10	2	98	
3/8"	9.51	12.40	24.50	6	94	
4	4.76	45.30	69.80	17	83	AASHTO Classification:
10	2.00	57.80	127.60	31	69	
40	0.420	79.40	207.00	50	50	A-1-b
60	0.250	27.80	234.80	57	43	
100	0.149	47.30	282.10	69	31	
200	0.074	34.70	316.80	77	23	
PAN						

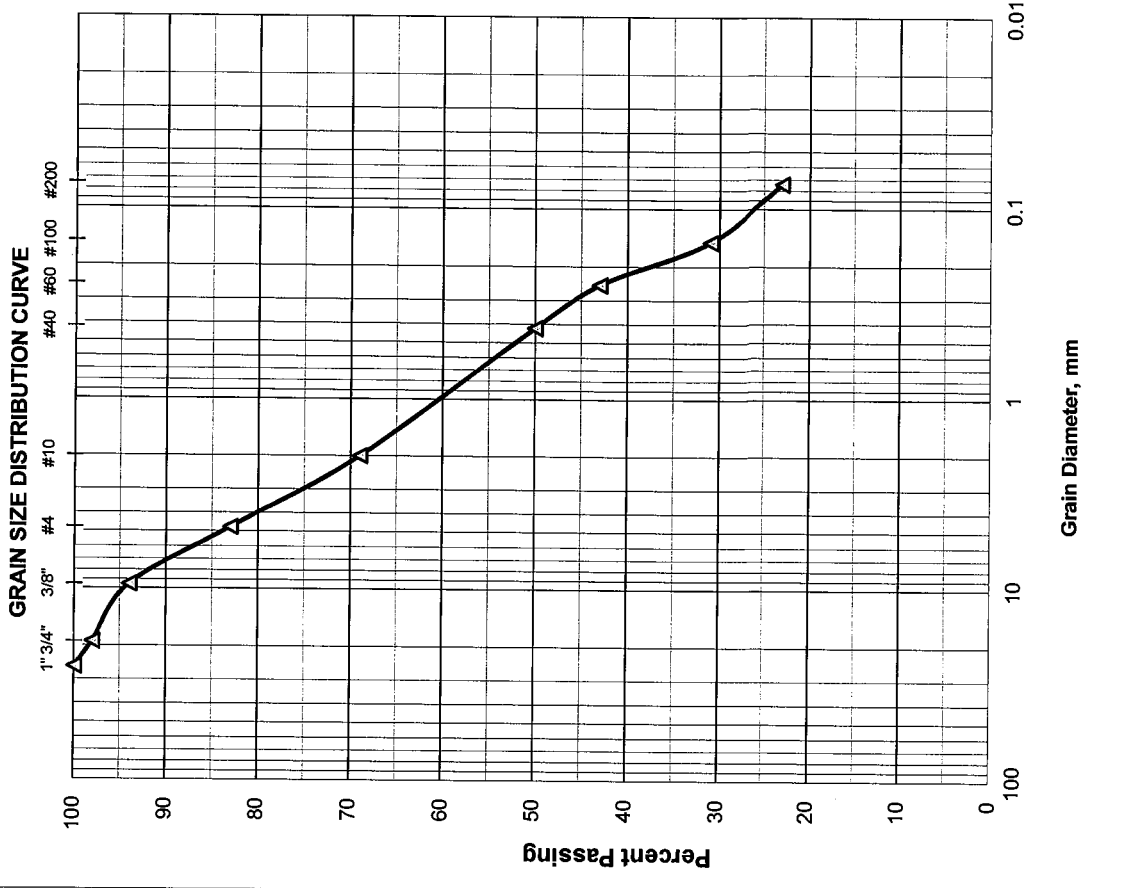
Total Dry Weight Before Wash, (gr) = **406.60**
 Percent Finer than No. 200 Sieve by Wash Method = **23%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	17
Coarse Sand	>No. 4-≤ No. 40	33
Fine Sand	>No. 40-≤ No. 200	27
Silt and Clays	>No. 200	23
Water Content		3%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2014R		Depth: 2.0'-3.0'	
Date: 10/16/2014		Sample No.: 2A	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	50.60	50.60	15	85	
4	4.76	18.50	69.10	21	79	
10	2.00	12.10	81.20	25	75	
40	0.420	40.30	121.50	37	63	
60	0.250	58.90	180.40	56	44	
100	0.149	81.90	262.30	81	19	
200	0.074	28.10	290.40	90	10	
PAN						

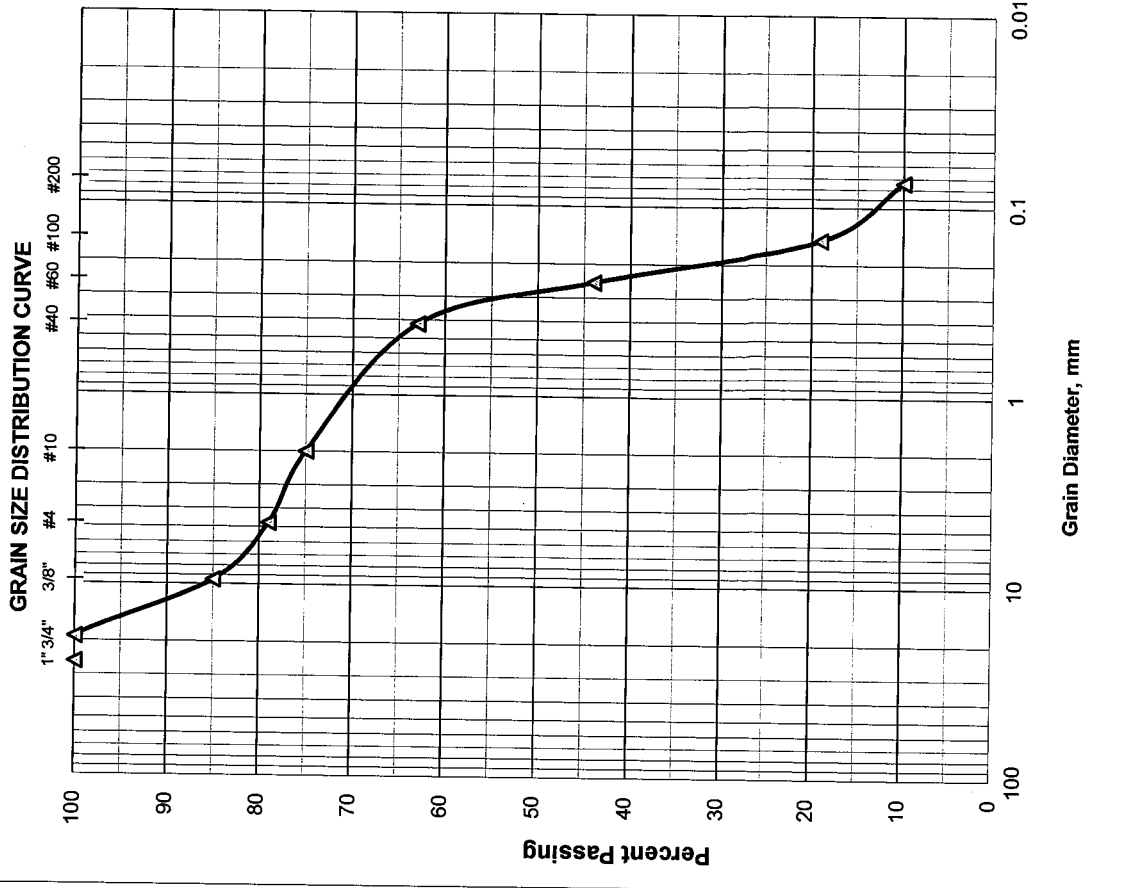
Total Dry Weight Before Wash, (gr) =	320.90
Percent Finer than No. 200 Sieve by Wash Method=	10%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 21
Coarse Sand	>No. 4-≤ No. 40 16
Fine Sand	>No. 40-≤ No. 200 53
Silt and Clays	>No. 200 10
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2014R		Depth: 4.0'-5.0'	
Date: 10/16/2014		Sample No.: 3A	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-2-4
3/4"	19.00	32.50	32.50	12	88	
3/8"	9.51	34.20	66.70	26	74	
4	4.76	18.60	85.30	33	67	
10	2.00	11.00	96.30	37	63	
40	0.420	28.90	125.20	48	52	
60	0.250	42.10	167.30	65	35	
100	0.149	48.20	215.50	84	16	
200	0.074	13.70	229.20	89	11	
PAN						

Total Dry Weight Before Wash, (gr) =	256.20
Percent Finer than No. 200 Sieve by Wash Method =	11%

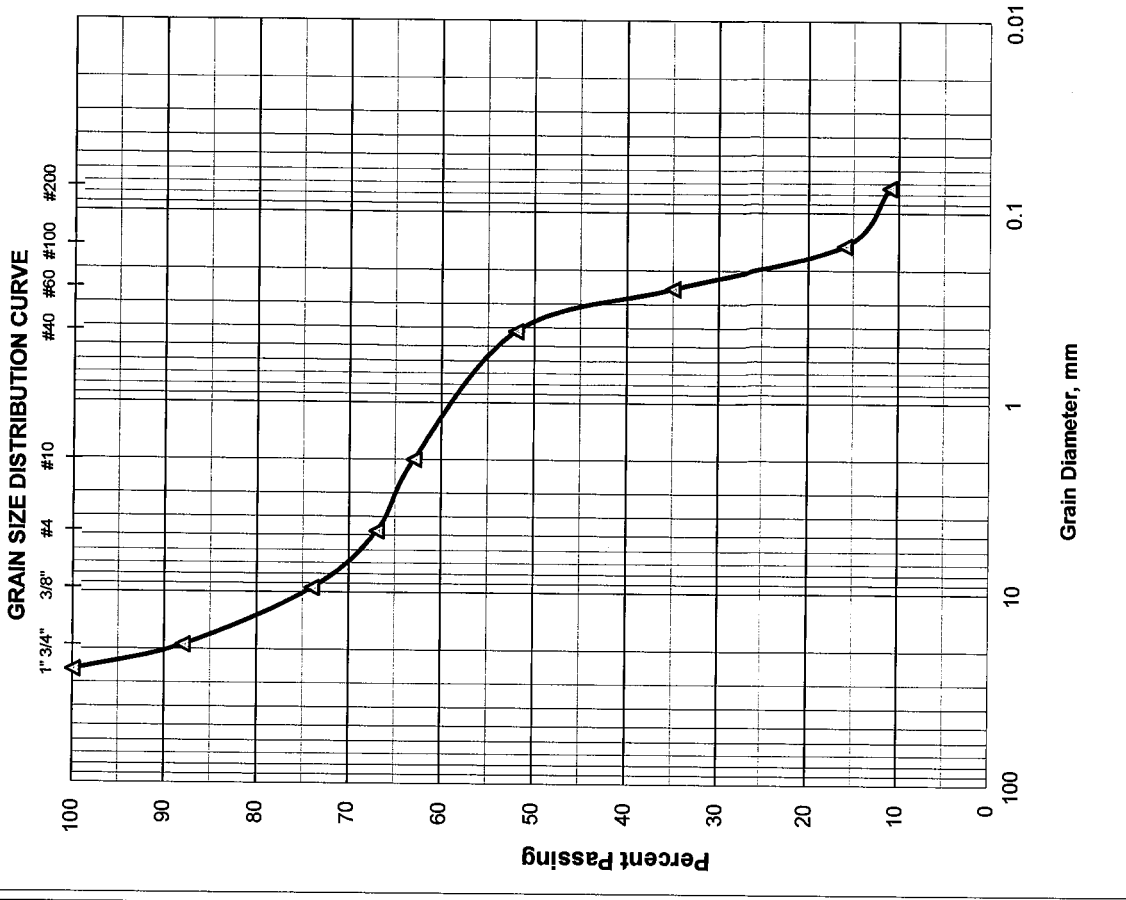
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 33
Coarse Sand	>No. 4-≤ No. 40 15
Fine Sand	>No. 40-≤ No. 200 41
Silt and Clays	>No. 200 11
Water Content 5%	

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2014R Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	255.50
Wt. of Dry Soil + Can, grams	254.10
Wt. of Can, grams No. 610	9.00
Wt. of Dry Soil, grams	245.10
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	27.60
Weight of Crucible and Sample After Ignition:	27.10
Weight of Crucible: No. 54	15.00
Weight of Oven-Dried Soil:	12.60
Weight Loss due to Ignition:	0.50
Percent Organics:	4%

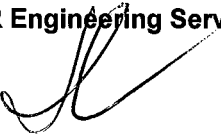
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2014R Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	255.50
Wt. of Dry Soil + Can, grams	254.10
Wt. of Can, grams No. 610	9.00
Wt. of Dry Soil, grams	245.10
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Wt. of Dry Soil + Can Before Wash, grams	241.60
Wt. of Can, grams No. 610	9.00
Wt. of Dry Soil Before Wash, grams	232.60
Time in / Out of Oven :	11/09/14 10:00 AM TO 11/10/14 10:00 AM
Wt. of Dry Soil + Can After Wash, grams	231.40
Wt. of Dry Soil After Wash, grams	222.40
Total Loss, grams	10.20
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2026CL		Sample No.: 1B				
Date: 11/06/14		Depth: 1.0'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	8.10	8.10	3	97	
4	4.76	7.60	15.70	6	94	AASHTO Classification:
10	2.00	5.70	21.40	8	92	A-3
40	0.420	34.90	56.30	22	78	
60	0.250	58.30	114.60	45	55	
100	0.149	66.90	181.50	72	28	
200	0.074	59.80	241.30	95	5	
PAN						

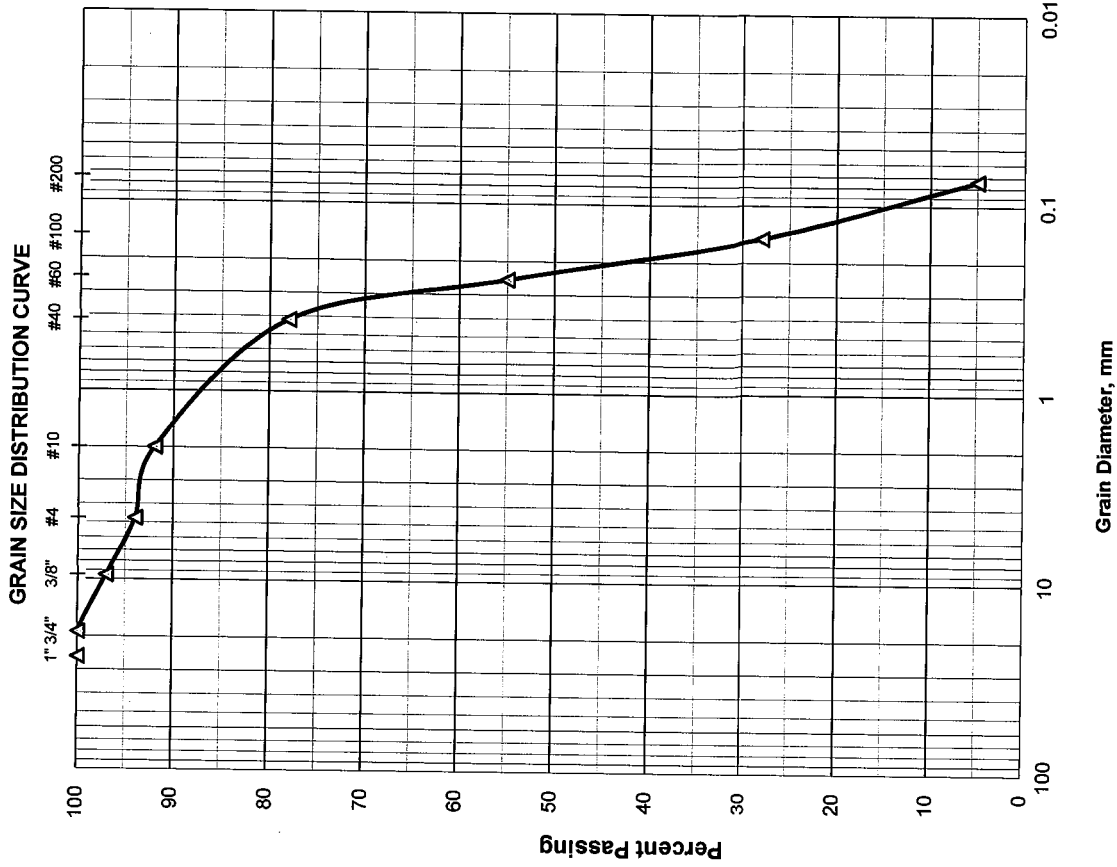
Total Dry Weight Before Wash, (gr) =	251.90
Percent Finer than No. 200 Sieve by Wash Method=	5%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4
Coarse Sand	>No. 4-≤ No. 40
Fine Sand	>No. 40-≤ No. 200
Silt and Clays	>No. 200
Water Content	12%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.
 7815 N.W. 72nd Avenue - Medley, Florida 33166
 Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2028CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	14.90	14.90	3	97	
3/8"	9.51	48.90	63.80	15	85	
4	4.76	47.40	111.20	27	73	
10	2.00	43.10	154.30	37	63	
40	0.420	59.60	213.90	52	48	
60	0.250	49.40	263.30	64	36	
100	0.149	78.20	341.50	84	16	
200	0.074	32.80	374.30	92	8	
PAN						

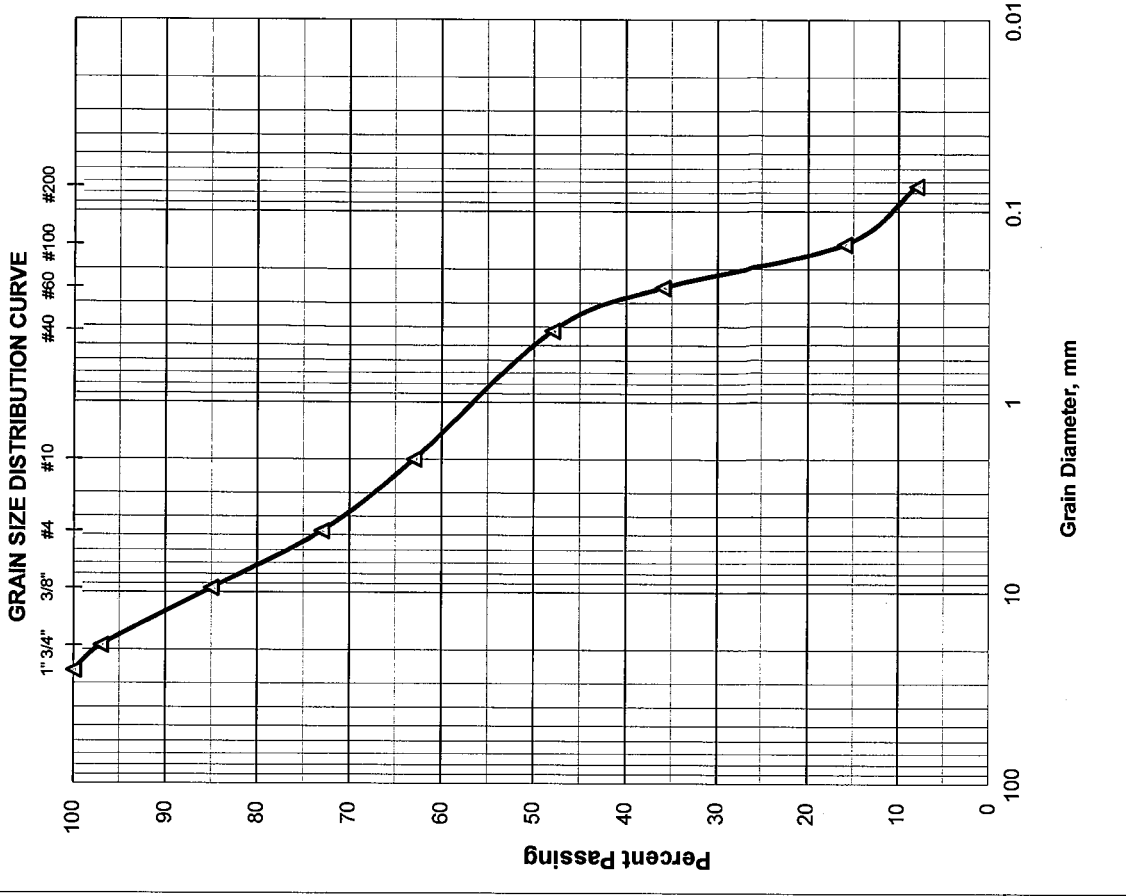
Total Dry Weight Before Wash, (gr) =	406.10
Percent Finer than No. 200 Sieve by Wash Method=	8%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	27
Coarse Sand	>No. 4-≤ No. 40	25
Fine Sand	>No. 40-≤ No. 200	40
Silt and Clays	>No. 200	8
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2028CR		Sample No.: 2				
Date: 10/17/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	31.10	31.10	5	95	
3/8"	9.51	40.90	72.00	13	87	
4	4.76	20.50	92.50	16	84	
10	2.00	19.30	111.80	20	80	
40	0.420	75.50	187.30	33	67	
60	0.250	130.10	317.40	57	43	
100	0.149	141.90	459.30	83	17	
200	0.074	53.20	512.50	92	8	
PAN						

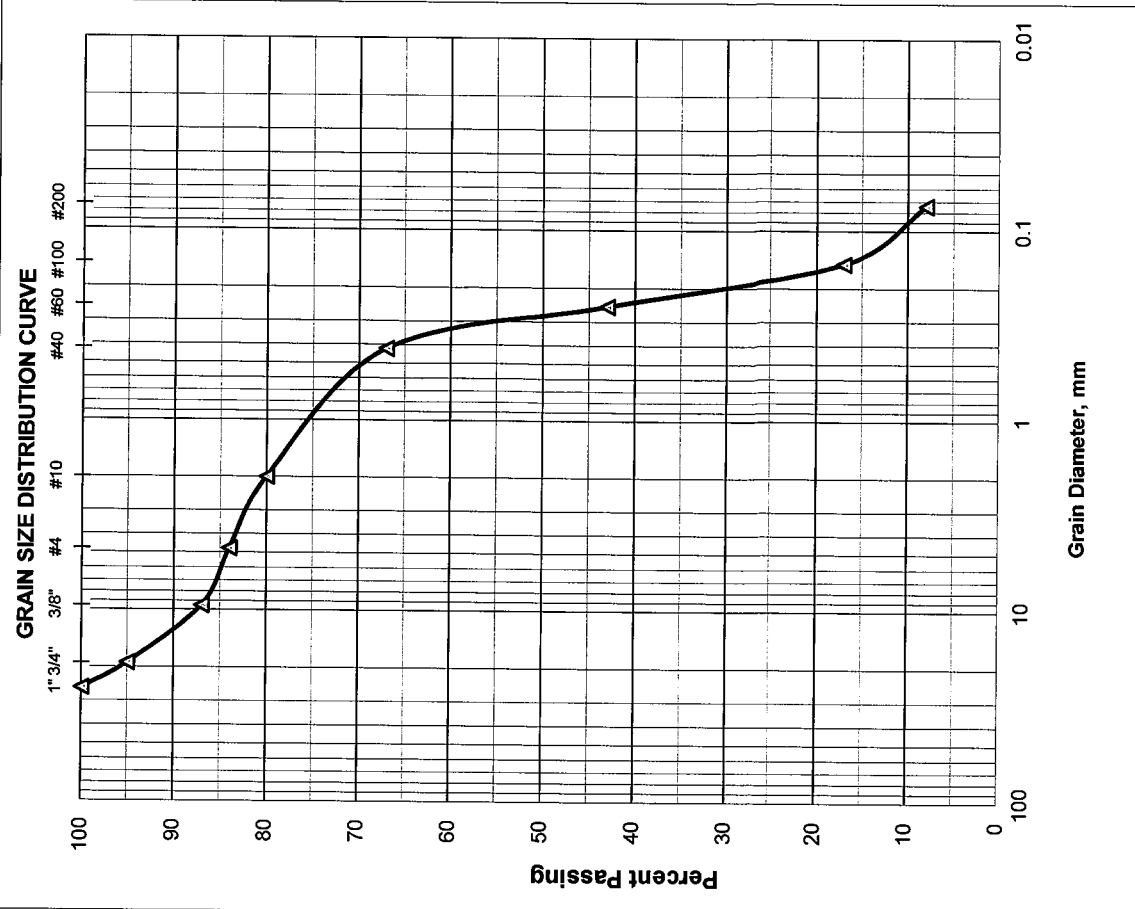
Total Dry Weight Before Wash, (gr) = **551.70**
 Percent Finer than No. 200 Sieve by Wash Method = **8%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	16
Coarse Sand	>No. 4-≤ No. 40	17
Fine Sand	>No. 40-≤ No. 200	59
Silt and Clays	>No. 200	8
Water Content		7%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2032CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	44.30	44.30	9	91	
3/8"	9.51	79.90	124.20	27	73	
4	4.76	62.10	186.30	40	60	
10	2.00	52.40	238.70	52	48	
40	0.420	66.00	304.70	66	34	
60	0.250	23.80	328.50	71	29	
100	0.149	39.60	368.10	80	20	
200	0.074	27.20	395.30	86	14	
PAN						

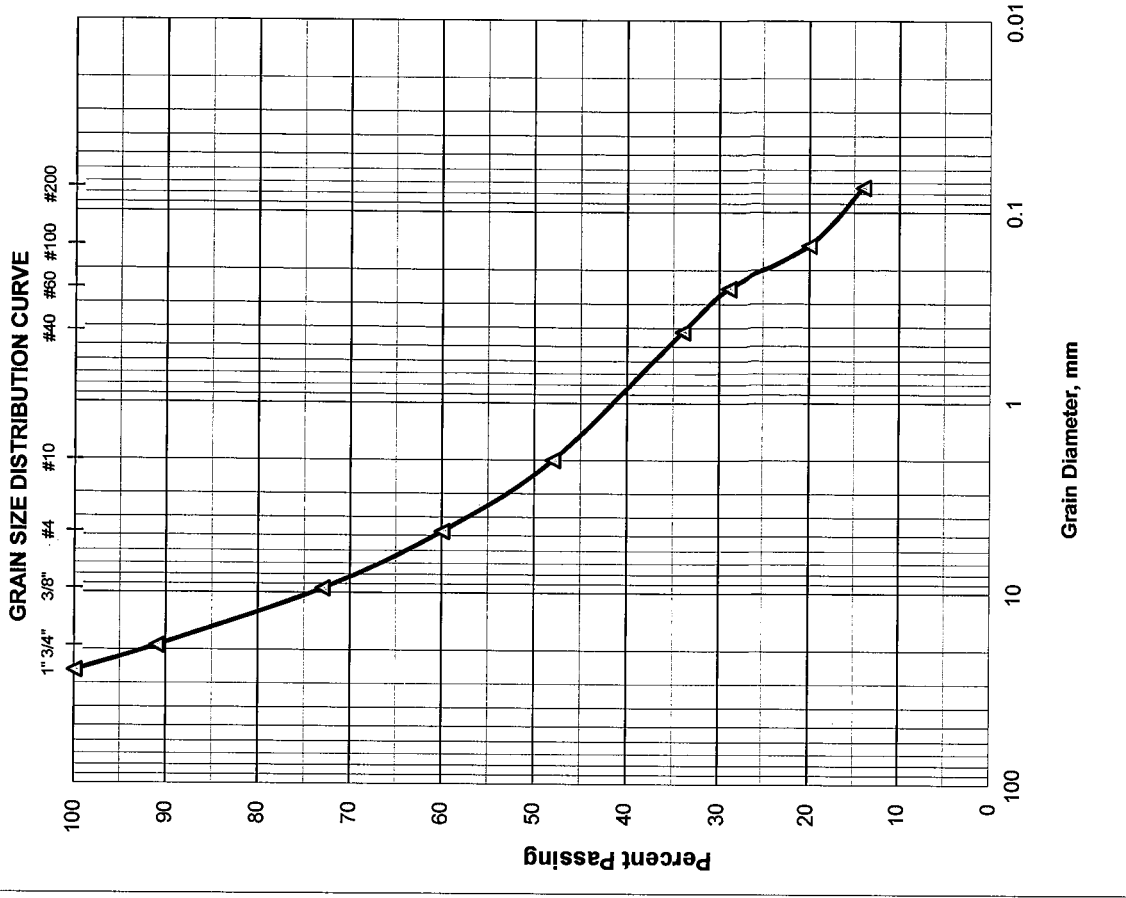
Total Dry Weight Before Wash, (gr) =	456.90
Percent Finer than No. 200 Sieve by Wash Method=	14%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	40
Coarse Sand	>No. 4-≤ No. 40	26
Fine Sand	>No. 40-≤ No. 200	20
Silt and Clays	>No. 200	14
Water Content		8%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2032CR		Sample No.: 2A				
Date: 10/17/2014		Depth: 2.0'-2.8'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	28.20	28.20	11	89	
3/8"	9.51	35.50	63.70	24	76	
4	4.76	23.90	87.60	34	66	AASHTO Classification:
10	2.00	23.60	111.20	43	57	
40	0.420	30.30	141.50	55	45	
60	0.250	24.10	165.60	64	36	A-1-b
100	0.149	38.10	203.70	79	21	
200	0.074	21.40	225.10	88	12	
PAN						

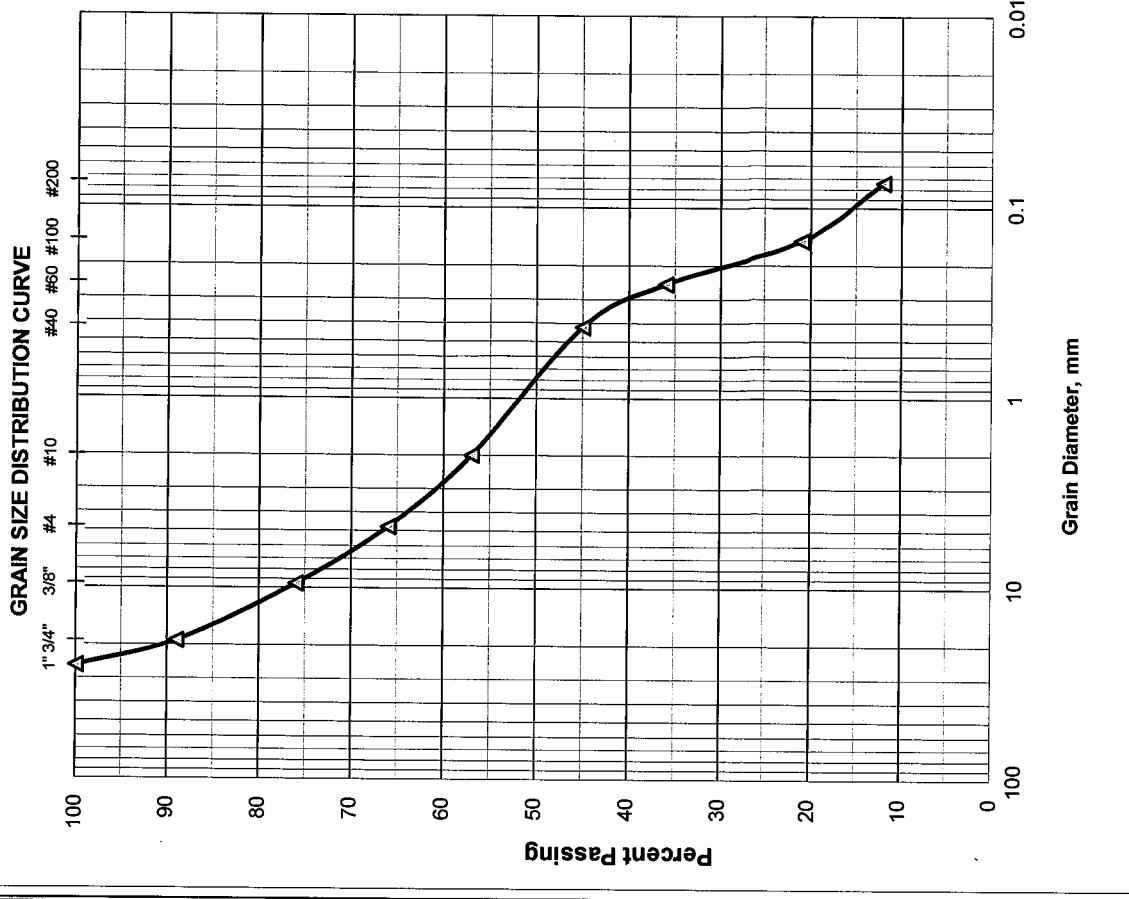
Total Dry Weight Before Wash, (gr) = **254.90**
 Percent Finer than No. 200 Sieve by Wash Method = **12%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 34
Coarse Sand	>No. 4-≤ No. 40 21
Fine Sand	>No. 40-≤ No. 200 33
Silt and Clays	>No. 200 12
Water Content	9%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2036CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	53.90	53.90	10	90	
3/8"	9.51	61.70	115.60	21	79	
4	4.76	60.10	175.70	33	67	AASHTO Classification:
10	2.00	71.90	247.60	46	54	
40	0.420	91.70	339.30	64	36	A-1-b
60	0.250	29.50	368.80	69	31	
100	0.149	51.30	420.10	79	21	
200	0.074	32.70	452.80	85	15	
PAN						

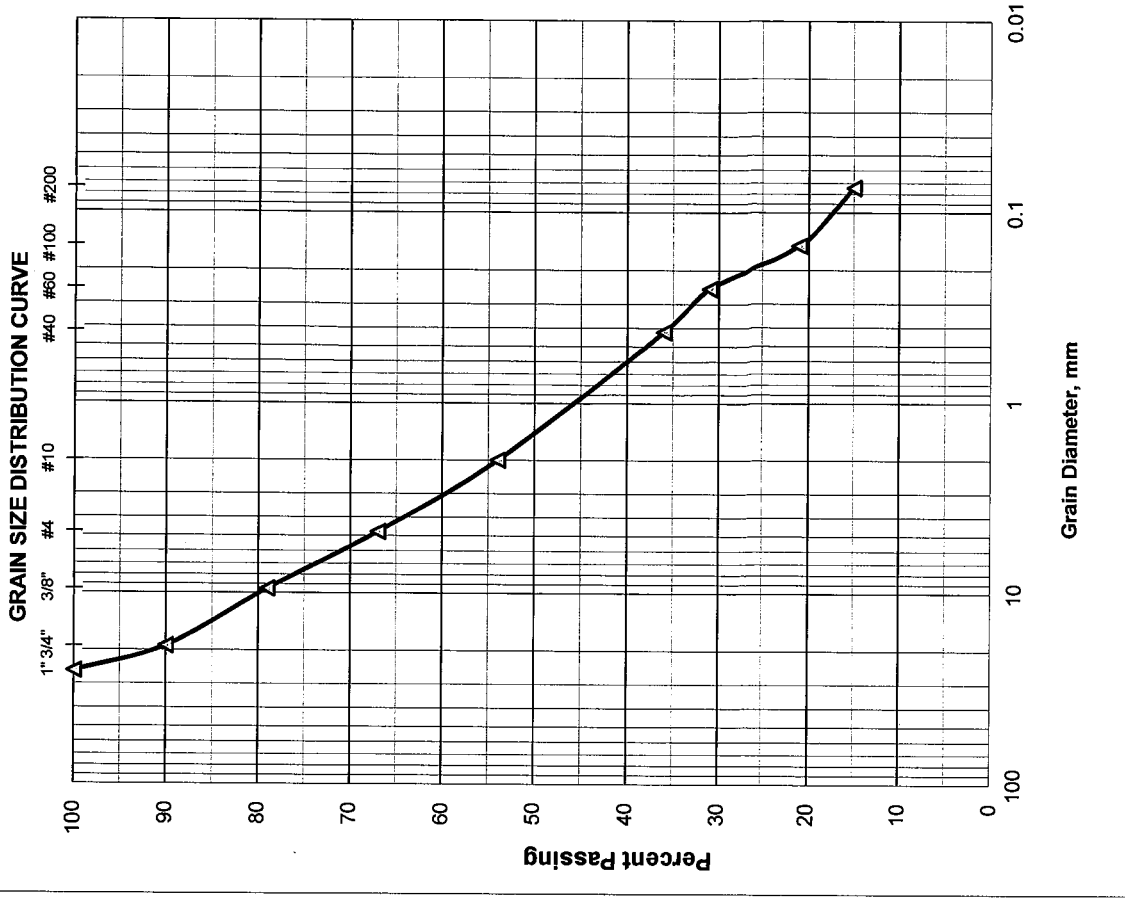
Total Dry Weight Before Wash, (gr) = **529.70**
 Percent Finer than No. 200 Sieve by Wash Method = **15%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	33
Coarse Sand	>No. 4-s No. 40	31
Fine Sand	>No. 40-s No. 200	21
Silt and Clays	>No. 200	15
Water Content		9%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036CR Sample No.: 4 Depth: 6.0'-8.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	560.90
Wt. of Dry Soil + Can, grams	460.20
Wt. of Can, grams No. 805	8.20
Wt. of Dry Soil, grams	452.00
Wt. of Moisture, grams	100.70
Water Content, w%	22%
Date Sample Placed in Furnace:	10/16/14
Time in / out of furnace (minimum 6 hrs):	10/16/14 5:00 AM TO 10/16/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	27.70
Weight of Crucible and Sample After Ignition:	27.50
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	12.10
Weight Loss due to Ignition:	0.20
Percent Organics:	2%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036CR Sample No.: 4 Depth: 6.0'-8.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	560.90
Wt. of Dry Soil + Can, grams	460.20
Wt. of Can, grams No. 805	8.20
Wt. of Dry Soil, grams	452.00
Wt. of Moisture, grams	100.70
Water Content, w%	22%
Wt. of Dry Soil + Can Before Wash, grams	443.90
Wt. of Can, grams No. 805	8.20
Wt. of Dry Soil Before Wash, grams	435.70
Time in / Out of Oven :	10/15/14 7:00 PM TO 10/16/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	416.80
Wt. of Dry Soil After Wash, grams	408.60
Total Loss, grams	27.10
Percent Finer Than No. 200 Sieve	6%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	461.10
Wt. of Dry Soil + Can, grams	442.90
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil, grams	434.50
Wt. of Moisture, grams	18.20
Water Content, w%	4%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	31.60
Weight of Crucible and Sample After Ignition:	31.40
Weight of Crucible: No. 299	16.50
Weight of Oven-Dried Soil:	15.10
Weight Loss due to Ignition:	0.20
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	461.10
Wt. of Dry Soil + Can, grams	442.90
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil, grams	434.50
Wt. of Moisture, grams	18.20
Water Content, w%	4%
Wt. of Dry Soil + Can Before Wash, grams	419.80
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil Before Wash, grams	411.40
Time in / Out of Oven :	11/05/14 7:00 PM TO 11/06/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	405.90
Wt. of Dry Soil After Wash, grams	397.50
Total Loss, grams	13.90
Percent Finer Than No. 200 Sieve	3%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2038R Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	265.40
Wt. of Dry Soil + Can, grams	264.00
Wt. of Can, grams No. 703	9.20
Wt. of Dry Soil, grams	254.80
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	27.20
Weight of Crucible and Sample After Ignition:	26.90
Weight of Crucible: No. 54	15.10
Weight of Oven-Dried Soil:	12.10
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2038R Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	265.40
Wt. of Dry Soil + Can, grams	264.00
Wt. of Can, grams No. 703	9.20
Wt. of Dry Soil, grams	254.80
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Wt. of Dry Soil + Can Before Wash, grams	252.50
Wt. of Can, grams No. 703	9.20
Wt. of Dry Soil Before Wash, grams	243.30
Time in / Out of Oven :	11/05/14 4:00 PM TO 11/06/14 4:00 PM
Wt. of Dry Soil + Can After Wash, grams	233.50
Wt. of Dry Soil After Wash, grams	224.30
Total Loss, grams	19.00
Percent Finer Than No. 200 Sieve	8%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2040CL		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	35.60	35.60	8	92	
3/8"	9.51	23.70	59.30	13	87	
4	4.76	35.80	95.10	21	79	
10	2.00	20.10	115.20	25	75	
40	0.420	68.70	183.90	41	59	
60	0.250	89.30	273.20	61	39	
100	0.149	96.30	369.50	83	17	
200	0.074	31.10	400.60	90	10	
PAN						

AASHTO Classification: **A-3**

Total Dry Weight Before Wash, (gr) =	444.80
Percent Finer than No. 200 Sieve by Wash Method=	10%

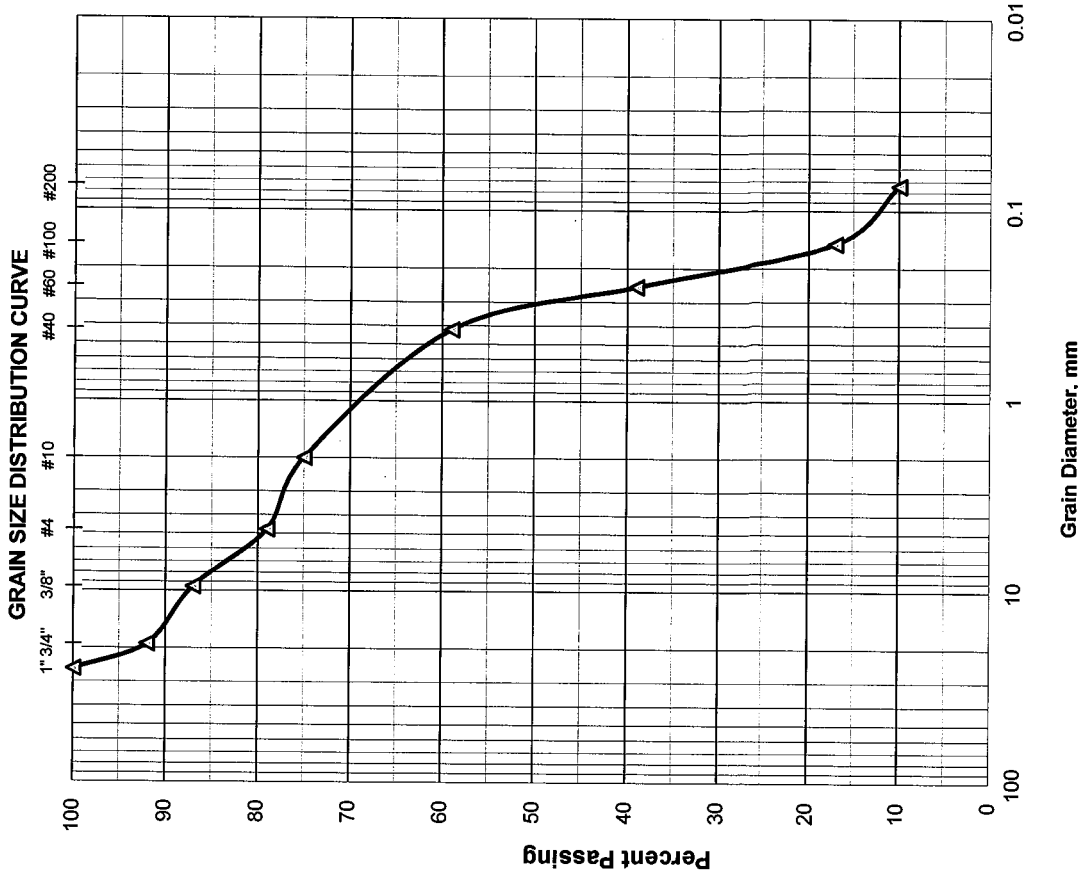
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 21
Coarse Sand	>No. 4-≤ No. 40 20
Fine Sand	>No. 40-≤ No. 200 49
Silt and Clays	>No. 200 10
Water Content	7%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2040CL		Depth: 2.0'-4.0'				
Date: 10/17/2014		Tested By: H.C.				
Sample No.: 2						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	33.40	33.40	7	93	
3/8"	9.51	7.50	40.90	9	91	
4	4.76	3.20	44.10	10	90	
10	2.00	3.70	47.80	11	89	
40	0.420	72.20	120.00	27	73	
60	0.250	150.50	270.50	63	37	
100	0.149	105.90	376.40	87	13	
200	0.074	37.90	414.30	96	4	
PAN						

Total Dry Weight Before Wash, (gr) =	429.20
Percent Finer than No. 200 Sieve by Wash Method =	4%

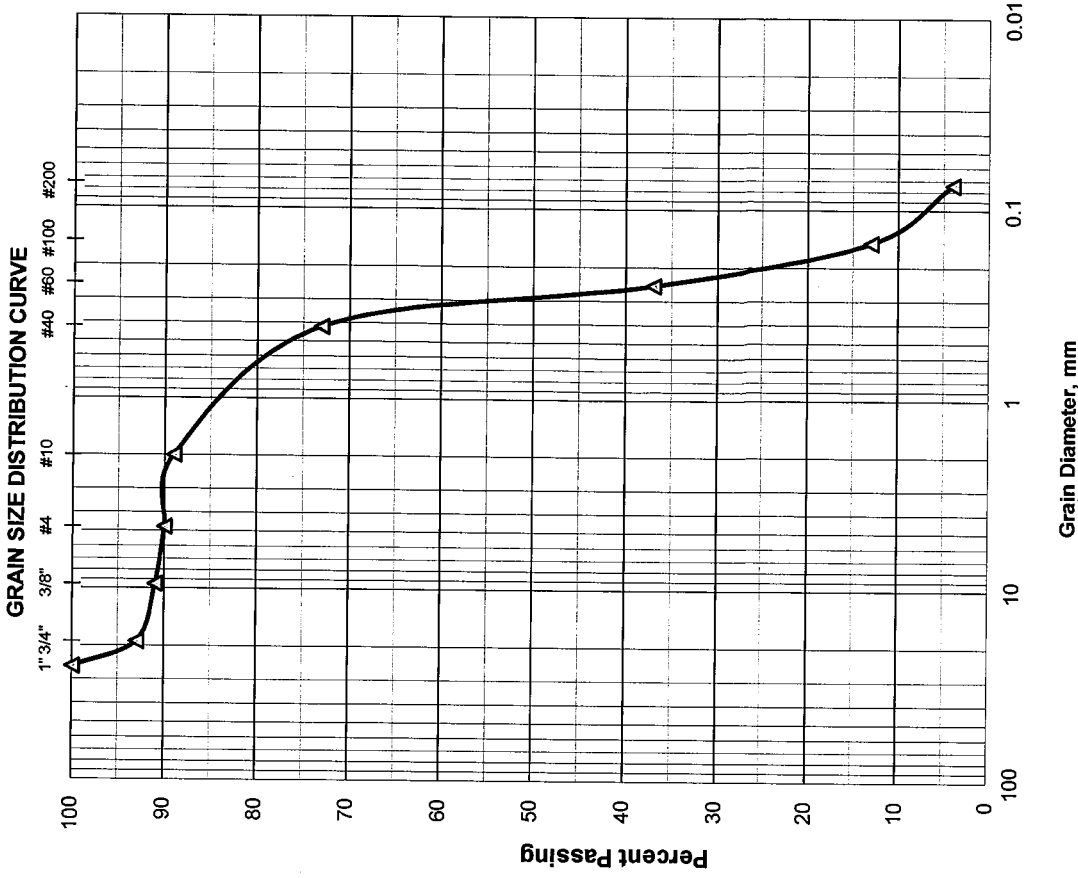
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	10
Coarse Sand	>No. 4-≤ No. 40	17
Fine Sand	>No. 40-≤ No. 200	69
Silt and Clays	>No. 200	4
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2040CL Sample No.: 5A Depth: 8.0'-9.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	525.70
Wt. of Dry Soil + Can, grams	417.60
Wt. of Can, grams No. 808	8.90
Wt. of Dry Soil, grams	408.70
Wt. of Moisture, grams	108.10
Water Content, w%	26%
Wt. of Dry Soil + Can Before Wash, grams	417.60
Wt. of Can, grams No. 808	8.90
Wt. of Dry Soil Before Wash, grams	408.70
Time in / Out of Oven :	10/15/14 7:00 PM TO 10/16/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	358.10
Wt. of Dry Soil After Wash, grams	349.20
Total Loss, grams	59.50
Percent Finer Than No. 200 Sieve	15%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-2-4



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2040R Sample No.: 1B Depth: 1.0'-2.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	372.80
Wt. of Dry Soil + Can, grams	368.20
Wt. of Can, grams No. 809	8.90
Wt. of Dry Soil, grams	359.30
Wt. of Moisture, grams	4.60
Water Content, w%	1%
Wt. of Dry Soil + Can Before Wash, grams	368.20
Wt. of Can, grams No. 809	8.90
Wt. of Dry Soil Before Wash, grams	359.30
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	354.60
Wt. of Dry Soil After Wash, grams	345.70
Total Loss, grams	13.60
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.

Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

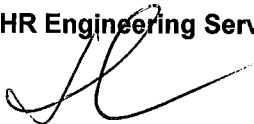
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2040R Sample No.: 2A Depth: 2.0'-3.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	296.50
Wt. of Dry Soil + Can, grams	287.60
Wt. of Can, grams No. 810	8.30
Wt. of Dry Soil, grams	279.30
Wt. of Moisture, grams	8.90
Water Content, w%	3%
Wt. of Dry Soil + Can Before Wash, grams	287.60
Wt. of Can, grams No. 810	8.30
Wt. of Dry Soil Before Wash, grams	279.30
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	277.20
Wt. of Dry Soil After Wash, grams	268.90
Total Loss, grams	10.40
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-391R				
Boring No.: RB-2042CL		Sample No.: 2				
Date: 11/6/2014		Depth: 2.0'-4.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	21.50	21.50	3	97	
4	4.76	7.90	29.40	5	95	
10	2.00	4.50	33.90	6	94	
40	0.420	58.20	92.10	16	84	
60	0.250	185.50	277.60	50	50	
100	0.149	175.60	453.20	82	18	
200	0.074	69.90	523.10	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	547.70
Percent Finer than No. 200 Sieve by Wash Method=	5%

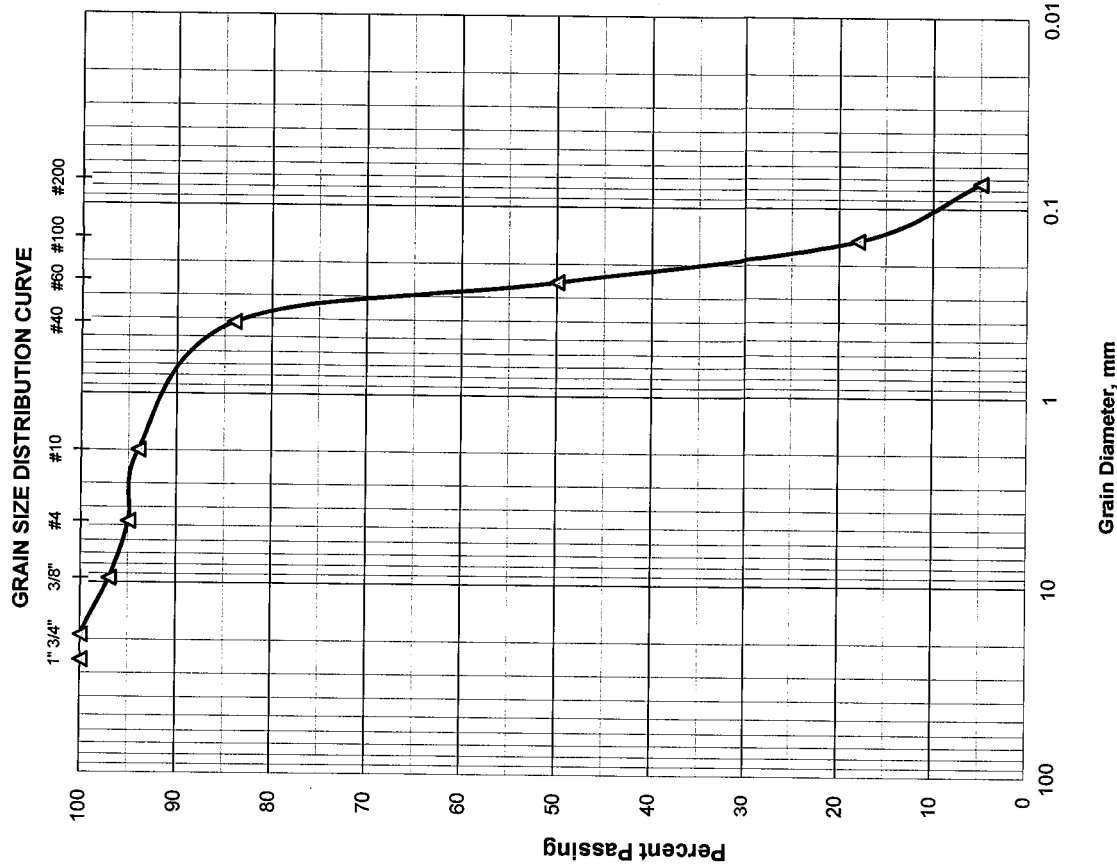
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	5
Coarse Sand	>No. 4-≤ No. 40	11
Fine Sand	>No. 40-≤ No. 200	79
Silt and Clays	>No. 200	5
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.



Hermando R. Ramos, P.E.
 Florida Registration No. 42045




GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2042CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-1.5'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	73.80	73.80	23	77	
3/8"	9.51	23.30	97.10	30	70	
4	4.76	26.20	123.30	39	61	AASHTO Classification:
10	2.00	27.20	150.50	47	53	
40	0.420	49.90	200.40	63	37	A-1-b
60	0.250	31.90	232.30	74	26	
100	0.149	26.60	258.90	82	18	
200	0.074	16.80	275.70	87	13	
PAN						

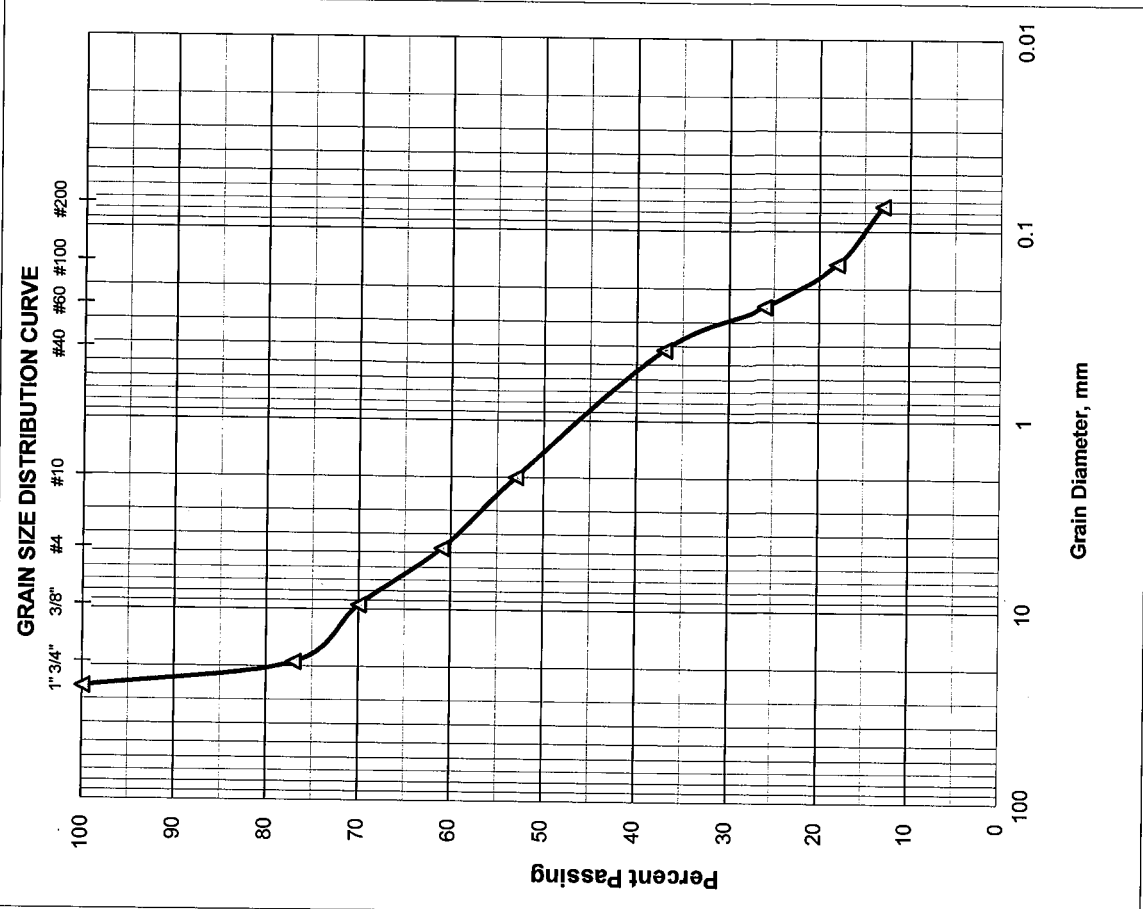
Total Dry Weight Before Wash, (gr) = **313.90**
 Percent Finer than No. 200 Sieve by Wash Method = **13%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 39
Coarse Sand	>No. 4-≤ No. 40 24
Fine Sand	>No. 40-≤ No. 200 24
Silt and Clays	>No. 200 13
Water Content	6%

Respectfully Submitted,
HR Engineering Services, Inc.


Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-391R				
Boring No.: RB-2046CL		Sample No.: 3				
Date: 11/6/2014		Depth: 4.0'-6.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	3.20	3.20	0	100	
4	4.76	1.50	4.70	1	99	AASHTO Classification:
10	2.00	1.40	6.10	1	99	
40	0.420	15.40	21.50	4	96	A-3
60	0.250	67.30	88.80	19	81	
100	0.149	196.60	285.40	63	37	
200	0.074	133.10	418.50	93	7	
PAN						

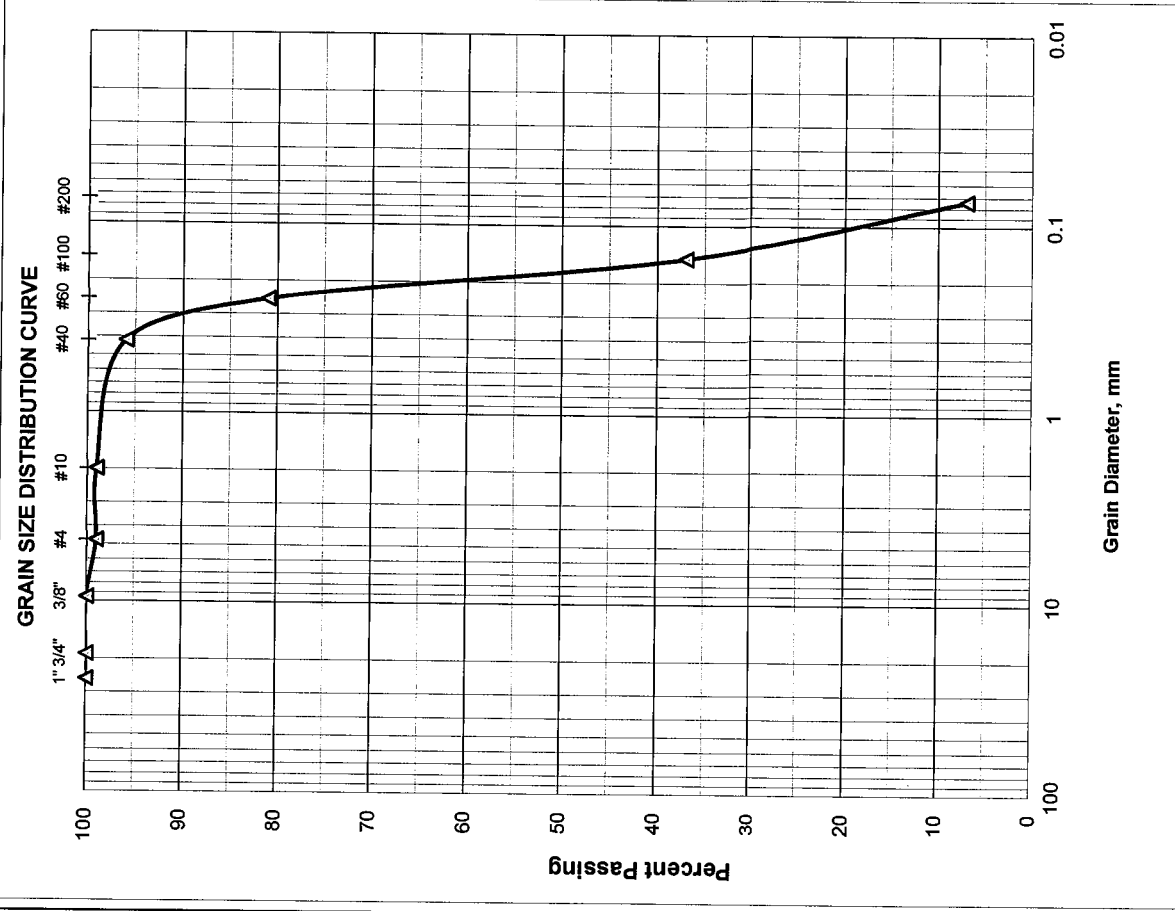
Total Dry Weight Before Wash, (gr) = **448.70**
 Percent Finer than No. 200 Sieve by Wash Method = **7%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	1
Coarse Sand	>No. 4-≤ No. 40	3
Fine Sand	>No. 40-≤ No. 200	89
Silt and Clays	>No. 200	7
Water Content		25%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2046CR Sample No.: 3B Depth: 5.5'-6.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	84.70
Wt. of Dry Soil + Can, grams	64.10
Wt. of Can, grams No. 812	8.90
Wt. of Dry Soil, grams	55.20
Wt. of Moisture, grams	20.60
Water Content, w%	37%
Wt. of Dry Soil + Can Before Wash, grams	64.10
Wt. of Can, grams No. 812	8.90
Wt. of Dry Soil Before Wash, grams	55.20
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	48.30
Wt. of Dry Soil After Wash, grams	39.40
Total Loss, grams	15.80
Percent Finer Than No. 200 Sieve	29%

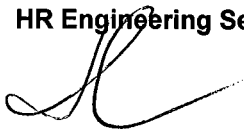
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-2-4


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2046CR Sample No.: 4A Depth: 6.0'-7.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	328.80
Wt. of Dry Soil + Can, grams	225.10
Wt. of Can, grams No. 813	8.90
Wt. of Dry Soil, grams	216.20
Wt. of Moisture, grams	103.70
Water Content, w%	48%
Wt. of Dry Soil + Can Before Wash, grams	225.10
Wt. of Can, grams No. 813	8.90
Wt. of Dry Soil Before Wash, grams	216.20
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	102.90
Wt. of Dry Soil After Wash, grams	94.00
Total Loss, grams	122.20
Percent Finer Than No. 200 Sieve	57%

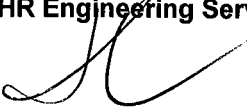
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-4


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2050CL		Sample No.: 1B	
Date: 10/17/2014		Depth: 0.5'-1.5'	
		Tested By: H.C.	

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	10.30	10.30	5	95	
3/8"	9.51	17.80	28.10	14	86	
4	4.76	24.70	52.80	27	73	
10	2.00	24.70	77.50	41	59	
40	0.420	29.80	107.30	56	44	
60	0.250	15.60	122.90	65	35	
100	0.149	24.60	147.50	78	22	
200	0.074	14.40	161.90	85	15	
PAN						

Total Dry Weight Before Wash, (gr) =	189.00
Percent Finer than No. 200 Sieve by Wash Method=	15%

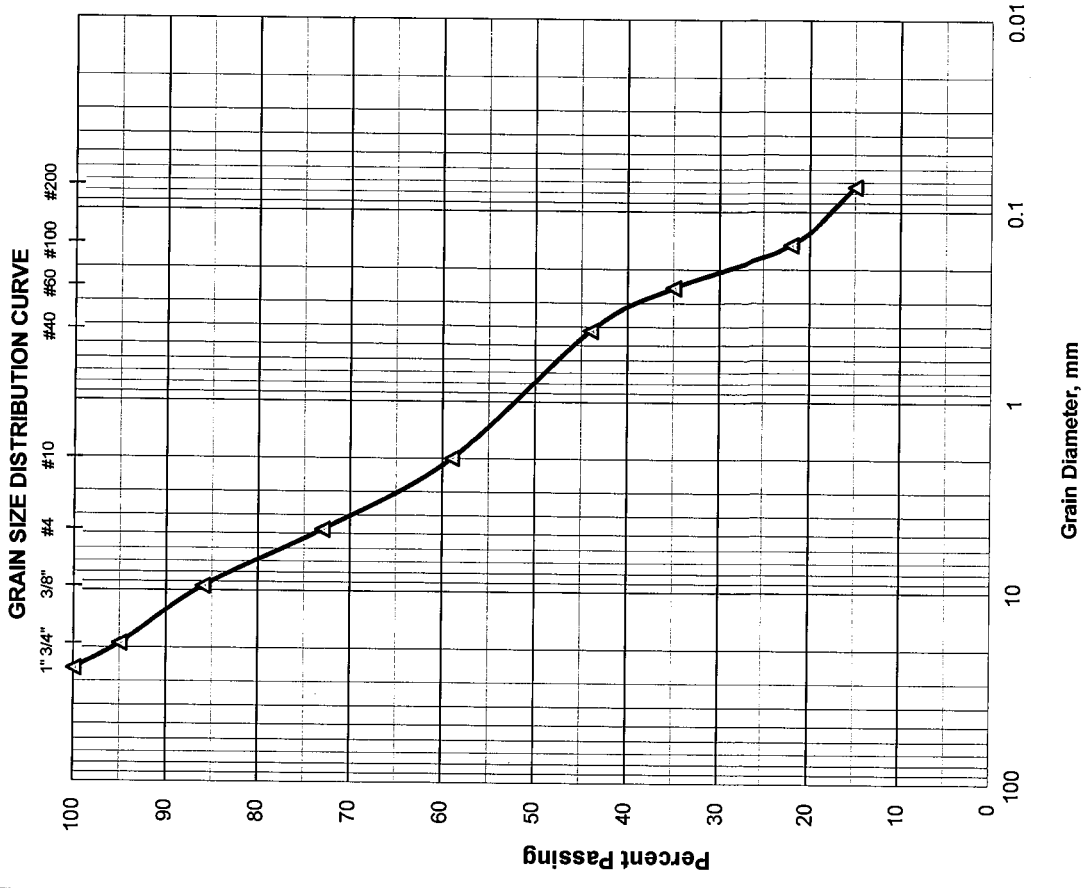
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel ≤ No. 4	27
Coarse Sand >No. 4-≤ No. 40	29
Fine Sand >No. 40-≤ No. 200	29
Silt and Clays >No. 200	15
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2050CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	30.10	30.10	6	94	
3/8"	9.51	32.50	62.60	13	87	
4	4.76	40.50	103.10	22	78	AASHTO Classification:
10	2.00	24.60	127.70	28	72	A-3
40	0.420	55.50	183.20	40	60	
60	0.250	89.10	272.30	59	41	
100	0.149	108.60	380.90	83	17	
200	0.074	29.60	410.50	90	10	
PAN						

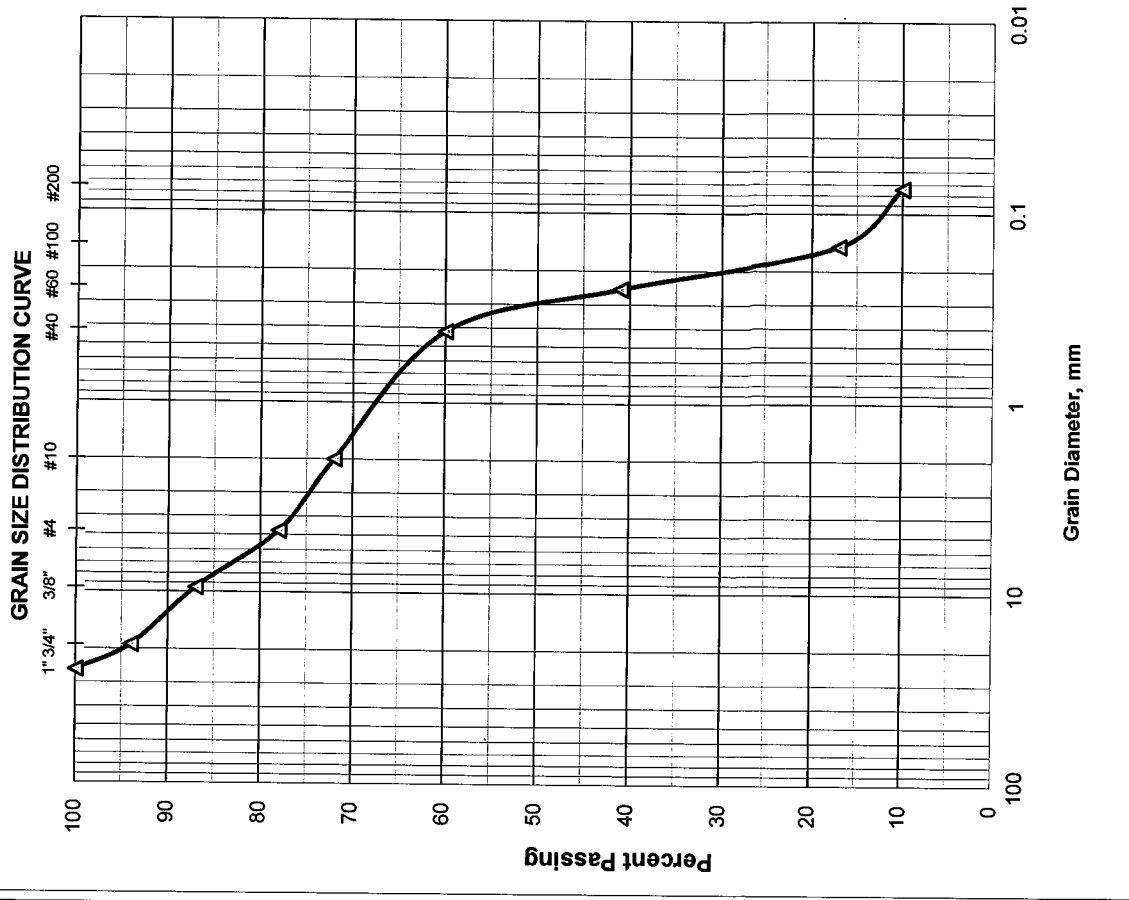
Total Dry Weight Before Wash, (gr) =	455.80
Percent Finer than No. 200 Sieve by Wash Method=	10%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	22
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	50
Silt and Clays	>No. 200	10
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2058R		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	15.40	15.40	24	76	
3/8"	9.51	1.20	16.60	26	74	
4	4.76	5.70	22.30	35	65	
10	2.00	4.80	27.10	43	57	
40	0.420	7.20	34.30	55	45	
60	0.250	7.40	41.70	67	33	
100	0.149	9.40	51.10	82	18	
200	0.074	5.20	56.30	90	10	
PAN						

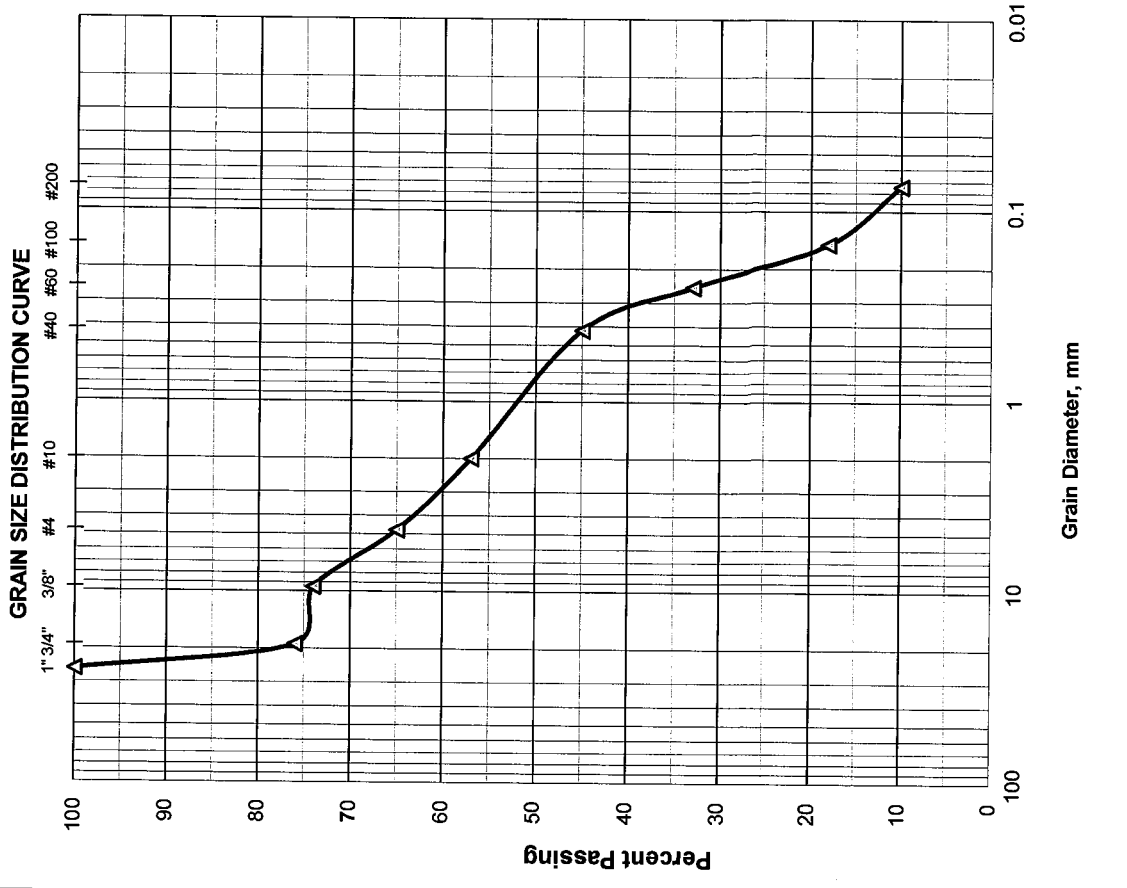
Total Dry Weight Before Wash, (gr) = **62.20**
 Percent Finer than No. 200 Sieve by Wash Method = **10%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 35
Coarse Sand	>No. 4-≤ No. 40 20
Fine Sand	>No. 40-≤ No. 200 35
Silt and Clays	>No. 200 10
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2058R		Depth: 2.0'-4.0'	
Date: 10/17/2014		Sample No.: 2	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	15.40	15.40	4	96	
4	4.76	33.40	48.80	12	88	AASHTO Classification:
10	2.00	33.30	82.10	21	79	
40	0.420	52.90	135.00	35	65	A-2-4
60	0.250	42.30	177.30	47	53	
100	0.149	67.20	244.50	64	36	
200	0.074	48.60	293.10	77	23	
PAN						

Total Dry Weight Before Wash, (gr) = **376.60**
 Percent Finer than No. 200 Sieve by Wash Method = **23%**

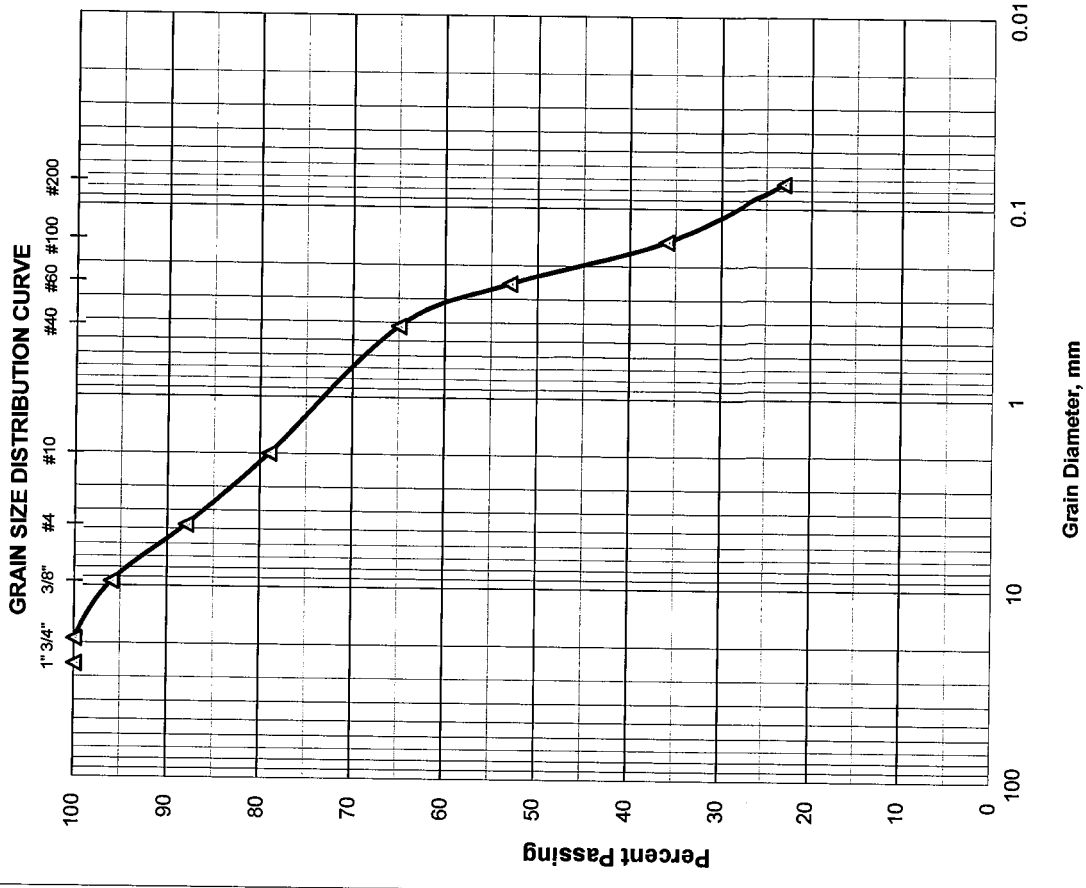
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	12
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	42
Silt and Clays	>No. 200	23
Water Content		3%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2058R		Sample No.: 3				
Date: 10/17/2014		Depth: 4.0'-6.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	69.80	69.80	15	85	
3/8"	9.51	34.70	104.50	23	77	
4	4.76	38.40	142.90	32	68	
10	2.00	46.70	189.60	42	58	
40	0.420	59.90	249.50	55	45	
60	0.250	38.20	287.70	64	36	
100	0.149	69.80	357.50	80	20	
200	0.074	49.70	407.20	91	9	
PAN						

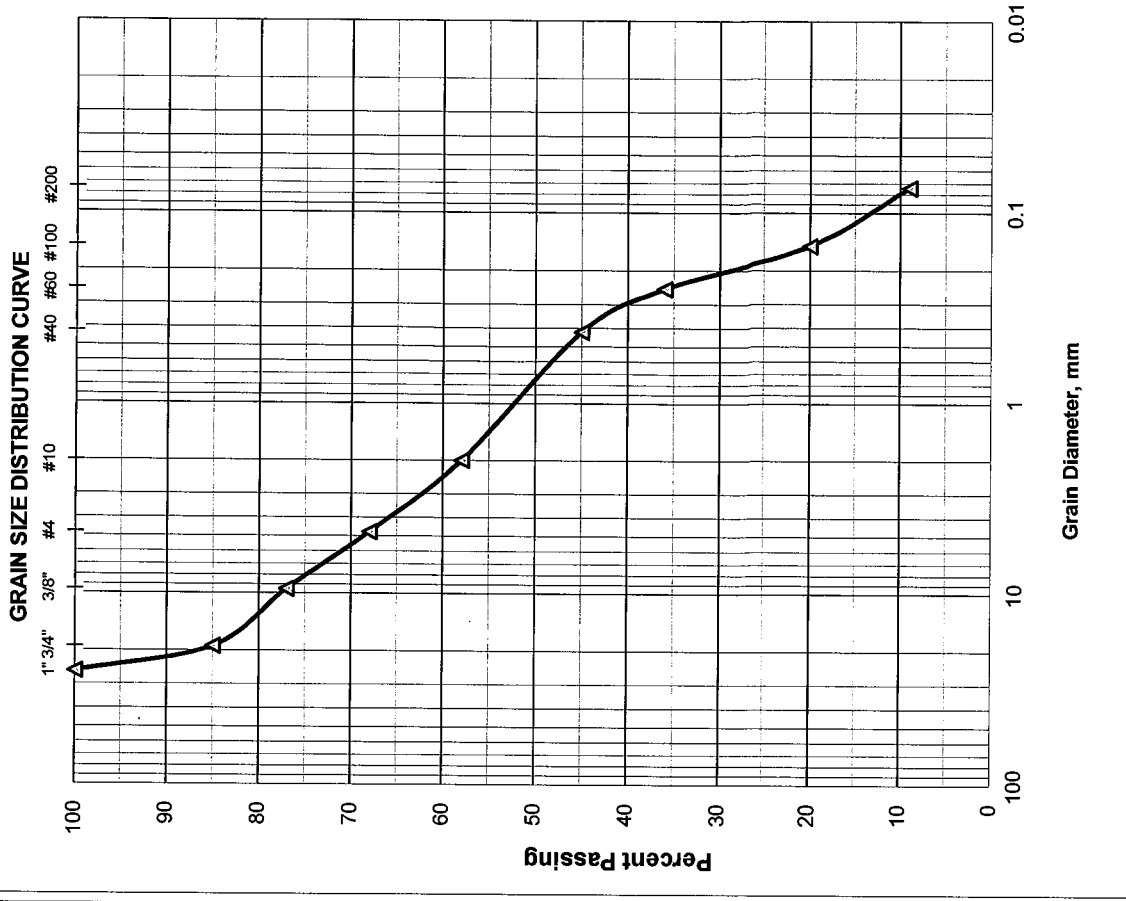
Total Dry Weight Before Wash, (gr) = **446.50**
 Percent Finer than No. 200 Sieve by Wash Method = **9%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	32
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	36
Silt and Clays	>No. 200	9
Water Content		4%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2062CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.3'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	62.10	62.10	11	89	
3/8"	9.51	54.50	116.60	21	79	
4	4.76	54.50	171.10	31	69	AASHTO Classification:
10	2.00	65.10	236.20	43	57	
40	0.420	93.90	330.10	60	40	A-1-b
60	0.250	29.20	359.30	66	34	
100	0.149	46.80	406.10	74	26	
200	0.074	35.20	441.30	81	19	
PAN						

Total Dry Weight Before Wash, (gr) =	542.00
Percent Finer than No. 200 Sieve by Wash Method =	19%

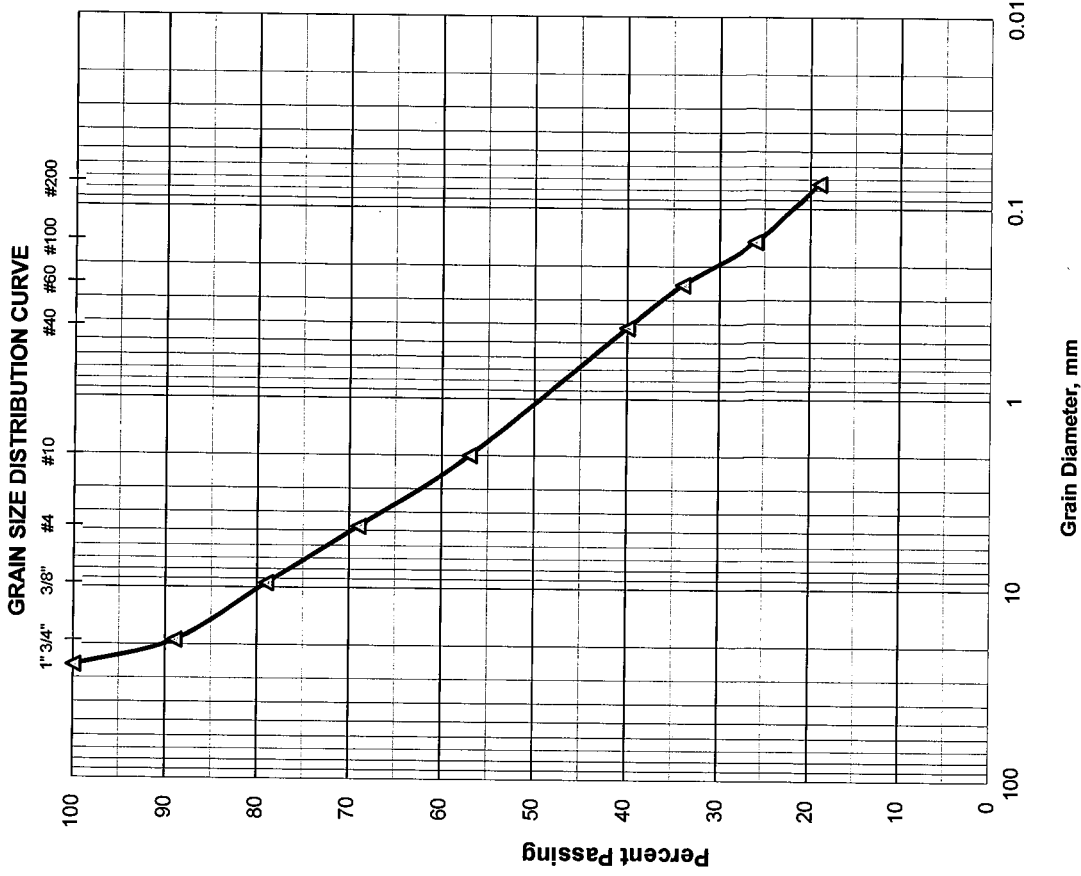
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 31
Coarse Sand	>No. 4-≤ No. 40 29
Fine Sand	>No. 40-≤ No. 200 21
Silt and Clays	>No. 200 19
Water Content	10%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2066CL		Sample No.: 3				
Date: 11/6/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	61.50	61.50	10	90	
4	4.76	77.30	138.80	24	76	AASHTO Classification:
10	2.00	81.40	220.20	39	61	
40	0.420	103.90	324.10	57	43	A-1-b
60	0.250	31.10	355.20	63	37	
100	0.149	54.10	409.30	72	28	
200	0.074	42.80	452.10	80	20	
PAN						

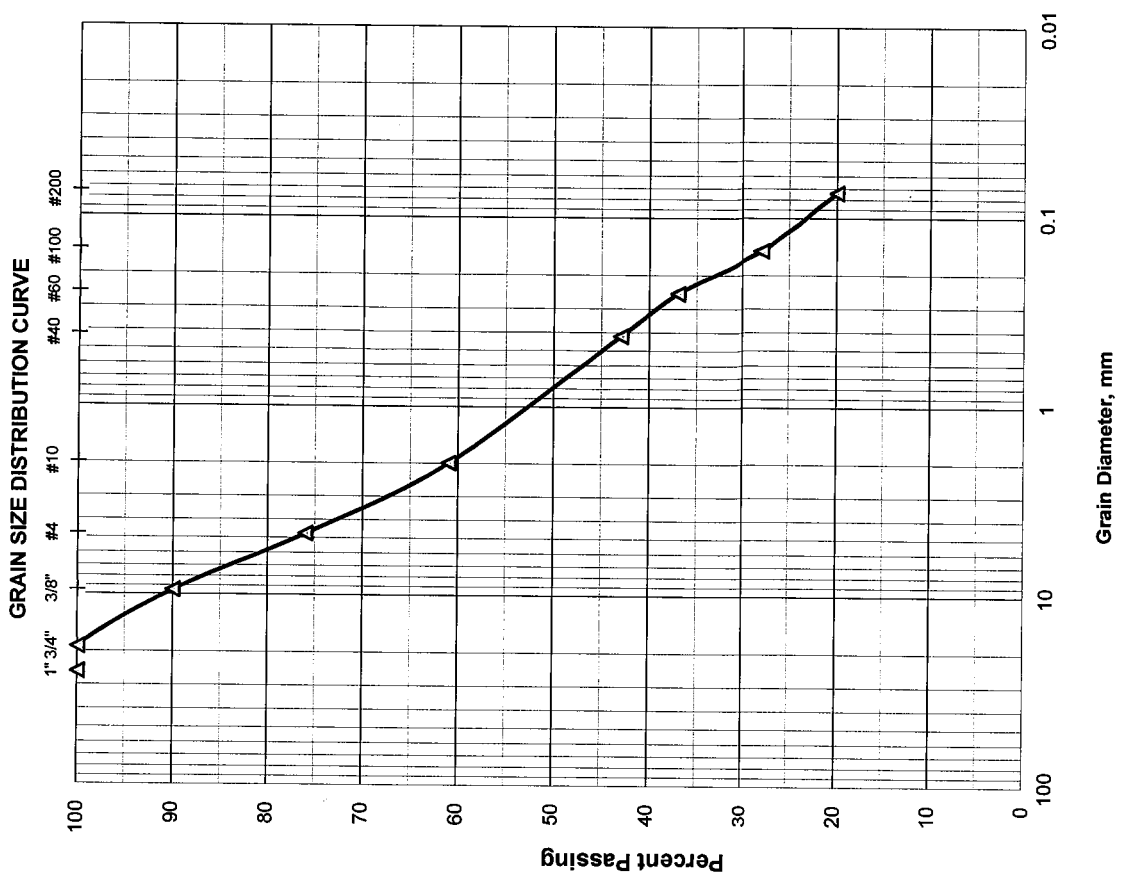
Total Dry Weight Before Wash, (gr) = **561.50**
 Percent Finer than No. 200 Sieve by Wash Method = **20%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	24
Coarse Sand	>No. 4 ≤ No. 40	33
Fine Sand	>No. 40 ≤ No. 200	23
Silt and Clays	>No. 200	20
Water Content		25%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045




GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2084L		Sample No.: 1B				
Date: 11/6/2014		Depth: 1.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	5.70	5.70	1	99	
4	4.76	3.10	8.80	2	98	AASHTO Classification:
10	2.00	3.30	12.10	3	97	
40	0.420	23.10	35.20	9	91	A-3
60	0.250	70.70	105.90	28	72	
100	0.149	178.20	284.10	75	25	
200	0.074	71.90	356.00	94	6	
PAN						

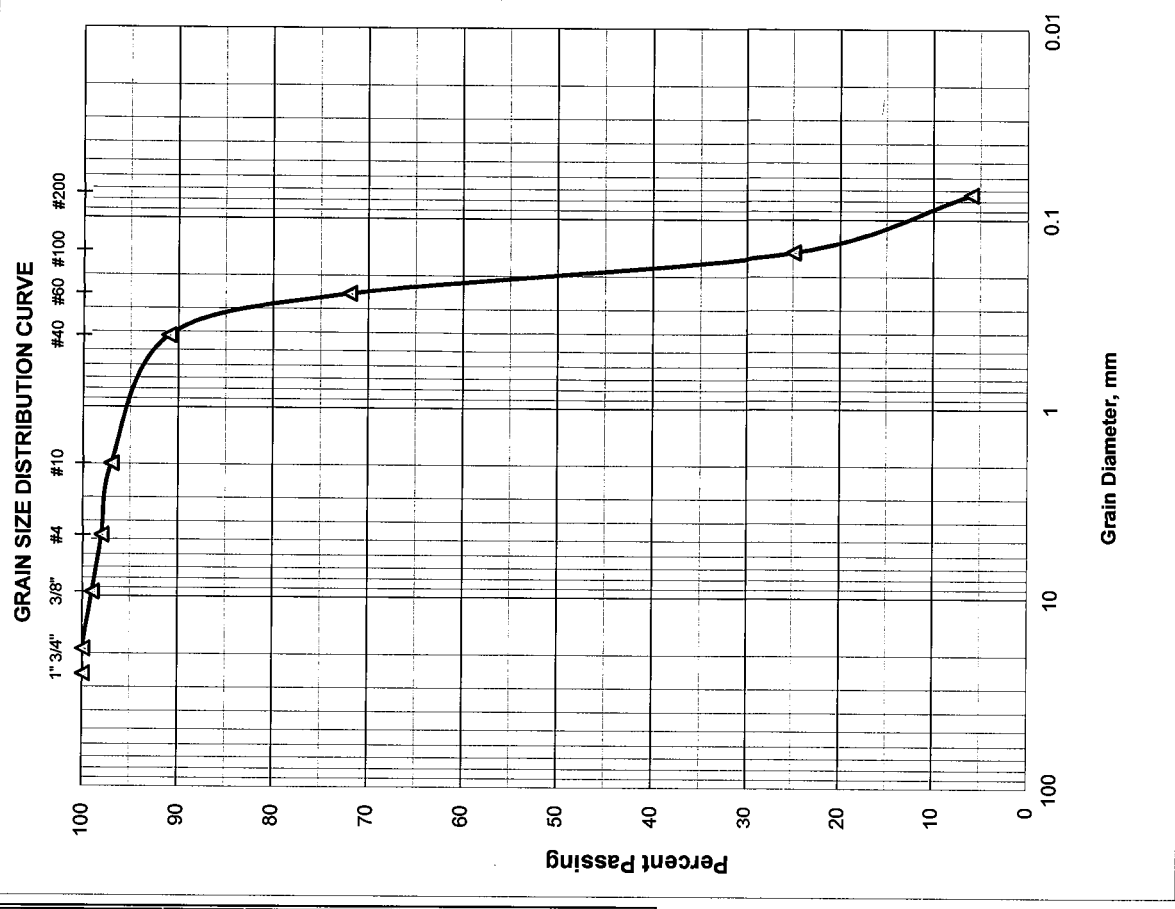
Total Dry Weight Before Wash, (gr) =	376.30
Percent Finer than No. 200 Sieve by Wash Method=	6%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 2
Coarse Sand	>No. 4-≤ No. 40 7
Fine Sand	>No. 40-≤ No. 200 85
Silt and Clays	>No. 200 6
Water Content	9%

Respectfully Submitted,
HR Engineering Services, Inc.


Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2088CR		Sample No.: 2				
Date: 11/6/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	26.60	26.60	5	95	
4	4.76	5.10	31.70	6	94	AASHTO Classification:
10	2.00	5.90	37.60	7	93	
40	0.420	42.20	79.80	15	85	A-3
60	0.250	123.90	203.70	40	60	
100	0.149	204.90	408.60	80	20	
200	0.074	73.30	481.90	94	6	
PAN						

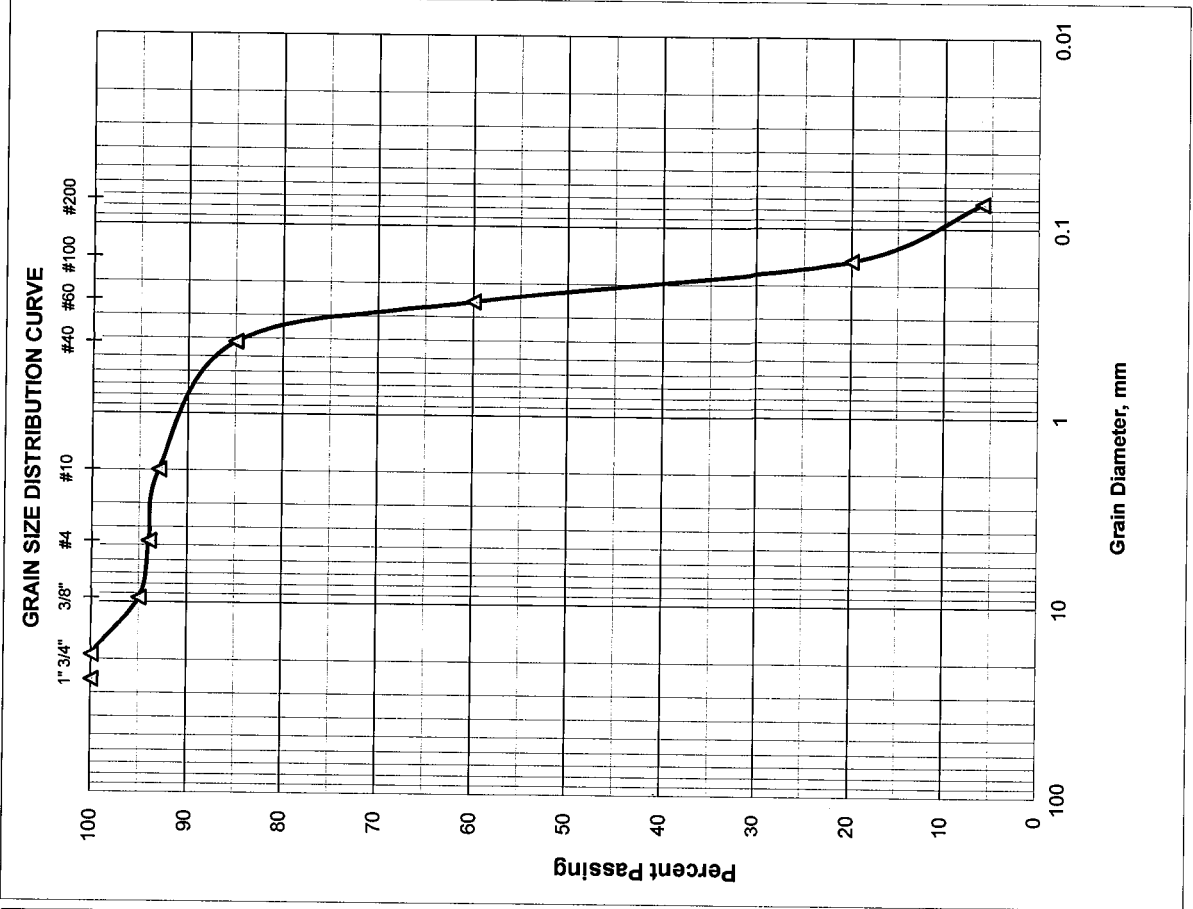
Total Dry Weight Before Wash, (gr) = **509.20**
 Percent Finer than No. 200 Sieve by Wash Method = **6%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	6
Coarse Sand	>No. 4 ≤ No. 40	9
Fine Sand	>No. 40 ≤ No. 200	79
Silt and Clays	>No. 200	6
Water Content		4%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2088CR Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	324.40
Wt. of Dry Soil + Can, grams	249.60
Wt. of Can, grams No. 611	9.20
Wt. of Dry Soil, grams	240.40
Wt. of Moisture, grams	74.80
Water Content, w%	31%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	26.30
Weight of Crucible and Sample After Ignition:	26.20
Weight of Crucible: No. 209	15.40
Weight of Oven-Dried Soil:	10.90
Weight Loss due to Ignition:	0.10
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2088CR Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	324.40
Wt. of Dry Soil + Can, grams	249.60
Wt. of Can, grams No. 611	9.20
Wt. of Dry Soil, grams	240.40
Wt. of Moisture, grams	74.80
Water Content, w%	31%
Wt. of Dry Soil + Can Before Wash, grams	238.70
Wt. of Can, grams No. 611	9.20
Wt. of Dry Soil Before Wash, grams	229.50
Time in / Out of Oven :	11/09/14 11:00 AM TO 11/10/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	227.20
Wt. of Dry Soil After Wash, grams	218.00
Total Loss, grams	11.50
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2092R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	615.80
Wt. of Dry Soil + Can, grams	571.40
Wt. of Can, grams No. 709	9.00
Wt. of Dry Soil, grams	562.40
Wt. of Moisture, grams	44.40
Water Content, w%	8%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	27.00
Weight of Crucible and Sample After Ignition:	26.80
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2092R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	615.80
Wt. of Dry Soil + Can, grams	571.40
Wt. of Can, grams No. 709	9.00
Wt. of Dry Soil, grams	562.40
Wt. of Moisture, grams	44.40
Water Content, w%	8%
Wt. of Dry Soil + Can Before Wash, grams	561.10
Wt. of Can, grams No. 709	9.00
Wt. of Dry Soil Before Wash, grams	552.10
Time in / Out of Oven :	11/05/14 7:00 PM TO 11/06/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	517.50
Wt. of Dry Soil After Wash, grams	508.50
Total Loss, grams	43.60
Percent Finer Than No. 200 Sieve	8%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

**REPORT OF MOISTURE AND
ORGANIC CONTENT BY LOSS ON IGNITION**

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2092CR Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	314.70
Wt. of Dry Soil + Can, grams	267.40
Wt. of Can, grams No. 612	9.10
Wt. of Dry Soil, grams	258.30
Wt. of Moisture, grams	47.30
Water Content, w%	18%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	28.00
Weight of Crucible and Sample After Ignition:	27.80
Weight of Crucible: No. 299	16.50
Weight of Oven-Dried Soil:	11.50
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2092CR Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	314.70
Wt. of Dry Soil + Can, grams	267.40
Wt. of Can, grams No. 612	9.10
Wt. of Dry Soil, grams	258.30
Wt. of Moisture, grams	47.30
Water Content, w%	18%
Wt. of Dry Soil + Can Before Wash, grams	255.80
Wt. of Can, grams No. 612	9.10
Wt. of Dry Soil Before Wash, grams	246.70
Time in / Out of Oven :	11/09/14 11:00 AM TO 11/10/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	241.30
Wt. of Dry Soil After Wash, grams	232.20
Total Loss, grams	14.50
Percent Finer Than No. 200 Sieve	6%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096CR Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	300.10
Wt. of Dry Soil + Can, grams	271.50
Wt. of Can, grams No. 710	8.90
Wt. of Dry Soil, grams	262.60
Wt. of Moisture, grams	28.60
Water Content, w%	11%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	27.50
Weight of Crucible and Sample After Ignition:	27.30
Weight of Crucible: No. 227	16.10
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

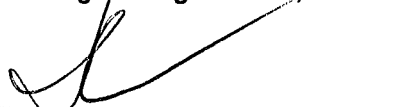
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-1-b


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096CR Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	300.10
Wt. of Dry Soil + Can, grams	271.50
Wt. of Can, grams No. 710	8.90
Wt. of Dry Soil, grams	262.60
Wt. of Moisture, grams	28.60
Water Content, w%	11%
Wt. of Dry Soil + Can Before Wash, grams	248.30
Wt. of Can, grams No. 710	8.90
Wt. of Dry Soil Before Wash, grams	239.40
Time in / Out of Oven :	11/05/14 7:00 PM TO 11/06/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	225.70
Wt. of Dry Soil After Wash, grams	216.80
Total Loss, grams	22.60
Percent Finer Than No. 200 Sieve	9%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-1-b


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	598.50
Wt. of Dry Soil + Can, grams	558.50
Wt. of Can, grams No. 711	8.80
Wt. of Dry Soil, grams	549.70
Wt. of Moisture, grams	40.00
Water Content, w%	7%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	28.80
Weight of Crucible and Sample After Ignition:	28.60
Weight of Crucible: No. 234	17.50
Weight of Oven-Dried Soil:	11.30
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	598.50
Wt. of Dry Soil + Can, grams	558.50
Wt. of Can, grams No. 711	8.80
Wt. of Dry Soil, grams	549.70
Wt. of Moisture, grams	40.00
Water Content, w%	7%
Wt. of Dry Soil + Can Before Wash, grams	547.70
Wt. of Can, grams No. 711	8.80
Wt. of Dry Soil Before Wash, grams	538.90
Time in / Out of Oven :	11/05/14 8:00 PM TO 11/06/14 8:00 PM
Wt. of Dry Soil + Can After Wash, grams	534.00
Wt. of Dry Soil After Wash, grams	525.20
Total Loss, grams	13.70
Percent Finer Than No. 200 Sieve	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

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Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	472.50
Wt. of Dry Soil + Can, grams	393.60
Wt. of Can, grams No. 613	9.00
Wt. of Dry Soil, grams	384.60
Wt. of Moisture, grams	78.90
Water Content, w%	21%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	33.80
Weight of Crucible and Sample After Ignition:	33.50
Weight of Crucible: No. 44	20.90
Weight of Oven-Dried Soil:	12.90
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	472.50
Wt. of Dry Soil + Can, grams	393.60
Wt. of Can, grams No. 613	9.00
Wt. of Dry Soil, grams	384.60
Wt. of Moisture, grams	78.90
Water Content, w%	21%
Wt. of Dry Soil + Can Before Wash, grams	380.80
Wt. of Can, grams No. 613	9.00
Wt. of Dry Soil Before Wash, grams	371.80
Time in / Out of Oven :	11/09/14 11:00 AM TO 11/10/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	368.90
Wt. of Dry Soil After Wash, grams	359.90
Total Loss, grams	11.90
Percent Finer Than No. 200 Sieve	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

Corrosion Series

Project Name: I-95 CDC PHASE 3A-1

Project Number: HR12-891R Date: 11/10/14 Tested by: H.C.

Sample No.	Sampling Date	Resistivity, ohm-cm.	Chlorides, ppm	Sulfates, ppm	pH	Testing Date	Sub-Structure Environmental Classification	
							Steel	Concrete
B-2	09/02/14	1856	58	30	7.4	09/05/14	MA	MA
B-3	09/18/14	2220	35	26	7.6	09/19/14	MA	MA
B-7	09/17/14	2417	23	38	7.3	10/13/14	MA	MA
B-8	09/24/14	1927	33	33	7.6	10/13/14	MA	MA
B-11	09/11/14	985	180	40	7.2	09/19/14	EA	MA
B-12	09/02/14	970	191	34	7.3	09/19/14	EA	MA
NE Pond	10/10/14	1952	55	30	7.5	10/13/14	MA	MA
C-13 Canal	10/10/14	2427	15	77	7.3	10/13/14	MA	MA

MA: Moderately Aggressive

EA: Extremely Aggressive

Tests performed by HRES in accordance with Florida Method of Test Corrosion Series in Soil and Water, Designation FM 5-550 through FM 5-553

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-1		Sample No.: 1				
Date: 11/3/2014		Depth: 0.0'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	11.30	11.30	2	98	
3/8"	9.51	27.00	38.30	7	93	
4	4.76	14.20	52.50	10	90	AASHTO Classification:
10	2.00	17.90	70.40	13	87	
40	0.420	61.00	131.40	25	75	A-3
60	0.250	129.20	260.60	50	50	
100	0.149	189.60	450.20	86	14	
200	0.074	49.70	499.90	96	4	
PAN						

Total Dry Weight Before Wash, (gr) =	520.70
Percent Finer than No. 200 Sieve by Wash Method=	4%

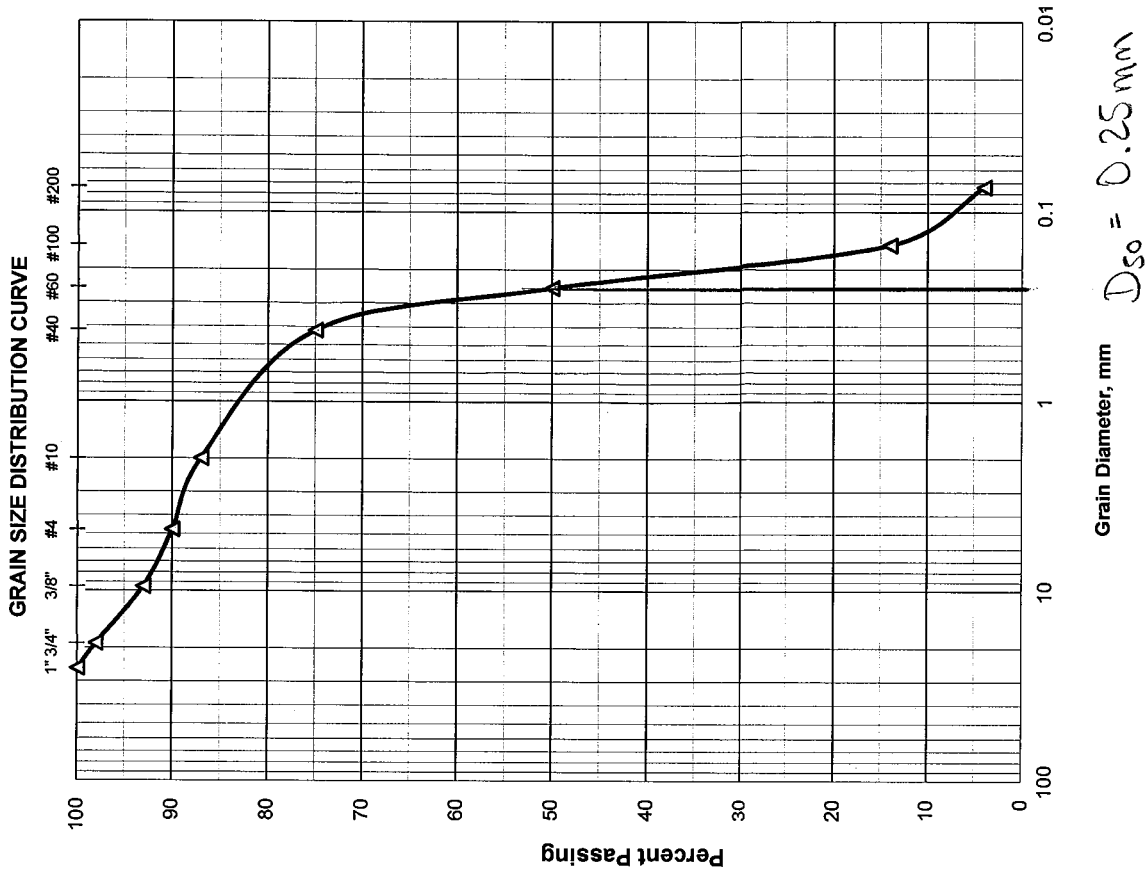
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 10
Coarse Sand	>No. 4-≤ No. 40 15
Fine Sand	>No. 40-≤ No. 200 71
Silt and Clays	>No. 200 4
Water Content	47%

Respectfully Submitted,
HR Engineering Services, Inc.



Herlando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: <u>I-95 CDC Phase 3A-1</u>		Project No.: <u>HR12-891R</u>				
Boring No.: <u>CB-1</u>	Sample No.: <u>2</u>	Depth: <u>2.0'-3.0'</u>				
Date: <u>11/3/2014</u>	Tested By: <u>H.C.</u>					
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	34.40	34.40	6	94	
3/8"	9.51	2.50	36.90	6	94	
4	4.76	6.80	43.70	7	93	
10	2.00	6.20	49.90	9	91	
40	0.420	34.90	84.80	15	85	
60	0.250	135.40	220.20	39	61	
100	0.149	251.20	471.40	85	15	
200	0.074	57.10	528.50	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	553.70
Percent Finer than No. 200 Sieve by Wash Method=	5%

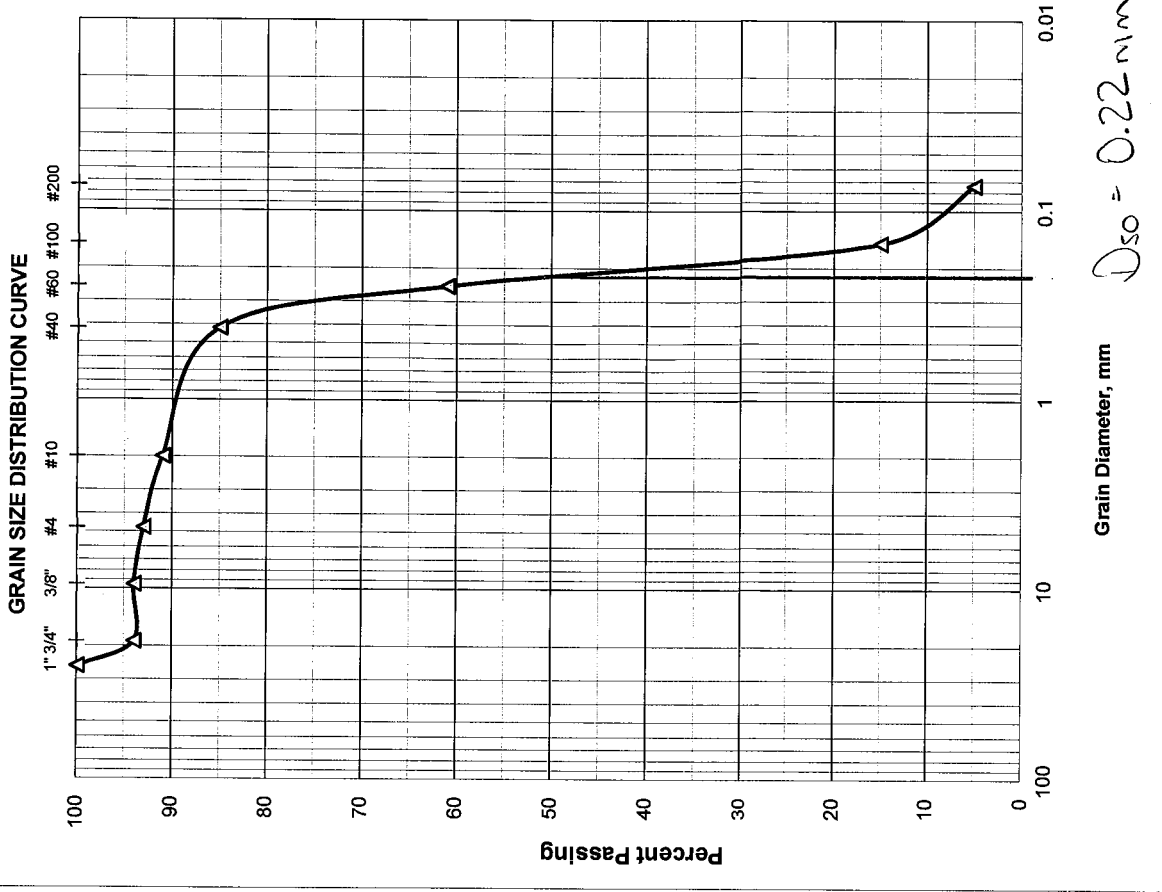
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	7
Coarse Sand	>No. 4-≤ No. 40	8
Fine Sand	>No. 40-≤ No. 200	80
Silt and Clays	>No. 200	5
Water Content		34%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-2		Depth: 0.0'-1.3'				
Sample No.: 1		Tested By: H.C.				
Date: 11/3/2014						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	21.10	21.10	3	97	
4	4.76	27.50	48.60	8	92	AASHTO Classification:
10	2.00	35.50	84.10	14	86	
40	0.420	94.70	178.80	31	69	A-3
60	0.250	175.40	354.20	63	37	
100	0.149	150.60	504.80	89	11	
200	0.074	33.60	538.40	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	561.20
Percent Finer than No. 200 Sieve by Wash Method=	5%

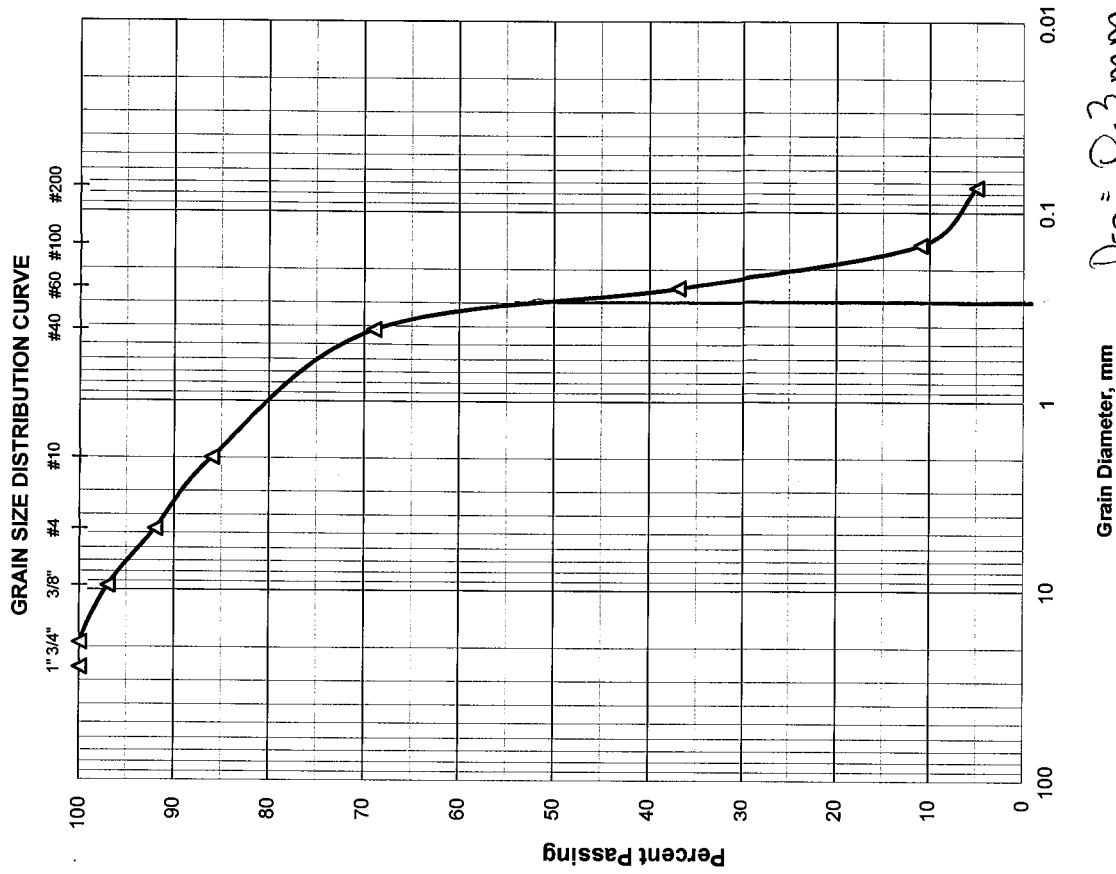
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 8
Coarse Sand	>No. 4-≤ No. 40 23
Fine Sand	>No. 40-≤ No. 200 64
Silt and Clays	>No. 200 5
Water Content	38%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-2		Sample No.: 2				
Date: 11/3/2014		Depth: 1.3'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	8.90	8.90	1	99	
3/8"	9.51	10.20	19.10	3	97	
4	4.76	9.30	28.40	5	95	AASHTO Classification:
10	2.00	22.70	51.10	9	91	A-3
40	0.420	108.30	159.40	28	72	
60	0.250	182.90	342.30	61	39	
100	0.149	159.80	502.10	90	10	
200	0.074	35.80	537.90	96	4	
PAN						

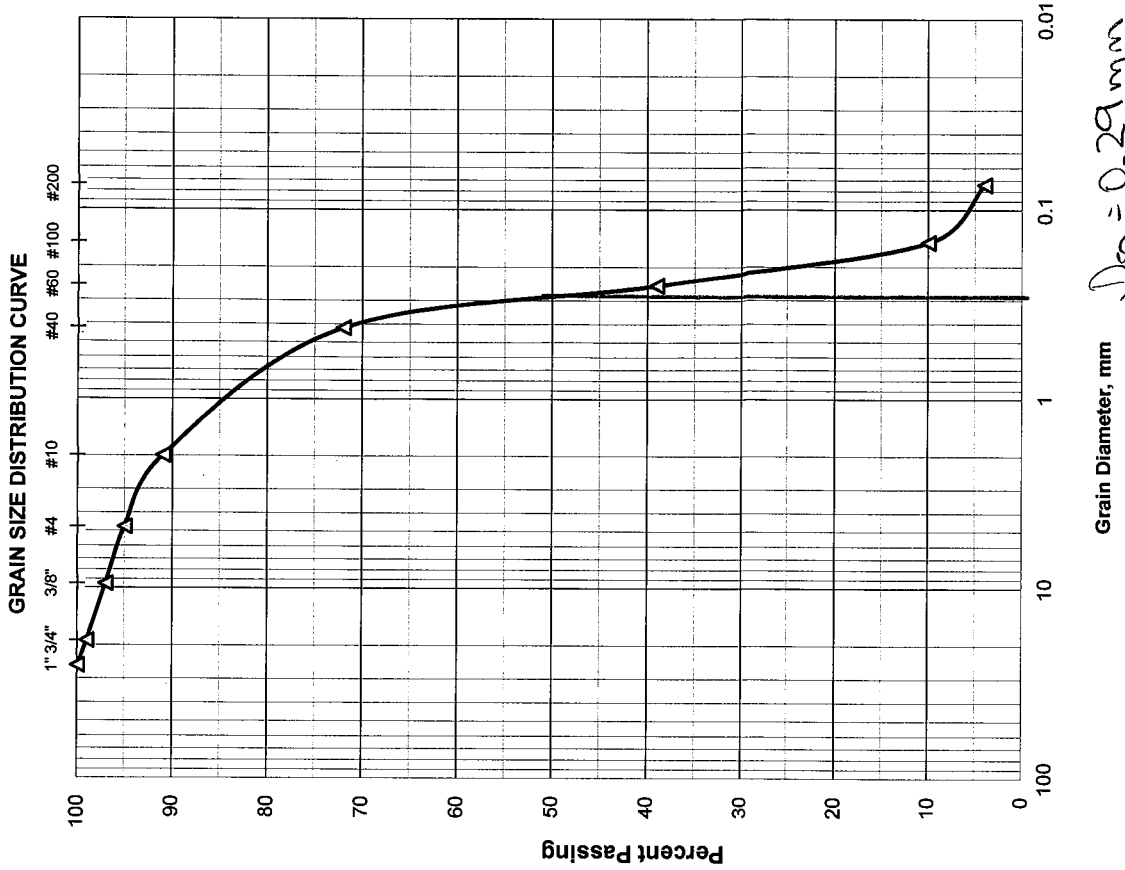
Total Dry Weight Before Wash, (gr) = **557.50**
 Percent Finer than No. 200 Sieve by Wash Method = **4%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	5
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	68
Silt and Clays	>No. 200	4
Water Content		25%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



SR 9/I-95 CDC, From S. of Davie
Blvd. to N. of W. Commercial Blvd. –
Phase 3A-1 – Structures

1. INTRODUCTION

The purpose of this geotechnical exploration was to obtain information concerning the site and subsurface conditions in the areas of proposed bridge widening. This report discusses our exploratory and testing procedures, presents our findings and includes the following items:

Field Exploration performed by GCME, Inc.

This report presents the field test data performed by GCME, Inc. (GCME) for FDOT District 4, Project SR 9/I-95, from North of Oakland Park Boulevard to South of Glades Road, Broward and Palm Beach Counties, Florida, report dated October 26, 2012. The field exploration presented in this report includes:

- A total of eight (8) Standard Penetration Test borings, each to a depth of 85 feet. The test borings were performed to help characterize the subsurface conditions for the proposed widening of the bridges. The test borings subsurface information is presented on the Report of Core Borings in Appendix A.

Field Exploration performed by HRES, Inc.

The field exploration performed by HRES includes:

- A total of twenty two (22) Standard Penetration Test (SPT) borings to depths ranging from 80 to 100 feet. The borings were performed to help characterize subsurface information for widening of bridges along I-95. The test borings subsurface information is presented on the Report of Core Borings in Appendix A.
- A total of forty five (45) Standard Penetration Tests (SPT) borings to depths ranging from 20 to 42 feet. The borings were performed to help characterize subsurface information for construction of retaining walls along I-95. The test borings subsurface information is presented on the Report of Core Borings in Appendix A.
- A total of four (4) Standard Penetration Tests (SPT) borings to depths ranging from 40 to 50 feet. The borings were performed to help characterize subsurface information for construction of toll gantry spans at two different locations along I-95. The test borings subsurface information is presented on the Report of Core Borings in Appendix A.
- A brief description of our field testing procedures.

3.2.2 Corrosivity Classification Testing

In this study, seventeen (17) corrosion classification test results were used to environmentally classify the structures. The testing included pH, chlorides, sulfates contents, and resistivity results.

The Florida Department of Transportation Requirements Manual, Section 1.3 Environmental Classifications outlines the ranges of groundwater chemical properties considered corrosive to reinforced concrete substructure. In addition, that section environmentally classifies the superstructure based on factors located near the structure location. Based on this classification, an environment may be Slightly Aggressive, Moderately Aggressive, or Extremely Aggressive. The following table summarizes the environmental classification based on laboratory test results:

Table 3.2.2 Summary of Corrosion Classification Test Results

Bridge Description	Resistivity, ohm-cm.	pH	Sulfates, ppm	Chlorides, ppm	Sample Location	Sub-Structure Environmental Classification	
						Steel	Concrete
Davie Blvd. over I-95	1,996	7.6	42	39	P-8	MA	MA
SB I-95 Ramp to Davie Blvd.	1,996	7.6	42	39	P-8	MA	MA
NB I-95 Ramp to Davie Blvd.	1,996	7.6	42	39	P-8	MA	MA
Broward Blvd. to SB I-95 over I-95 SB Ramp to I-595	2,528	7.6	31	32	P-10	MA	MA
NB I-95 to Broward Blvd. over I-595 Ramp to NB I-95	2,528	7.6	31	32	P-10	MA	MA
WB Broward Blvd. over SFRC	2,528	7.6	31	32	P-10	MA	MA
EB Broward Blvd. over SFRC	2,528	7.6	31	32	P-10	MA	MA
Broward Blvd. over I-95	2,528	7.6	31	32	P-10	MA	MA
EB Broward Blvd. to NB I-95 Flyover	2,528	7.6	31	32	P-10	MA	MA
I-95 to PNR #1 over SB I-95/Broward Blvd.	2,528	7.6	31	32	P-10	MA	MA
PNR to I-95 NB over SB I-95/Broward Blvd.	2,528	7.6	31	32	P-10	MA	MA
PNR #2 to I-95 Ramp over SB I-95 and SB I-95 / I-595 Conn.	2,780-3,290	7.6-8.1	27-36	11-56	P-4, P-6	MA	SA to MA
SB I-95 Ramp over North Fork of the New River	1,856-2,220	7.4-7.6	26-30	35-58	B-2, B-3	MA	MA
SB I-95 over North Fork of the New River	1,856-2,220	7.4-7.6	26-30	35-58	B-2, B-3	MA	MA
NB I-95 over North Fork of the New River	1,856-2,220	7.4-7.6	26-30	35-58	B-2, B-3	MA	MA
NB I-95 Ramp over North Fork of the New River	1,856-2,220	7.4-7.6	26-30	35-58	B-2, B-3	MA	MA
SB I-95 over NW 6th Street	3,133	7.5	77	25	B-5	MA	SA
NB I-95 over NW 6th Street	3,133	7.5	77	25	B-5	MA	SA
Sunrise Blvd. (SR 838) over I-95	1,952	7.5	30	55	B-2100	MA	MA

4. SITE AND SUBSURFACE CONDITIONS

4.1 SITE CONDITIONS

The site conditions were observed by a geotechnical engineer during the months of August through December, 2014.

4.2 SUBSURFACE CONDITIONS

4.2.1 General

A graphical representation of the subsurface conditions encountered by the test borings drilled along the proposed bridges, walls and gantries is shown on the Report of Core Borings in Appendix A. These profiles and the following soil/rock conditions highlight the major subsurface stratification. The boring profiles on these sheets should be consulted for a detailed description of the soil/rock conditions encountered at each boring location. When reviewing the subsurface profiles, it should be understood that the soil/rock conditions may vary between and away from the boring locations.

4.2.2 Geologic Conditions

The project is located on the southern flank of the Florida Plateau, a stable, carbonate platform. In the study, the upper 200 feet of this platform is composed predominately of limestone and quartz sand. The sediments were deposited during several glacial and interglacial stages during the Pleistocene Epoch. Within the explored depths of this study, two distinct geological formations were encountered. These formations are the Miami Limestone Formation and the Fort Thompson Formation.

4.2.3 Miami Limestone

The Miami Limestone can be described as a soft tan white porous to very porous fossiliferous quartz sandy fine-grained slightly oolitic limestone. The solution channels in the limestone may be up to 2 inches in diameter at some locations, are filled with quartz fine sand and uncemented calcareous materials. The limestone varies in both thickness and competency within the investigated area.

The Miami Limestone was deposited in a shallow near shore marine carbonate bank environment. Spherical carbonate sand grains called oolites were formed and deposited in this environment. Near shore, processes transported quartz sand into the area and reworked some of the carbonate material. Encrusting organisms called bryozoans were locally abundant and formed patches on the substrate. After sea level receded, the carbonate deposit was exposed to fresh water and the cementation process was initiated. The degree of cementation, and therefore the competency of the rock, was influenced by both the abundance and the type of calcareous material in the original deposit. Humic and carbonic acids percolating downward through the material etched slots up to 4 feet deep in the surface of the stratum.

4.2.4 Fort Thompson Formation

Underlying the Miami Limestone Formation, the Fort Thompson Formation was generally encountered. The Fort Thompson Formation is composed of sediments of variable lithologies. The lithologies include non-fossiliferous quartz fine sand, fossiliferous quartz sandy limestone, coralline limestone, freshwater limestone, and quartz sandstone. These lithologies alternate abruptly in thickness and lateral extent.

The Fort Thompson limestone grades downward into a gray quartz and calcareous fine to medium sand. This sand has been cemented to varying degrees by carbonate material leached out of the overlying limestone. The cementation commonly takes the form of hard spherical sandstone nodules 1 to 2 inches in diameter occurring in a sand matrix. Sandstone lenses within the sand layer are the result of a more complete cementation.

4.2.5 Generalized Subsurface Conditions

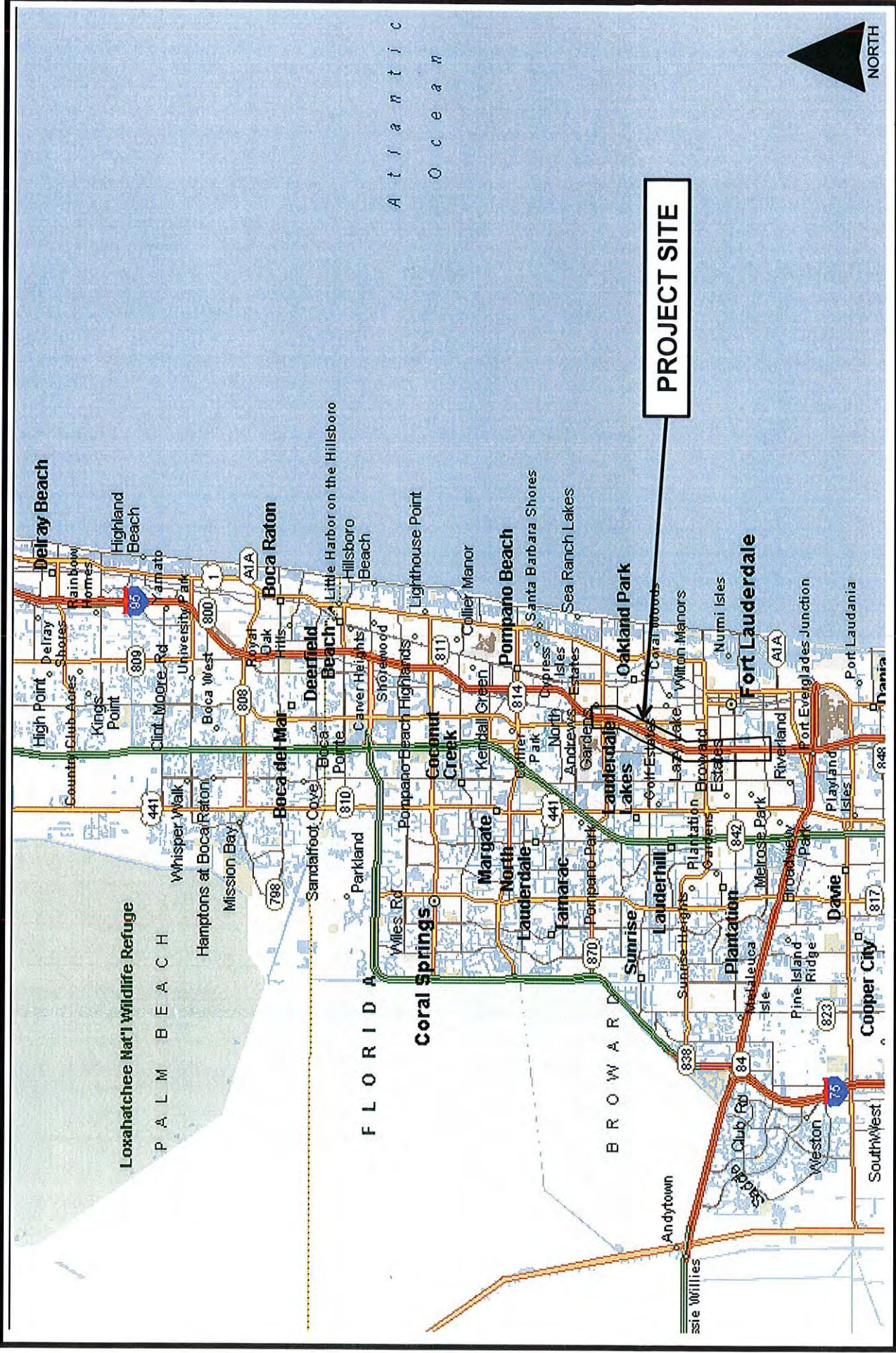
For a detailed subsurface condition at a particular borehole location, please refer to the Report of Core Borings in Appendix A.

4.2.6 Groundwater Conditions

The groundwater levels in the borings were measured at the time of drilling. Groundwater levels in the test borings were encountered at elevations ranging from 0.5 to 2.0 feet, NAVD88.

In addition, HRES reviewed the groundwater data provided by Broward County Office of Environmental Services, Water Management Division – Water Table Map, Average Wet Season dated February 17, 2000 (Attached in Appendix A). Based on this map, the average wet season

groundwater along the project is at 1.5 feet, NAVD88: A Seasonal High Ground Water Table (SHGWT) of 2.5 feet NAVD88 may be used for design. The Seasonal High Ground Water Table (SHGWT) was estimated by adding 12 inches over the average wet season. Fluctuation in the groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, surface water runoff and other site-specific factors such as water elevation variations at the canals. Since groundwater level variations are anticipated, design drawing and specifications should accommodate such possibilities and construction planning should be based on the assumption that variations will occur.



A t l a n t i c
O c e a n



PROJECT SITE

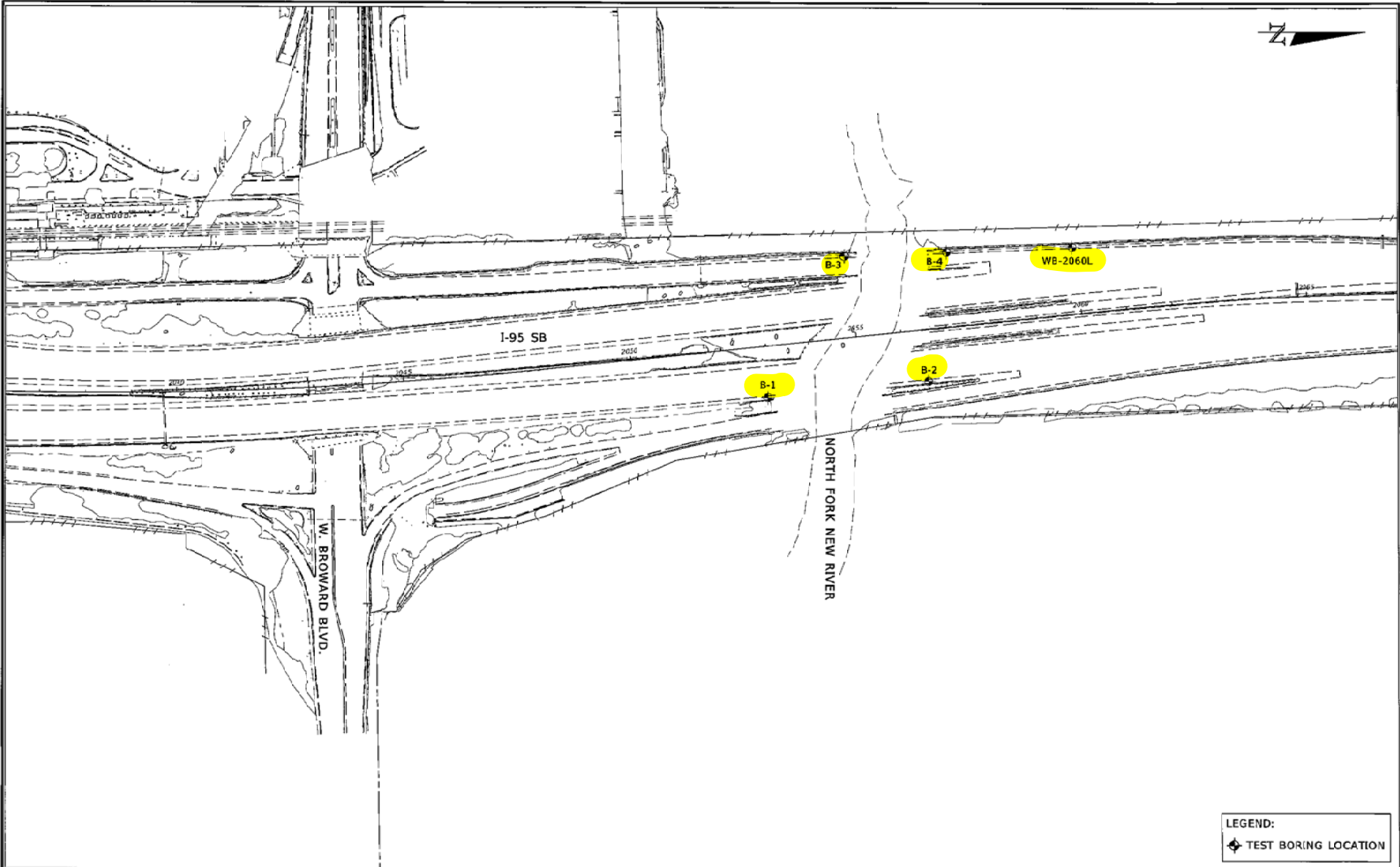
SITE LOCATION MAP		A-1
DRAWN BY: R.A.C.	DATE: 12/31/14	
PROJECT No: HR12-891R		SCALE: NTS

HRES
HR Engineering Services, Inc.

I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF W. COMMERCIAL BLVD. - PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION-D4
BROWARD COUNTY, FLORIDA

SUMMARY OF TEST BORING LOCATIONS - STRUCTURES
I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL
BOULEVARD – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID NO. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT NO. HR12-891R
DECEMBER 31, 2014

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft	BASELINE
	NORTHING	EASTING			
B-1	651745.635	928933.413	2052+70	110.0 R	I-95
B-3	651912.669	928621.271	2054+50	190.0 L	I-95
B-2	652099.452	928897.026	2056+50	110.0 R	I-95
B-4	652138.344	928611.956	2057+50	160.0 L	I-95
WB-2060L	652414.897	928601.003	2060+00	150.0 L	I-95
B-5	653610.282	928802.389	2071+80	110.0 R	I-95
WB-2072L	653631.523	928599.473	2072+00	100.0 L	I-95
WB-2076L	654035.024	928601.819	2076+00	95.0 L	I-95
WB-2076R	654036.579	928788.510	2076+00	95.0 R	I-95
WB-2080L	654431.223	928599.290	2080+00	90.0 L	I-95
WB-2080R	654437.130	928784.310	2080+00	90.0 R	I-95
WB-2084R	654834.057	928781.775	2084+00	100.0 R	I-95
GB-2108L	657221.644	928571.960	2108+00	110.0 L	I-95
GB-2108R	657224.254	928753.052	2108+00	110.0 R	I-95
WB-2126L	659031.484	928453.120	2126+00	110.0 L	I-95
WB-2130L	659438.338	928468.239	2130+00	100.0 L	I-95
WB-2134L	659843.591	928517.160	2134+00	90.0 L	I-95
WB-2138L	660242.180	928604.179	2138+00	100.0 L	I-95
WB-2142L	660631.153	928722.095	2142+00	100.0 L	I-95
WB-2146L	661006.469	928864.374	2146+00	90.0 L	I-95
WB-2146R	660940.347	929040.313	2146+00	90.0 R	I-95
WB-2150L	661380.378	929013.877	2150+00	90.0 L	I-95
B-6	661449.074	929240.130	2151+00	100.0 R	I-95
B-8	661516.963	929056.307	2151+50	95.0 L	I-95
B-9	661687.581	929134.278	2153+30	95.0 L	I-95
B-7	661613.877	929318.137	2153+30	105 R	I-95
WB-2156R	661872.154	929404.731	2156+00	90.0 R	I-95
WB-2158L	662125.967	929305.015	2158+00	90.0 L	I-95
WB-2160R	662244.946	929549.640	2160+00	90.0 R	I-95
WB-2162L	662497.300	929449.277	2162+00	100.0 L	I-95
WB-2182L	664360.209	930179.366	2182+00	100.0 L	I-95
WB-2186L	664734.893	930335.400	2186+00	100.0 L	I-95
B-9A	665579.340	930791.838	2195+60	110.0 L	I-95
B-9B	665628.539	931093.311	2197+50	125.0 R	I-95
WB-2204R	666180.011	931437.135	2204+00	135.0 R	I-95
GB-2207L	666606.631	931416.666	2207+50	90.0 L	I-95
GB-2207R	666514.982	931578.319	2207+50	90.0 R	I-95
B-12	666838.256	931540.475	2210+00	120.0 L	I-95
B-10	666799.092	931723.765	2210+20	95.0 R	I-95
B-13	667057.109	931656.820	2212+76	86.0 L	I-95
B-11	666995.433	931843.864	2212+90	110.0 R	I-95



LEGEND:
 ◆ TEST BORING LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Humberto R. Ramos
 P. E. License No. 42045
 7915 NW 72nd Avenue, Miramar, Florida 33166
 Phone: (305) 888-8960 - Fax: (305) 868-9773
 Certificate of Authorization No. 7991

OWNER:
 ME 12-14
 CHECKED BY:
 RJC 12-14
 DESIGNED BY:
 RJC 12-14
 CHECKED BY:
 HRB 12-14

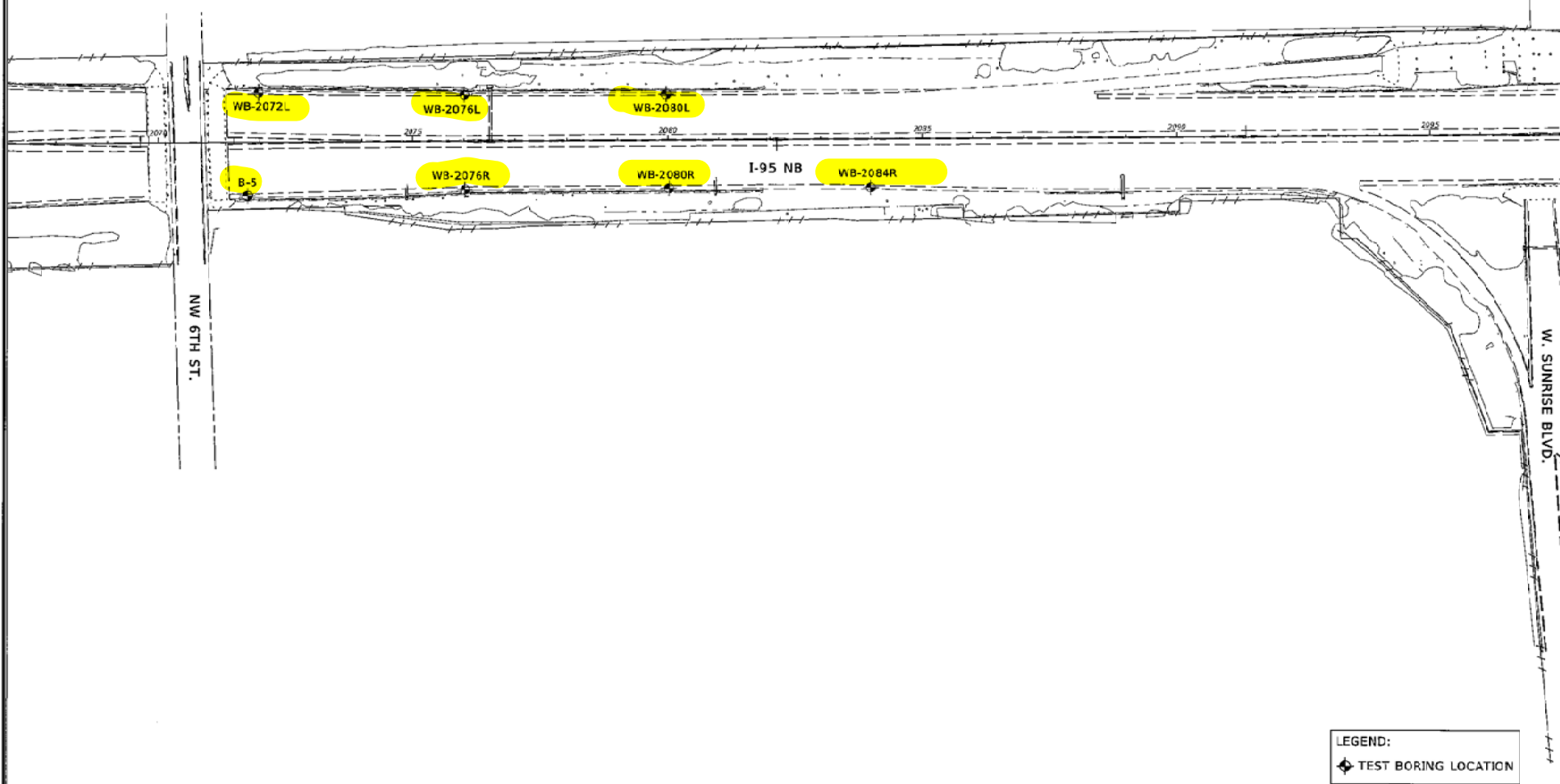
STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

PROJECT NAME:
FIELD EXPLORATION PLANS

REF. DRAWING:
A-4

SHEET NO.
1-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1



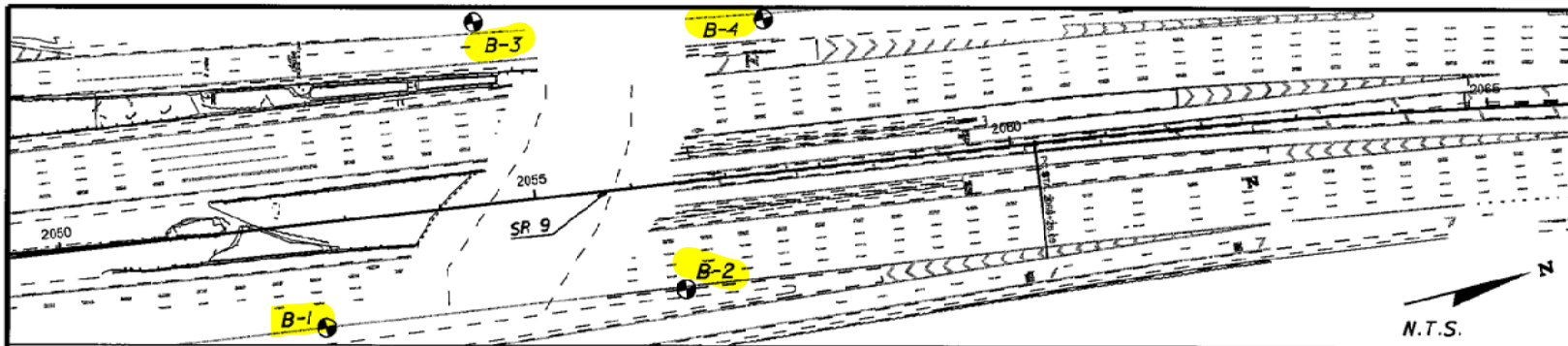
LEGEND:
 TEST BORING LOCATION

REVISIONS				DATE		BY		DESCRIPTION	

HR ENGINEERING SERVICES, INC. Hernando R. Ramos P. E. License No. 42045 7815 NW 72nd Avenue Maitley, Florida 33196 Phone: (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7991			DRAWN BY: ME 12-14 CHECKED BY: EIC 12-14 DESIGNED BY: EIC 12-14 CHECKED BY: MGR 12-14		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD NO. COUNTY FINANCIAL PROJECT # SR 9 BROWARD 433108-4-52-01		SHEET TITLE: FIELD EXPLORATION PLANS A-5		REF. DRAW. NO. SHEET NO.
PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1							12/9/2014 12:34:30 PM PR		

BRIDGE OVER NORTH FORK NEW RIVER

- **HRES BORINGS B-1, B-2, B-3, AND B-4**



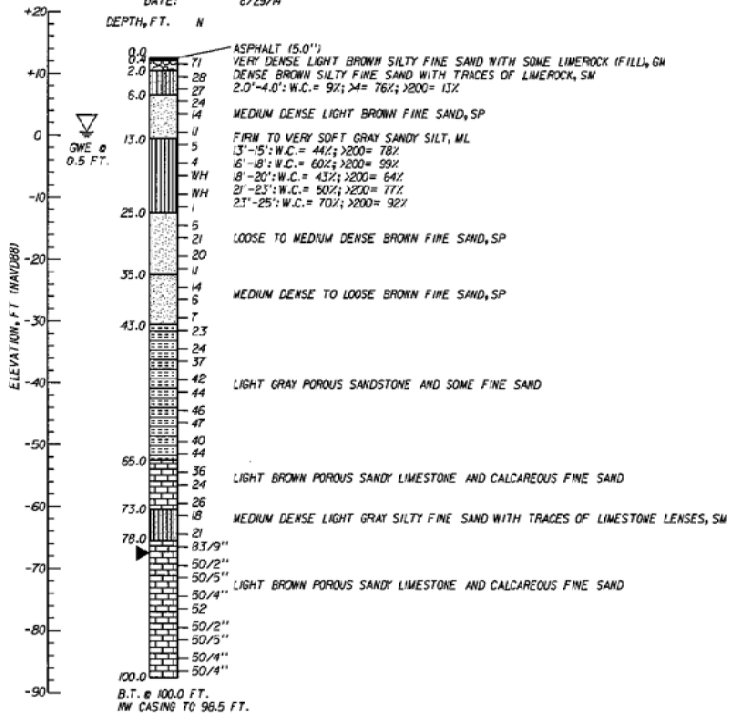
LEGEND:

- ASPHALT
- LIMESTONE FILL
- SANDY SILT
- SANDSTONE WITH SOME FINE SAND
- WATER LOSS
- GROUND WATER LEVEL AT BORING COMPLETION
- SILTY SAND
- FINE SAND
- LIMESTONE WITH SOME FINE SAND OR AND FINE SAND

B.T. BORING TERMINATED
 WH: WEIGHT OF HAMMER
 W.C.: WATER CONTENT
 >4: PERCENT PASSING #4 SIEVE
 >200: PERCENT PASSING #200 SIEVE
 N: SPT VALUE FOR A 12-INCH PENETRATION (AUTOMATIC HAMMER)
 HAMMER WEIGHT = 140 LB
 DROP HEIGHT = 30 IN
 THE TEST BORINGS WERE PERFORMED BY HRS USING A CME-55 TRACK MOUNTED RIG.
 GRANULAR MATERIALS:
 RELATIVE DENSITY (SILTS/CLAYS)
 SPT N-VALUE (BLOWS/2 INCHES)
 SILTS AND CLAYS:
 CONSISTENCY (SPT N-VALUE (BLOWS/2 INCHES))
 ENVIRONMENTAL CLASSIFICATION
 SUBSTRUCTURE:
 CONCRETE: MODERATELY AGGRESSIVE
 STEEL: MODERATELY AGGRESSIVE
 SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
 Plasticity
 pH
 Sulfates ppm
 Chlorides ppm

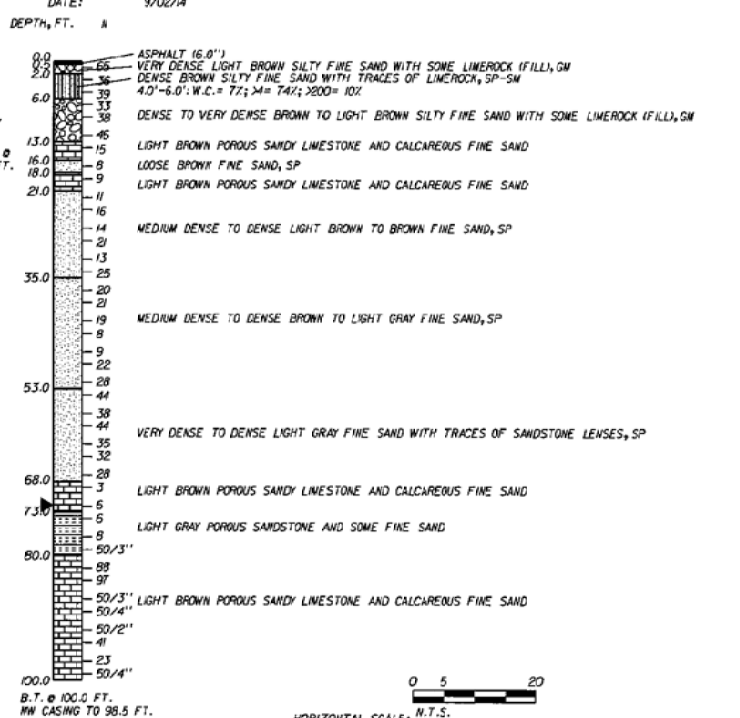
B-1

NORTHING: 65745.635
 EASTING: 928931.413
 STATION: 2052+70
 OFFSET: 10.0 R
 ELEVATION: 12.5 FT.
 DATE: 8/25/14



B-2

NORTHING: 652099.452
 EASTING: 928897.025
 STATION: 2056+50
 OFFSET: 10.0 R
 ELEVATION: 12.2 FT.
 DATE: 3/02/14



LEGEND:

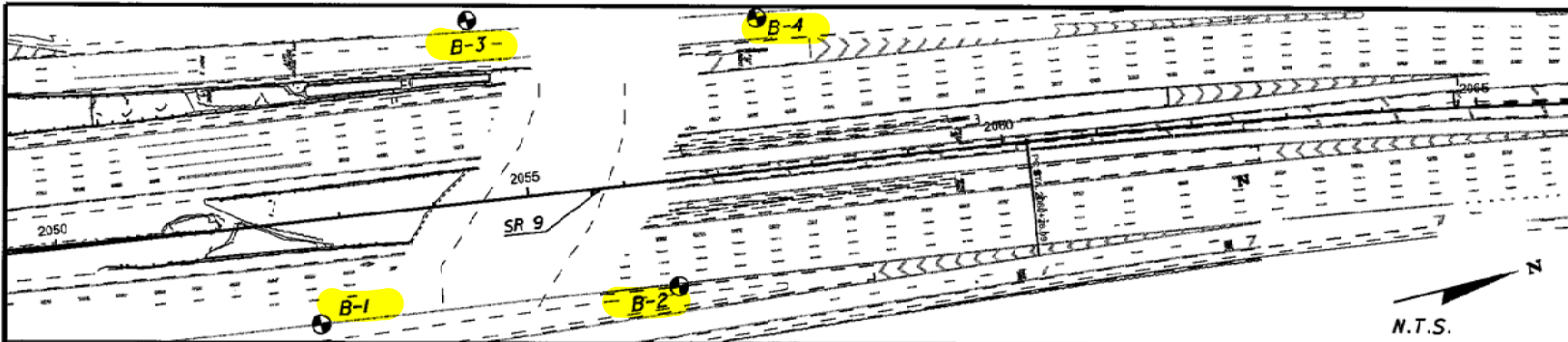
- ASPHALT
- LIMESTONE FILL
- SANDY SILT
- SANDSTONE WITH SOME FINE SAND
- WATER LOSS
- GROUND WATER LEVEL AT BORING COMPLETION
- SILTY SAND
- FINE SAND
- LIMESTONE WITH SOME FINE SAND OR AND FINE SAND

B.T. BORING TERMINATED
 WH: WEIGHT OF HAMMER
 W.C.: WATER CONTENT
 >4: PERCENT PASSING #4 SIEVE
 >200: PERCENT PASSING #200 SIEVE
 N: SPT VALUE FOR A 12-INCH PENETRATION (AUTOMATIC HAMMER)
 HAMMER WEIGHT = 140 LB
 DROP HEIGHT = 30 IN
 THE TEST BORINGS WERE PERFORMED BY HRS USING A CME-55 TRACK MOUNTED RIG.
 GRANULAR MATERIALS:
 RELATIVE DENSITY (SILTS/CLAYS)
 SPT N-VALUE (BLOWS/2 INCHES)
 SILTS AND CLAYS:
 CONSISTENCY (SPT N-VALUE (BLOWS/2 INCHES))
 ENVIRONMENTAL CLASSIFICATION
 SUBSTRUCTURE:
 CONCRETE: MODERATELY AGGRESSIVE
 STEEL: MODERATELY AGGRESSIVE
 SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE
 Plasticity
 pH
 Sulfates ppm
 Chlorides ppm

REVISIONS				DATE	BY	DESCRIPTION
DATE	BY	DESCRIPTION				

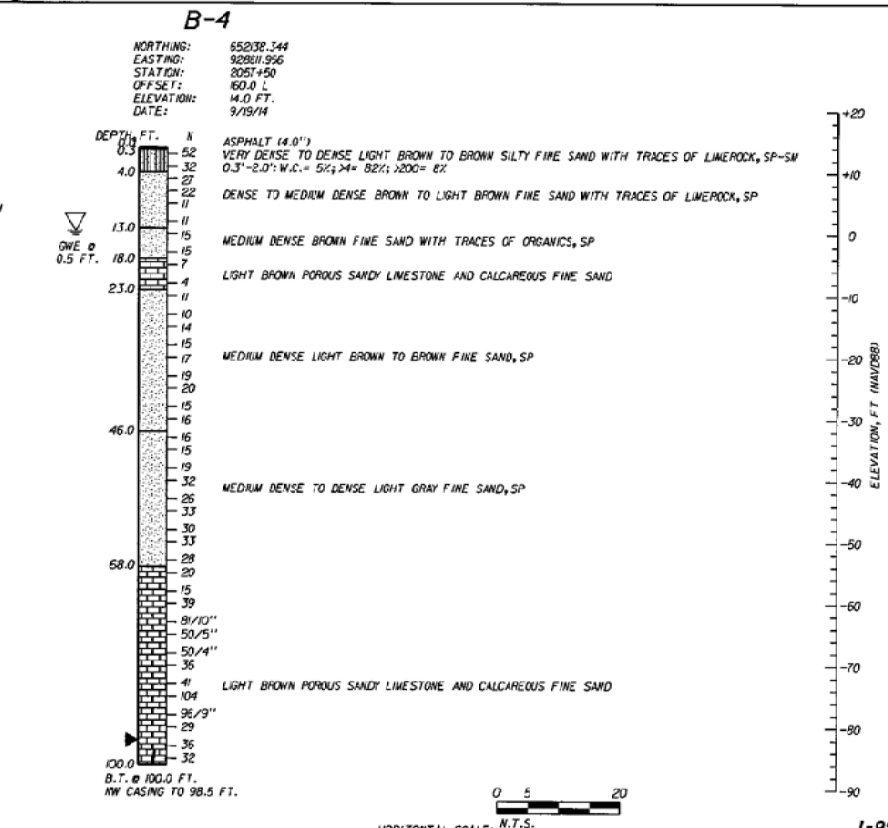
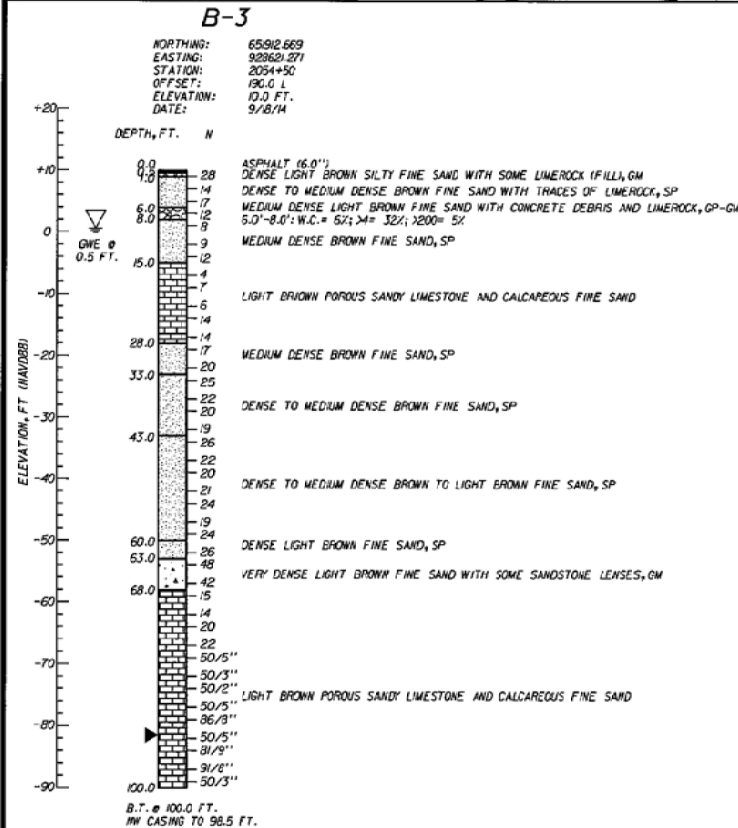
HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7816 NW 72nd Avenue Medley, Florida 33108 Phone (305) 888-8880 - Fax (305) 888-8770 Certificate of Authorization No. 7991			DRAWN BY: UME 12-14 CHECKED BY: NH 12-14 DESIGNED BY: NH 12-14 DATE: 12-14 ROAD NO.: SR 9 COUNTY: BROWARD FINANCIAL PROJECT ID: 433109-1-52-01			STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1			SHEET TITLE: REPORT OF CORE BORINGS A-14		SHEET NO.:
--	--	--	--	--	--	--	--	--	--	--	------------

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6005-23.0001, F.A.C.



LEGEND:

- ASPHALT
- LIMEROCK FILL
- FINE SAND WITH SOME SANDSTONE LENSES
- FINE SAND
- LIMESTONE WITH SOME FINE SAND GR AND FINE SAND SILTY SAND
- GROUND WATER LEVEL AT BORING COMPLETION
- B.T.: BORING TERMINATED
- N: STANDARD PENETRATION RESISTANCE (AUTOMATIC HAMMER)
- W.C.: WATER CONTENT
- >4: PERCENT PASSING #4 SIEVE
- >200: PERCENT PASSING #200 SIEVE
- HAMMER WEIGHT = 140 LB
- DROP HEIGHT = 30 IN



RELATIVE DENSITY

VERY LOOSE <3

LOOSE 3-8

MEDIUM DENSE 8-24

DENSE 24-40

VERY DENSE >40

SILTS AND CLAYS:

CONSISTENCY

VERY SOFT <1

SOFT 1-3

FIRM 3-6

STIFF 6-12

VERY STIFF 12-24

HARD >24

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE:
CONCRETE: MODERATELY AGGRESSIVE
STEEL: MODERATELY AGGRESSIVE
SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

Resistance class-on	pH	Sulfates ppm	Chlorides ppm
1B55-2,220	7.4-7.6	26-30	35-58

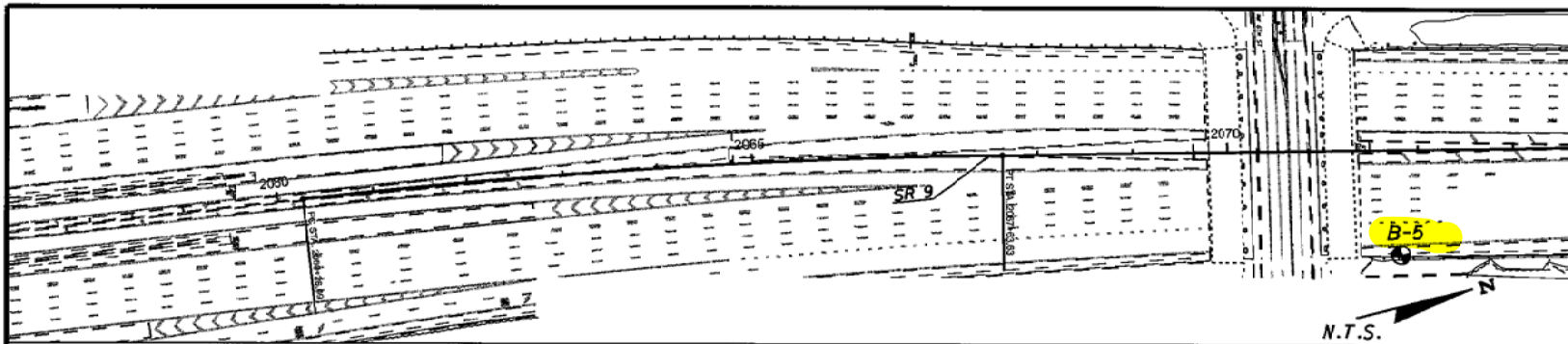
REVISIONS				DATE	BY	DESCRIPTION
DATE	BY	DESCRIPTION				

HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7615 NW 72nd Avenue Medley, Florida 33166 Phone: (305) 886-8380 - Fax: (305) 888-8770 Certificate of Authorization No. 7991			DRAWN BY: MUE 12-14 CHECKED BY: MH 12-14 DESIGNED BY: MH 12-14 CHECKED BY: MHR 12-14	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD NO. SR 9 COUNTY BROWARD FINANCIAL PROJECT ID 433108-1-52-01	SHEET TITLE: REPORT OF CORE BORINGS A-15 PROJECT NAME: 1-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1	REP. ENG. NO. SHEET NO.
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NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6005-23.003, F.A.C.

BRIDGE OVER NW 6TH STREET

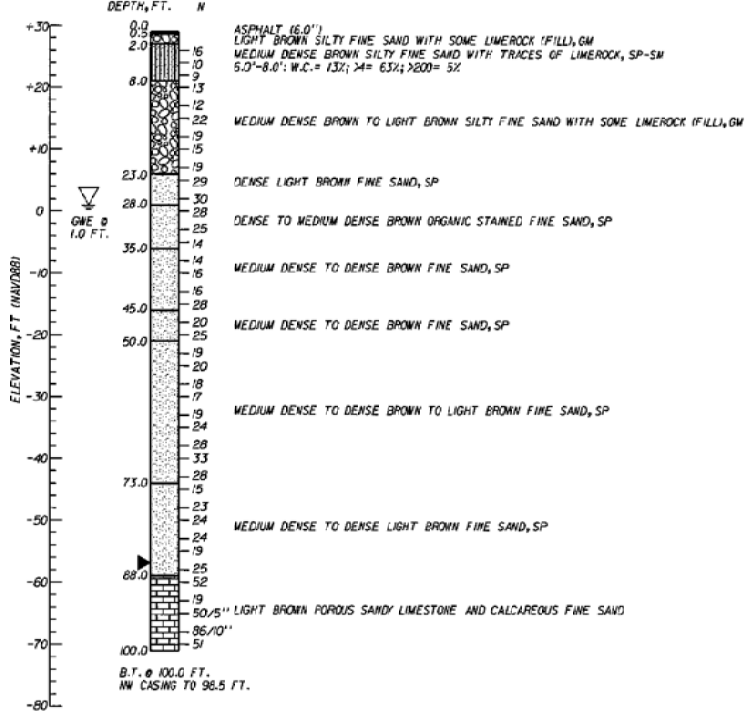
- HRES BORING B-5



- LEGEND:**
- ASPHALT
 - LIMEROCK FILL
 - SILTY SAND
 - FINE SAND
 - LIMESTONE WITH SOME FINE SAND OR AND FINE SAND
 - WATER LOSS
 - GROUND WATER LEVEL AT BORING COMPLETION
 - B.T.: BORING TERMINATED
 - N: STANDARD PENETRATION RESISTANCE (AUTOMATIC HAMMER)
 - W.C.: WATER CONTENT
 - >4: PERCENT PASSING #4 SIEVE
 - >200: PERCENT PASSING #200 SIEVE
 - HAMMER WEIGHT = 140 LB
 - DROP HEIGHT = 30 IN

B-5

NORTHING: 65360.282
 EASTING: 928802.389
 STATION: 2071+00
 OFFSET: 10.0 R
 ELEVATION: 29.0 FT.
 DATE: 9/03/14



THE TEST BORING WAS PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG.

GRANULAR MATERIALS:

RELATIVE DENSITY	SPT N-VALUE (BLOWS/12 INCHES)
VERY LOOSE	<3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	>40

SILTS AND CLAYS:

CONSISTENCY	SPT N-VALUE (BLOWS/12 INCHES)
VERY SOFT	<1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	>24

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE:
 STEEL: MODERATELY AGGRESSIVE
 CONCRETE: SLIGHTLY AGGRESSIVE
 SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

Resistivity ohm-cm	pH	Sulfates ppm	Chlorides ppm
3,493	7.5	7.7	25



HORIZONTAL SCALE: N.T.S.

1-95 NB OVER NW 6TH STREET

REVISIONS				DATE		BY		DESCRIPTION	

HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7816 NW 72nd Avenue Modry, Florida 33166 Phone (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7991				DRAWN BY: MUE 12-4 CHECKED BY: NK 12-11 DESIGNED BY: NK 12-11 CHECKED BY: HRB 12-14		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		SHEET TITLE: REPORT OF CORE BORINGS A-17		REF. NO. NO.
ROAD NO.: SR 9 COUNTY: BROWARD FINANCIAL PROJECT ID: 433108-1-52-01				PROJECT NAME: 1-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1		SHEET NO.				

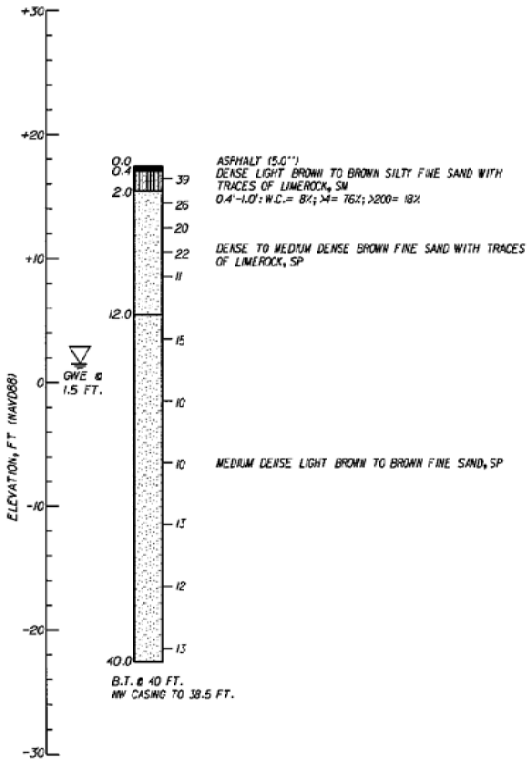
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 60G-23.001, F.A.C.

RETAINING WALL BORINGS

WB-2060L

NORTHING: 65244.897
 EASTING: 92880.003
 STATION: 2060+00
 OFFSET: 150.0 L
 ELEVATION: 17.5 FT
 DATE: 9/24/14

DEPTH, FT. N



LEGEND:

- ASPHALT
- FINE SAND
- SILTY SAND
- GROUND WATER LEVEL AT BORING COMPLETION
- B.T. BORING TERMINATED
- N: STANDARD PENETRATION RESISTANCE (AUTOMATIC HAMMER)
- W.C.: WATER CONTENT
- >4: PERCENT PASSING #4 SIEVE
- >200: PERCENT PASSING #200 SIEVE
- HAMMER WEIGHT = 140 LB
- DROP HEIGHT = 30 IN

THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG.
 GRANULAR MATERIALS:

RELATIVE DENSITY	SPT N-VALUE (BLOWS/2 INCHES)
VERY LOOSE	<3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	>40

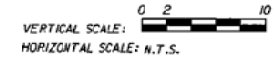
SILTS AND CLAYS:

CONSISTENCY	SPT N-VALUE (BLOWS/2 INCHES)
VERY SOFT	<1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	>24

ENVIRONMENTAL CLASSIFICATION
 SUBSTRUCTURE:
 STEEL: MODERATELY AGGRESSIVE
 CONCRETE: MODERATELY AGGRESSIVE
 SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

Resistivity ohm-cm	pH	Sulfates ppm	Chlorides ppm
1,056-2,220	7.4-7.6	25-30	35-58

NOTE: CORROSION TEST DATA FROM BORINGS B-2 AND B-3



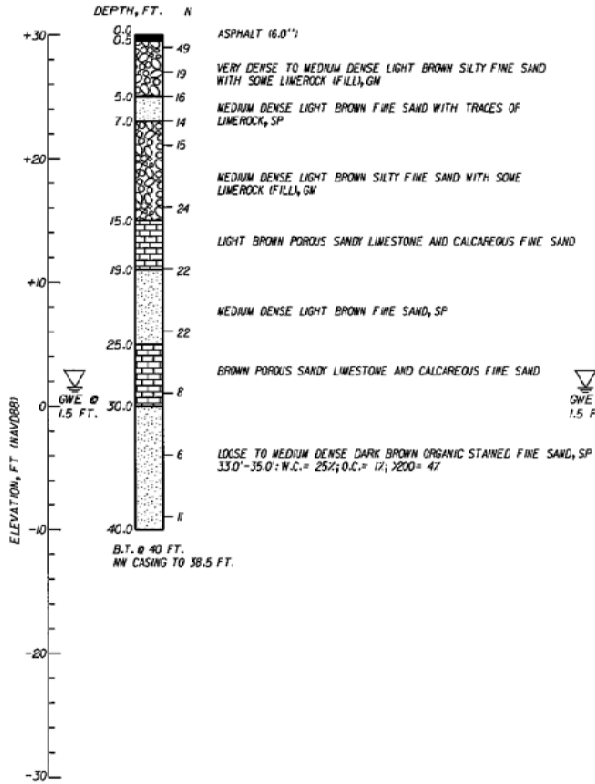
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 68B5-23.003, F.A.C.

REVISIONS				HR ENGINEERING SERVICES, INC. Herrando R. Remco P.E. License No. 42045 7815 NW 72nd Avenue Medley, Florida 33166 Phone: (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7891	DRAWN BY: ME 12-14 CHECKED BY: MM 12-11 DESIGNED BY: MM 12-11 CHECKED BY: MMR 12-14	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	SHEET TITLE: REPORT OF CORE BORINGS	PROJECT NAME: 1-95 CDC FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1	REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE						

WSCALEP #DATEP #TIMEP #FOLDER

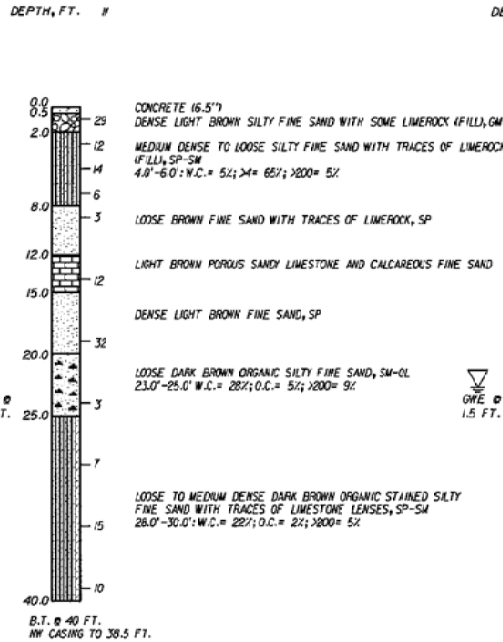
WB-2072L

NORTHING: 65435.523
 EASTING: 92869.813
 STATION: 2072+00
 OFFSET: 100.0 L
 ELEVATION: 30.0 FT
 DATE: 9/25/14



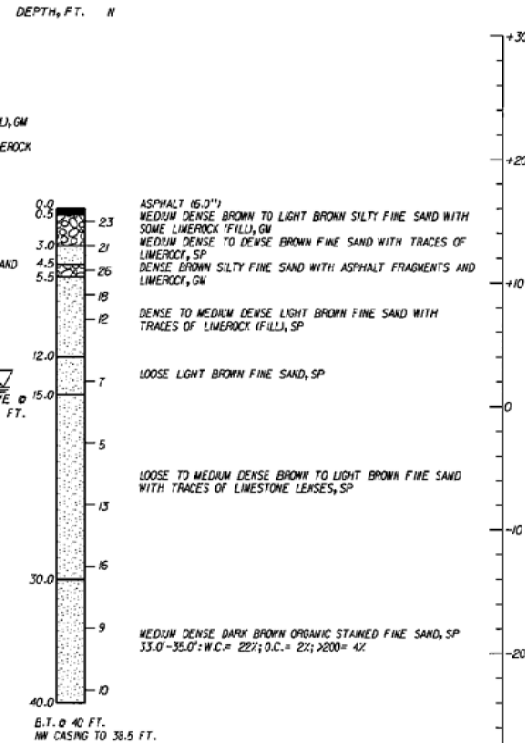
WB-2076L

NORTHING: 65405.024
 EASTING: 92869.813
 STATION: 2076+00
 OFFSET: 55.0 L
 ELEVATION: 24.2 FT
 DATE: 9/25/14



WB-2080L

NORTHING: 65443.223
 EASTING: 92859.698
 STATION: 2080+00
 OFFSET: 90.0 L
 ELEVATION: 16.0 FT
 DATE: 9/25/14



LEGEND

- ASPHALT
- CONCRETE
- LIMESTOCK FILL
- SILTY SAND
- FINE SAND
- ORGANIC FINE SAND
- LIMESTONE WITH SOME FINE SAND OR AND FINE SAND

▽ GROUND WATER LEVEL AT BORING COMPLETION

B.T.: BORING TERMINATED

N: STANDARD PENETRATION RESISTANCE (AUTOMATIC HAMMER)

W.C.: WATER CONTENT

O.C.: ORGANIC CONTENT

>4: PERCENT PASSING #4 SIEVE

>200: PERCENT PASSING #200 SIEVE

HAMMER WEIGHT = 140 LB

DROP HEIGHT = 30 IN

THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG.

GRANULAR MATERIALS:

RELATIVE DENSITY	SP1 N-VALUE (BLOWS/12 INCHES)
VERY LOOSE	<3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	>40

SILTS AND CLAYS:

CONSISTENCY	SP1 N-VALUE (BLOWS/12 INCHES)
VERY SOFT	<1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	>24

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE: STEEL: MODERATELY AGGRESSIVE
 CONCRETE: MODERATELY AGGRESSIVE
 SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

Resistivity (ohm-cm)	pH	Sulfates (ppm)	Chlorides (ppm)
1,892-3,333	7.5	30-77	25-53

NOTE: CORROSION TEST DATA FROM BORING B-5 AND SAMPLE B-200



REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7615 NW 72nd Avenue Medley, Florida 33156
 Phone: (305) 888-6880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

DRAWN BY: ME 12-4
 CHECKED BY: MH 12-14
 DESIGNED BY: MH 12-14
 CHECKED BY: HRS 12-14

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO. SP 9 COUNTY BROWARD FINANCIAL PROJECT ID 433100-4-52-01

SHEET TITLE: **REPORT OF CORE BORINGS A-43**

PROJECT NAME: **1-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1**

REF. Dwg. NO. SHEET NO.

NOTE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6805-23.0001, F.A.C.

WB-2076R

NORTHING: 654035.579
 EASTING: 928788.510
 STATION: 2076+00
 OFFSET: 95.0 R
 ELEVATION: 24.2 FT
 DATE: 5/02/14




WB-2080R


NORTHING: 654437.130
 EASTING: 928784.310
 STATION: 2080+00
 OFFSET: 50.0 R
 ELEVATION: 16.0 FT
 DATE: 5/02/14

WB-2084R

NORTHING: 654634.057
 EASTING: 928781.715
 STATION: 2084+00
 OFFSET: 100.0 R
 ELEVATION: 9.5 FT
 DATE: 5/02/14

LEGEND

-  ASPHALT
-  FINE SAND
-  LIMEROCK FILL

 GROUND WATER LEVEL AT BORING COMPLETION

B.T. BORING TERMINATED

N: STANDARD PENETRATION RESISTANCE (AUTOMATIC HAMMER)

HAMMER WEIGHT = 140 LB

DROP HEIGHT = 30 IN

THE TEST BORINGS WERE PERFORMED BY IRE'S USING A CME-55 TRUCK MOUNTED R.I.D.

GRANULAR MATERIALS:

RELATIVE DENSITY	SPT N-VALUE (BLOWS/2 INCHES)
VERY LOOSE	<3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	>40

SILTS AND CLAYS:

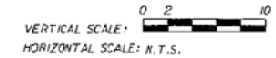
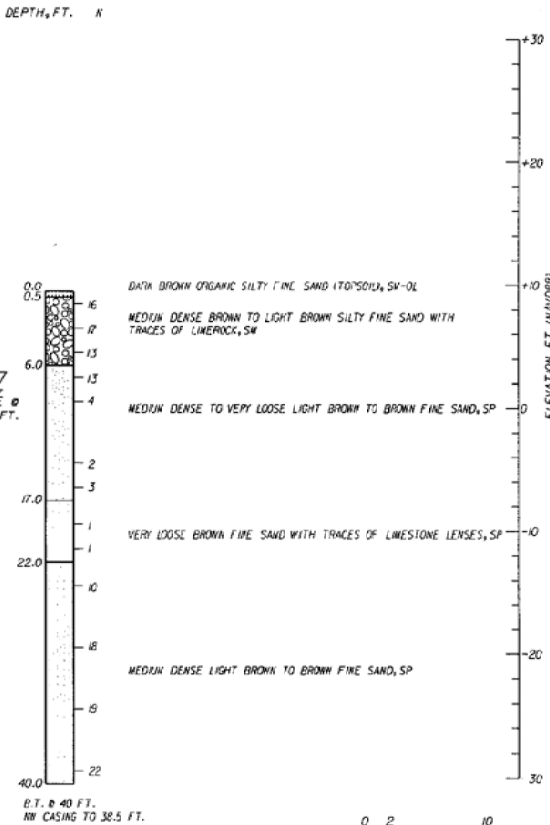
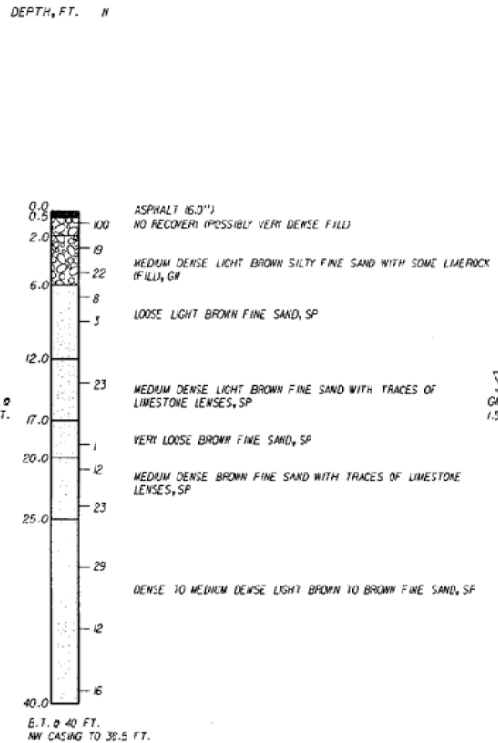
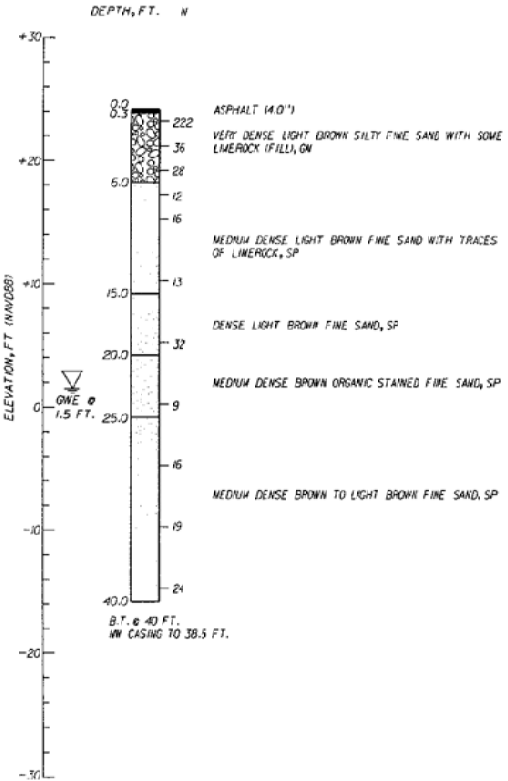
CONSISTENCY	SPT N-VALUE (BLOWS/2 INCHES)
VERY SOFT	<1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	>24

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE:
 STEEL: MODERATELY AGGRESSIVE
 CONCRETE: MODERATELY AGGRESSIVE
 SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

Resistivity ohm-cm	pH	Sulfates ppm	Chlorides ppm
1,692-3,033	7.5	30-77	25-55

NOTE: CORROSION TEST DATA FROM BORING B-5 AND SAMPLE D-200



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramon
 P. E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33169
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 799

DRAWN BY: ME 12-14
 CHECKED BY: ME 12-14
 DESIGNED BY: ME 12-14
 CHECKED BY: ME 12-14

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO. COUNTY FINANCIAL PROJECT ID PROJECT NAME

SR 9 BROWARD 433108-4-52-01 I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1

REPORT OF CORE BORINGS **A-44**

SHEET NO. 1

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 68B5-23.001, F.A.C.

APPENDIX B

**SUMMARY OF LABORATORY TEST RESULTS
LABORATORY TESTING PROCEDURES
LABORATORY TEST RESULTS
 SOIL TESTING
 CORROSION TESTING**

**B-1 THRU B-10
B-11**

**B-12 THRU B-184
B-185**

SUMMARY OF LABORATORY TEST RESULTS - STRUCTURES
I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT 4
FINANCIAL PROJECT ID No: 433108-4-52-01
BROWARD COUNTY- FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 31, 2014

Test Boring No.	USCS Class.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
			3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
B-1	SM	2.0-4.0	100	83	76	68	57	40	22	13	-	9	24	63	13
B-1	ML	13.0-15.0	-	-	-	-	-	-	-	78	-	44	-	-	78
B-1	ML	16.0-18.0	-	-	-	-	-	-	-	99	-	60	-	-	99
B-1	ML	18.0-20.0	-	-	-	-	-	-	-	64	-	43	-	-	64
B-1	ML	21.0-23.0	-	-	-	-	-	-	-	77	-	50	-	-	77
B-1	ML	23.0-25.0	-	-	-	-	-	-	-	92	-	70	-	-	92
B-2	SP-SM	4.0-6.0	83	80	74	68	52	39	25	10	-	7	26	64	10
B-3	GP-GM	6.0-8.0	47	37	32	27	18	12	8	5	-	6	68	27	5
B-4	SP-SM	0.3-2.0	100	87	82	78	67	42	16	8	-	5	18	74	8
WB-2060L	SM	0.4-1.0	100	89	76	61	42	36	25	18	-	8	24	58	18

SUMMARY OF LABORATORY TEST RESULTS - STRUCTURES
I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT 4
FINANCIAL PROJECT ID No: 433108-4-52-01
BROWARD COUNTY- FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 31, 2014

Test Boring No.	USCS Class.	Sample Depth (ft)	Grain Size Distribution - Percent Passing							Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %			
			3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100			No. 200	Gravel	Sand	Fines
B-5	SP-SM	6.0-8.0	75	68	63	57	49	37	17	5	-	13	37	58	5
WB-2072L	SP	33.0-35.0	-	-	-	-	-	-	-	4	1	25	-	-	4
WB-2076L	SP-SM	4.0-6.0	81	71	65	60	51	36	16	5	-	5	35	60	5
WB-2076L	SM-OL	23.0-25.0	-	-	-	-	-	-	-	9	5	28	-	-	9
WB-2076L	SP-SM	28.0-30.0	-	-	-	-	-	-	-	5	2	22	-	-	5
WB-2080L	SP	33.0-35.0	-	-	-	-	-	-	-	4	2	22	-	-	4
GB-2108L	SP-SM	2.0-3.0	89	78	71	66	57	42	17	11	-	10	29	60	11
GB-2108L	SP	23.0-25.0	-	-	-	-	-	-	-	4	2	25	-	-	4
GB-2108R	SP	2.0-4.0	95	93	90	88	81	54	9	3	-	6	10	87	3
WB-2126L	SP	2.0-3.0	92	82	69	57	38	24	9	4	-	9	31	65	4

LABORATORY TESTING PROCEDURES

Percent Fines Content – In this test, the sample is dried and then washed over a # 200 mesh sieve. The percentage of soil by weight passing the sieve is the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in general accordance with ASTM D-1140.

Percent Organics (Organic Loss on Ignition) – The amount of organic material in a sample is determined in this test. The sample is first dried and weighed, then ignited and reweighed. The amount of organic material is expressed as a percentage.

Water Content – The water content is the ratio, expressed as a percentage of the weight of water in a given mass of soil to the weight of the soil particles. This test was conducted in general accordance with ASTM D-2216.

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: B-1 Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/21/14


Technician:	H.C.
Date Sample Placed in Oven:	11/21/2014
Time in / Out of Oven :	11/21/14 4:00 PM TO 11/22/14 4:00 PM
Wt. of Wet Soil + Can, grams	295.80
Wt. of Dry Soil + Can, grams	271.70
Wt. of Can, grams No. 700	8.40
Wt. of Dry Soil, grams	263.30
Wt. of Moisture, grams	24.10
Water Content, w%	9%
Wt. of Dry Soil + Can Before Wash, grams	271.70
Wt. of Can, grams No. 700	8.40
Wt. of Dry Soil Before Wash, grams	263.30
Time in / Out of Oven :	11/24/14 2:00 PM TO 11/25/14 2:00 PM
Wt. of Dry Soil + Can After Wash, grams	238.50
Wt. of Dry Soil After Wash, grams	230.10
Total Loss, grams	33.20
Percent Finer Than No. 200 Sieve	13%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

USCS Classification:
SM


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: B-1		Sample No.: 2				
Date: 11/25/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	47.20	47.20	17	83	
4	4.76	17.20	64.40	24	76	USCS Classification:
10	2.00	19.90	84.30	32	68	SM
40	0.420	31.50	115.80	43	57	
60	0.250	44.10	159.90	60	40	
100	0.149	46.80	206.70	78	22	
200	0.074	23.20	229.90	87	13	
PAN						

Total Dry Weight Before Wash, (gr) = **263.30**
 Percent Finer than No. 200 Sieve by Wash Method = **13%**

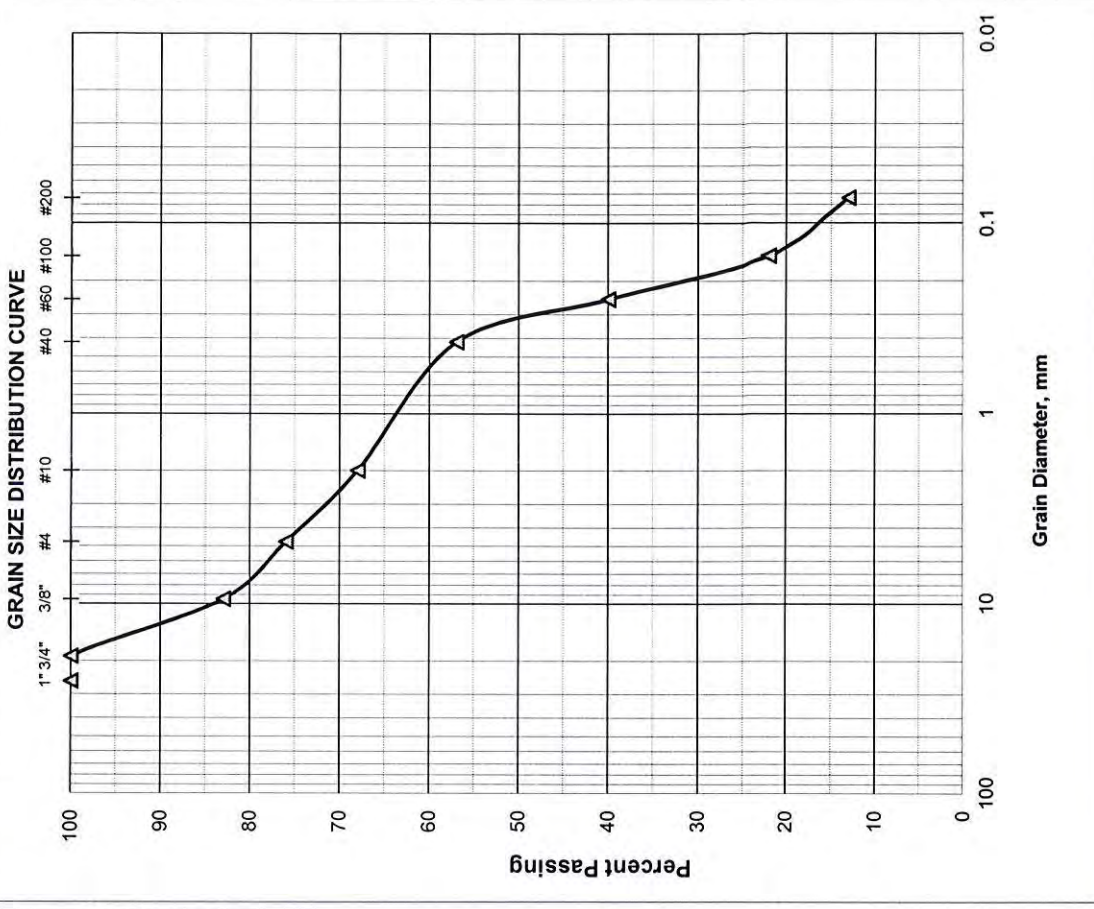
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	24
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	44
Silt and Clays	>No. 200	13
Water Content		9%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: B-1 Sample No.: 7 Depth: 13.0'-15.0'
Date: 09/02/14

Technician:	H.C.
Date Sample Placed in Oven:	09/04/2014
Time in / Out of Oven :	09/04/14 3:30 PM TO 09/05/14 3:30 PM
Wt. of Wet Soil + Can, grams	279.10
Wt. of Dry Soil + Can, grams	196.80
Wt. of Can, grams No. 903	8.30
Wt. of Dry Soil, grams	188.50
Wt. of Moisture, grams	82.30
Water Content, w%	44%
Wt. of Dry Soil + Can Before Wash, grams	196.80
Wt. of Can, grams No. 903	8.30
Wt. of Dry Soil Before Wash, grams	188.50
Time in / Out of Oven :	09/05/14 5:00 PM TO 09/06/14 5:00 PM
Wt. of Dry Soil + Can After Wash, grams	48.90
Wt. of Dry Soil After Wash, grams	40.60
Total Loss, grams	147.90
Percent Finer Than No. 200 Sieve	78%


Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

USCS Classification:

ML


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: B-1 Sample No.: 8 Depth: 16.0'-18.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:00 PM TO 11/10/14 2:00 PM
Wt. of Wet Soil + Can, grams	389.20
Wt. of Dry Soil + Can, grams	247.10
Wt. of Can, grams No. 715	9.00
Wt. of Dry Soil, grams	238.10
Wt. of Moisture, grams	142.10
Water Content, w%	60%
Wt. of Dry Soil + Can Before Wash, grams	247.10
Wt. of Can, grams No. 715	9.00
Wt. of Dry Soil Before Wash, grams	238.10
Time in / Out of Oven :	11/10/14 3:00 PM TO 11/11/14 3:00 PM
Wt. of Dry Soil + Can After Wash, grams	11.80
Wt. of Dry Soil After Wash, grams	2.80
Total Loss, grams	235.30
Percent Finer Than No. 200 Sieve	99%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

USCS Classification:
ML

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

**REPORT OF MOISTURE AND
PERCENT PASSING THE No. 200 SIEVE**

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: B-1 Sample No.: 9 Depth: 18.0'-20.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:30 PM TO 11/10/14 2:30 PM
Wt. of Wet Soil + Can, grams	296.70
Wt. of Dry Soil + Can, grams	210.70
Wt. of Can, grams No. 750	9.10
Wt. of Dry Soil, grams	201.60
Wt. of Moisture, grams	86.00
Water Content, w%	43%
Wt. of Dry Soil + Can Before Wash, grams	210.70
Wt. of Can, grams No. 750	9.10
Wt. of Dry Soil Before Wash, grams	201.60
Time in / Out of Oven :	11/10/14 3:00 PM TO 11/11/14 3:00 PM
Wt. of Dry Soil + Can After Wash, grams	81.40
Wt. of Dry Soil After Wash, grams	72.30
Total Loss, grams	129.30
Percent Finer Than No. 200 Sieve	64%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

USCS Classification:
ML

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

**REPORT OF MOISTURE AND
PERCENT PASSING THE No. 200 SIEVE**

Project Name: I-95 CDC Project No.: HR12-891R
 Boring No.: B-1 Sample No.: 10 Depth: 21.0'-23.0'
 Date: 09/02/14

Technician:	H.C.
Date Sample Placed in Oven:	09/04/2014
Time in / Out of Oven :	09/04/14 3:30 PM TO 09/05/14 3:30 PM
Wt. of Wet Soil + Can, grams	348.70
Wt. of Dry Soil + Can, grams	235.20
Wt. of Can, grams No. 904	8.40
Wt. of Dry Soil, grams	226.80
Wt. of Moisture, grams	113.50
Water Content, w%	50%
Wt. of Dry Soil + Can Before Wash, grams	235.20
Wt. of Can, grams No. 904	8.40
Wt. of Dry Soil Before Wash, grams	226.80
Time in / Out of Oven :	09/05/14 5:00 PM TO 09/06/14 5:00 PM
Wt. of Dry Soil + Can After Wash, grams	60.60
Wt. of Dry Soil After Wash, grams	52.20
Total Loss, grams	174.60
Percent Finer Than No. 200 Sieve	77%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
Florida Registration No. 42045

USCS Classification:
ML

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: B-1 Sample No.: 11 Depth: 23.0'-25.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:30 PM TO 11/10/14 2:30 PM
Wt. of Wet Soil + Can, grams	261.40
Wt. of Dry Soil + Can, grams	157.50
Wt. of Can, grams No. 751	9.10
Wt. of Dry Soil, grams	148.40
Wt. of Moisture, grams	103.90
Water Content, w%	70%
Wt. of Dry Soil + Can Before Wash, grams	157.50
Wt. of Can, grams No. 751	9.10
Wt. of Dry Soil Before Wash, grams	148.40
Time in / Out of Oven :	11/10/14 3:00 PM TO 11/11/14 3:00 PM
Wt. of Dry Soil + Can After Wash, grams	21.60
Wt. of Dry Soil After Wash, grams	12.50
Total Loss, grams	135.90
Percent Finer Than No. 200 Sieve	92%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

USCS Classification:

ML

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R

Boring No.: B-3 Sample No.: 4 Depth: 6.0'-8.0'

Date: 11/21/14

Technician:	H.C.
Date Sample Placed in Oven:	11/21/2014
Time in / Out of Oven :	11/21/14 4:00 PM TO 11/22/14 4:00 PM
Wt. of Wet Soil + Can, grams	149.80
Wt. of Dry Soil + Can, grams	141.30
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil, grams	132.90
Wt. of Moisture, grams	8.50
Water Content, w%	6%
Wt. of Dry Soil + Can Before Wash, grams	141.30
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil Before Wash, grams	132.90
Time in / Out of Oven :	11/24/14 2:00 PM TO 11/25/14 2:00 PM
Wt. of Dry Soil + Can After Wash, grams	135.30
Wt. of Dry Soil After Wash, grams	126.90
Total Loss, grams	6.00
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,

HR Engineering Services, Inc.

USCS Classification:

GP-GM


Hernando R. Ramos, P.E.

Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-991R				
Boring No.: B-3		Sample No.: 4				
Date: 11/25/2014		Depth: 6.0'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	70.70	70.70	53	47	
3/8"	9.51	13.20	83.90	63	37	
4	4.76	7.50	91.40	68	32	USCS Classification:
10	2.00	6.90	98.30	73	27	
40	0.420	11.20	109.50	82	18	GP-GM
60	0.250	7.90	117.40	88	12	
100	0.149	6.00	123.40	92	8	
200	0.074	3.40	126.80	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	132.90
Percent Finer than No. 200 Sieve by Wash Method=	5%

Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

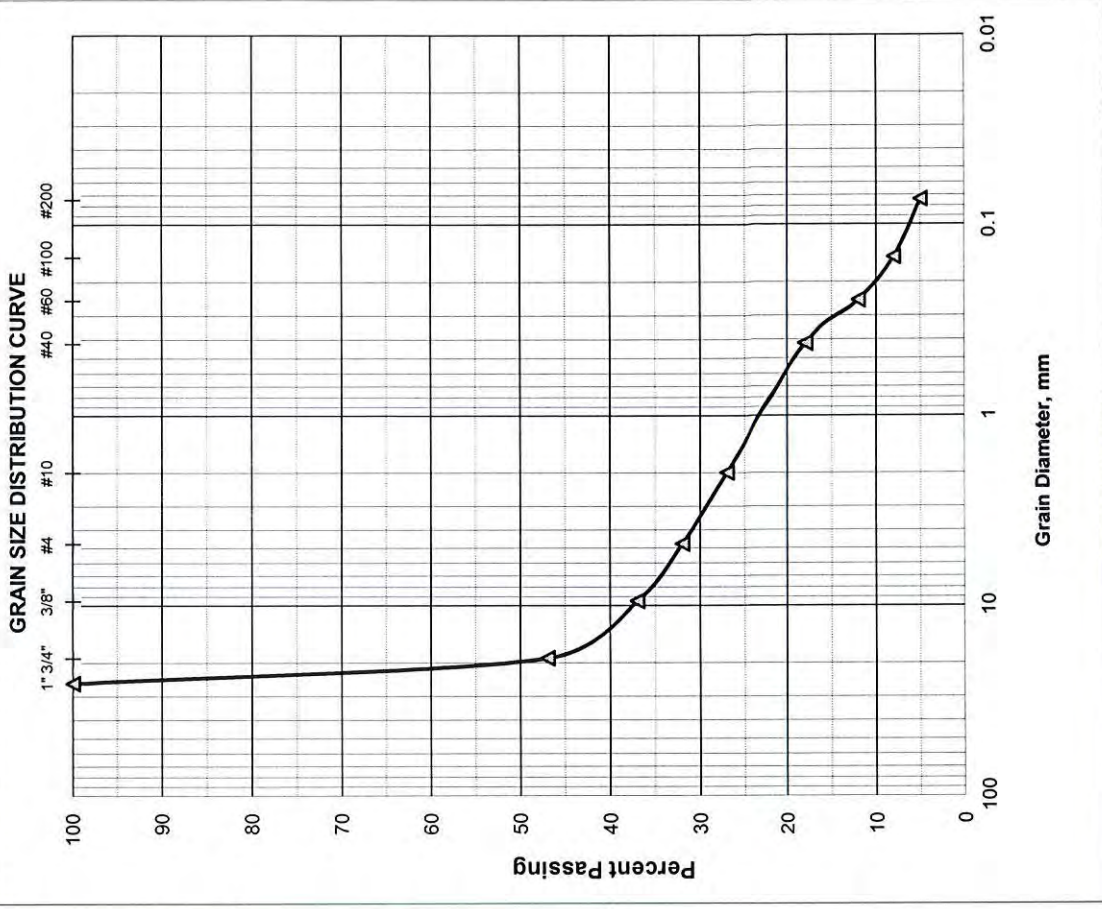
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	68
Coarse Sand	>No. 4-≤ No. 40	14
Fine Sand	>No. 40-≤ No. 200	13
Silt and Clays	>No. 200	5
Water Content		6%

Respectfully Submitted,
 HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: B-2 Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/21/14

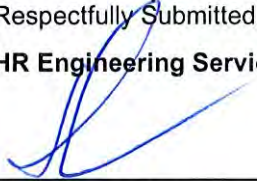
Technician:	H.C.
Date Sample Placed in Oven:	11/21/2014
Time in / Out of Oven :	11/21/14 4:00 PM TO 11/22/14 4:00 PM
Wt. of Wet Soil + Can, grams	237.90
Wt. of Dry Soil + Can, grams	222.60
Wt. of Can, grams No. 701	9.10
Wt. of Dry Soil, grams	213.50
Wt. of Moisture, grams	15.30
Water Content, w%	7%
Wt. of Dry Soil + Can Before Wash, grams	222.60
Wt. of Can, grams No. 701	9.10
Wt. of Dry Soil Before Wash, grams	213.50
Time in / Out of Oven :	11/24/14 2:00 PM TO 11/25/14 2:00 PM
Wt. of Dry Soil + Can After Wash, grams	201.00
Wt. of Dry Soil After Wash, grams	191.90
Total Loss, grams	21.60
Percent Finer Than No. 200 Sieve	10%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

USCS Classification:
SP-SM


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: B-2		Sample No.: 3				
Date: 11/25/2014		Depth: 4.0'-6.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	38.10	38.10	17	83	
3/8"	9.51	5.60	43.70	20	80	
4	4.76	12.50	56.20	26	74	USCS Classification:
10	2.00	12.40	68.60	32	68	
40	0.420	35.20	103.80	48	52	SP-SM
60	0.250	26.50	130.30	61	39	
100	0.149	31.90	162.20	75	25	
200	0.074	29.60	191.80	90	10	
PAN						

Total Dry Weight Before Wash, (gr) =	213.50
Percent Finer than No. 200 Sieve by Wash Method =	10%

Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

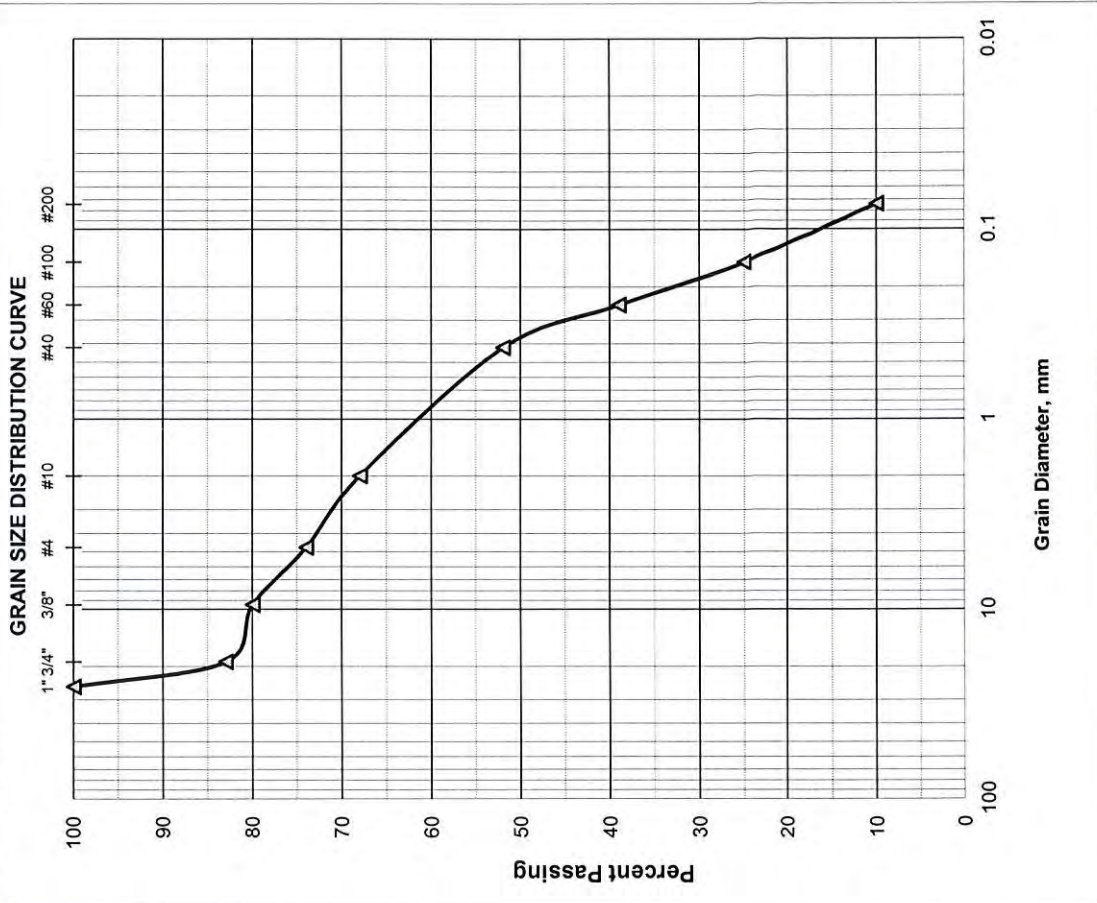
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	26
Coarse Sand	>No. 4-≤ No. 40	22
Fine Sand	>No. 40-≤ No. 200	42
Silt and Clays	>No. 200	10
Water Content		7%

Respectfully Submitted,
 HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE


Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: B-4 Sample No.: 1B Depth: 0.3'-2.0'
Date: 11/21/14

Technician:	H.C.
Date Sample Placed in Oven:	11/21/2014
Time in / Out of Oven :	11/21/14 4:00 PM TO 11/22/14 4:00 PM
Wt. of Wet Soil + Can, grams	260.30
Wt. of Dry Soil + Can, grams	248.10
Wt. of Can, grams No. 703	9.10
Wt. of Dry Soil, grams	239.00
Wt. of Moisture, grams	12.20
Water Content, w%	5%
Wt. of Dry Soil + Can Before Wash, grams	248.10
Wt. of Can, grams No. 703	9.10
Wt. of Dry Soil Before Wash, grams	239.00
Time in / Out of Oven :	11/24/14 2:00 PM TO 11/25/14 2:00 PM
Wt. of Dry Soil + Can After Wash, grams	228.30
Wt. of Dry Soil After Wash, grams	219.20
Total Loss, grams	19.80
Percent Finer Than No. 200 Sieve	8%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.


Hernando R. Ramos, P.E.
Florida Registration No. 42045

USCS Classification:
SP-SM

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-991R				
Boring No.: B-4		Sample No.: 1B				
Date: 11/25/2014		Depth: 0.3'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	31.60	31.60	13	87	
4	4.76	13.30	44.90	18	82	USCS Classification:
10	2.00	9.90	54.80	22	78	
40	0.420	26.10	80.90	33	67	SP-SM
60	0.250	57.80	138.70	58	42	
100	0.149	64.10	202.80	84	16	
200	0.074	17.00	219.80	92	8	
PAN						

Total Dry Weight Before Wash, (gr) =	239.00
Percent Finer than No. 200 Sieve by Wash Method=	8%

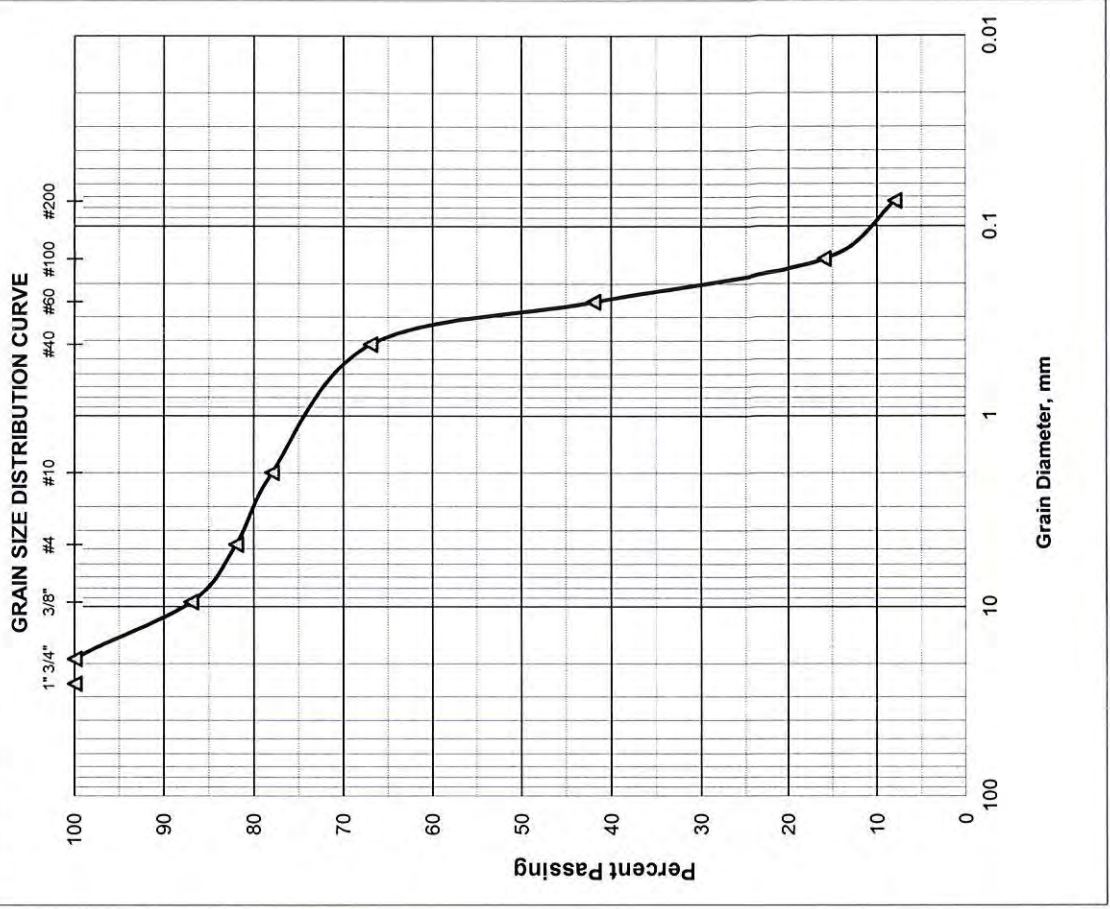
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	18
Coarse Sand	>No. 4-≤ No. 40	15
Fine Sand	>No. 40-≤ No. 200	59
Silt and Clays	>No. 200	8
Water Content		5%

Respectfully Submitted,
 HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: WB-2060L Sample No.: 1A Depth: 0.4'-1.0'
Date: 11/21/14

Technician:	H.C.
Date Sample Placed in Oven:	11/21/2014
Time in / Out of Oven :	11/21/14 6:00 PM TO 11/22/14 6:00 PM
Wt. of Wet Soil + Can, grams	228.20
Wt. of Dry Soil + Can, grams	212.90
Wt. of Can, grams No. 758	9.10
Wt. of Dry Soil, grams	203.80
Wt. of Moisture, grams	15.30
Water Content, w%	8%
Wt. of Dry Soil + Can Before Wash, grams	212.90
Wt. of Can, grams No. 758	9.10
Wt. of Dry Soil Before Wash, grams	203.80
Time in / Out of Oven :	11/25/14 6:00 AM TO 11/26/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	176.60
Wt. of Dry Soil After Wash, grams	167.50
Total Loss, grams	36.30
Percent Finer Than No. 200 Sieve	18%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

USCS Classification:
SM

Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: WB-2060L		Sample No.: 1A				
Date: 11/26/2014		Depth: 0.4'-1.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	23.90	23.90	11	89	
4	4.76	26.40	50.30	24	76	
10	2.00	30.30	80.60	39	61	
40	0.420	39.60	120.20	58	42	
60	0.250	12.10	132.30	64	36	
100	0.149	20.90	153.20	75	25	
200	0.074	14.20	167.40	82	18	
PAN						

USCS Classification: **SM**

Total Dry Weight Before Wash, (gr) =	203.80
Percent Finer than No. 200 Sieve by Wash Method=	18%

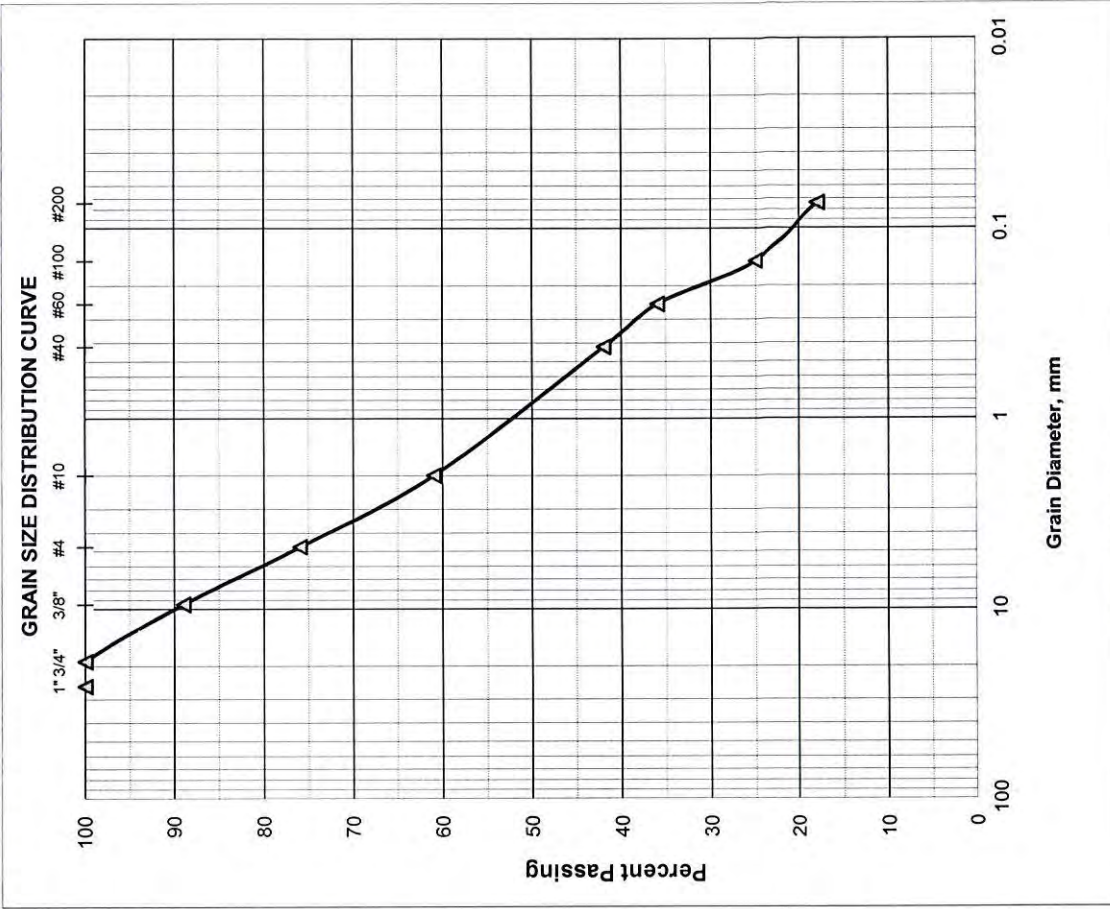
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	24
Coarse Sand	>No. 4-≤ No. 40	34
Fine Sand	>No. 40-≤ No. 200	24
Silt and Clays	>No. 200	18
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: B-5 Sample No.: 4 Depth: 6.0'-8.0'
Date: 11/21/14

Technician:	H.C.
Date Sample Placed in Oven:	11/21/2014
Time in / Out of Oven :	11/21/14 4:00 PM TO 11/22/14 4:00 PM
Wt. of Wet Soil + Can, grams	295.80
Wt. of Dry Soil + Can, grams	263.90
Wt. of Can, grams No. 704	9.00
Wt. of Dry Soil, grams	254.90
Wt. of Moisture, grams	31.90
Water Content, w%	13%
Wt. of Dry Soil + Can Before Wash, grams	263.90
Wt. of Can, grams No. 704	9.00
Wt. of Dry Soil Before Wash, grams	254.90
Time in / Out of Oven :	11/24/14 2:00 PM TO 11/25/14 2:00 PM
Wt. of Dry Soil + Can After Wash, grams	250.40
Wt. of Dry Soil After Wash, grams	241.40
Total Loss, grams	13.50
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

USCS Classification:

SP-SM

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-991R	
Boring No.: B-5		Depth: 6.0'-8.0'	
Date: 11/25/2014		Tested By: H.C.	
Sample No.: 4			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	USCS Classification: SP-SM
3/4"	19.00	64.60	64.60	25	75	
3/8"	9.51	17.70	82.30	32	68	
4	4.76	12.90	95.20	37	63	
10	2.00	14.50	109.70	43	57	
40	0.420	21.60	131.30	51	49	
60	0.250	31.30	162.60	63	37	
100	0.149	51.20	213.80	83	17	
200	0.074	27.50	241.30	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	254.90
Percent Finer than No. 200 Sieve by Wash Method=	5%

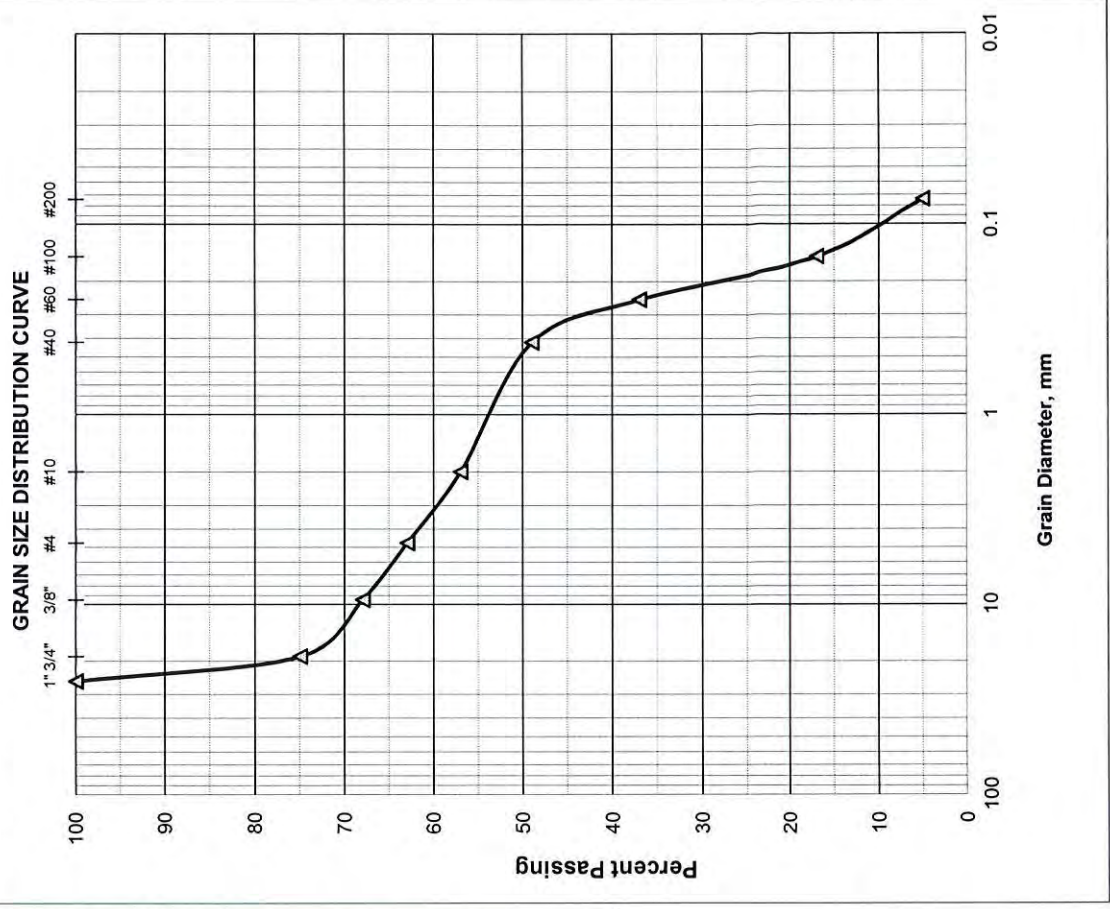
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 37
Coarse Sand	>No. 4-≤ No. 40 14
Fine Sand	>No. 40-≤ No. 200 44
Silt and Clays	>No. 200 5
Water Content	13%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

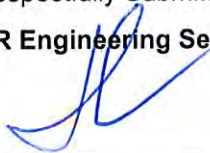
Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2072L Sample No.: 10 Depth: 33.0'-35.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	393.30
Wt. of Dry Soil + Can, grams	315.30
Wt. of Can, grams No. 804	9.00
Wt. of Dry Soil, grams	306.30
Wt. of Moisture, grams	78.00
Water Content, w%	25%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	30.50
Weight of Crucible and Sample After Ignition:	30.40
Weight of Crucible: No. 169	18.00
Weight of Oven-Dried Soil:	12.50
Weight Loss due to Ignition:	0.10
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216

Organic Content Test performed in general accordance with ASTM D 2974

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

USCS Classification:
SP

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2072L Sample No.: 10 Depth: 33.0'-35.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	393.30
Wt. of Dry Soil + Can, grams	315.30
Wt. of Can, grams No. 804	9.00
Wt. of Dry Soil, grams	306.30
Wt. of Moisture, grams	78.00
Water Content, w%	25%
Wt. of Dry Soil + Can Before Wash, grams	303.00
Wt. of Can, grams No. 804	9.00
Wt. of Dry Soil Before Wash, grams	294.00
Time in / Out of Oven :	11/08/14 11:00 AM TO 11/09/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	292.10
Wt. of Dry Soil After Wash, grams	283.10
Total Loss, grams	10.90
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

USCS Classification:

SP

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: WB-2076L Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/21/14

Technician:	H.C.
Date Sample Placed in Oven:	11/21/2014
Time in / Out of Oven :	11/21/14 6:00 PM TO 11/22/14 6:00 PM
Wt. of Wet Soil + Can, grams	673.10
Wt. of Dry Soil + Can, grams	641.60
Wt. of Can, grams No. 759	9.10
Wt. of Dry Soil, grams	632.50
Wt. of Moisture, grams	31.50
Water Content, w%	5%
Wt. of Dry Soil + Can Before Wash, grams	641.60
Wt. of Can, grams No. 759	9.10
Wt. of Dry Soil Before Wash, grams	632.50
Time in / Out of Oven :	11/25/14 6:00 AM TO 11/26/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	610.40
Wt. of Dry Soil After Wash, grams	601.30
Total Loss, grams	31.20
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

USCS Classification:

SP-SM

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: WB-2076L		Depth: 4.0'-6.0'				
Date: 11/26/2014		Tested By: H.C.				
Sample No.: 3		USCS Classification: SP-SM				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	126.20	126.20	19	81	
3/8"	9.51	62.50	188.70	29	71	
4	4.76	37.40	226.10	35	65	
10	2.00	27.50	253.60	40	60	
40	0.420	59.50	313.10	49	51	
60	0.250	95.10	408.20	64	36	
100	0.149	124.50	532.70	84	16	
200	0.074	68.50	601.20	95	5	
PAN						

Total Dry Weight Before Wash, (gr) = **632.50**
 Percent Finer than No. 200 Sieve by Wash Method = **5%**

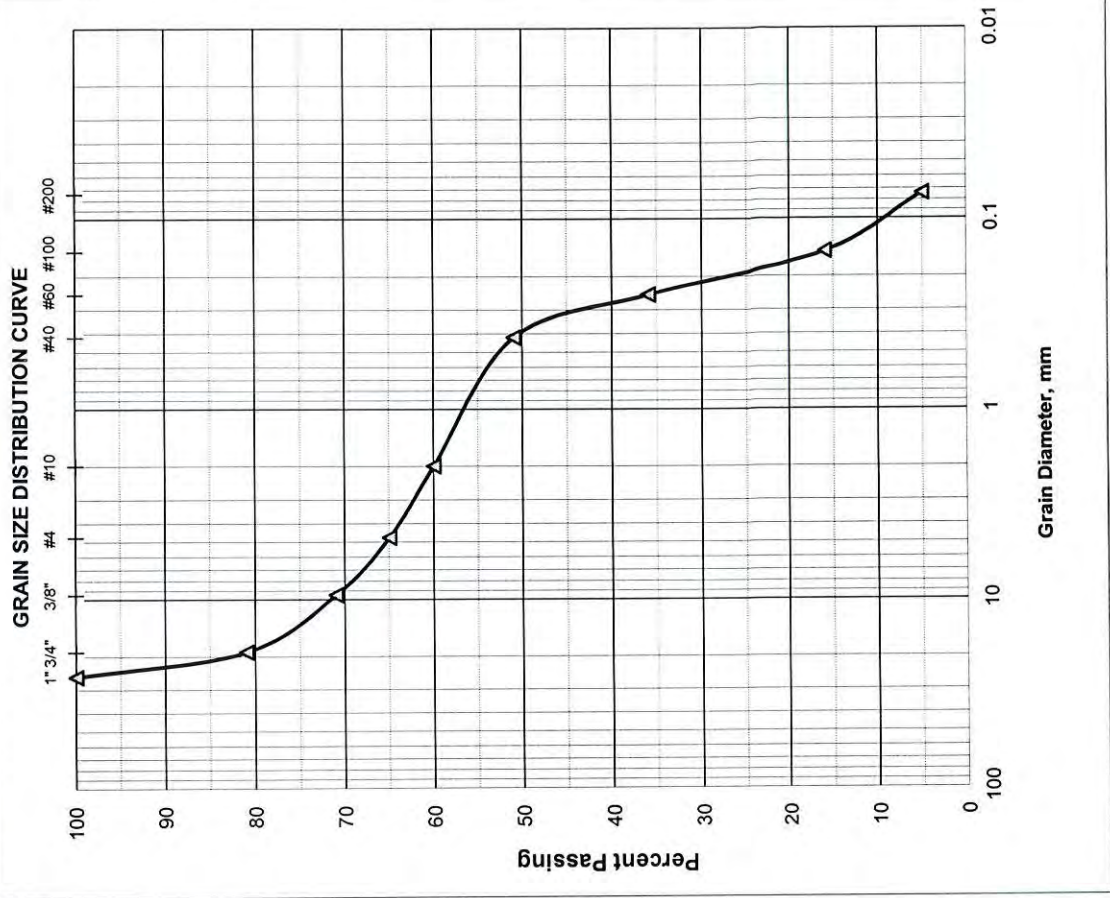
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 35
Coarse Sand	>No. 4-≤ No. 40 14
Fine Sand	>No. 40-≤ No. 200 46
Silt and Clays	>No. 200 5
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2076L Sample No.: 8 Depth: 23.0'-25.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	326.40
Wt. of Dry Soil + Can, grams	255.90
Wt. of Can, grams No. 805	8.30
Wt. of Dry Soil, grams	247.60
Wt. of Moisture, grams	70.50
Water Content, w%	28%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	30.20
Weight of Crucible and Sample After Ignition:	29.60
Weight of Crucible: No. 25	18.00
Weight of Oven-Dried Soil:	12.20
Weight Loss due to Ignition:	0.60
Percent Organics:	5%

Moisture Content Test performed in general accordance with ASTM D 2216

Organic Content Test performed in general accordance with ASTM D 2974

Respectfully Submitted,
HR Engineering Services, Inc.



USCS Classification:
SM-OL

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2076L Sample No.: 8 Depth: 23.0'-25.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	326.40
Wt. of Dry Soil + Can, grams	255.90
Wt. of Can, grams No. 805	8.30
Wt. of Dry Soil, grams	247.60
Wt. of Moisture, grams	70.50
Water Content, w%	28%
Wt. of Dry Soil + Can Before Wash, grams	244.20
Wt. of Can, grams No. 805	8.30
Wt. of Dry Soil Before Wash, grams	235.90
Time in / Out of Oven :	11/08/14 12:00 PM TO 11/09/14 12:00 PM
Wt. of Dry Soil + Can After Wash, grams	223.30
Wt. of Dry Soil After Wash, grams	215.00
Total Loss, grams	20.90
Percent Finer Than No. 200 Sieve	9%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

USCS Classification:
SM-OL

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2076L Sample No.: 9 Depth: 28.0'-30.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	574.80
Wt. of Dry Soil + Can, grams	471.10
Wt. of Can, grams No. 806	9.00
Wt. of Dry Soil, grams	462.10
Wt. of Moisture, grams	103.70
Water Content, w%	22%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	28.80
Weight of Crucible and Sample After Ignition:	28.60
Weight of Crucible: No. 234	17.50
Weight of Oven-Dried Soil:	11.30
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216

Organic Content Test performed in general accordance with ASTM D 2974

Respectfully Submitted,

HR Engineering Services, Inc.


Hernando R. Ramos, P.E.

Florida Registration No. 42045

USCS Classification:

SP-SM

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2076L Sample No.: 9 Depth: 28.0'-30.0'
Date: 11/07/14


Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	574.80
Wt. of Dry Soil + Can, grams	471.10
Wt. of Can, grams No. 806	9.00
Wt. of Dry Soil, grams	462.10
Wt. of Moisture, grams	103.70
Water Content, w%	22%
Wt. of Dry Soil + Can Before Wash, grams	450.80
Wt. of Can, grams No. 806	9.00
Wt. of Dry Soil Before Wash, grams	441.80
Time in / Out of Oven :	11/08/14 12:00 PM TO 11/09/14 12:00 PM
Wt. of Dry Soil + Can After Wash, grams	430.50
Wt. of Dry Soil After Wash, grams	421.50
Total Loss, grams	20.30
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

USCS Classification:
SP-SM


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2080L Sample No.: 10 Depth: 33.0'-35.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	396.20
Wt. of Dry Soil + Can, grams	326.60
Wt. of Can, grams No. 807	8.90
Wt. of Dry Soil, grams	317.70
Wt. of Moisture, grams	69.60
Water Content, w%	22%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	28.40
Weight of Crucible and Sample After Ignition:	28.10
Weight of Crucible: No. 83	16.30
Weight of Oven-Dried Soil:	12.10
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216

Organic Content Test performed in general accordance with ASTM D 2974

Respectfully Submitted,

HR Engineering Services, Inc.



USCS Classification:

SP

Hernando R. Ramos, P.E.

Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: WB-2080L Sample No.: 10 Depth: 33.0'-35.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	396.20
Wt. of Dry Soil + Can, grams	326.60
Wt. of Can, grams No. 807	8.90
Wt. of Dry Soil, grams	317.70
Wt. of Moisture, grams	69.60
Water Content, w%	22%
Wt. of Dry Soil + Can Before Wash, grams	314.70
Wt. of Can, grams No. 807	8.90
Wt. of Dry Soil Before Wash, grams	305.80
Time in / Out of Oven :	11/08/14 12:00 PM TO 11/09/14 12:00 PM
Wt. of Dry Soil + Can After Wash, grams	301.60
Wt. of Dry Soil After Wash, grams	292.70
Total Loss, grams	13.10
Percent Finer Than No. 200 Sieve	4%


Moisture Content Test performed in general accordance with ASTM D 2216

Fines Content Test performed in general accordance with ASTM C 136

Respectfully Submitted,
HR Engineering Services, Inc.

USCS Classification:

SP


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.
Corrosion Series

I-95 CDC PHASE 3A-1

Project Name: _____

Project Number: _____

HR12-891R

Date: 11/11/14

Tested by: H.C.

Sample No.	Sampling Date	Resistivity, ohm-cm.	Chlorides, ppm	Sulfates, ppm	pH	Testing Date	Sub-Structure Environmental Classification	
							Steel	Concrete
B-2	09/02/14	1856	58	30	7.4	09/05/14	MA	MA
B-3	09/18/14	2220	35	26	7.6	09/19/14	MA	MA
B-5	09/03/14	3133	25	77	7.5	11/04/14	MA	SA
B-7	09/17/14	2417	23	38	7.3	10/13/14	MA	MA
B-8	09/24/14	1927	33	33	7.6	10/13/14	MA	MA
B-11	09/11/14	985	180	40	7.2	09/19/14	EA	MA
B-12	09/02/14	970	191	34	7.3	09/19/14	EA	MA
B-2100 (NE Sunrise Blvd. Pond)	10/10/14	1952	55	30	7.5	10/13/14	MA	MA
CB-4 (C-13 Canal)	10/10/14	2427	15	77	7.3	10/13/14	MA	MA

P-185

SA: Slightly Aggressive

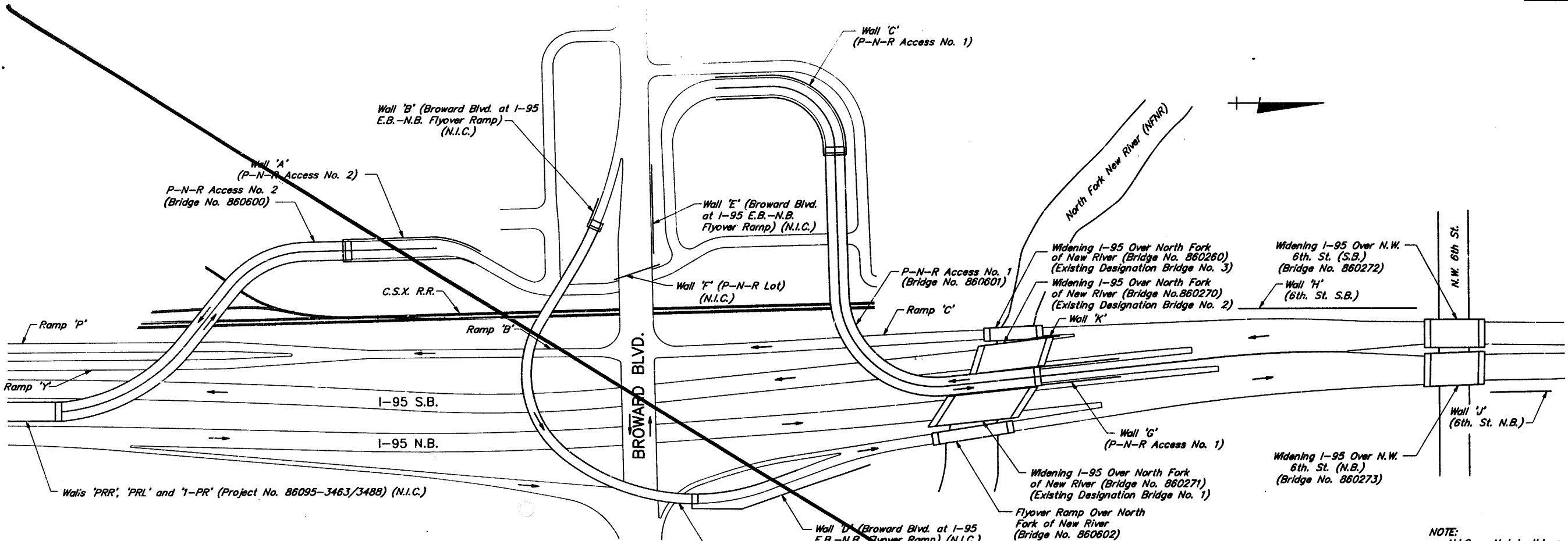
MA: Moderately Aggressive

EA: Extremely Aggressive

Tests performed by HRES in accordance with Florida Method of Test Corrosion Series in Soil and Water, Designation FM 5-550 through FM 5-553

APPENDIX – B2

Existing Soil Boring Information from Previous Projects along the Project Corridor



VICINITY MAP

PAY ITEM NOTES:

- Payment for Incidental Items Not Specifically Covered in the Individual Bid Items Shall Be Included in the Contract Prices for the Bid Items.
- For Summary of Bridge Pay Items, see Print of Computer (CES) Output.
- For Maintenance of Traffic Notes, see Roadway Plans.
- The Following Numbers of Standard Composite Neoprene Bearing Pads Are Required:
 Bridge No. 1 : 32 Type II Composite Pads
 Bridge No. 2 : 20 Type III Composite Pads
 Bridge No. 3 : 8 Type II Composite Pads
 Bridges over N.W. 6th Street : 24 Type II Composite Pads
 Flyover Ramp : 18 Type III Composite Pads
 Item No. 400-147 includes quantities for all pads.
- Bid Item No. 400-7 includes the following areas for Approach Slab Grooving:
 P.N.R. No. 1 : 231 S.Y.
 P.N.R. No. 2 : 231 S.Y.
 Flyover Ramp : 116 S.Y.
- The Total Plan Area of Entirely New Approach Slabs Required is as Follows:
 P.N.R. No. 1 : 279 S.Y.
 P.N.R. No. 2 : 279 S.Y.
 Flyover Ramp : 138 S.Y.
 Details of approach slabs and payment are included in the Roadway Plans.
- Item Number 110-3 Includes Removal of Approximately the Following (Plan Area) of Existing Structure :
 Bridge No. 1 : 5,636 S.F. — 6830 S.F. 32
 Bridge No. 2 : 1,087 S.F.
 Bridge No. 3 : 814 S.F.
 Bridges over N.W. 6th Street : 833 S.F.(NB)
 833 S.F.(SB)
- The Number "9" that precedes Item Number Indicates Epoxy Coated Reinforcing is used in the Item.
- The Cost of Cleaning and Sealing All Concrete Surfaces to be Sealed Shall be Paid for Under Item No. 400-154, Cleaning and Sealing Concrete Surfaces.
- The Cost of Furnishing Penetrant sealer to All Concrete Surfaces to be Sealed at an Estimated Application Rate of 200 Sq. Ft. Per Gallon Shall be Paid For Under Item No. 400-149, Penetrant Sealer.
- Payment for "Class 5 Applied Finish Coating" on the Existing Substructure shall be Under Bid Item No. 400-143, Cleaning and Coating Concrete Surfaces.

- Estimated structural steel quantities:
 A. Bid item no. 460-2-1, Structural Steel (Carbon)-
 P-N-R NO. 1 729,639 P-N-R NO. 2
 1) Grade 36 material 859,692 (846,641) lbs. (726,305) (721,314) lbs
 2) Anchor bolts 3,368 1,443
 3) High strength bolts 67,916 (68,074) (48) (70,910) 71,180
 4) Shear connectors 31,041 (30,132) 833,577 31,315 lbs
 Total 962,017 (948,215) lbs. (829,973) (825,092)
 B. Bid item no. 460-2-2, Structural Steel (Low Alloy)-
 1) Grade 50 material 3,682,850 lbs. 5,276,413 lbs
 3,698,942
- It should be noted that quantities for some of the bridges are divided among two different project numbers on the Summary of Bridge Pay Items.

GENERAL INDEX OF SHEETS

- A-1 Vicinity Map, General Index of Sheets and Pay Items Notes.
- A-2 General Notes
- A-3 Slope Pavement, Sand-Cement Riprap and Concrete Finish Details
- A-4 Bridge Hydraulic Recommendations
- A-5 Typical Notes and Details for AASHTO Type II, III and IV Prestressed Beams (Index 100)
- A-6 Composite Neoprene Bearing Pads (Index 200)
- A-7 Light Pole Pilaster (Index 500)
- A-8 18" and 20" Prestressed Concrete Piles (Index 601)
- A-9 24" and 30" Prestressed Concrete Piles (Index 602)
- A-10 Traffic Railing Barrier
- A-11 Standard Bar Bending Details (Index 1300)
- B-1 thru B-76 P-N-R Access No. 2 (see Detailed Index, sheet B-1)
- C-1 thru C-75 P-N-R Access No. 1 (see Detailed Index, sheet C-1)
- D-1 thru D-62 Widening I-95 over North Fork of New River (see Detailed Index, sheet D-1)
- E-1 thru E-12 Flyover Ramp over North Fork of New River (see Detailed Index, sheet E-1)
- F-1 thru F-42 Widening I-95 over N.W. 6th Street (see Detailed Index, sheet F-1)

Timothy J. Fennell
January 30, 1995

NOTE:
N.I.C. = Not in this contract, See state project no. 86070-3493. (Broward Blvd. at I-95 E.B.-N.B. Flyover Ramp), state project no. 86070-3496 (P-N-R Lot) and state project no. 86095-3463/3488 (I-595 / I-95 / Davis Blvd.)

NOTE:
PAYMENT FOR DOOR ASSEMBLY ENCLOSURES AT THE ACCESS OPENING IN THE GIRDERS SHALL BE PAID FOR UNDER BID ITEM NO. 2-46010B-B, LUMP SUM BASIS. SEE SHEET A-12 FOR QUANTITY.

860600

Page No. 2

RECEIVED
JAN 31 1995
MORRISON KNUDSEN
C-4044

W.P.I. NO. 4140930
VICINITY MAP, GENERAL INDEX OF SHEETS AND PAY ITEM NOTES

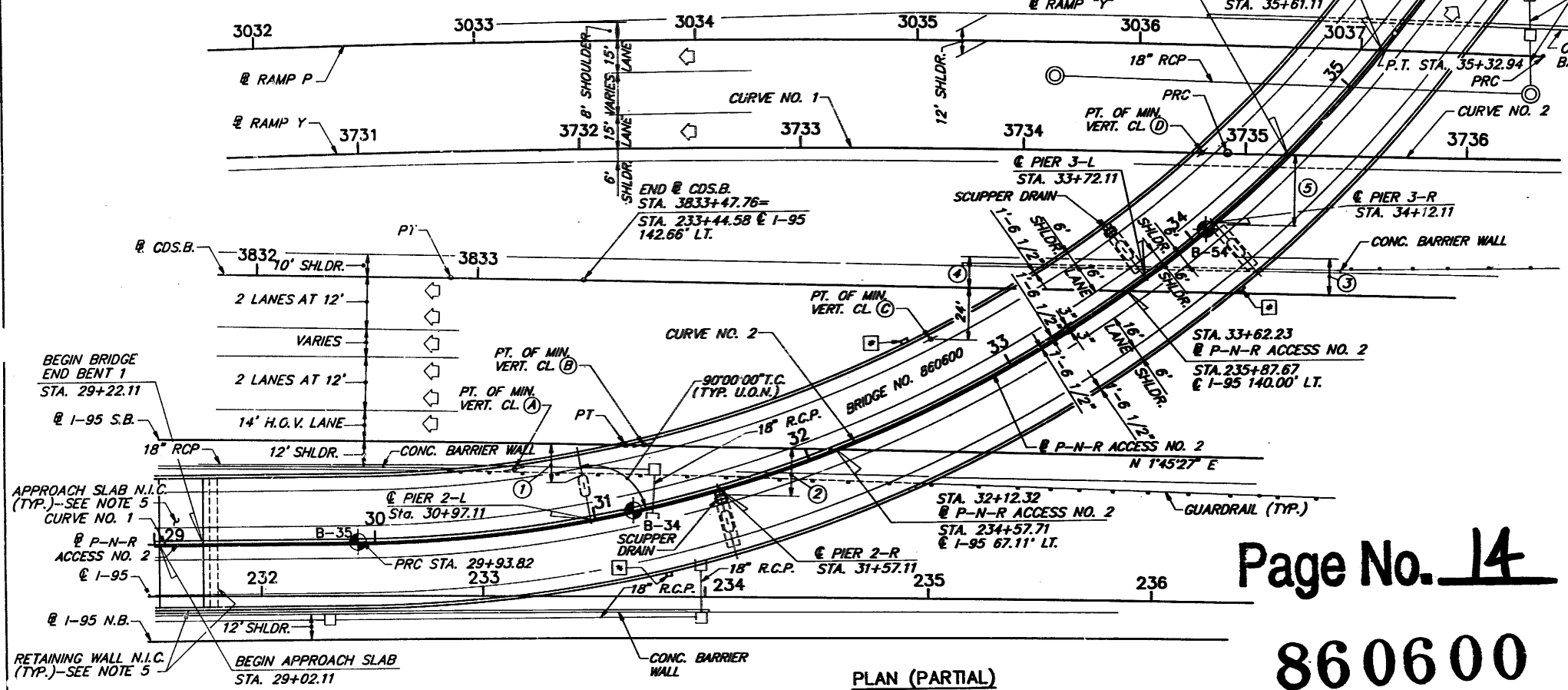
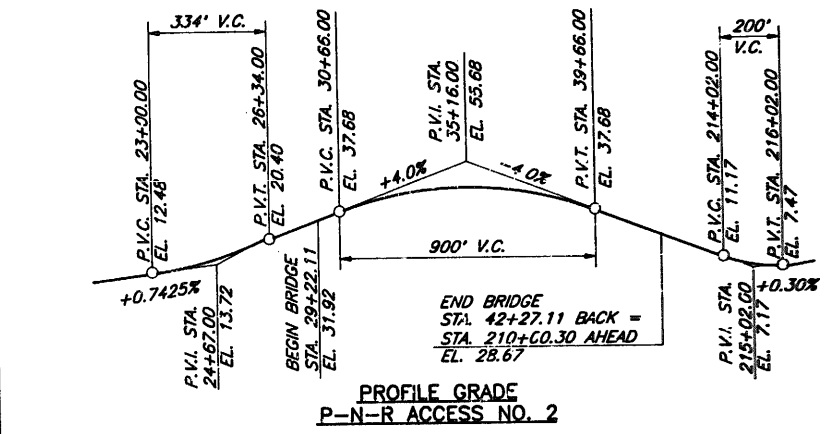
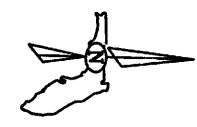
DESIGNERS		SURVEYORS		PLANNERS	
TAMPA, FLORIDA					
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN					
I-95 H.O.V.					
ROAD NO.	COUNTY	PROJECT NO.			
9	BROWARD	86070-3464/3465			
Designed by	Checked by	Quantities by	Checked by	Supervised by	
J.H.H.	J.S.R.			J.R.	
Date		Date		Date	
1-91		1-91			

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description
1-30-95	T.J.F.	PNR NO. 2 STRUCTURAL STEEL QUANTITY	7/12/91	WF	Added notes 12 & 13. Removed Index 700.
			9-25-91	T.J.L.	Note 12
			2-22-93	AGM	ADDED NOTE
			9-14-93	SCR	REVISED BRIDGE NO. 1 TYPE II COMP PAD QUANTITY AND BRIDGE NO. 1 PAY ITEM NO. 3 QUANTITY

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	I-IR-95-1(398)27		B-1

- NOTES:**
1. DENOTES BORING LOCATION.
 2. FOR HORIZONTAL CURVE DATA AND PROFILE GRADES NOT SHOWN, SEE SHEET B-2.
 3. FOR BRIDGE PAY ITEM NOTES, SEE SHEET A-1.
 4. DENOTES LIGHT POLE LOCATIONS, SEE TABLE OF LIGHT POLE STATIONS, THIS SHEET.
 5. RETAINING WALLS AND APPROACH SLABS AT BEGIN BRIDGE TO BE CONSTRUCTED UNDER STATE PROJECT NO. 86095-3463/3488.
 6. THE PLANS FOR P-N-R ACCESS NO. 2 UTILIZE THE COORDINATE DATUM FOR STATE PROJECT NO. 86095-3463/3488. SEE THE "SURVEY CONTROL DRAWING" IN THE ROADWAY PLANS.
 7. (A), ETC. DENOTES VERTICAL CLEARANCE POINTS
(1), ETC. DENOTES HORIZONTAL CLEARANCE POINTS FOR TABLE, SEE SHEET B-3.

TRAFFIC DATA
 1992 ADT = 1,646
 2012 ADT = 1,646
 K = 50%
 T = 2%
 D = 80%
 DESIGN SPEED = 25 M.P.H.



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- | | | | |
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| | | B-59 | CAMBER DIAGRAMS (LEFT BRIDGE) |
| | | B-60 | CAMBER DIAGRAMS (RIGHT BRIDGE) |
| | | B-61 | POT BEARING DETAILS |
| | | B-62 | BEVEL PLATE DETAILS |
| | | B-63 | ACCESS OPENING AND JACKING DETAILS |
| | | B-64 | REINFORCING BAR LIST (SHEET 1 OF 5) |
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| | | B-66 | REINFORCING BAR LIST (SHEET 3 OF 5) |
| | | B-67 | REINFORCING BAR LIST (SHEET 4 OF 5) |
| | | B-68 | REINFORCING BAR LIST (SHEET 5 OF 5) |

Page No. **14**
860600

RECEIVED
 JAN 20 1994
 MORRISON KNUDSEN
 C-4044

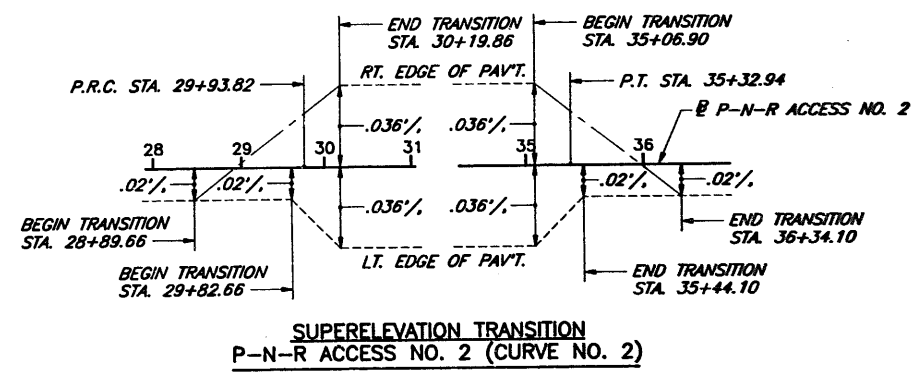
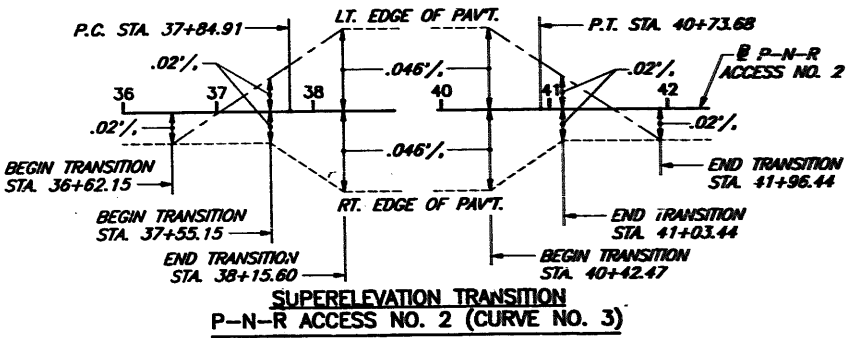


TABLE OF LIGHT POLE STATIONS

31+27
32+64
34+02
35+71
37+07
39+29
40+73
42+17



REVISIONS

Date	By	Description
7-12-91	WF	ADDED "(TO REMAIN)"

W.P.I. NO. 4140930
 GENERAL PLAN (SHEET 1 OF 2)

DESIGNED BY SURVEYORS PLANNERS
 TAMPA, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION
 BUREAU OF STRUCTURES DESIGN

**P-N-R ACCESS NO. 2
 BRIDGE NO. 860600**

ROAD NO.	COUNTY	PROJECT NO.
9	BROWARD	86070-346A/3465

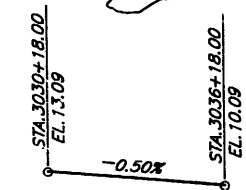
Designed by	Checked by	Quantity by	Checked by	Supervised by
JSR	JSR			JSR

Jose S. Rodriguez

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			B-2

N649,658.86
E772,113.1874
END BRIDGE END BENT B
STA. 42+27.11 BACK =
P.I. STA. 210+00.30 AHEAD
P-N-R ACCESS NO. 2
N649,670.477
E772,111.211 $\Delta = 0^{\circ}05'55''$ RT.

SEE NOTE 5,
THIS SHEET



PROFILE GRADE
RAMP P

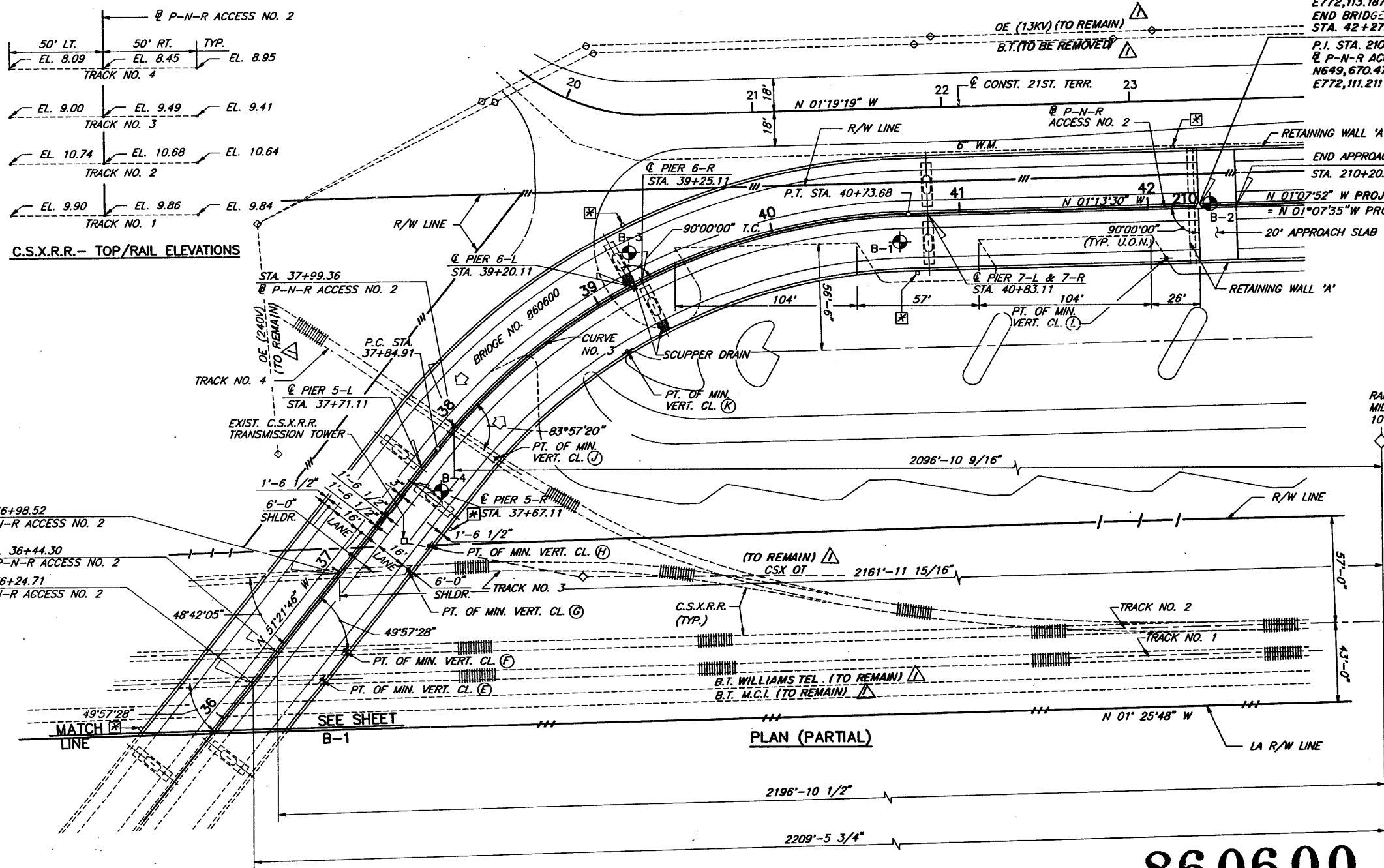
PROFILE GRADE
I-95

NOTES:

1. \odot DENOTES BORING LOCATION.
2. FOR SUPERELEVATION TRANSITION AND PROFILE GRADES NOT SHOWN, SEE SHEET B-1.
3. FOR BRIDGE PAY ITEM NOTES, SEE SHEET A-1.
4. \otimes DENOTES LIGHT POLE LOCATIONS. SEE TABLE OF LIGHT POLE STATIONS, SHEET B-1.
5. THE PLANS FOR P-N-R ACCESS NO. 2 UTILIZE THE COORDINATE DATUM FOR STATE PROJECT NO. 86095-3463/3488. SEE THE "EQUATION SHEET" IN THE ROADWAY PLANS. ITEMS MARKED WITH \otimes REFER TO THE COORDINATE DATUM FOR STATE PROJECT NO. 86070-3464/3465.
6. (A), ETC. DENOTES VERTICAL CLEARANCE POINTS
(1), ETC. DENOTES HORIZONTAL CLEARANCE POINTS FOR TABLE, SEE SHEET B-3.

GENERAL PLAN (SHEET 2 OF 2)

RECEIVED
JAN 20 1994
COMMERCIAL ENGINEERING
CORPORATION



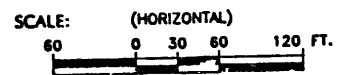
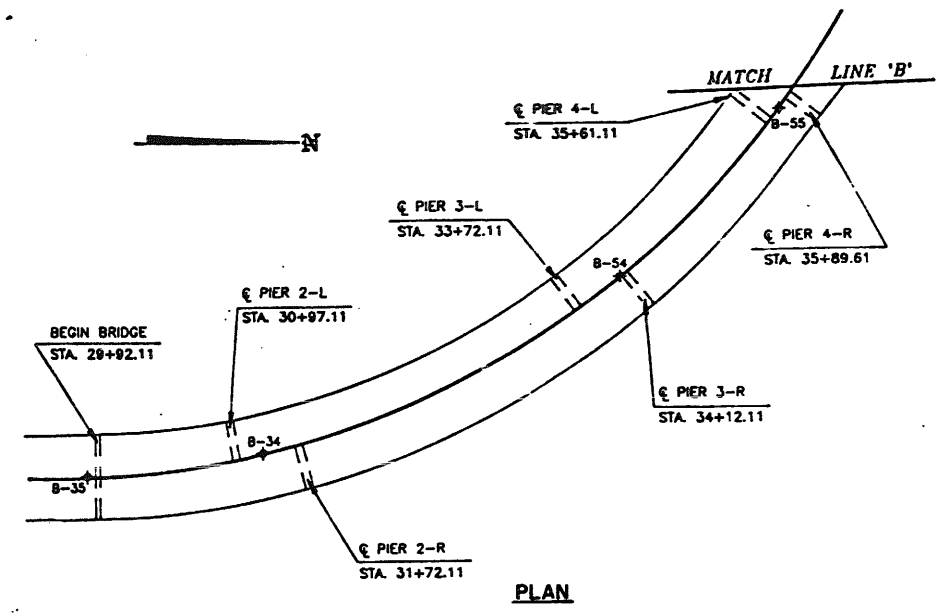
PLAN (PARTIAL)

860600
Page No. 15

	HORIZONTAL CURVE DATA									
	P-N-R ACCESS NO. 2			CONST. I-95	RAMP P	I-95 S.B.	I-95 N.B.	CDS.B.	RAMP Y CURVE NO. 1	RAMP Y CURVE NO. 2
	CURVE NO. 1	CURVE NO. 2	CURVE NO. 3							
Δ	01°51'54" RT.	51°28'55" LT.	50°08'16" RT.	04°48'59" RT.	04°30'54" RT.	07°27'33" RT.	02°59'20" RT.	2°07'13" RT.	3°25'58" RT.	3°25'58" RT.
D	00°14'58"	9°32'57"	1721'44"	00°15'00"	00°45'00"	00°30'00"	00°15'00"	0°15'00"	0°45'00"	0°30'00"
R	22,963.31'	600.00'	330.00'	22,918.31'	7,639.44'	11,459.16'	22,918.31'	22,918.31'	7,639.44'	11,459.15'
T	373.76'	289.29'	154.36'	963.85'	301.16'	746.97'	597.91'	424.12'	228.92'	343.38'
L	747.45'	539.12'	288.77'	1,926.56'	602.00'	1,491.83'	1,195.56'	848.15'	457.70'	686.55'
P.C. STA.	22+46.37	29+93.82	37+84.91	217+19.41	3031+79.66			3824+39.54	3730+33.92	3734+91.62
P.T. STA.	29+93.82	35+32.94	40+73.68	236+45.97	3037+81.66			3832+87.69	3734+91.62	3741+78.17
P.I. STA.	26+20.13	32+83.11	39+39.27	226+83.26	3034+80.82			3828+63.66	3732+62.84	3738+35.00
e	0.02%	0.036%	0.046%	0.02%	N.C.	0.03%	N.C.			

REVISIONS		
Date	By	Description
7-12-91	WF	DEMOTED DISPOSITION OF UTILITIES.

		ENGINEERS • SURVEYORS • PLANNERS	
TAMPA, FLORIDA			
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN			
P-N-R ACCESS NO. 2 BRIDGE NO. 860600			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070-3464/3465	
Designed by	Checked by	Date	
F.H.	J.R.	4-91	
Checked by			
Quantity by			
Checked by			
Supervised by			
		Drawing No.	Index No.



- LEGEND:
- ◆ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - ⊖ GROUNDWATER LEVEL
 - SAND
 - ▨ SAND AND SILT
 - ▩ SANDSTONE

NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND LIMITED LABORATORY TESTING.

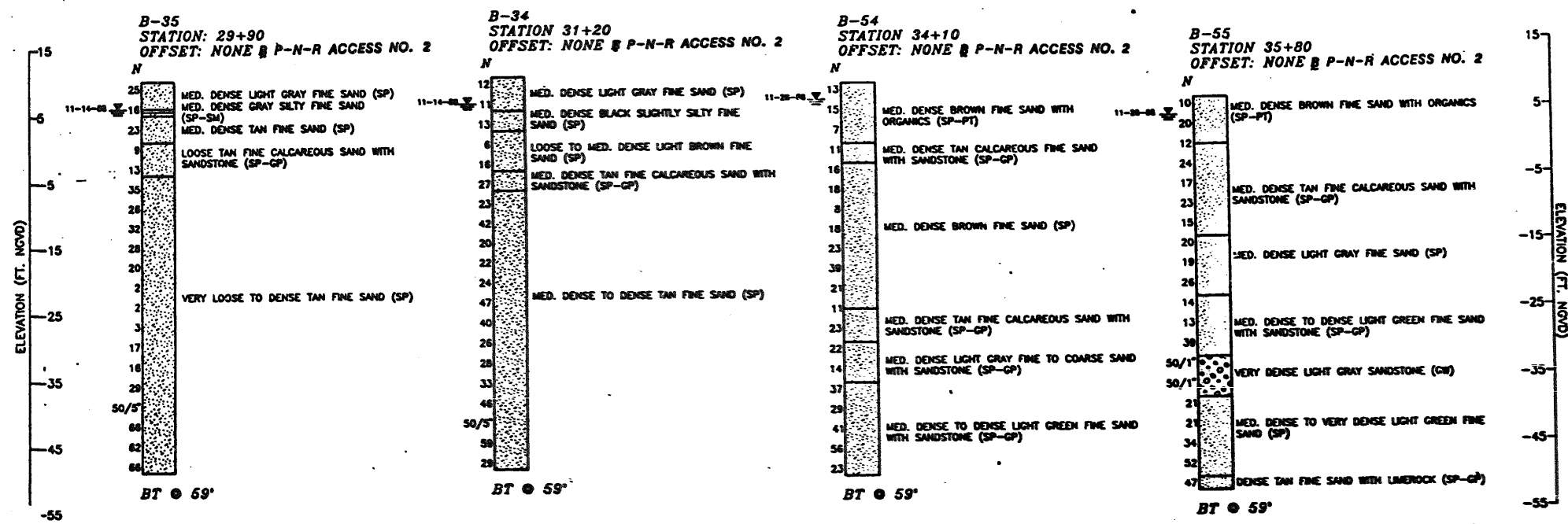
PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATIONS ONLY AND MAY NOT INDICATIVE OF FINAL CONTRACT PLANS.

SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVG. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

SCALE: 1" = 60' HORIZONTAL (FOR PLAN VIEW)
 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT
 SUBSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)
 SUPERSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)

PROFILE OF BORINGS:



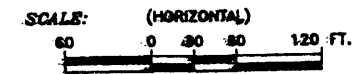
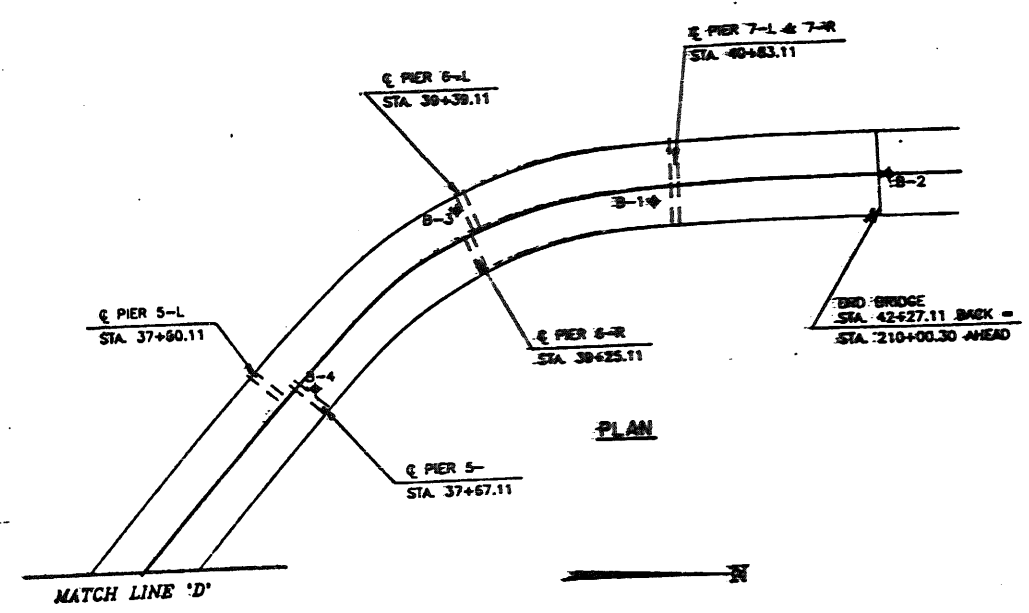
860600
 Page No. 17

APPROVED: *J. L. Carter, Jr.*
 TERRY'S CARTER, P.E.
 DATE: 3/21/11 P.E. NO.: 99420

WESTINGHOUSE ENVIRONMENTAL AND GEOTECHNICAL SERVICES, INC.

BORING DATA (SHEET 1 OF 2)

DESIGNED BY		CHECKED BY		APPROVED BY	
DATE		DATE		DATE	
PROJECT NO.		COUNTY		PROJECT NO.	
9		BROWARD		86070-3464 / 3465	
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN P-N-R ACCESS NO. 2 BRIDGE NO. 860600					
ENGINEERS • SURVEYORS • PLANNERS TAMPA, FLORIDA					



- LEGEND:**
- ◆ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - GROUNDWATER LEVEL
 - W/H WEIGHT OF HAMMER
 - SAND
 - SANDSTONE
 - FILL

NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND LIMITED LABORATORY TESTING.

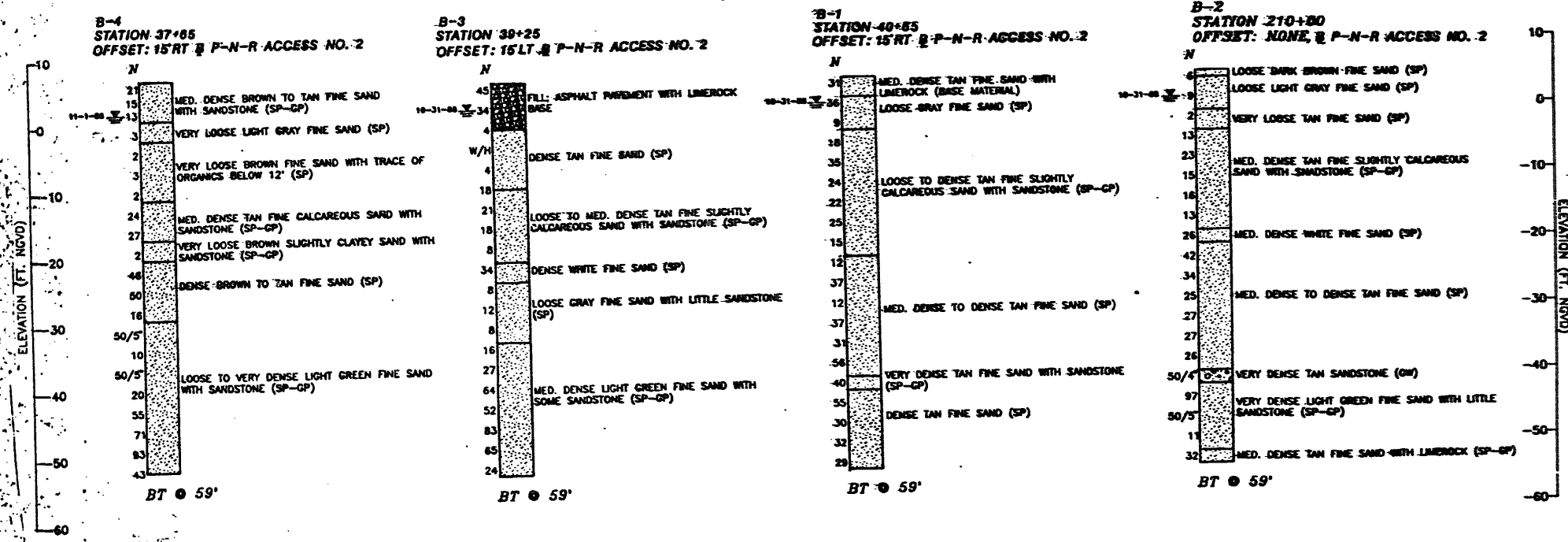
PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATIONS ONLY AND MAY NOT INDICATIVE OF FINAL CONTRACT PLANS.

SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVG. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

SCALE:
 1" = 80' HORIZONTAL (FOR PLAN VIEW)
 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT
 SUBSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)
 SUPERSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)

PROFILE OF BORINGS:



860600
 Page No. 18

APPROVED: *[Signature]*
 DATE: 3/27/91 P.E. NO. 33490

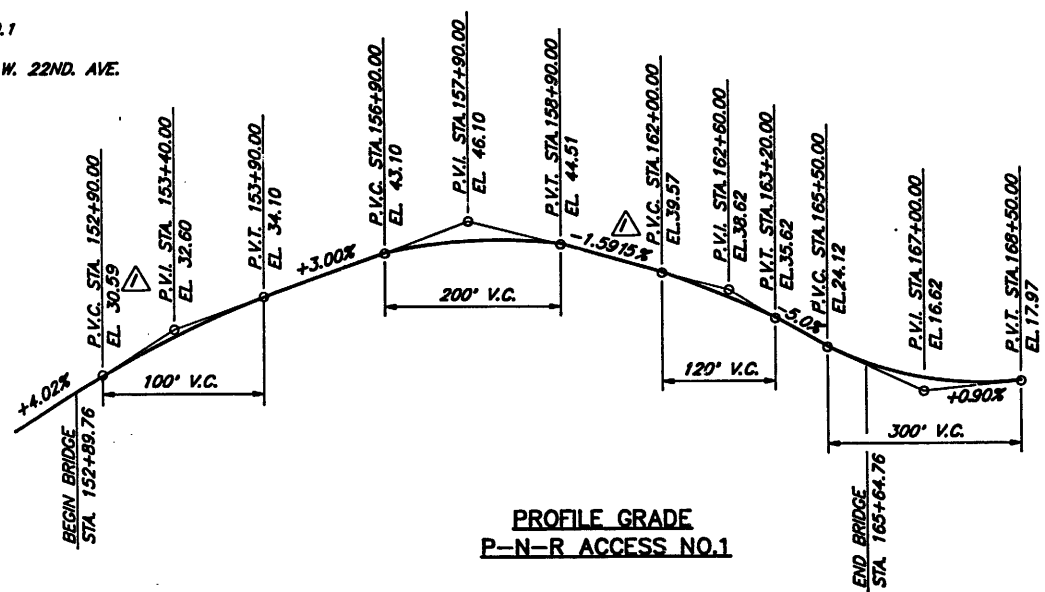
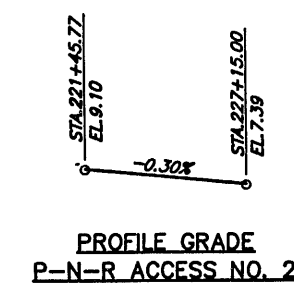
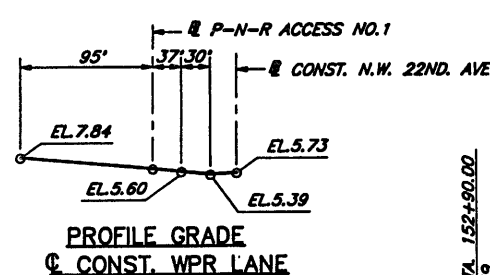
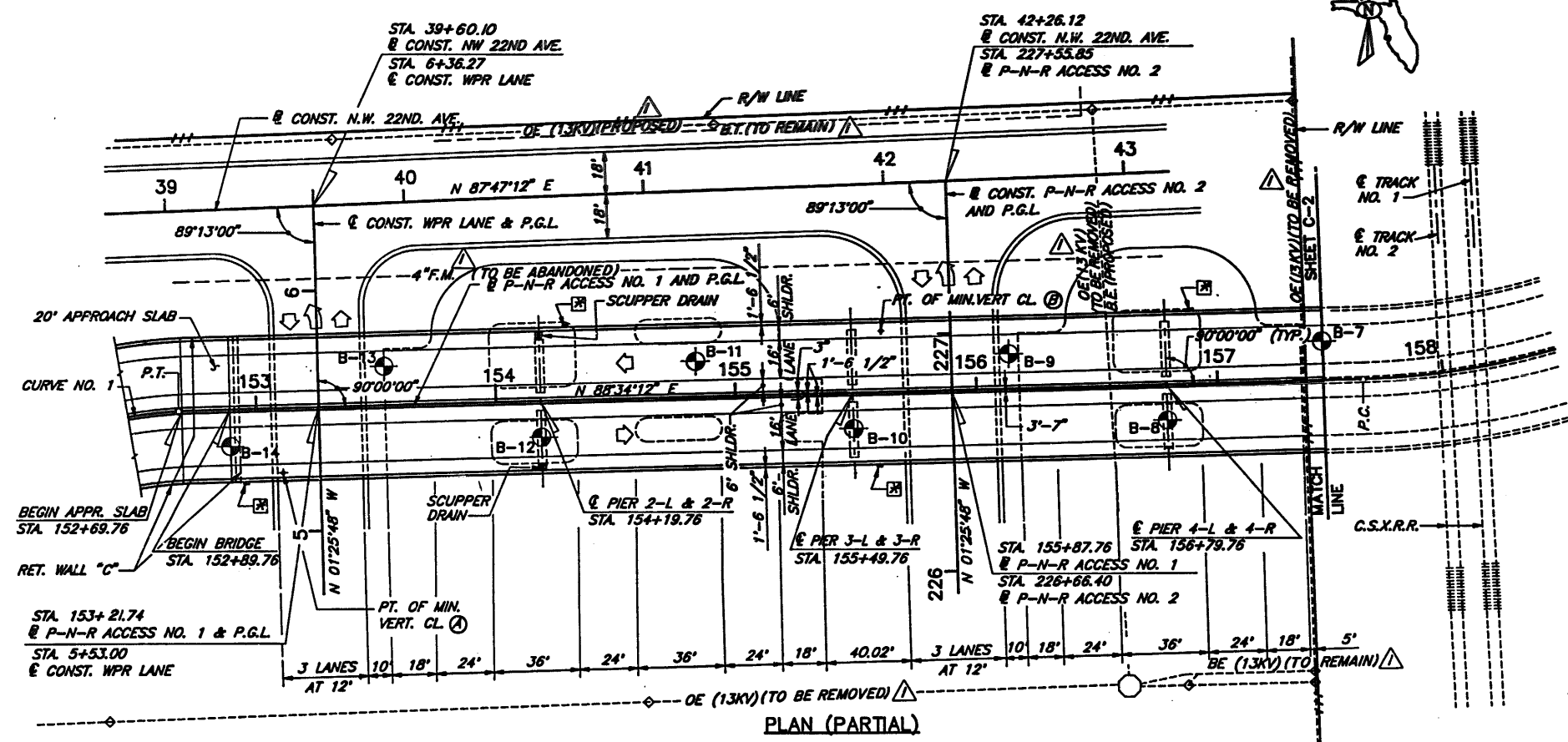
WESTINGHOUSE ENVIRONMENTAL AND GEOTECHNICAL SERVICES, INC.

BORING DATA (SHEET 2 OF 2)

DESIGNERS		SURVEYORS		PLANNERS	
TAMPA, FLORIDA					
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES-SEMIN					
P-N-R ACCESS NO. 2 BRIDGE NO. 868680					
NO. 9	BROWARD		PROJECT NO. 86070-3464 / 3465		
Designed by	Checked by	Drawn by	Approved by		
Checked by	Drawn by	Approved by			
Checked by	Drawn by	Approved by			
Checked by	Drawn by	Approved by			

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C-2 GENERAL PLAN (SHEET 2 OF 2)	C-39 SUPERSTRUCTURE SPAN 8-R
C-3 GENERAL ELEVATION	C-40 SUPERSTRUCTURE SPAN 9-R
C-4 BORING DATA (SHEET 1 OF 4)	C-41 SUPERSTRUCTURE DETAILS (SHEET 1 OF 2)
C-5 BORING DATA (SHEET 2 OF 4)	C-42 SUPERSTRUCTURE DETAILS (SHEET 2 OF 2)
C-6 BORING DATA (SHEET 3 OF 4)	C-43 FRAMING PLAN (SPAN 1-L)
C-7 BORING DATA (SHEET 4 OF 4)	C-44 FRAMING PLAN (SPAN 2-L)
C-8 FOUNDATION LAYOUT (SHEET 1 OF 2)	C-45 FRAMING PLAN (SPAN 3-L)
C-9 FOUNDATION LAYOUT (SHEET 2 OF 2)	C-46 FRAMING PLAN (SPAN 4-L)
C-10 FINISHED GRADE ELEVATIONS (SPANS 1-L THRU 3-L)	C-47 FRAMING PLAN (SPAN 5-L)
C-11 FINISHED GRADE ELEVATIONS (SPANS 4-L AND 5-L)	C-48 FRAMING PLAN (SPAN 6-L)
C-12 FINISHED GRADE ELEVATIONS (SPAN 6-L)	C-49 FRAMING PLAN (SPAN 7-L)
C-13 FINISHED GRADE ELEVATIONS (SPANS 7-L AND 8-L)	C-50 FRAMING PLAN (SPAN 8-L)
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C-19 END BENT 10	C-56 FRAMING PLAN (SPAN 6-R)
C-20 END BENT DETAILS	C-57 FRAMING PLAN (SPAN 7-R)
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C-24 SUPERSTRUCTURE SPAN 1-L	C-61 DIAPHRAGM DETAILS (SHEET 2 OF 3)
C-25 SUPERSTRUCTURE SPAN 2-L	C-62 DIAPHRAGM DETAILS (SHEET 3 OF 3)
C-26 SUPERSTRUCTURE SPAN 3-L	C-63 STRUCTURAL STEEL DETAILS (SHEET 1 OF 2)
C-27 SUPERSTRUCTURE SPAN 4-L	C-64 STRUCTURAL STEEL DETAILS (SHEET 2 OF 2)
C-28 SUPERSTRUCTURE SPAN 5-L	C-65 FIELD SPLICE DETAILS
C-29 SUPERSTRUCTURE SPAN 6-L	C-66 CAMBER DIAGRAMS (LEFT BRIDGE)
C-30 SUPERSTRUCTURE SPAN 7-L	C-67 CAMBER DIAGRAMS (RIGHT BRIDGE)
C-31 SUPERSTRUCTURE SPAN 8-L	C-68 POT BEARING DETAILS
C-32 SUPERSTRUCTURE SPAN 1-R	C-69 BEVEL PLATE DETAILS
C-33 SUPERSTRUCTURE SPAN 2-R	C-70 ACCESS OPENING AND JACKING DETAILS
C-34 SUPERSTRUCTURE SPAN 3-R	C-71 REINFORCING BAR LIST (SHEET 1 OF 5)
C-35 SUPERSTRUCTURE SPAN 4-R	C-72 REINFORCING BAR LIST (SHEET 2 OF 5)
C-36 SUPERSTRUCTURE SPAN 5-R	C-73 REINFORCING BAR LIST (SHEET 3 OF 5)
C-37 SUPERSTRUCTURE SPAN 6-R	C-74 REINFORCING BAR LIST (SHEET 4 OF 5)
	C-75 REINFORCING BAR LIST (SHEET 5 OF 5)



- NOTES:**
- ⊙ DENOTES BORING LOCATION.
 - FOR HORIZONTAL CURVE DATA, SUPERELEVATION TRANSITION, AND PROFILE GRADES NOT SHOWN, SEE SHEET C-2.
 - FOR BRIDGE PAY ITEM NOTES, SEE SHEET A-1.
 - ⊠ DENOTES LIGHT POLE LOCATIONS. SEE TABLE OF LIGHT POLE STATIONS, SHEET C-3.

TRAFFIC DATA
 1992 ADT = 2,359
 2012 ADT = 2,359
 K = 50.0%
 T = 2%
 D = 80.0%
 DESIGN SPEED = 25 M.P.H.

Page No. 82
 860600

Date	By	Description
7-12-91	GD	DENOTED DISPOSITION OF UTILITIES, REV. P.G.L.

W.P.I. NO. 4140930
 GENERAL PLAN (SHEET 1 OF 2)

DBA GROUP INC.
 ENGINEERS • SURVEYORS • PLANNERS
 TAMPA, FLORIDA

FLORIDA DEPARTMENT OF TRANSPORTATION
 BUREAU OF STRUCTURES DESIGN

**P-N-R ACCESS NO. 1
 BRIDGE NO. 860601**

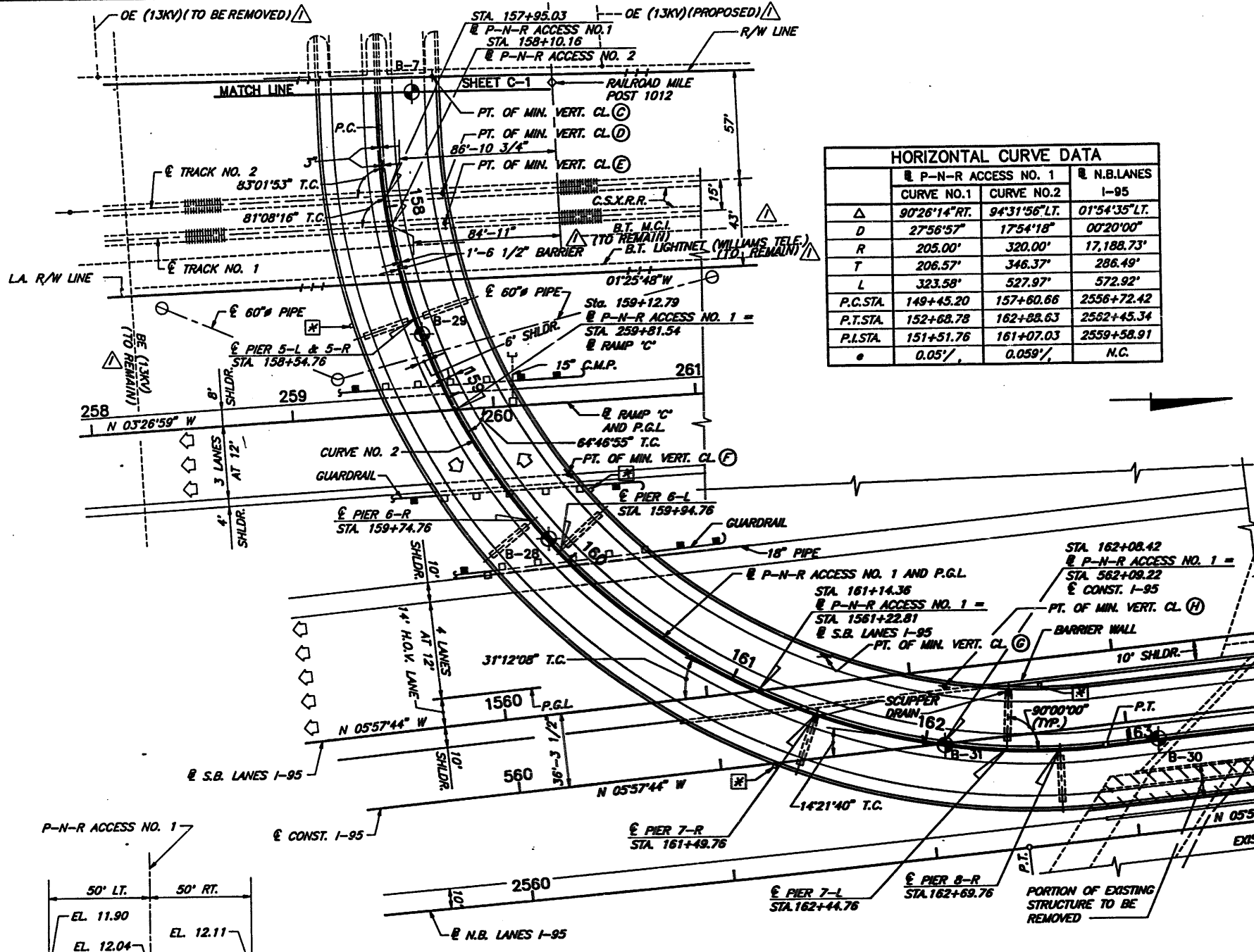
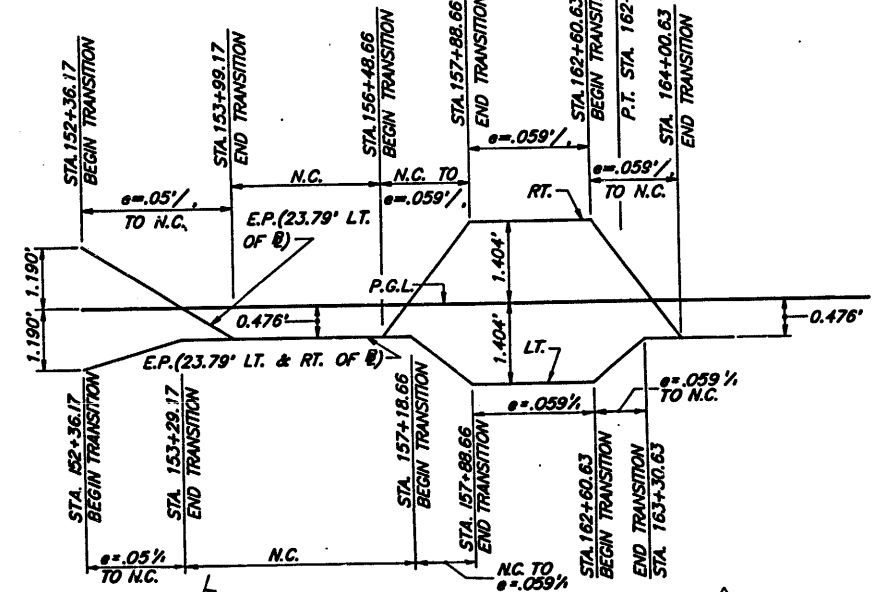
ROAD NO.	COUNTY	PROJECT NO.
9	BROWARD	86070-3464/3465

Designed by	Checked by	Quantity by	Checked by	Supervised by
RHH	JSR			JSR

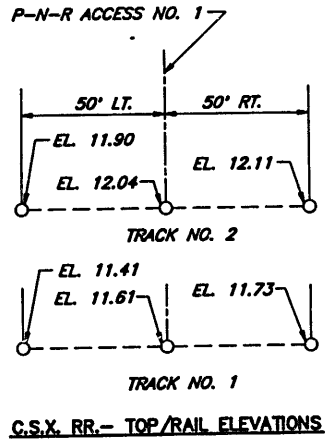
Date: 4-91
 Date: A-91
 Drawing No. _____
 Index No. _____

Jose S. Rodriguez

HORIZONTAL CURVE DATA			
	P-N-R ACCESS NO. 1	N.B. LANES	I-95
	CURVE NO. 1	CURVE NO. 2	1-95
Δ	90°26'14" RT.	94°31'56" LT.	01°54'35" LT.
D	2756.57'	1754.18'	00'20" 00"
R	205.00'	320.00'	17,188.73'
T	206.57'	346.37'	286.49'
L	323.58'	527.97'	572.92'
P.C. STA.	149+45.20	157+60.66	2556+72.42
P.T. STA.	152+68.78	162+88.63	2562+45.34
P.L. STA.	151+51.76	161+07.03	2559+58.91
e	0.05%	0.059%	N.C.



PLAN (PARTIAL)



PROFILE GRADE RAMP 'C' PROFILE GRADE S.B. LANES I-95

- NOTES:
1. DENOTES BORING LOCATION.
 2. FOR PROFILE GRADES NOT SHOWN, SEE SHEET C-1.
 3. DENOTES LIGHT POLE LOCATIONS.
 4. FOR TABLE OF LIGHT POLE STATIONS, SEE SHEET C-3.

REVISIONS	
Date	By
7-12-91	G.D.

Page No. **83**
860600

PRELIMINARY GENERAL PLAN (SHEET 2 OF 2)

USD DESIGNERS • SURVEYORS • PLANNERS
 TAMPA, FLORIDA

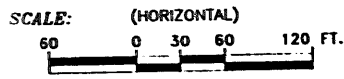
FLORIDA DEPARTMENT OF TRANSPORTATION
 BUREAU OF STRUCTURES DESIGN

**P-N-R ACCESS NO. 1
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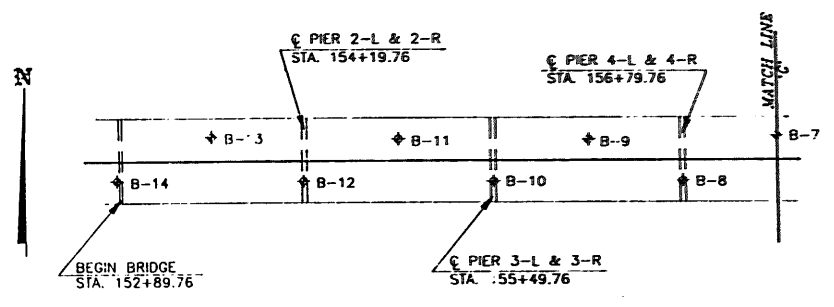
ROAD NO.	COUNTY	PROJECT NO.
9	BROWARD	86070-3464/3485

Designed by	Checked by	Quantity by	Checked by	Supervised by
RAH	JSP			JSP
Date	Date	Drawing No.		
4-91	4-91	Index No.		

Jose S. Rodriguez



- LEGEND:**
- ◆ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - ≡ GROUNDWATER LEVEL
 - SAND



PLAN

NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND LIMITED LABORATORY TESTING.

PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATIONS ONLY AND MAY NOT INDICATIVE OF FINAL CONTRACT PLANS.

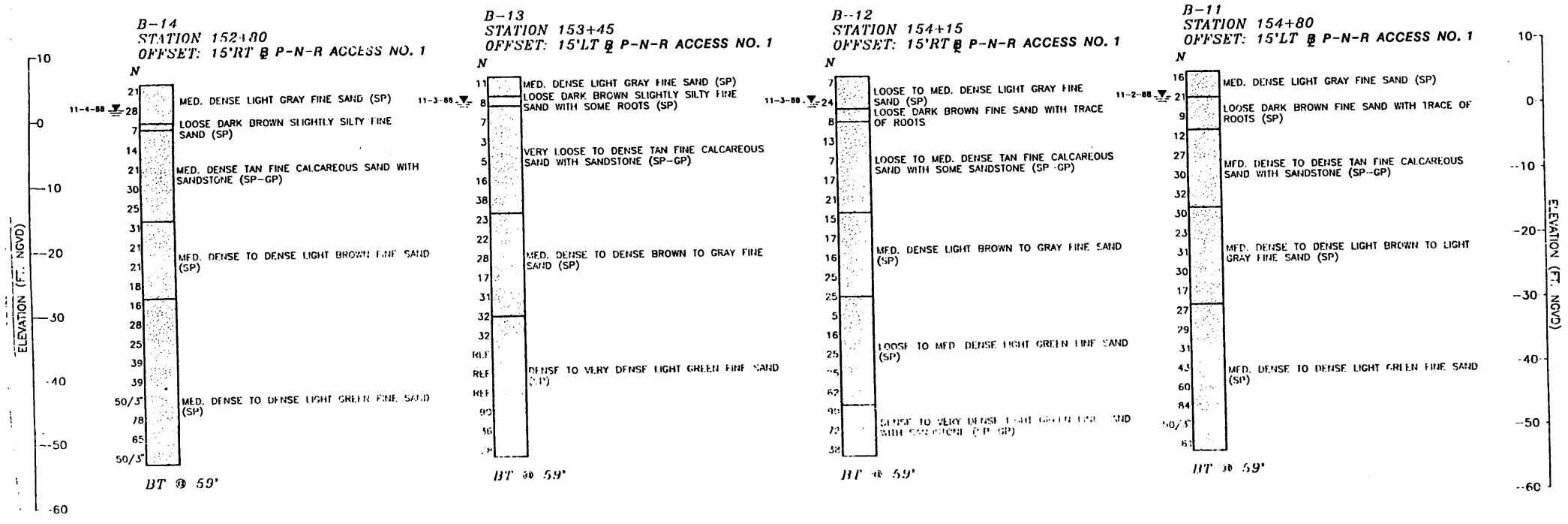
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 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVG. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

SCALE: 1" = 60' HORIZONTAL (FOR PLAN VIEW)
 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT
 SUBSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE) SPANS 1-L THRU 6-L AND 1-R THRU 7-R
 CORROSIVE (EXTREMELY AGGRESSIVE) SPANS 7-L, 8-L, 8-R, AND 9-R

SUPERSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE) SPANS 1-L THRU 6-L AND 1-R THRU 7-R
 CORROSIVE (EXTREMELY AGGRESSIVE) SPANS 7-L, 8-L, 8-R AND 9-R

PROFILE OF BORINGS:



Page No. 85

860600

APPROVED: *[Signature]*
 TIMOTHY S. CARTER, P.E.
 DATE: 1/11 P.E. NO.: 37423

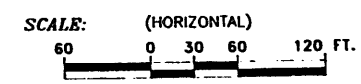
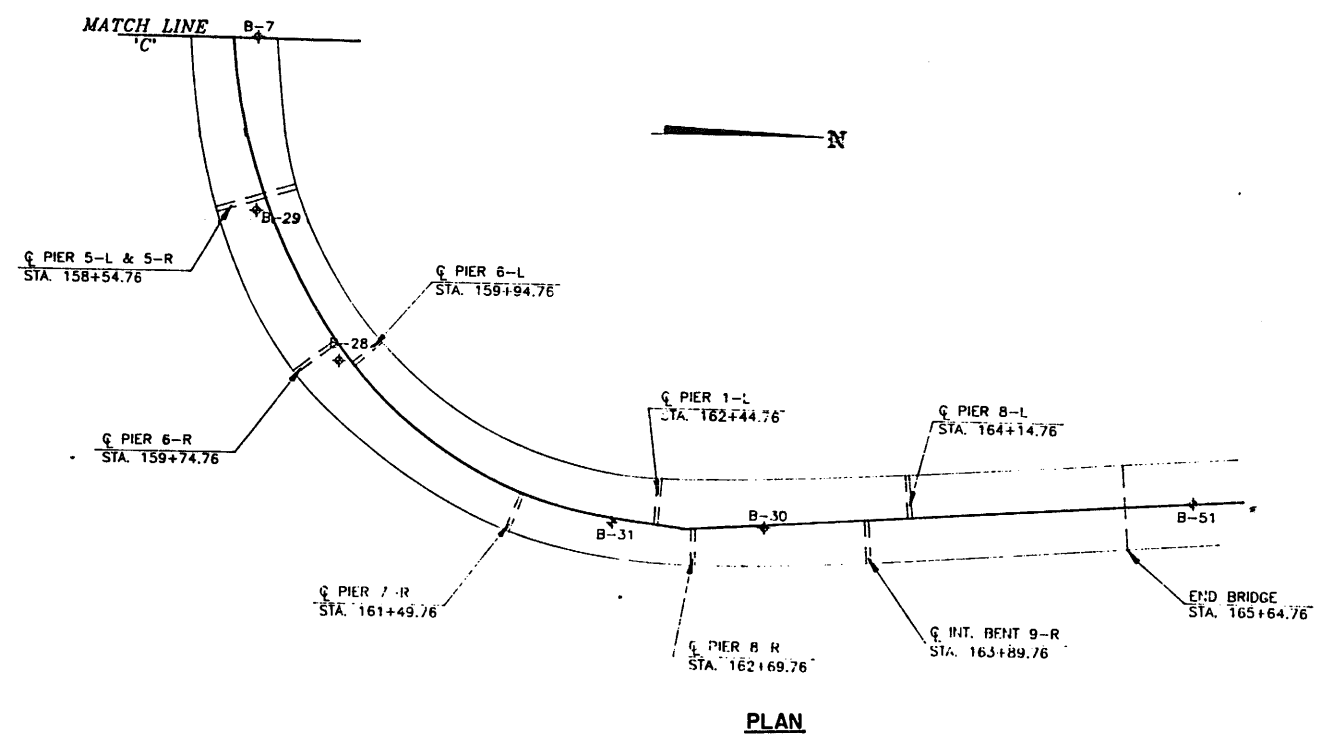
WESTINGHOUSE ENVIRONMENTAL AND GEOCHEMICAL SERVICES, INC.

BORING DATA (SHEET 1 OF 4)

		ENGINEERS	SURVEYORS	PLANNERS
TAMPA, FLORIDA				
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN P-N-R ACCESS NO. 1 BRIDGE NO. 860601				
ROAD NO.	COUNTY	PROJECT NO.		
9	BROWARD	86070 3-164 / 3465		
Designed by	Name	Date	APPROVED BY	
Checked by				
Quoted by	RW	1-11-91		
Checked by	TSC	2-29-91	Drawing No.	Index No.
Supervised by				

REVISIONS		
Date	By	Description

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			C-6



- LEGEND:**
- ⊕ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - ≡ GROUNDWATER LEVEL
 - SAND
 - ▣ LIMEROCK

NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND LIMITED LABORATORY TESTING.

PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATIONS ONLY AND MAY NOT INDICATE OF FINAL CONTRACT PLANS.

SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 A/G. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

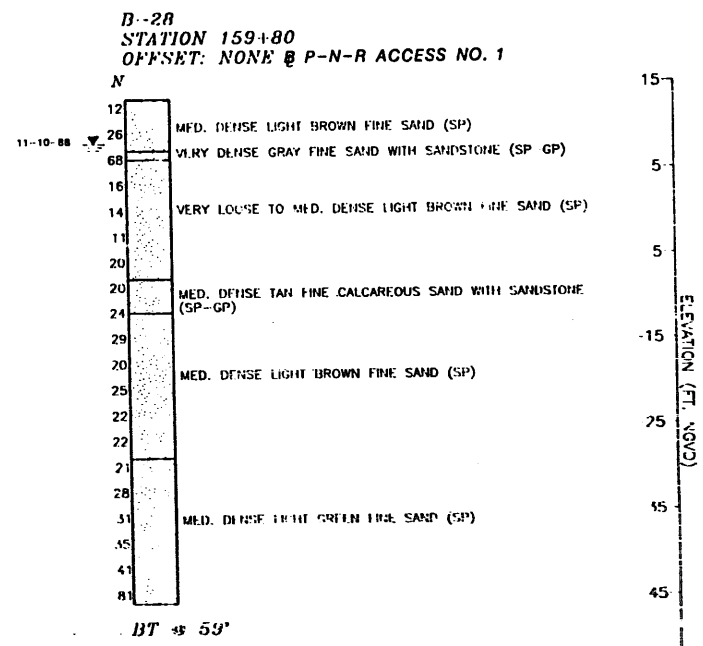
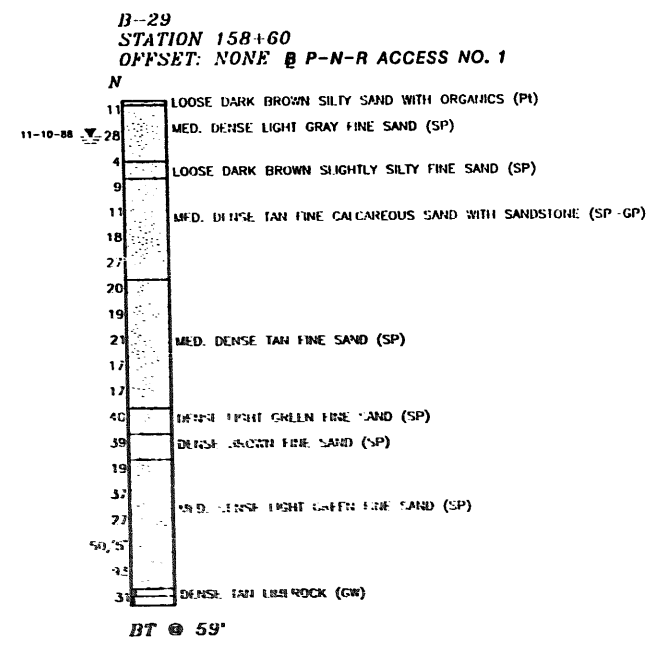
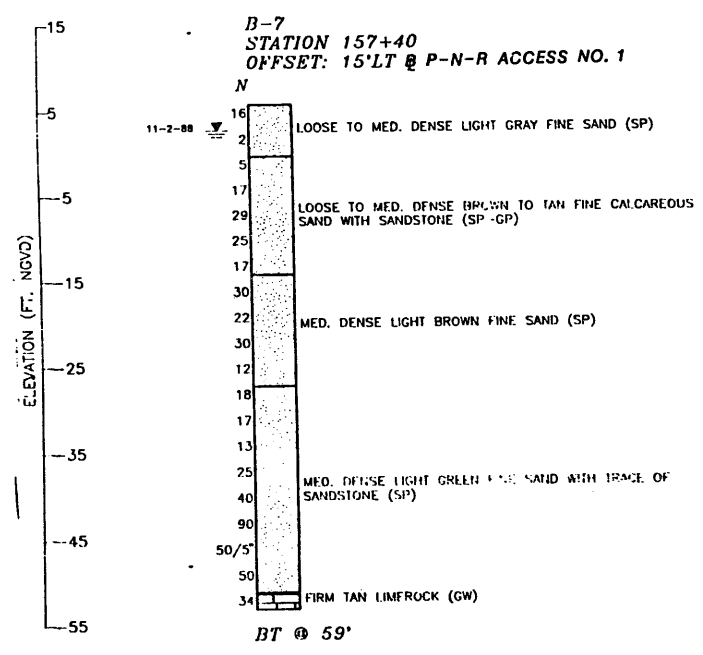
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 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT

SUBSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE) SPANS 1-L THRU 6-L AND 1-R THRU 7-R
 CORROSIVE (EXTREMELY AGGRESSIVE) SPANS 7-L, 8-L, 8-R AND 9-R

SUPERSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE) SPANS 1-L THRU 6-L AND 1-L THRU 7-R
 CORROSIVE (EXTREMELY AGGRESSIVE) SPANS 7-L, 8-L, 8-R AND 9-R

PROFILE OF BORINGS:



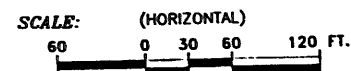
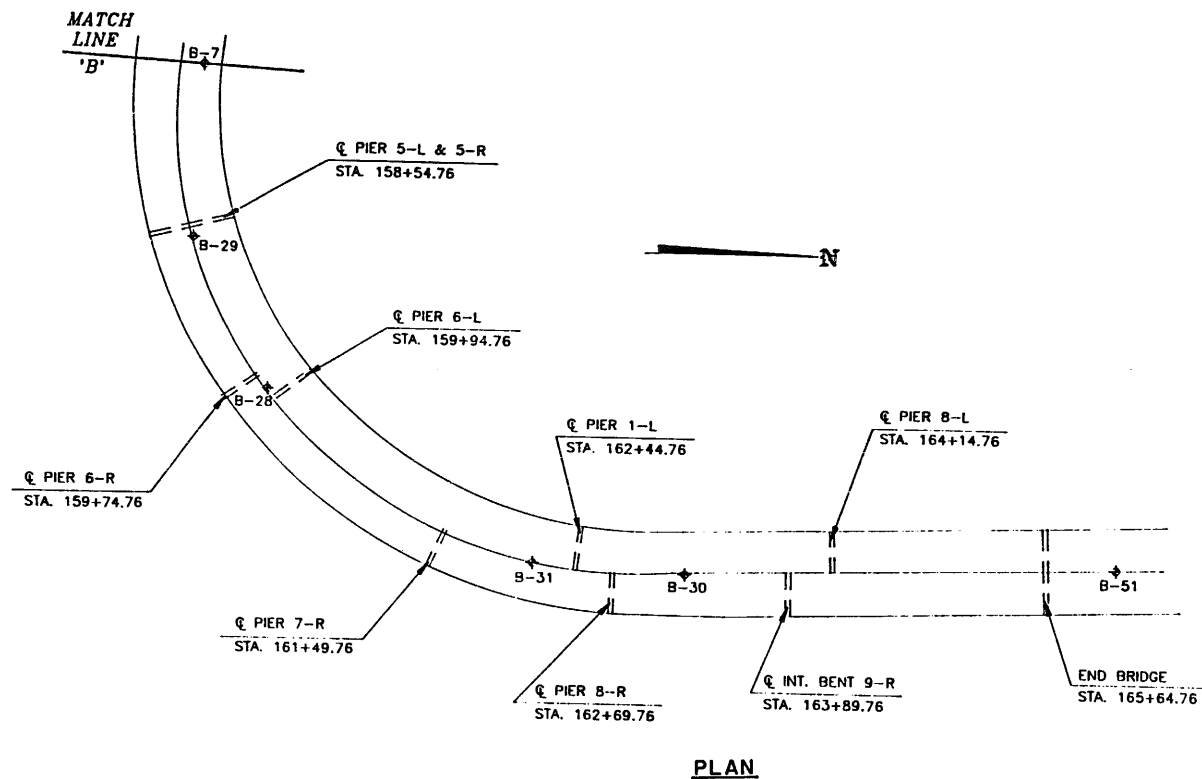
Page No. 87
 860600

APPROVED: [Signature]
 DATE: 3/21/11 P.F. NO.: 57420

WESTINGHOUSE ENVIRONMENTAL AND GEO-CHEMICAL SERVICES, INC.

REVISIONS		
Date	By	Description

OSN GROUP INC.		
ENGINEERS • SURVEYORS • PLANNERS		
TAMPA, FLORIDA		
BORING DATA (SHEET 3 OF 4)		
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN		
P-N-R ACCESS NO. 1 BRIDGE NO. 860601		
ROAD NO.	COUNTY	PROJECT NO.
9	BROWARD	86070-3464/3465
Designed by	Checked by	Checked by
Checked by		
Checked by		
Supervised by		



- LEGEND:**
- ⊕ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - ≡ GROUNDWATER LEVEL
 - W/H WEIGHT OF HAMMER
 - SAND
 - ◻ SANDSTONE

NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

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SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVG. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

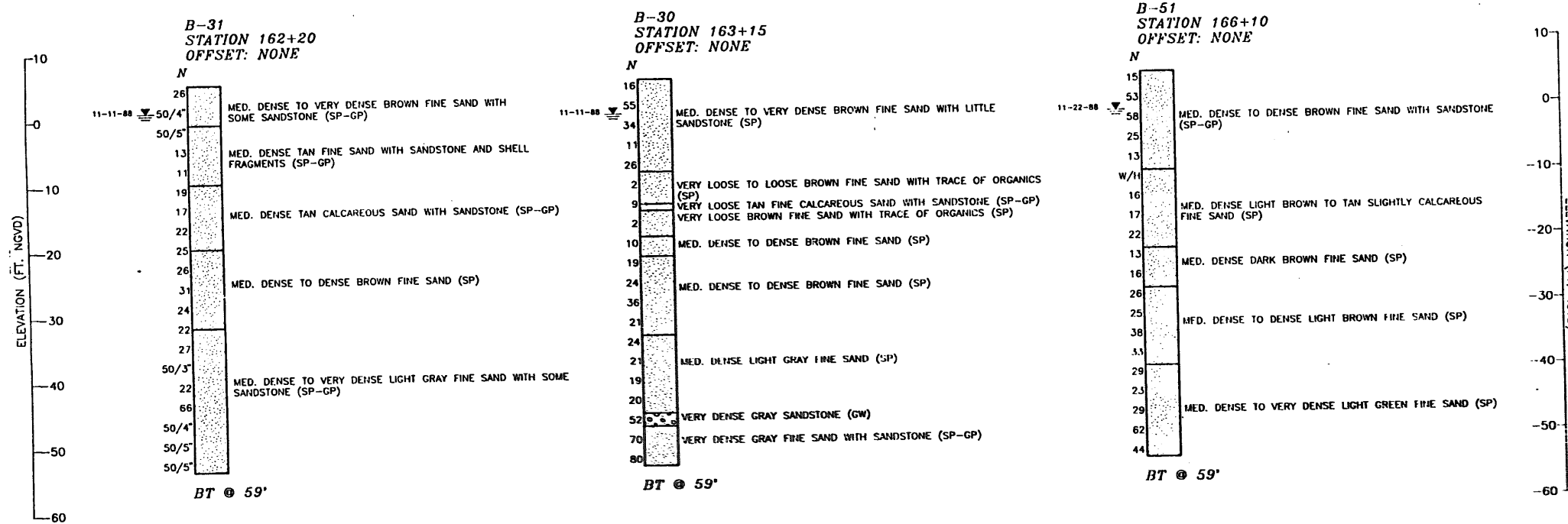
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 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT

SUBSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE) SPANS 1-L THRU 6-L AND 1-R THRU 7-R
 CORROSIVE (EXTREMELY AGGRESSIVE) SPANS 7-L, 8-L, 8-R AND 9-R

SUPERSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE) SPANS 1-L THRU 6-L AND 1-L THRU 7-R
 CORROSIVE (EXTREMELY AGGRESSIVE) SPANS 7-L, 8-L, 8-R AND 9-R

PROFILE OF BORINGS:



860600

Page No. 88

APPROVED:

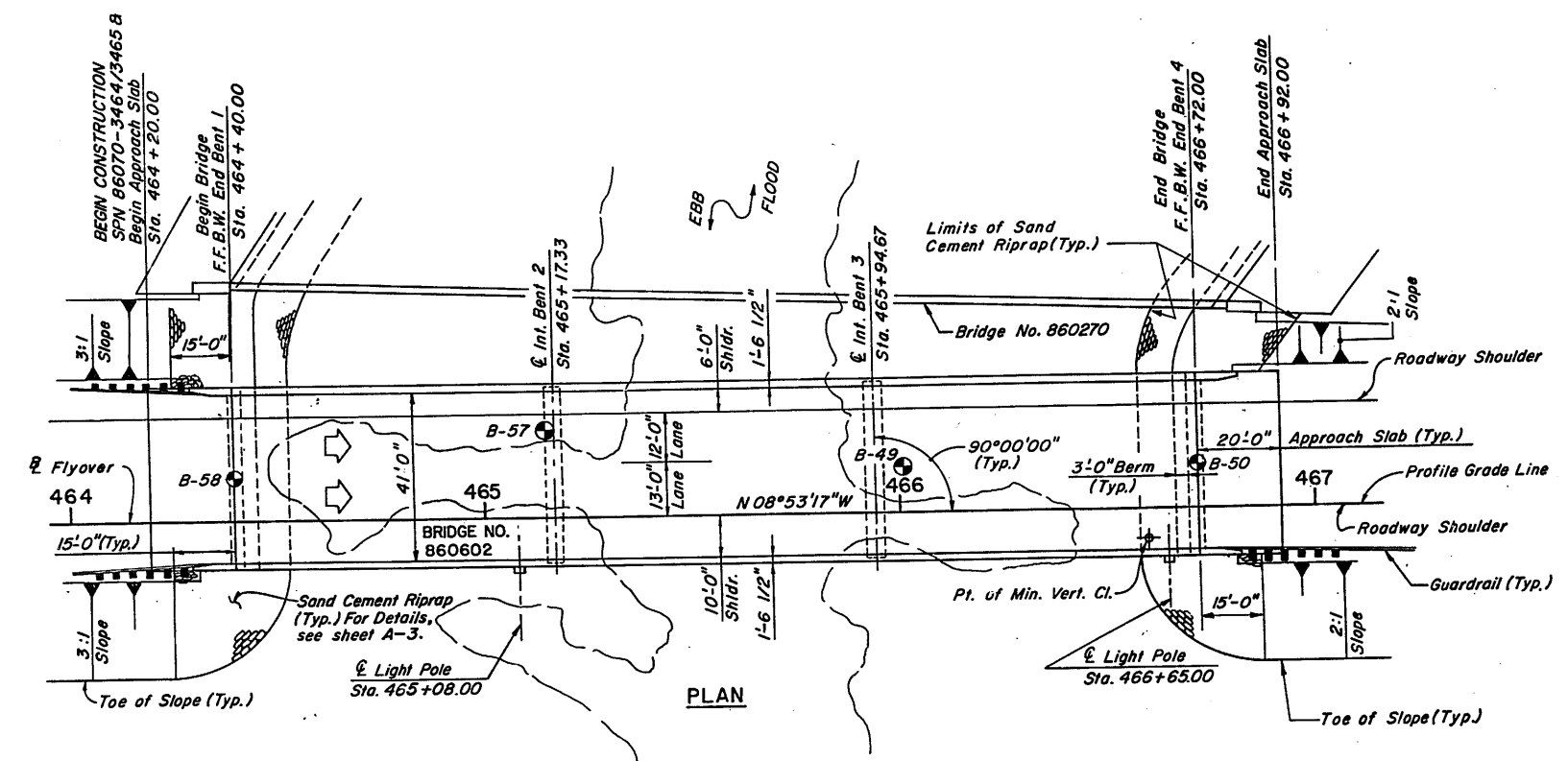
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WESTINGHOUSE ENVIRONMENTAL AND GEOTECHNICAL SERVICES, INC.

BORING DATA (SHEET 4 OF 4)

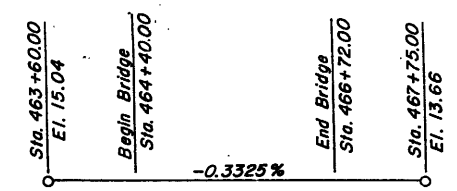
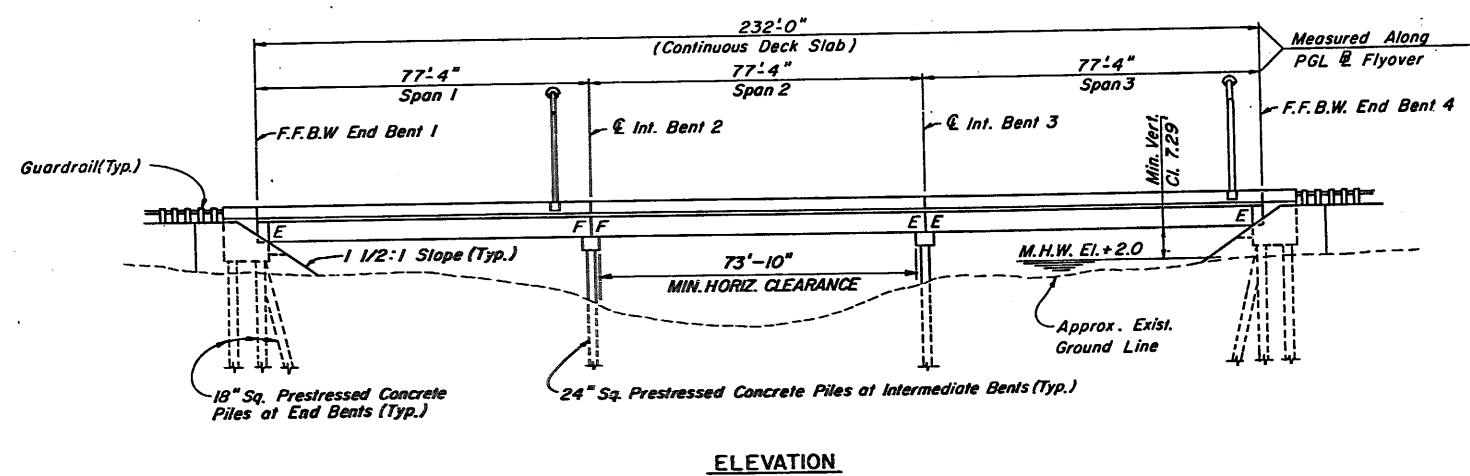
OSN GROUP		ENGINEERS • SURVEYORS • PLANNERS
TAMPA, FLORIDA		
FLORIDA DEPARTMENT OF TRANSPORTATION		
BUREAU OF STRUCTURES DESIGN		
P-N-R ACCESS NO. 1		
BRIDGE NO. 860601		
ROAD NO.	COUNTY	PROJECT NO.
9	BROWARD	86070-3464/3465
Designed by	Checked by	Checked by
Checked by	Checked by	Checked by
Checked by	Checked by	Checked by
Checked by	Checked by	Checked by
Supervised by	Supervised by	Supervised by

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	I-IR-95-(398)27		E-1



INDEX OF SHEETS

- E-1 GENERAL PLAN AND ELEVATION
- E-2 BORING DATA
- E-3 FOUNDATION LAYOUT
- E-4 FINISHED DECK ELEVATIONS
- E-5 END BENTS 1 AND 4
- E-6 END BENT DETAILS
- E-7 INTERMEDIATE BENTS 2 AND 3
- E-8 AASHTO TYPE III BEAMS
- E-9 SUPERSTRUCTURE SPANS
- E-10 SUPERSTRUCTURE DETAILS (SHEET 1 OF 2)
- E-11 SUPERSTRUCTURE DETAILS (SHEET 2 OF 2)
- E-12 REINFORCING BAR LIST



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860600
Page No. 157

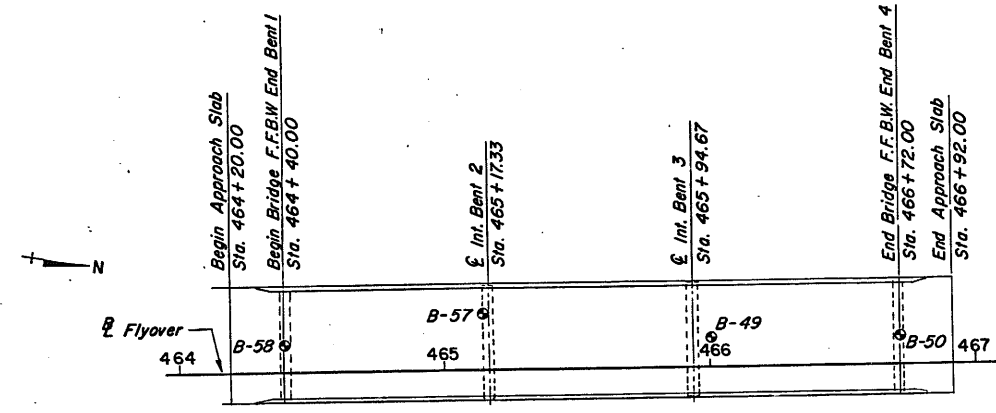
W.P.I. NO. 4140930

GENERAL PLAN AND ELEVATION

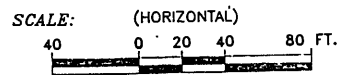
OSA GROUP INC. ENGINEERS • SURVEYORS • PLANNERS
 TAMPA, FLORIDA

REVISIONS		APPROVED BY	
Date	By	Names	Dates
		Jose S. Rodriguez	1-89
			1-89

FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN			
FLYOVER RAMP OVER NORTH FORK OF NEW RIVER; BRIDGE NO. 860602			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070-3464/3465	
Designed by	DJR	1-89	
Checked by	JSR	1-89	
Quantity by			
Checked by			
Supervised by	JSR		



PLAN



- LEGEND:
- ⊕ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - ≡ GROUNDWATER LEVEL
 - ▨ SAND

NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND LIMITED LABORATORY TESTING.

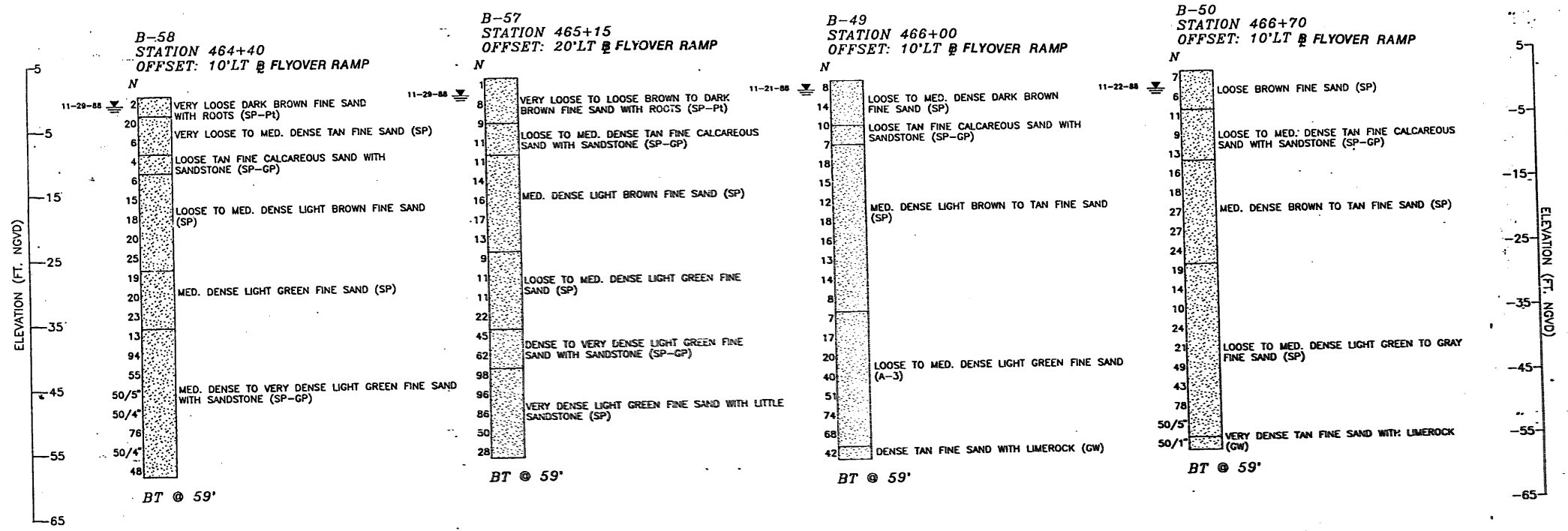
PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATIONS ONLY AND MAY NOT INDICATIVE OF FINAL CONTRACT PLANS.

SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVG. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

SCALE: 1" = 40' HORIZONTAL (FOR PLAN VIEW)
 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT
 SUBSTRUCTURE: CORROSIVE (EXTREMELY AGGRESSIVE)
 SUPERSTRUCTURE: CORROSIVE (EXTREMELY AGGRESSIVE)

PROFILE OF BORINGS:



860600

Page No. 158

APPROVED: *[Signature]*
 TIMOTHY S. CARTER, P.E.

DATE: P.E. NO.: 39420



REVISIONS		
Date	By	Descriptions

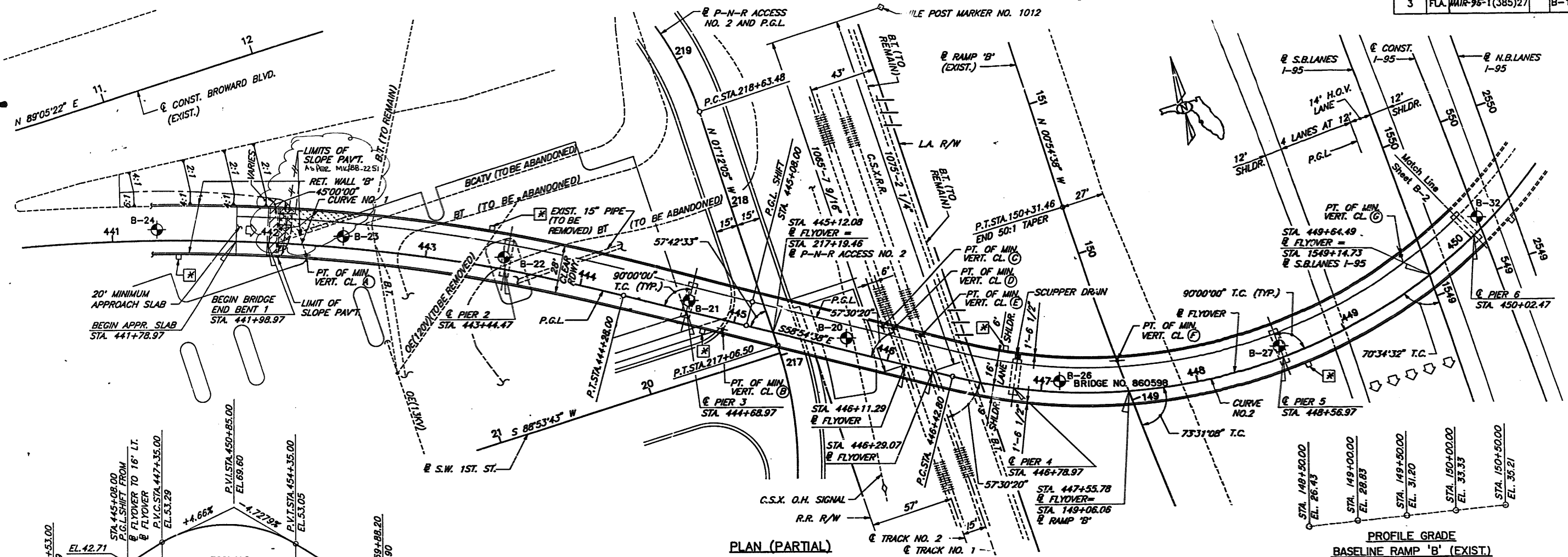
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ENGINEERS • SURVEYORS • PLANNERS TAMPA, FLORIDA		
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ROAD NO.	COUNTY	PROJECT NO.
9	BROWARD	86070-3464/3-65
Designed by	Names	Dates
Checked by	T.S.C.	3-91
Quantity by		
Checked by		
Supervised by	T.S.C.	
APPROVED BY: <i>[Signature]</i>		Drawing No.
		Index No.

APPENDIX – B3

Existing Soil Boring Information from Previous Projects along the Project Corridor

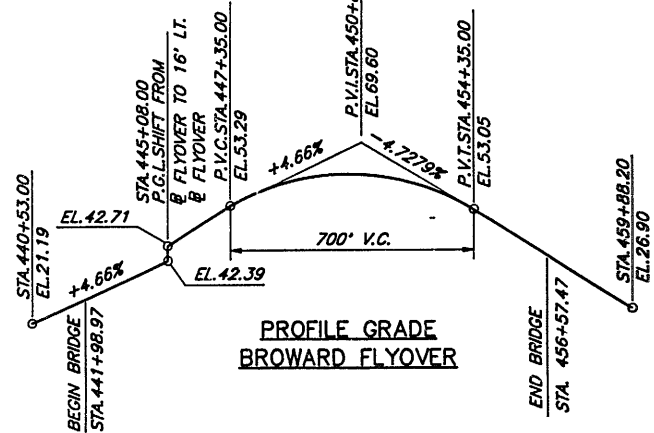
FINAL PLANS

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
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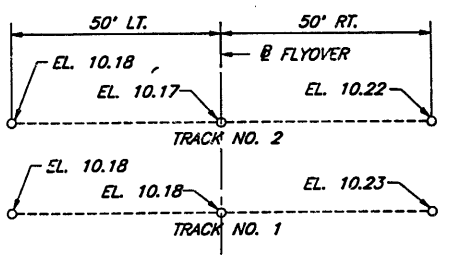


PLAN (PARTIAL)

PROFILE GRADE
BASELINE RAMP 'B' (EXIST.)



PROFILE GRADE
BROWARD FLYOVER



C.S.X. RR.-TOP/RAIL ELEVATIONS

INDEX OF SHEETS

- B-1 GENERAL PLAN (SHEET 1 OF 2)
- B-2 GENERAL PLAN (SHEET 2 OF 2)
- B-3 GENERAL ELEVATION
- B-4 GENERAL NOTES
- B-5 BORING DATA (SHEET 1 OF 3)
- B-6 BORING DATA (SHEET 2 OF 3)
- B-7 BORING DATA (SHEET 3 OF 3)
- B-8 FOUNDATION LAYOUT (SHEET 1 OF 2)
- B-9 FOUNDATION LAYOUT (SHEET 2 OF 2) AND SLOPE PAVEMENT DETAILS
- B-10 FINISHED GRADE ELEVATIONS (SPANS 1 AND 2)
- B-11 FINISHED GRADE ELEVATIONS (SPAN 3)
- B-12 FINISHED GRADE ELEVATIONS (SPANS 4 AND 5)
- B-13 FINISHED GRADE ELEVATIONS (SPANS 6 AND 7)
- B-14 FINISHED GRADE ELEVATIONS (SPANS 8 AND 9)
- B-15 END BENT 1
- B-16 END BENT 10
- B-17 END BENT DETAILS
- B-18 PIERS 2 THRU 5 AND 7 THRU 9
- B-19 PIER 6
- B-20 PIER DETAILS
- B-21 SUPERSTRUCTURE SPANS 1 AND 2
- B-22 SUPERSTRUCTURE SPAN 3
- B-23 SUPERSTRUCTURE SPANS 4 AND 5
- B-24 SUPERSTRUCTURE SPANS 6 AND 7
- B-25 SUPERSTRUCTURE SPANS 8 AND 9
- B-26 SUPERSTRUCTURE DETAILS (SHEET 1 OF 2)
- B-27 SUPERSTRUCTURE DETAILS (SHEET 2 OF 2)
- B-28 FRAMING PLAN (SPAN 1)
- B-29 FRAMING PLAN (SPAN 2)
- B-30 FRAMING PLAN (SPAN 3)
- B-31 FRAMING PLAN (SPAN 4)
- B-32 FRAMING PLAN (SPAN 5)
- B-33 FRAMING PLAN (SPAN 6)
- B-34 FRAMING PLAN (SPAN 7)
- B-35 FRAMING PLAN (SPAN 8)
- B-36 FRAMING PLAN (SPAN 9)
- B-37 DIAPHRAGM DETAILS (SHEET 1 OF 2)
- B-38 DIAPHRAGM DETAILS (SHEET 2 OF 2)
- B-39 STRUCTURAL STEEL DETAILS (SHEET 1 OF 2)
- B-40 STRUCTURAL STEEL DETAILS (SHEET 2 OF 2)
- B-41 FIELD SPLICE DETAILS
- B-42 CAMBER DIAGRAM
- B-43 POT BEARING DETAILS
- B-44 BEVEL PLATE DETAILS
- B-45 ACCESS OPENING AND JACKING DETAILS
- B-46 REINFORCING BAR LIST (SHEET 1 OF 5)
- B-47 REINFORCING BAR LIST (SHEET 2 OF 5)
- B-48 REINFORCING BAR LIST (SHEET 3 OF 5)
- B-49 REINFORCING BAR LIST (SHEET 4 OF 5)
- B-50 REINFORCING BAR LIST (SHEET 5 OF 5)
- B-51 LIGHT POLE PILASTER (FDOT INDEX NO. 500)
- B-52 18" AND 20" PRESTRESSED CONCRETE PILES (FDOT INDEX NO. 601)
- B-53 TRAFFIC RAILING BARRIER (FDOT INDEX NO. 702)
- B-54 STANDARD BAR BENDING DETAILS (FDOT INDEX NO. 1300)
- W-1 thru W-31 RETAINING WALLS (See detailed, sheet W-1)
- EW1, EW3 thru EW-9 EXISTING WALL PLANS (86070-3436)

NOTES:

1. DENOTES BORING LOCATION.
2. FOR HORIZONTAL CURVE DATA, SUPERELEVATION TRANSITION, AND PROFILE GRADES NOT SHOWN, SEE SHEET B-2.
3. FOR BRIDGE PAY ITEM NOTES, SEE SHEET B-4.
4. DENOTES LIGHT POLE LOCATIONS. SEE TABLE OF LIGHT POLE STATIONS, SHEET B-2.
5. DENOTES LIMITS OF SLOPE PAVEMENT.

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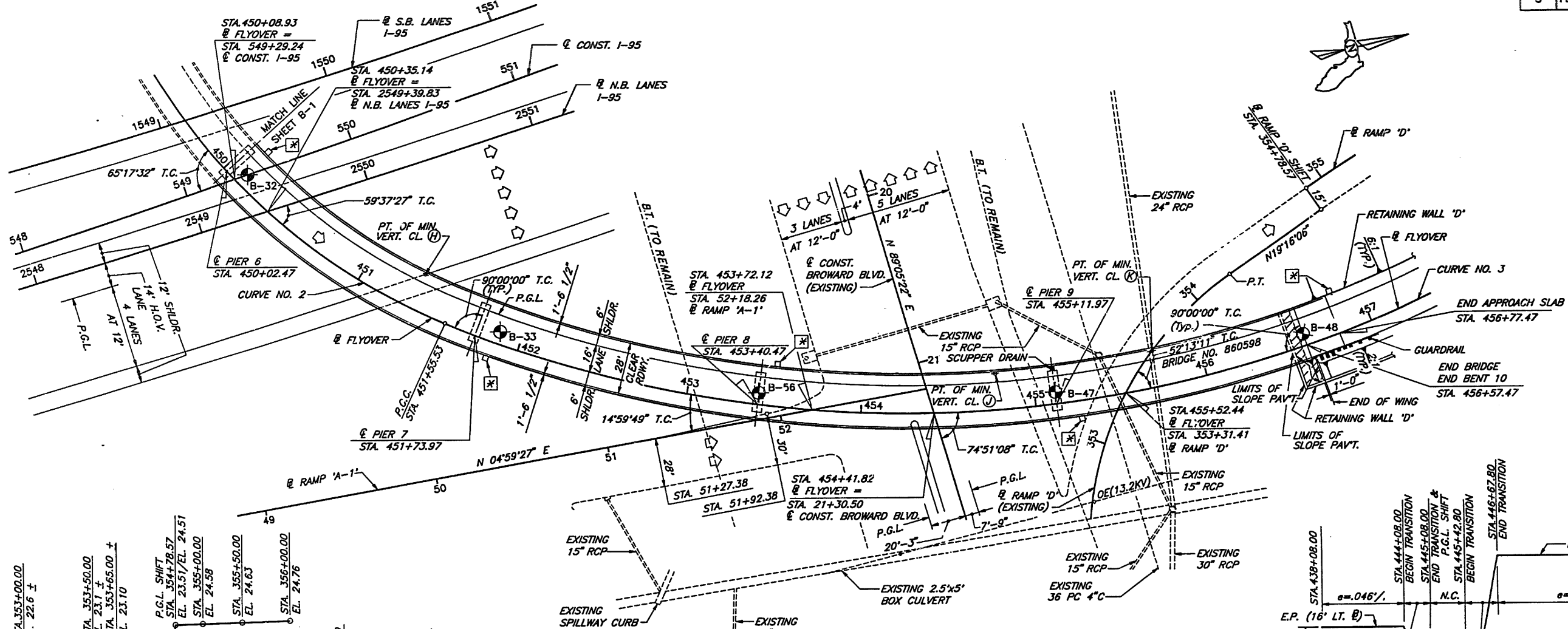
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 T = 3.5%
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860598

Page No. 1

W.P.I. NO. 4140867
 GENERAL PLAN (SHEET 1 OF 2)

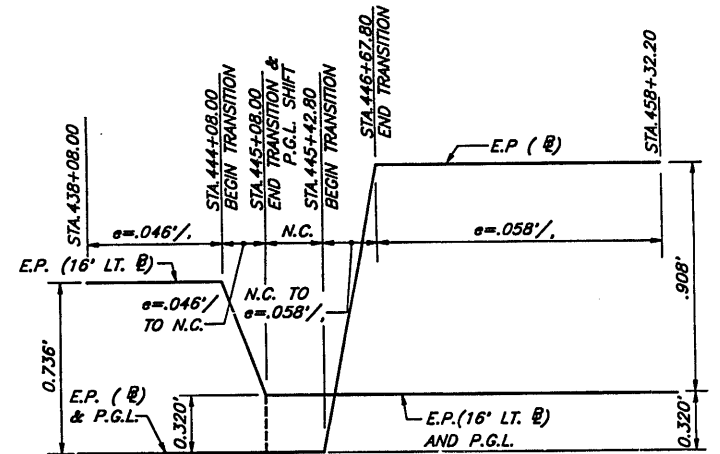
DESIGNED BY		SURVEYORS		PLANNERS	
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN					
BROWARD BLVD. AT I-95 EB-NB FLYOVER RAMP-BRIDGE NO. 860598					
ROAD NO.	COUNTY	PROJECT NO.			
842	BROWARD	86070-3493			
Designed by	RAA	Date	4-91		
Checked by	JSP	Date	4-91		
Quantities by		Jose S. Rodriguez			
Checked by		Drawing No.	Index No.		
Supervised by	JSP				



PLAN (PARTIAL)

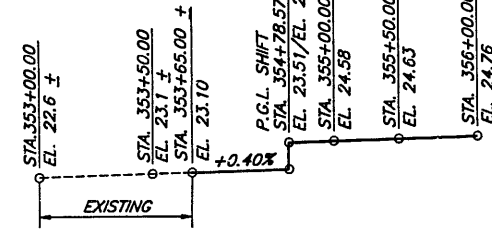
- NOTES:
1. DENOTES BORING LOCATION.
 2. FOR TRAFFIC DATA AND PROFILE GRADE - BROWARD FLYOVER, SEE SHEET B-1.
 3. DENOTES LIGHT POLE LOCATIONS. SEE TABLE OF LIGHT POLE STATIONS.
 4. DENOTES LIMITS OF SLOPE PAVEMENT.

STATION
441+40.00
443+34.00
444+78.00
446+68.00
448+66.00
450+12.00
451+83.00
453+50.00
455+21.00
456+80.00

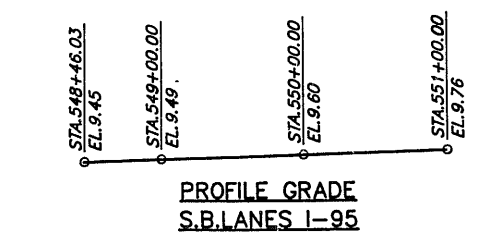


SUPERELEVATION TRANSITION

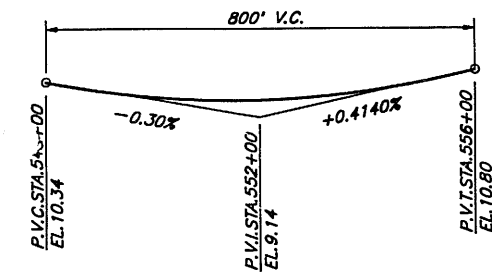
86 05 98 Page No. 2



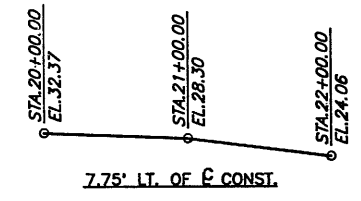
PROFILE GRADE
BASELINE RAMP 'D'



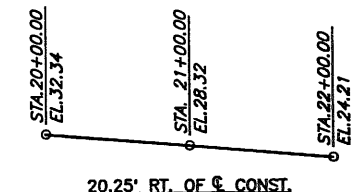
PROFILE GRADE
S.B. LANES I-95



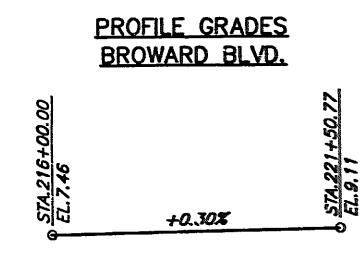
PROFILE GRADE
N.B. LANES I-95



7.75' LT. OF \bar{c} CONST.



20.25' RT. OF \bar{c} CONST.

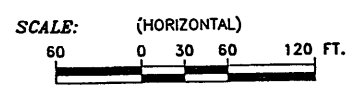


PROFILE GRADE
P-N-R ACCESS NO. 2

	FLYOVER			S.B. LANES I-95	N.B. LANES I-95	CONST. I-95	RAMP 'B'	RAMP 'D'
	CURVE NO.1	CURVE NO.2	CURVE NO.3					
Δ	32°00'00"Rt.	83°13'59"Lt.	58°23'59"Lt.	9°34'05"Lt.	5°38'09"Lt.	7°32'44"Lt.	10°34'37"Rt.	71°38'31"Rt.
D	500'00"	16'14'00"	8'15'00"	1'18'41"	0°36'37"	0°45'00"	2'15'00"	30°09'20"
R	1145.92'	352.95'	694.49'	4368.87'	9386.65'	7639.44'	2546.48'	190.00'
T	328.59'	313.54'	388.13'	365.64'	462.02'	503.77'	235.71'	137.14'
L	640.00'	512.73'	707.87'	729.58'	923.30'	1006.08'	470.08'	237.57'
P.C. STA.	437+88.00	446+42.80	451+55.53	1545+09.68	2543+15.96	542+33.18	145+61.38	351+86.16
P.T. STA.	444+28.00	451+55.53	458+63.40	1552+39.26	2552+39.26	552+39.26	150+31.46	354+23.73
P.L. STA.	441+16.59	449+56.34	455+43.67	1548+75.32	2547+77.98	547+36.95	147+97.09	353+23.00
e	0.046 %	0.058 %	0.058 %	0.037 %	0.020 %	-----	0.046 %	0.070 %

GENERAL PLAN (SHEET 2 OF 2)

OSR GROUP INC.		ENGINEERS • SURVEYORS • PLANNERS	
TAMPA, FLORIDA			
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN			
BROWARD BLVD. AT I-95 EB-NB FLYOVER RAMP-BRIDGE NO. 860598			
ROAD NO.	COUNTY	PROJECT NO.	
842	BROWARD	86070-3493	
Designed by	Checked by	Dates	
JAN	JCR	4-91	
Checked by	Supervised by	Jose S. Rodriguez	
	JCR	Drawing No.	Index No.



- LEGEND:
- ◆ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - ≡ GROUNDWATER LEVEL
 - [Pattern] SAND
 - [Pattern] SAND AND SILT
 - [Pattern] LIMEROCK
 - [Pattern] SANDSTONE
 - [Pattern] FILL

NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

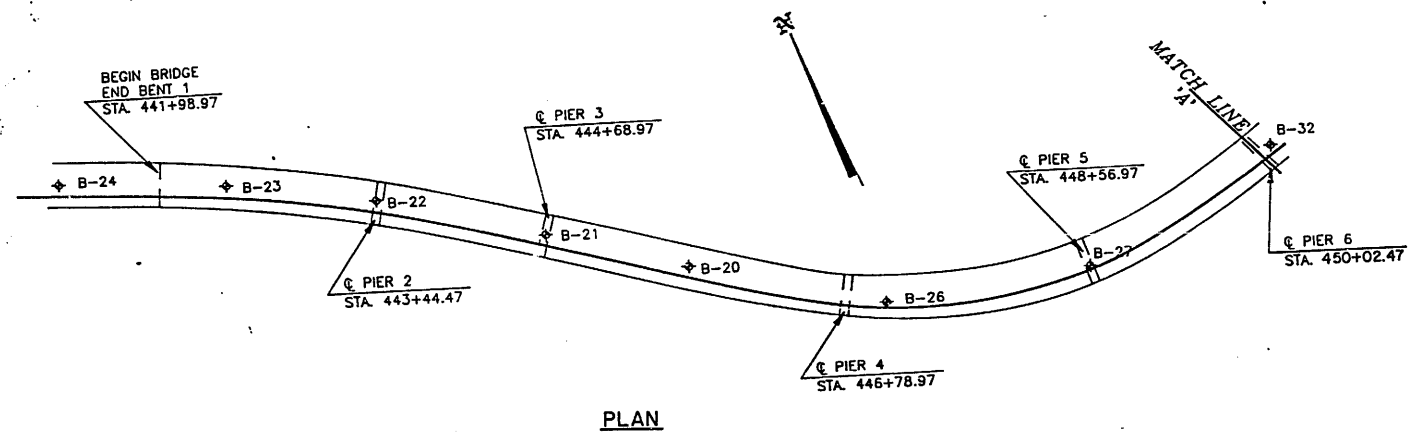
SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND LIMITED LABORATORY TESTING.

PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATIONS ONLY AND MAY NOT INDICATIVE OF FINAL CONTRACT PLANS.

SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVG. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

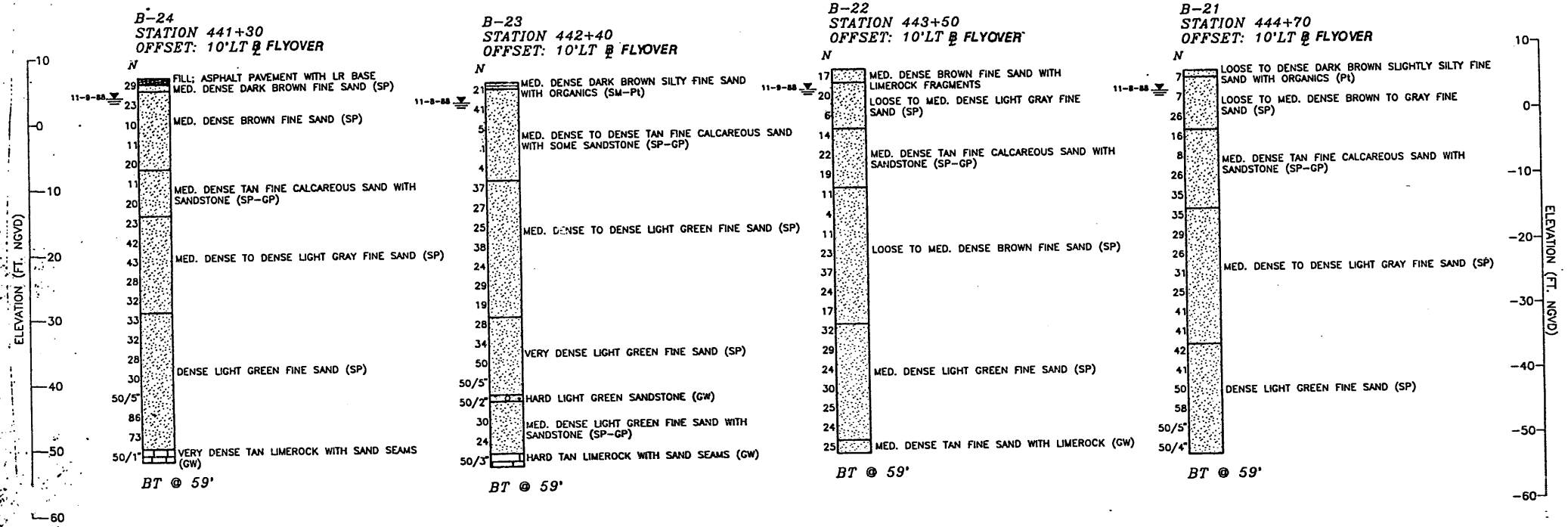
SCALE: 1" = 60' HORIZONTAL (FOR PLAN VIEW)
 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT
 SUBSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)
 SUPERSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)



PLAN

PROFILE OF BORINGS:



Page No. 5

860598

APPROVED:
TIMOTHY S. CARTER, P.E.

DATE: 3/21/11 P.E. NO.: 39420

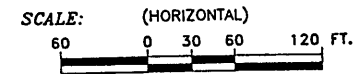
WESTINGHOUSE ENVIRONMENTAL AND GEOTECHNICAL SERVICES, INC.

BORING DATA (SHEET 1 OF 3)

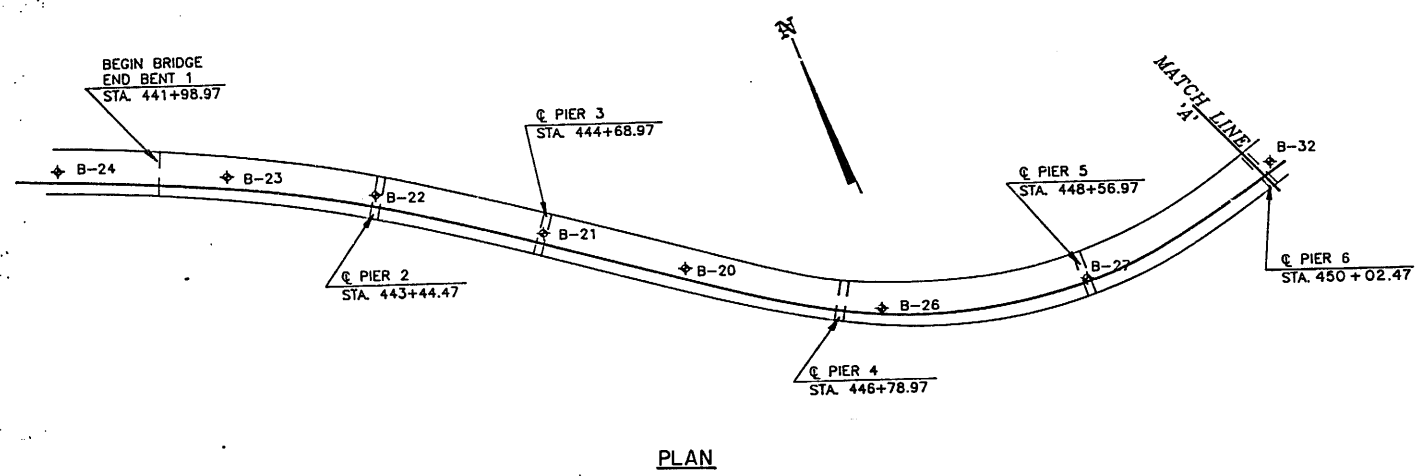
USA GROUP		ENGINEERS • SURVEYORS • PLANNERS
TAMPA, FLORIDA		
FLORIDA DEPARTMENT OF TRANSPORTATION		
BUREAU OF STRUCTURES DESIGN		
BROWARD BLVD. AT I-95		
EB-NB FLYOVER RAMP-BRIDGE NO. 860598		
ROAD NO.	COUNTY	PROJECT NO.
842	BROWARD	86070-3493
Designed by	Checked by	APPROVED BY
Checked by	Checked by	
Checked by	Checked by	
Checked by	Checked by	
Supervised by	Supervised by	

REVISIONS		
Date	By	Description

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			B-6



- LEGEND:
- ⊕ SPT BORING
 - N STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
 - ≡ GROUNDWATER LEVEL
 - ▨ SAND



NOTES:

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN BLOWS PER FOOT UNLESS OTHERWISE SPECIFIED.

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND LIMITED LABORATORY TESTING.

PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATIONS ONLY AND MAY NOT INDICATIVE OF FINAL CONTRACT PLANS.

SPLIT SPOON SAMPLER:
 INSIDE DIAMETER: 1.375 IN.
 OUTSIDE DIAMETER: 2.0 IN.
 AVG. HAMMER DROP: 30.0 IN.
 HAMMER WEIGHT: 140 LBS.

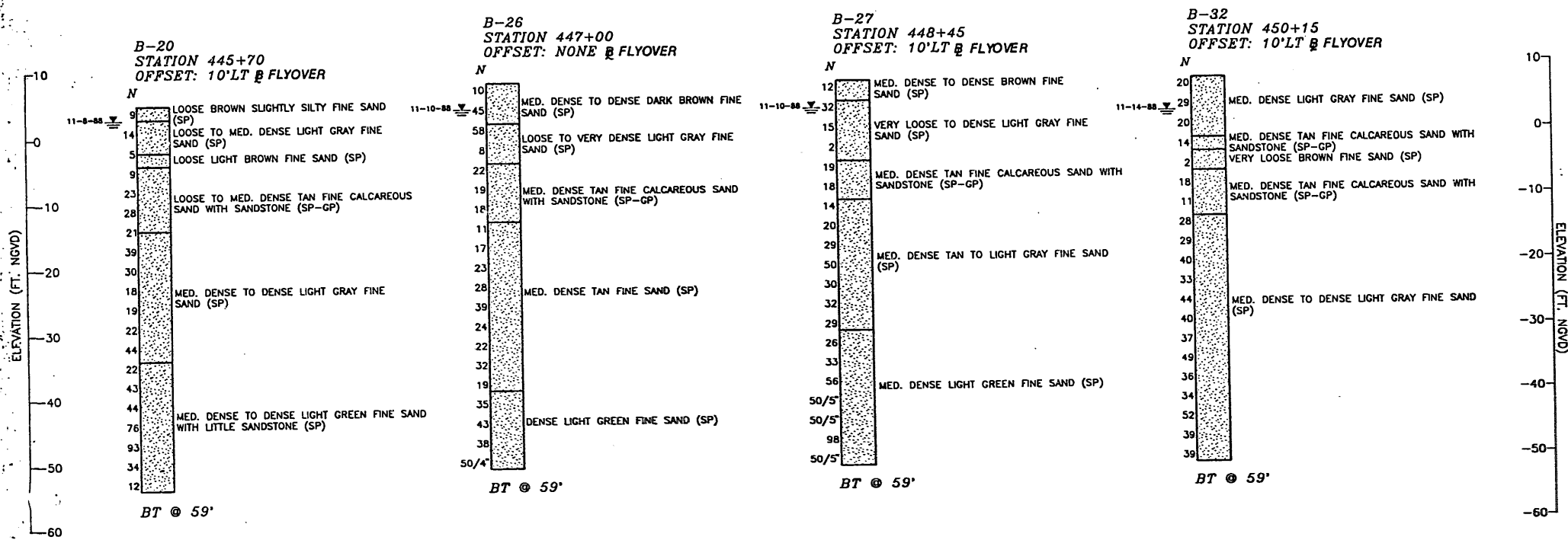
SCALE: 1" = 60' HORIZONTAL (FOR PLAN VIEW)
 1" = 10' VERTICAL (FOR PROFILE OF BORINGS)

ENVIRONMENT
 SUBSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)
 SUPERSTRUCTURE: NON-CORROSIVE (SLIGHTLY AGGRESSIVE)

Page No. 6

860598

PROFILE OF BORINGS:



APPROVED:
 TIMOTHY S. CARTER, P.E.

DATE: 3/29/11 P.E. NO.: 39420

WESTINGHOUSE ENVIRONMENTAL AND GEOTECHNICAL SERVICES, INC.

BORING DATA (SHEET 2 OF 3)

		ENGINEERS • SURVEYORS • PLANNERS
TAMPA, FLORIDA		
FLORIDA DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURES DESIGN BROWARD BLVD. AT I-95 EB-NB FLYOVER RAMP - BRIDGE NO. 860598		
ROAD NO.	COUNTY	PROJECT NO.
842	BROWARD	86070-3493
Designed by	Checked by	APPROVED BY
Checked by	Quantity by	Drawing No.
Checked by	Supervised by	Index No.

APPENDIX – B4

Existing Soil Boring Information from Previous Projects along the Project Corridor

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: F.S.R.D. Standard Specifications for Road and Bridge Construction, 1988 Edition and Special Provisions.

DESIGN SPECIFICATION: A.A. & W.O. Specifications for Highway Bridges, 1988 Edition and approved revisions.

DESIGN LIVE LOADING: HS 20-44 (Modified for Military Loading as required) with allowance for 15 lbs. per square foot for future wearing surfaces.

MAXIMUM WORKING STRESSES: Reinforcing Steel = 20,000 P.S.I.
Concrete: Class A = 1,200 P.S.I.
Class AA = 1,360 P.S.I.
Class B = 1,500 P.S.I.
Class C = 2,000 P.S.I.

MINIMUM 28 DAY CONCRETE STRENGTH: Class A = 3,000 P.S.I.
Class AA = 3,400 P.S.I.
Class B = 3,750 P.S.I.
Class C = 5,000 P.S.I.

REINFORCING STEEL: All reinforcing steel shall be intermediate or hard grade.

SURFACE FINISH: A Class 1 Surface Finish shall be given to those surfaces specified in Article 400-22.2 of the general specifications, except outside faces of exterior beams, which shall be given no special finish.

CHAMFER: All exposed concrete edges, unless otherwise indicated, shall be chamfered 3/8".

I-95 OVER N. FORK OF NEW RIVER

- C-1 GENERAL PLAN.
- C-2 ELEVATIONS AND ESTIMATED BRIDGE QUANTITIES.
- C-3 BRIDGE DESIGN DATA SHEET.
- C-4 BORING DATA.
- C-5 BORING DATA.
- C-6 BORING DATA.
- C-7 FOUNDATION PLAN.
- C-8 BRIDGE NO. 1, END BENT NO. 1.
- C-9 BRIDGE NO. 1, END BENT NO. 2.
- C-10 BRIDGE NO. 2, END BENT NO. 1.
- C-11 BRIDGE NO. 2, END BENT NO. 2.
- C-12 BRIDGE NO. 3, END BENT NO. 1.
- C-13 BRIDGE NO. 3, END BENT NO. 2.
- C-14 BRIDGE NO. 1, END BENT DETAILS.
- C-15 BRIDGE NO. 2 & NO. 3, END BENT DETAILS.
- C-16 BRIDGE NO. 1, INT. BENT NO. 1.
- C-17 BRIDGE NO. 1, INT. BENT NO. 2.
- C-18 BRIDGE NO. 1, INT. BENT NO. 3.
- C-19 BRIDGE NO. 1, INT. BENT NO. 4.
- C-20 BRIDGE NO. 2, INT. BENT NO. 1.
- C-21 BRIDGE NO. 2, INT. BENT NO. 2.
- C-22 BRIDGE NO. 3, INT. BENT NO. 1.
- C-23 BRIDGE NO. 3, INT. BENT NO. 2.
- C-24 BRIDGE NO. 1, PRESTR. BEAM TYPE III (16-8) SP. 1 & 2.
- C-25 BRIDGE NO. 1, PRESTR. BEAM TYPE III (22-6) SPAN 3.
- C-26 BRIDGE NO. 1, PRESTR. BEAM TYPE III (16-6) SP. 4 & 5.
- C-27 BRIDGE NO. 2, PRESTR. BEAM TYPE III (22-6) ALL SP.
- C-28 BRIDGE NO. 3, PRESTR. BEAM TYPE III (16-8) SP. 1 & 2.
- C-29 BRIDGE NO. 3, PRESTR. BEAM TYPE III (22-6) SPAN 2.
- C-30 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 1.
- C-31 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 2.
- C-32 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 3.
- C-33 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 4.
- C-34 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 5.
- C-35 BRIDGE NO. 2, SUPERSTRUCTURE SPAN NO. 1.
- C-36 BRIDGE NO. 3, SUPERSTRUCTURE SPAN NO. 2.
- C-37 BRIDGE NO. 3, SUPERSTRUCTURE SPAN NO. 3.
- C-38 BRIDGE NO. 3, SUPERSTRUCTURE SPAN NO. 3.
- C-39 BRIDGE NO. 1, SUPERSTRUCTURE DETAILS.
- C-40 BRIDGE NO. 2, SUPERSTRUCTURE DETAILS.
- C-41 BRIDGE NO. 3, SUPERSTRUCTURE DETAILS.
- C-42 BRIDGE NO. 1, DECK ELEVATIONS.
- C-43 BRIDGE NO. 2, DECK ELEVATIONS.
- C-44 BRIDGE NO. 3, DECK ELEVATIONS.

* For STD. SHES. SEE 860270 PAGE 1 AND PAGE 2
FOR WAREING PROJECT ROADWAY SEE PLAN SHEET 108

860260
Page No. 1

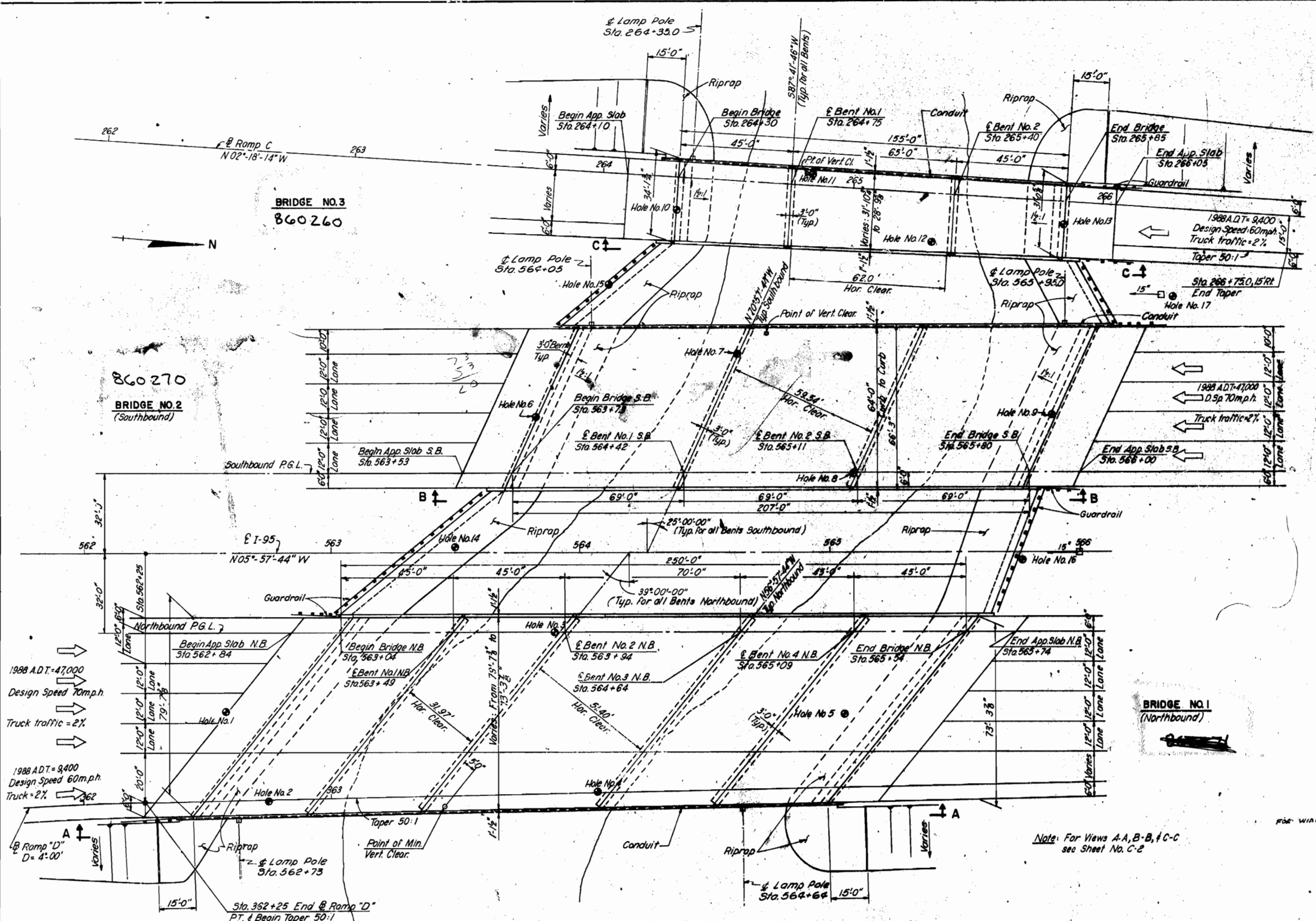
GENERAL PLAN

STATE ROAD DEPARTMENT OF FLORIDA
STRUCTURES DIVISION

I-95 OVER
NORTH FORK OF NEW RIVER

REVISIONS	ROAD NO.	COUNTY	PROJECT NO.
Date	9	BROWARD	86070-3436
Designed by	F.G./R.I.	Date	6-70
Checked by	V.A.A.	Date	6-70
Quantity		Drawn by	
Checked by		Supervised by	V.A.A.
		Drawing No.	1 of 44
		Index No.	10884

RADER AND ASSOCIATES, MIAMI, FLA.



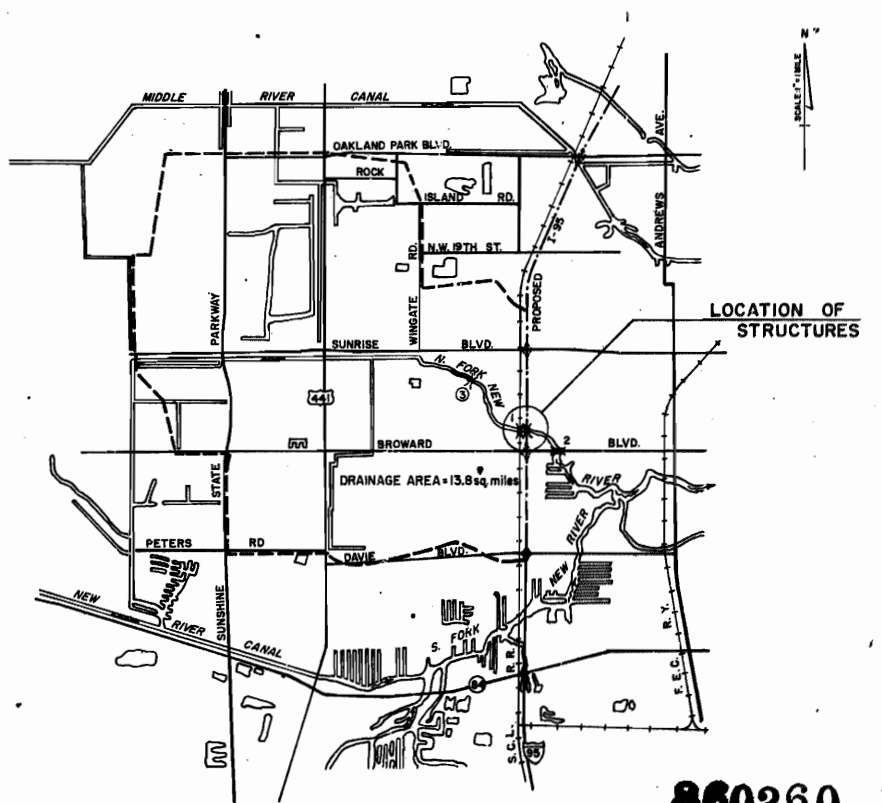
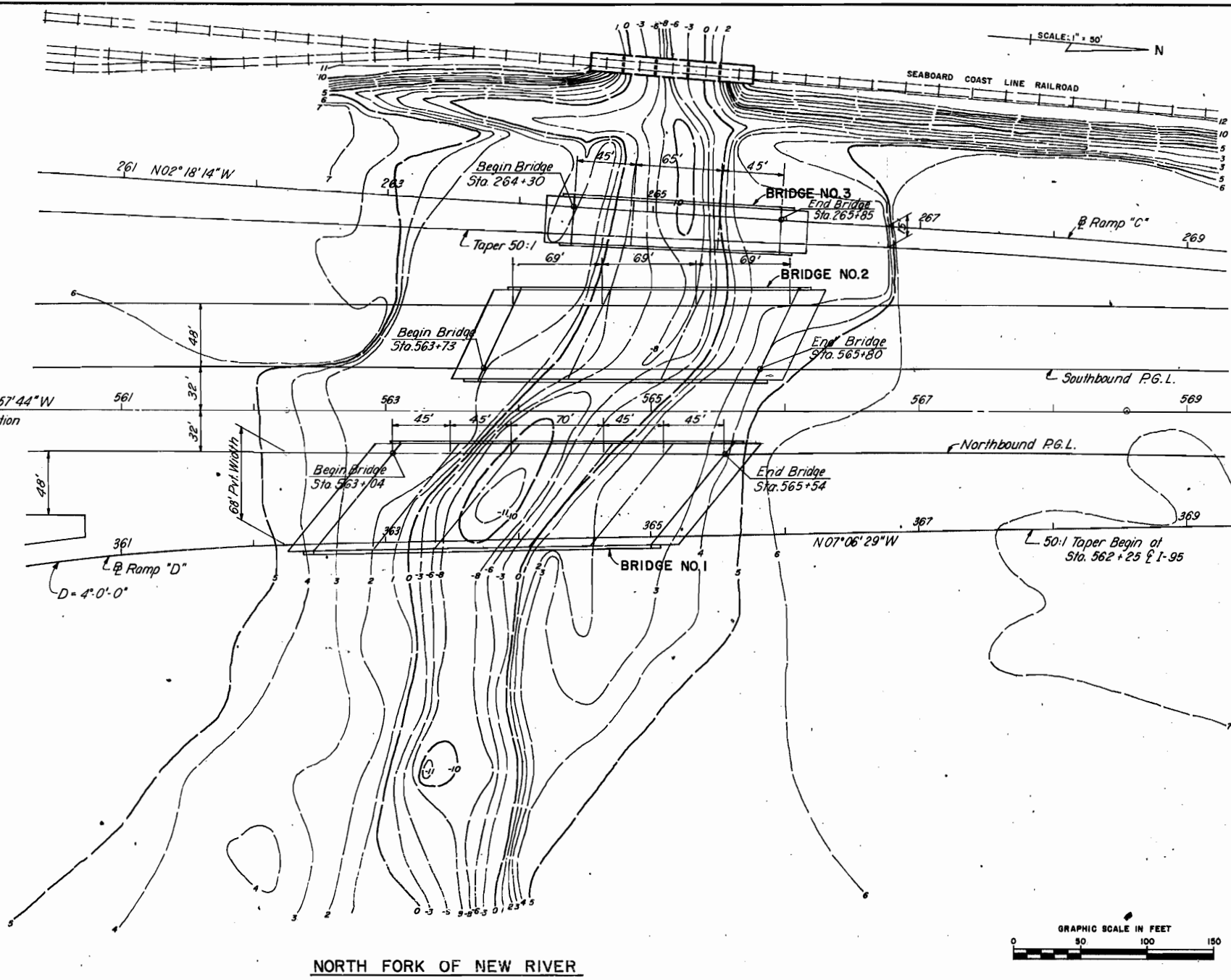
PLAN

Note: For Views A-A, B-B, & C-C see Sheet No. C-2

1988 A.D.T. = 47,000
Design Speed 70 m.p.h.
Truck traffic = 2%

1988 A.D.T. = 9,400
Design Speed 60 m.p.h.
Truck traffic = 2%

860270



860260

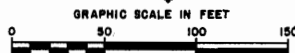
Page No. 3



DRAINAGE AREA & LOCATION

(REFERENCE)	(1)	(2)	(3)	(4)	(5)
FOUNDATION	CONCRETE PILES	CONCRETE PILES			
OVERALL LENGTH	119.00'	75'	80'		
SPAN LENGTH	1@23.5', 3@24.0', 1@23.5'	15'	2@25', 1@30'		
TYPE CONSTRUCTION	CONCRETE	FLAT SLAB	FLAT SLAB		
SIDEWALKS	NONE	2@5'	2@5'		
ROADWAY WIDTH	SINGLE TRACK R.R.	50'	64'		
ELEV LOW MEMBER	8.19'				

NORTH FORK OF NEW RIVER



Note: For Bridges Elevation see Sheet No. C-2

DESIGN DATA

STRUCTURE RECOMMENDATIONS

1. LOADING _____ 2. BRIDGE ROADWAY WIDTH _____ FT.

3. SIDEWALKS _____

DRAINAGE RECOMMENDATIONS

1. BEGIN BRIDGE STATION _____ END BRIDGE STATION _____

2. CENTERLINE GRADE ELEVATION _____

3. BRIDGE SKEW ANGLE _____ ELEVATION VARIES _____ SIDE SLOPES VARIES _____

4. CHANNEL BOTTOM, WIDTH VARIES _____

CENTERLINE CHANNEL BOTTOM, STATION VARIES _____

LIMITS OF CHANNEL EXCAVATION RT. _____ LT. _____

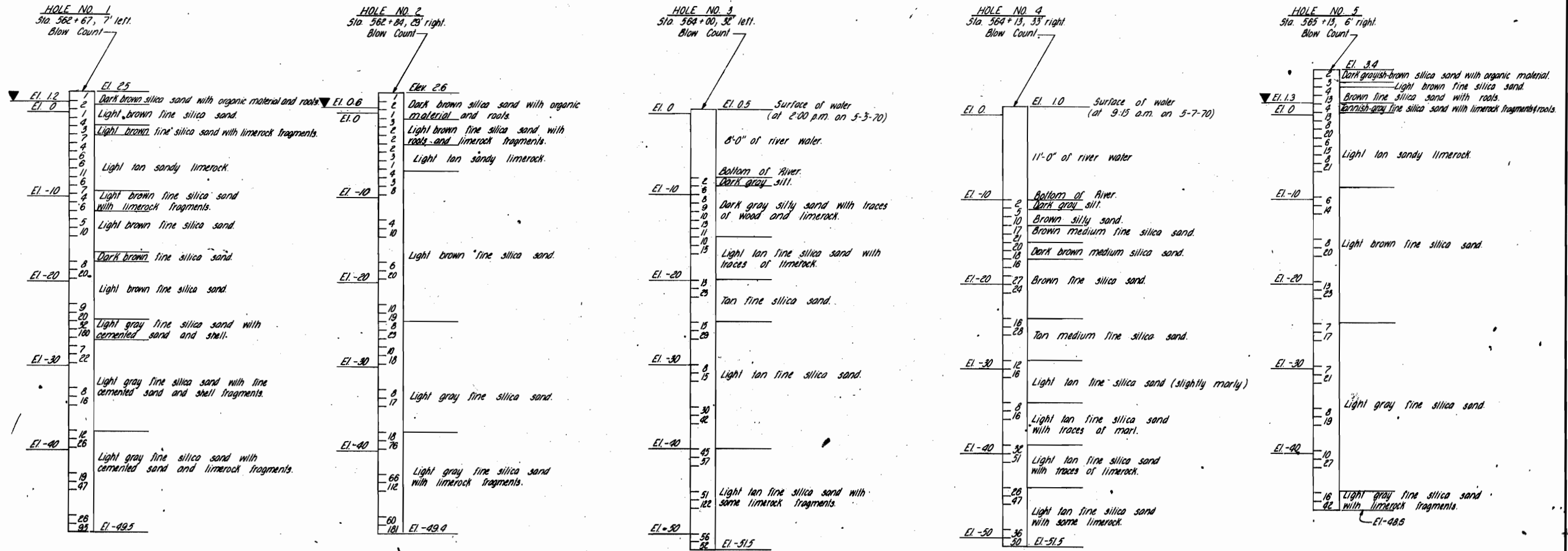
5. CLEARANCE: NAVIGATION: HORIZ. NOT APPLICABLE DRIFT: HORIZ. 25'-0" & VERT. 6.0' ABOVE EL. +2.2 VERT. 3' ABOVE EL. +3.9'

6. DRAINAGE AREA 13.8 sq. mi.

7. WATER STAGE DATA: MAX. STAGE OF RECORD, DESIGN H.W., NORMAL FLOW ELEV. ELEVATION 6.5 M.S.L. * 3.9 * * 2.2 (Spring Tide) DATE OF OCCURRENCE SEPT. 17, 1947 * RECURRENT INTERVAL UNKNOWN * 200 yr. * DESIGN DISCHARGE 1920 * * * CFS SOURCE CORPS OF ENGINEERS, JACKSONVILLE, FLORIDA RECURRENT INTERVAL 200 * * * YEARS DESIGN VELOCITY @ 10, @ 18, @ 26 FPS

REMARKS: * TIDAL FLOODING DUE TO THE SEPT. 17, 1947 HURRICANE (SEE FLOOD PLAIN INFORMATION, BROWARD COUNTY, FLA., PREPARED BY THE U.S. ARMY ENGINEERING DISTRICT, JACKSONVILLE, CORPS OF ENGINEERS.) * 2.29 MSL IS THE MAXIMUM FLOOD OF RECORD WITH EXISTING DRAINAGE CONDITIONS. DESIGN WATER SURFACE ELEVATION FOR THE 50% STANDARD PROJECT STORM WAS + 2.3 M.S.L. (CORPS OF ENGINEERS) * * * THE DESIGN DISCHARGE OF 1920 C.F.S. REPRESENTS THE RUNOFF FROM THE STANDARD PROJECT STORM WITH A RECURRENT INTERVAL OF IN EXCESS OF 200 YEARS.

RECOMMENDED DISTRICT DR. ENGR. _____ APPROVED ENGINEER OF DRAINAGE _____



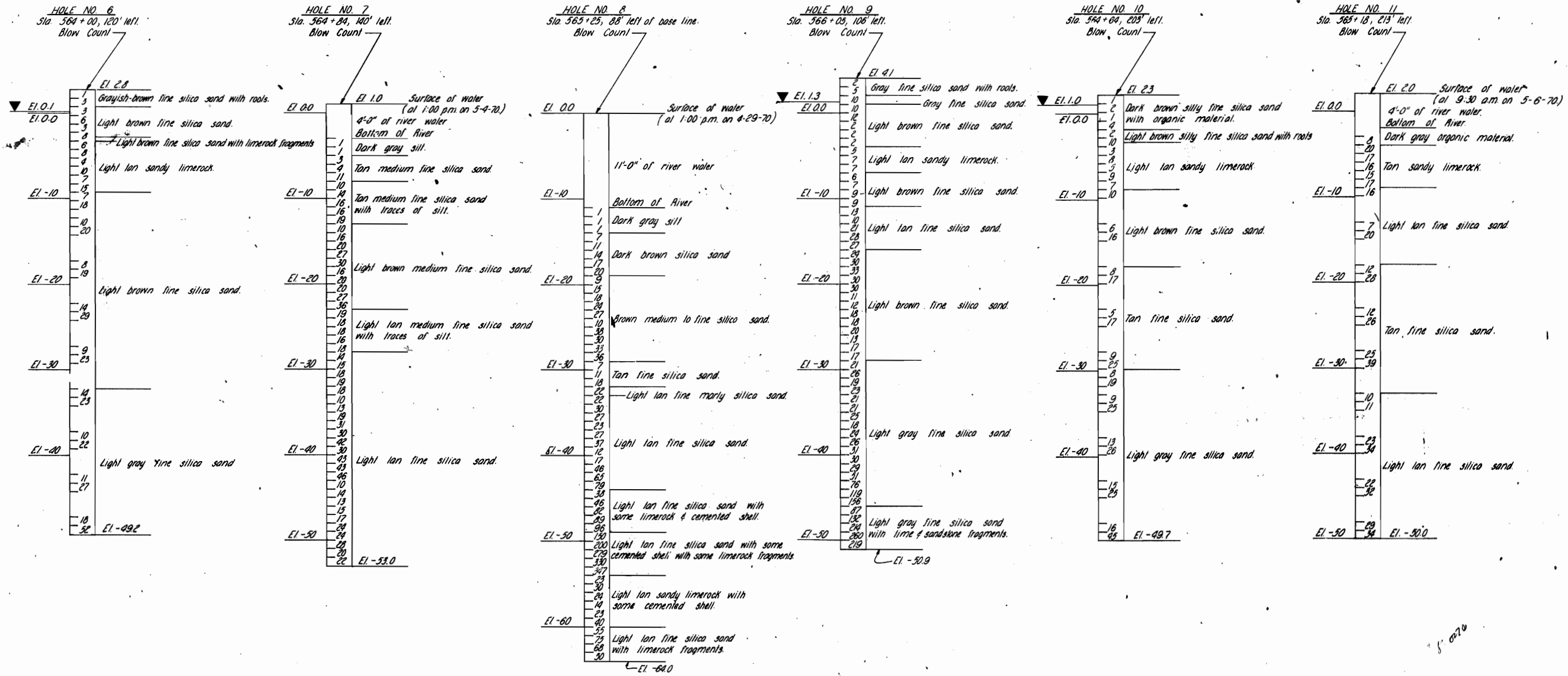
LEGEND
 ▼ Ground Water Elevation

BORING EQUIPMENT
 Type of Rig: FW-BX
 Spoon Inside Diameter: 1.5"
 Spoon Outside Diameter: 2.0"
 Casing Inside Diameter: 2.5"
 Casing Outside Diameter: 3.0"
 Hammer Weight: 300 Lbs.
 Hammer Drop: 18" (holes 1, 2, 3, 4, 5, 6, 10, 11, 14, 15)
 30" (holes 7, 9, 12, 13, 16, 17)
 Split Spoon: 2" (holes 1, 2, 3, 4, 5, 6, 10, 11, 14, 15)
 5" (holes 7, 9, 12, 13, 16, 17)
 Borings by Wingerter Laboratories, Inc.
 May 1, 1970
 Note: Blow Count refer to Hammer Blows on Sampler.

860260
 Page No. 4

RADER AND ASSOCIATES INC. MIAMI, FLA

REVISIONS		ROAD NO.	COUNTY	PROJECT NO.
Date	Description	9	BROWARD	86070-3436
		APPROVED BY		
		Name	Date	
		Designed by	8-70	
		Checked by	6-70	
		Quantities by		
		Checked by		
		Supervised by	V.A.A.	
		Drawing No.	4 of 44	Index No.
				10884



LEGEND
▼ Ground Water Elevation

Note: Blow Count refer to Hammer Blows on Sampler.

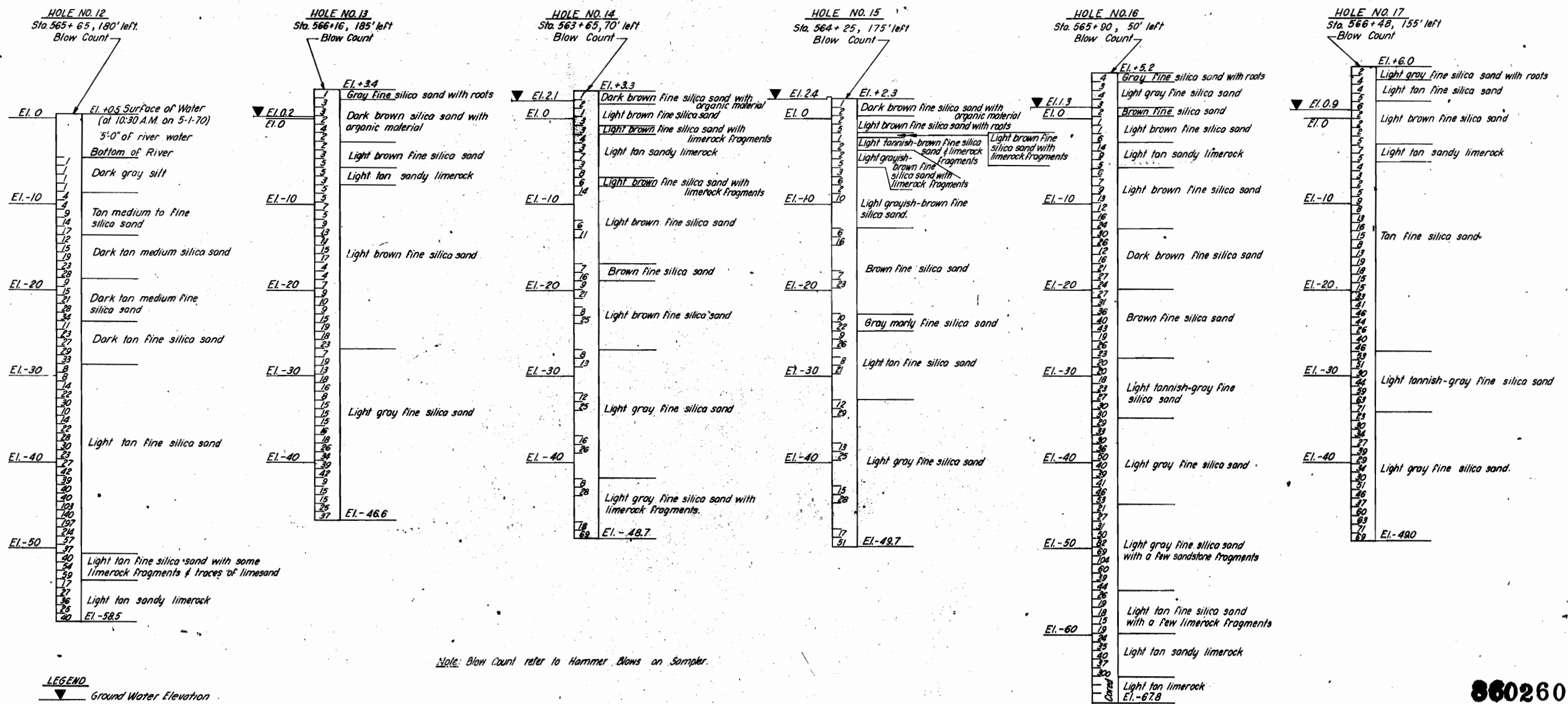
860260

Page No. **5**

For Note on Boring Equipment See Sheet No. C-4

BORING DATA			
STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION			
I-95 BRIDGES OVER NORTH FORK OF NEW RIVER			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070--3436	
REVISIONS		APPROVED BY	
Date	Descriptions	Names	Dates
		Designed by	6-70
		Checked by	6-70
		Engineer of Structures	
		Drawing No.	Index No.
		5 of 44	1088*
		Supervised by	V.A.A.

RADER AND ASSOCIATES INC. MIAMI, FLA.



LEGEND
 ▼ Ground Water Elevation

Note: Blow Count refer to Hammer Blows on Sampler.

860260
 Page No. 56

For Note on Boring Equipment see Sheet No. C-4

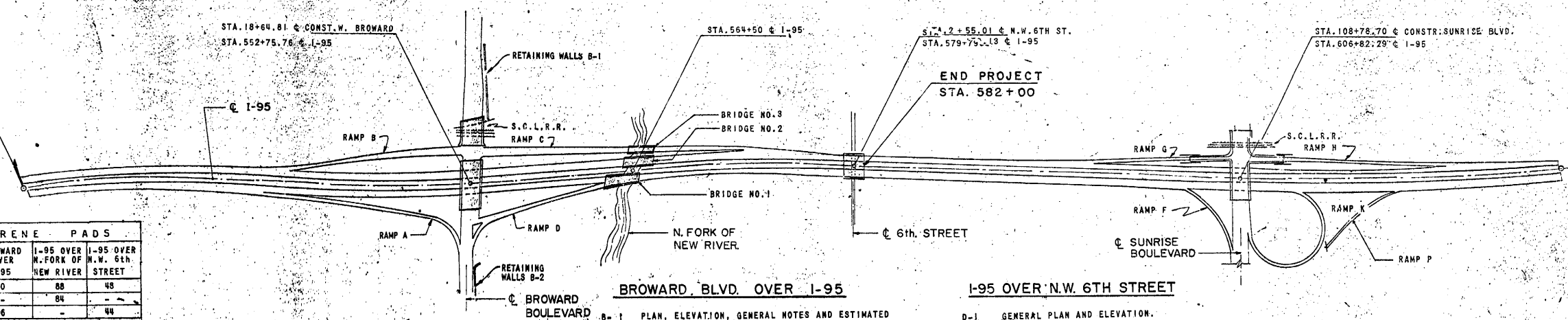
BORING DATA			
STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION			
I-95 BRIDGES OVER NORTH FORK OF NEW RIVER			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070-3436	
DESIGNED BY		APPROVED BY	
R. I. 6-70		T. C. 6-70	
CHECKED BY		SUPERVISOR	
T. C.		V. A. A.	
DRAWING NO.		INDEX NO.	
6 of 44		10884	

APPENDIX – B5

Existing Soil Boring Information from Previous Projects along the Project Corridor

BEGIN PROJECT STA. 520+78.76

END PROJECT STA. 582+00



SUMMARY OF NEOPRENE PADS

ITEM	BROWARD OVER S.C.L.R.R.	BROWARD OVER I-95	I-95 OVER N.FORK OF NEW RIVER	I-95 OVER N.W. 6TH STREET
Composite Neoprene Pad Type II Beams	50	40	88	45
Composite Neoprene Pad Type III Beams	18	-	84	-
Composite Neoprene Pad Type IV Beams	52	96	-	44

SUMMARY OF ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM	UNIT	BROWARD OVER S.C.L.R.R.	BROWARD OVER I-95	I-95 OVER N.FORK OF NEW RIVER	I-95 OVER N.W. 6TH ST	WALLS "B"	TOTAL
400-1-4	Class A Concrete (Superstructure)	Cu.Yd.	764	671	558	259	-	2,252
400-1-5	Class A Concrete (Substructure)	Cu.Yd.	321	611	394	428	-	1,754
400-2-4	Class A-A Concrete (Superstructure)	Cu.Yd.	98	226	458	290	-	1,072
400-6-1	Concrete Handrail (Safety Curb)	Lin.Ft.	-	-	1,228	694	-	1,922
400-5-2	Concrete Handrail (Sidewalk)	Lin.Ft.	444	625	-	-	-	1,069
401-1-2	Reinforcing Steel (Bridge)	Lb.	253,000	273,870	347,488	218,050	94,400	1,186,808
400-1-1	Class A Concrete (Retaining Walls)	Cu.Yd.	-	-	-	-	773	773
450-1-1	Prestressed Beams (Type III)	Lin.Ft.	1,054	723	1,955	888	-	4,615
450-1-2	Prestressed Beams (Type III)	Lin.Ft.	618	-	2,862	-	-	3,479
450-1-3	Prestressed Beams (Type IV)	Lin.Ft.	2,135	5,047	-	1,449	-	8,631
524-1-1B	Concrete Ditch Pavement (3" Thick)	Sq. Yd.	-	-	-	-	30	30
455-3-2	Precast Concrete Piling Furnished (18" x 24")	Lin.Ft.	2,550	7,275	5,390	5,650	4,985	24,850
455-3-3	Precast Concrete Piling Furnished (20" x 24")	Lin.Ft.	2,100	-	3,535	-	-	5,635
455-4-2	Precast Concrete Piling Driven (18" x 24")	Lin.Ft.	2,550	7,275	5,390	5,650	4,985	24,850
455-4-3	Precast Concrete Piling Driven (20" x 24")	Lin.Ft.	2,100	-	3,535	-	-	5,635
455-9-12	Unloaded Test Piles (18" x 24")	Lin.Ft.	50	180	340	180	80	830
455-9-13	Unloaded Test Piles (20" x 24")	Lin.Ft.	150	-	285	-	-	435
455-10-90	Test Loads (90 Tons)	Each	1	1	1	1	1	5
455-10-130	Test Loads (130 Tons)	Each	1	1	1	1	1	5
455-95-2	Pile Splices (18" x 24") (Concrete)	Each	25	30	45	10	5	115
455-95-3	Pile Splices (20" x 24") (Concrete)	Each	20	-	35	-	-	55
520-2-2	Concrete Slope Pavement (1" Thick)	Sq. Yd.	-	1,680	-	1,970	-	3,650
530-1B	Rip-Rap (Sandstone)	Cu.Yd.	440	-	365	-	-	805
515-1-1	Pipe Handrail (Steel)	Lin. Ft.	-	-	-	-	384	384
515-1-2	Pipe Handrail (Aluminum)	Lin. Ft.	-	-	-	-	384	384

NOTES: PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN INDIVIDUAL BID ITEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES FOR BID ITEMS.
 TEST LOADS MAY BE INCREASED IN NUMBER OR OMITTED AS DIRECTED BY THE ENGINEER.
 ALL COMPOSITE NEOPRENE BEARING PADS SHALL BE FURNISHED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION.
 INCLUDES 65 CU.YDS. FOR CRASH WALL.
 INCLUDES 5150 LBS. FOR CRASH WALL.

INDEX OF SHEETS

BROWARD OVER S.C.L.R.R.

Sheet No.	Description
A-1	PLAN, ELEVATION, GENERAL NOTES AND ESTIMATED BRIDGE QUANTITIES.
A-2	BRIDGE DESIGN DATA SHEET.
A-3	BORING DATA.
A-4	BORING DATA.
A-5	FOUNDATION PLAN.
A-6	END BENT NO. 1.
A-7	END BENT NO. 2.
A-8	END BENT DETAILS (1).
A-9	END BENT DETAILS (2) AND BILLS OF REINFORCING STEEL.
A-10	INTERMEDIATE BENTS NO. 1, N.B. AND NO. 1, E.B.
A-10A	CRASH WALL.
A-11	INTERMEDIATE BENT NO. 2, N.B.
A-12	INTERMEDIATE BENTS NO. 3, N.B. AND NO. 2, E.B.
A-13	INTERMEDIATE BENTS NO. 3, E.B. AND BILLS OF REINFORCING STEEL.

BROWARD OVER S.C.L.R.R. (CONT.)

Sheet No.	Description
A-14	PRESTRESSED BEAM TYPE IV
A-15	PRESTRESSED BEAM TYPE III (16-0) SPAN NO. 2, N.B.
A-16	PRESTRESSED BEAM TYPE IV (34-0) SPAN NO. 2, E.B.
A-17	PRESTRESSED BEAM TYPE III (22-6) SPAN NO. 3, N.B.
A-18	PRESTRESSED BEAM TYPE IV (12-6) SPANS NOS. 4, N.B. & NO. 3, E.B.
A-19	SUPERSTRUCTURE SPANS NOS. 1, N.B. AND 1, E.B.
A-20	SUPERSTRUCTURE SPAN NO. 2, N.B.
A-21	SUPERSTRUCTURE NO. 2, E.B.
A-22	SUPERSTRUCTURE SPAN NO. 2, E.B. DETAILS AND BILL OF REINFORCING STEEL.
A-23	SUPERSTRUCTURE SPAN NO. 3, N.B.
A-24	SUPERSTRUCTURE SPANS NOS. 4, N.B. AND 3, E.B.
A-25	SUPERSTRUCTURE SPANS NOS. 4, N.B. AND 1, E.B., 4, N.B. AND 3, E.B. BILLS OF REINFORCING STEEL.
A-26	SUPERSTRUCTURE DETAILS.
A-27	DECK ELEVATIONS.

RETAINING WALLS "B"

Sheet No.	Description
B-1	BORING DATA.
B-2	BORING DATA.
B-3	ELEVATION AND LAYOUT & DETAILS.
B-4	RETAINING WALL B-1, UNITS 1 THRU 4.
B-5	RETAINING WALL B-1, UNIT NOS. 5 & 6.
B-6	RETAINING WALL B-2, UNIT NOS. 1 THRU 4.
B-7	RETAINING WALL B-2, UNIT NOS. 5 & 6.
B-8	RETAINING WALL B-2, DETAILS, QUANTITIES AND BILL OF REINFORCING STEEL.

BROWARD BLVD. OVER I-95

- B-1 PLAN, ELEVATION, GENERAL NOTES AND ESTIMATED BRIDGE QUANTITIES.
- B-2 BORING DATA.
- B-3 BORING DATA.
- B-4 FOUNDATION PLAN.
- B-5 END BENT NO. 1.
- B-6 END BENT NO. 2.
- B-7 END BENT DETAILS.
- B-8 PIER NO. 1.
- B-9 PIER NO. 2.
- B-10 PIER NO. 3.
- B-11 PRESTR. BEAM TYPE III (16-0) SPAN NO. 1.
- B-12 PRESTR. BEAM TYPE IV (16-0) SPAN NO. 1.
- B-13 PRESTR. BEAM TYPE IV (38-0) SPANS NOS. 2 & 3.
- B-14 PRESTR. BEAM TYPE III (12-0) SPAN NO. 4.
- B-15 PRESTR. BEAM TYPE IV (16-0) SPAN NO. 4.
- B-16 SUPERSTRUCTURE SPAN NO. 1.
- B-17 SUPERSTRUCTURE SPANS NO. 2 & NO. 3.
- B-18 SUPERSTRUCTURE SPAN NO. 4.
- B-19 SUPERSTRUCTURE DETAILS.
- B-20 DECK ELEVATIONS.

I-95 OVER N. FORK OF NEW RIVER

- C-1 GENERAL PLAN, ELEVATIONS AND ESTIMATED BRIDGE QUANTITIES.
- C-2 ELEVATIONS AND ESTIMATED BRIDGE QUANTITIES.
- C-3 BRIDGE DESIGN DATA SHEET.
- C-4 BORING DATA.
- C-5 BORING DATA.
- C-6 BORING DATA.
- C-7 FOUNDATION PLAN.
- C-8 BRIDGE NO. 1, END BENT NO. 1.
- C-9 BRIDGE NO. 1, END BENT NO. 2.
- C-10 BRIDGE NO. 2, END BENT NO. 1.
- C-11 BRIDGE NO. 2, END BENT NO. 2.
- C-12 BRIDGE NO. 3, END BENT NO. 1.
- C-13 BRIDGE NO. 3, END BENT NO. 2.
- C-14 BRIDGE NO. 1, INT. BENT DETAILS.
- C-15 BRIDGE NO. 2, INT. BENT DETAILS.
- C-16 BRIDGE NO. 1, INT. BENT NO. 1.
- C-17 BRIDGE NO. 1, INT. BENT NO. 2.
- C-18 BRIDGE NO. 1, INT. BENT NO. 3.
- C-19 BRIDGE NO. 1, INT. BENT NO. 4.
- C-20 BRIDGE NO. 2, INT. BENT NO. 1.
- C-21 BRIDGE NO. 2, INT. BENT NO. 2.
- C-22 BRIDGE NO. 3, INT. BENT NO. 1.
- C-23 BRIDGE NO. 3, INT. BENT NO. 2.
- C-24 BRIDGE NO. 1, PRESTR. BEAM TYPE III (16-0) SP. 1 & 2.
- C-25 BRIDGE NO. 1, PRESTR. BEAM TYPE III (22-6) SPAN 3.
- C-26 BRIDGE NO. 2, PRESTR. BEAM TYPE III (16-0) SP. 4 & 5.
- C-27 BRIDGE NO. 3, PRESTR. BEAM TYPE III (16-0) SP. 1 & 2.
- C-28 BRIDGE NO. 3, PRESTR. BEAM TYPE III (22-6) SPAN 2.
- C-29 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 1.
- C-30 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 2.
- C-31 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 3.
- C-32 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 4.
- C-33 BRIDGE NO. 1, SUPERSTRUCTURE SPAN 5.
- C-34 BRIDGE NO. 2, SUPERSTRUCTURE.
- C-35 BRIDGE NO. 3, SUPERSTRUCTURE SPAN NO. 1.
- C-36 BRIDGE NO. 3, SUPERSTRUCTURE SPAN NO. 2.
- C-37 BRIDGE NO. 3, SUPERSTRUCTURE SPAN NO. 3.
- C-38 BRIDGE NO. 1, SUPERSTRUCTURE DETAILS.
- C-39 BRIDGE NO. 2, SUPERSTRUCTURE DETAILS.
- C-40 BRIDGE NO. 3, SUPERSTRUCTURE DETAILS.
- C-41 BRIDGE NO. 1, DECK ELEVATIONS.
- C-42 BRIDGE NO. 2, DECK ELEVATIONS.
- C-43 BRIDGE NO. 3, DECK ELEVATIONS.

I-95 OVER N.W. 6TH STREET

- D-1 GENERAL PLAN AND ELEVATION.
- D-2 BORING DATA.
- D-3 FOUNDATION PLAN.
- D-4 END BENT NO. 1 NORTHBOUND.
- D-5 END BENT NO. 2 NORTHBOUND.
- D-6 END BENT NO. 1 SOUTHBOUND.
- D-7 END BENT NO. 2 SOUTHBOUND.
- D-8 END BENT DETAILS.
- D-9 PARAPET WALLS AND SLOPE PAVEMENT DETAILS.
- D-10 PIER NO. 1 NORTHBOUND.
- D-11 PIER NO. 2 NORTHBOUND.
- D-12 PIER NO. 1 SOUTHBOUND.
- D-13 PIER NO. 2 SOUTHBOUND.
- D-14 PRESTR. BEAM TYPE IV (14-4) SP. 1 & 3.
- D-15 PRESTR. BEAM TYPE III (12-4) SP. 1 & 3.
- D-16 PRESTR. BEAM TYPE IV (34-8) SP. 2.
- D-17 SUPERSTRUCTURE SPAN 1 & 3.
- D-18 SUPERSTRUCTURE SPAN 2.
- D-19 SUPERSTRUCTURE SPAN 4.
- D-20 DECK ELEVATIONS, NORTHBOUND.
- D-21 DECK ELEVATIONS, SOUTHBOUND.

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LOCATION, PLAN, INDEX OF SHEETS AND ESTIMATED BRIDGE QUANTITIES

STATE ROAD DEPARTMENT OF FLORIDA
 STRUCTURES DIVISION
 INTERSTATE ROUTE 1-95
 STATION 520+78.76 TO STATION

DATE	REVISIONS	ROAD NO.	COUNTY	PROJ. COST NO.
		9	BROWARD	86070-243

DESIGNED BY: [Signature] DATE: 10-70
 CHECKED BY: [Signature] DATE: 10-70
 QUANTITIES BY: [Signature] DATE: 4-71
 DRAWING NO. 9-71

RADER AND ASSOCIATES, INC. - MIAMI, FLA.

REVISED 1-19-73

PROJ. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	I-95-1(410)27		A-1

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: F.S.D. Standard Specifications for Road and Bridge Construction, 1966 Edition and Special Provisions.

DESIGN SPECIFICATION: A.A.S.N.C. Specifications for Highway Bridges, 1969 Edition with approved revisions.

DESIGN LIVE LOADING: HS 20-44 with allowance for 15 lbs. per sq. ft. for Future Wearing Surface.

MAXIMUM WORKING STRESSES: Reinforcing Steel = 20,000 P.S.I.
Concrete: Class A = 1,200 P.S.I.
Class AA = 1,380 P.S.I.
Class B = 1,500 P.S.I.
Class P = 2,000 P.S.I.

MINIMUM 28 DAY CONCRETE STRENGTH: Class A = 3,000 P.S.I.
Class AA = 3,400 P.S.I.
Class B = 3,750 P.S.I.
Class P = 5,000 P.S.I.

REINFORCING STEEL: All reinforcing steel shall be intermediate or hard grade.

SURFACE FINISH: A Class I Surface Finish shall be given to those surfaces specified in Article 400-22.2 of the general specifications, except outside faces of exterior beams, which shall be given no Special Finish.

CHAMFER: All exposed concrete edges, unless otherwise indicated, shall be chamfered 3/4".

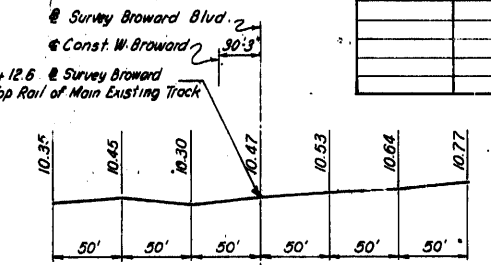
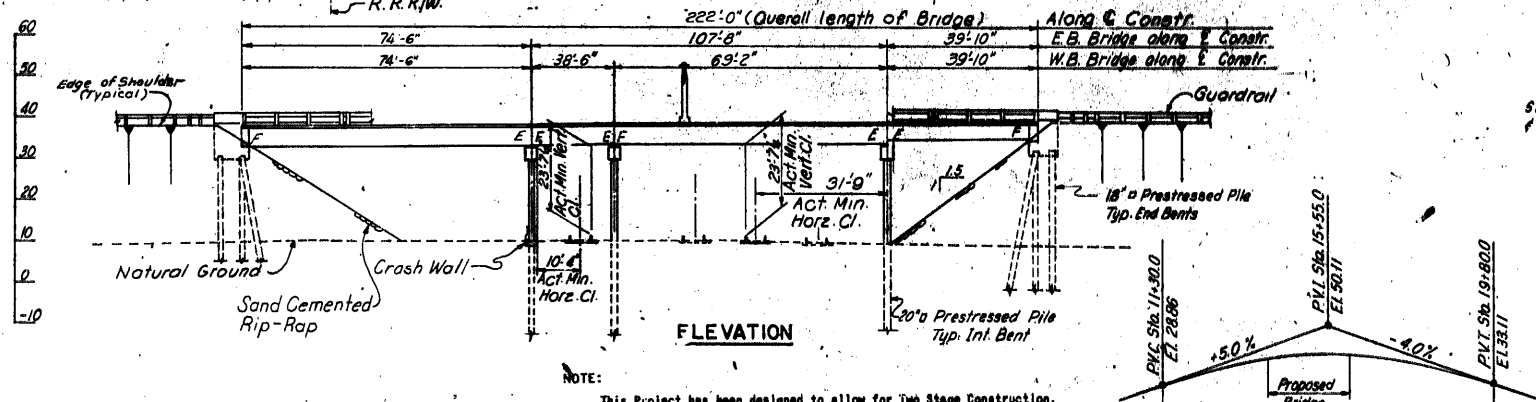
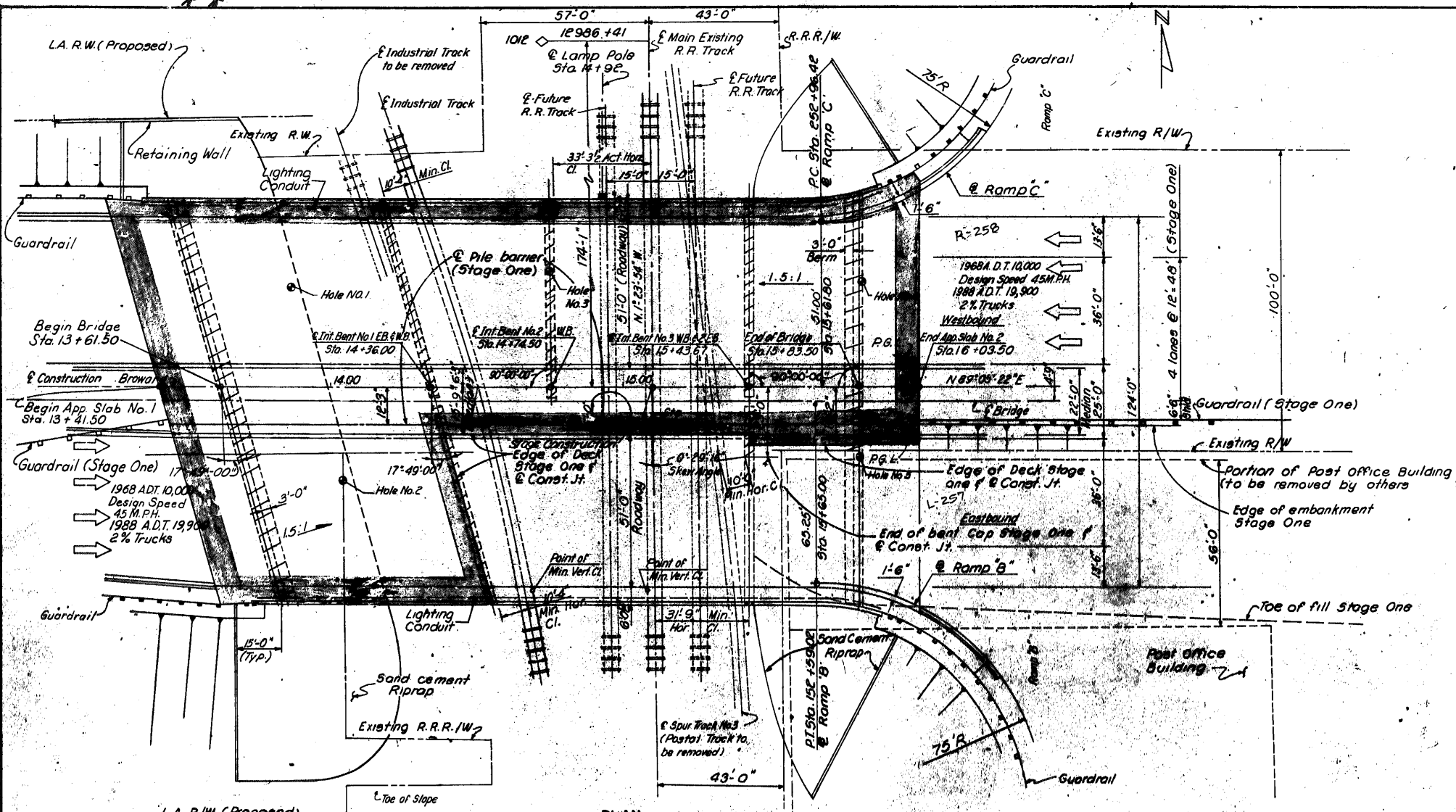
ESTIMATED BRIDGE QUANTITIES			
ITEM NO.	ITEM	UNIT	TOTAL
400-1-4	Class A Concrete (Superstructure)	Cu.Yd.	764
400-1-5	Class A Concrete (Substructure)	Cu.Yd.	321
400-2-4	Class AA Concrete (Superstructure)	Cu.Yd.	88
400-6-2	Concrete Handrail (Sidewalk)	Lin.Ft.	444
418-1-2	Reinforcing Steel (Bridge)	Lb.	285,000
450-1-1	Prestressed Beams (Type II)	Lin.Ft.	1,054
450-1-2	Prestressed Beams (Type III)	Lin.Ft.	616
450-1-3	Prestressed Beams (Type IV)	Lin.Ft.	2,188
455-3-2	Precast Concrete Piling Furnished (18" x 18") Prestressed	Lin.Ft.	2,960
455-3-3	Precast Concrete Piling Furnished (20" x 20") Prestressed	Lin.Ft.	2,100
455-4-2	Precast Concrete Piling Driven (18" x 18") Prestressed	Lin.Ft.	2,960
455-4-3	Precast Concrete Piling Driven (20" x 20") Prestressed	Lin.Ft.	2,100
455-9-12	Unloaded Test Piles (18" x 18") Prestressed	Lin.Ft.	50
455-9-18	Unloaded Test Piles (20" x 20") Prestressed	Lin.Ft.	150
455-10-90	Test Loads (50 Tons)	Each	1
455-10-130	Test Loads (130 Tons)	Each	1
455-55-2	Pile Splices (18" x 18") Concrete	Each	25
455-55-3	Pile Splices (20" x 20") Concrete	Each	28
530-1	Rip-Rap (Sand-Cement)	Cu.Yd.	460

Composite Neoprene Pads, No. Required:
Type II Beams = 50
Type III Beams = 18
Type IV Beams = 52

All Composite Neoprene Pads will be furnished by the Florida Department of Transportation.

* Includes 85 Cu.Yds. for Cresh Wall.
** Includes 3766 Lbs. for Cresh Wall.

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TEST PILE SCHEDULE

DRIVE UNLOADED TEST PILES AS SHOWN IN SCHEDULE, IN THE POSITION OF PERMANENT PLUMB PILES, AS DIRECTED BY THE ENGINEER.

END BENT NO. 1 W.B.	18" x 50'-0"
1. BENT NO. 1 E.B.	20" x 50'-0"
1. BENT NO. 2 W.B.	20" x 50'-0"
1. BENT NO. 3 W.B.	20" x 50'-0"

NOTE: This Project has been designed to allow for Two Stage Construction.

STAGE ONE: The Northern Portion of the Post Office Building (shown with dashed lines) will be removed. This will permit the construction of the embankment at the end of Bridge (See Toe of Slope on Plan). The limits of the Bridge Structures to be Built at this Stage are shown with shaded areas on Plan View.

Construct temporary guardrail sufficient to prevent traffic from entering incomplete side of Bridge.

STAGE TWO: The Remaining Part of the Post Office Building will be removed (by others) and the construction of the Bridge Completed.

PROFILE GRADE BROWARD BLVD.

RADER AND ASSOCIATES MIAMI, FLA.

PLAN, ELEVATION, GENERAL NOTES AND ESTIMATED BRIDGE QUANTITIES

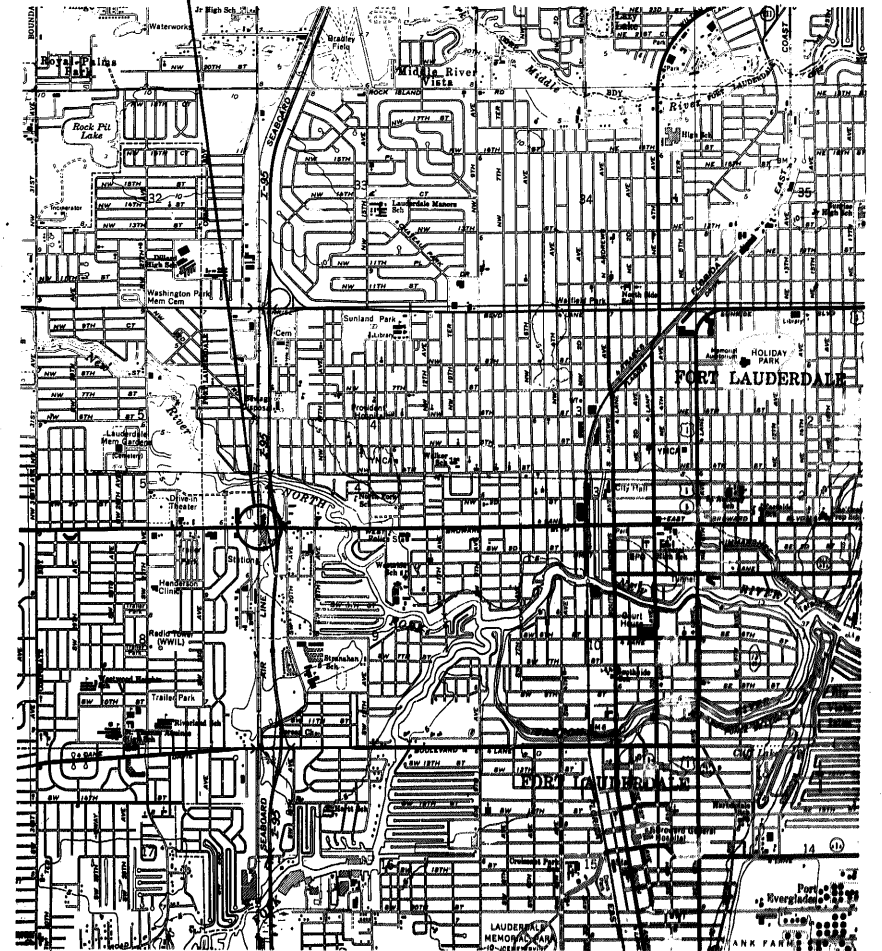
STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION
BROWARD BOULEVARD OVER S.C.L.R.R.

REVISIONS		DATE	BY	PROJECT NO.
1	As Shown	5-70	T. All	86070-3436
2	As Shown	6-70	T. All	
3	As Shown	6-71	T. All	
4	As Shown	6-71	T. All	

1 of 27

REVISED 1-17-73
LOCATION OF STRUCTURE

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.
3	FLA.	I-95-1(110)27	A-2



DRAINAGE AREA & LOCATION

(REFERENCE)	(1)	(2)	(3)	(4)	(5)
FOUNDATION					
OVERALL LENGTH					
SPAN LENGTH					
TYPE CONSTRUCTION					
SIDEWALKS					
ROADWAY WIDTH					
ELEV LOW MEMBER					

DESIGN DATA

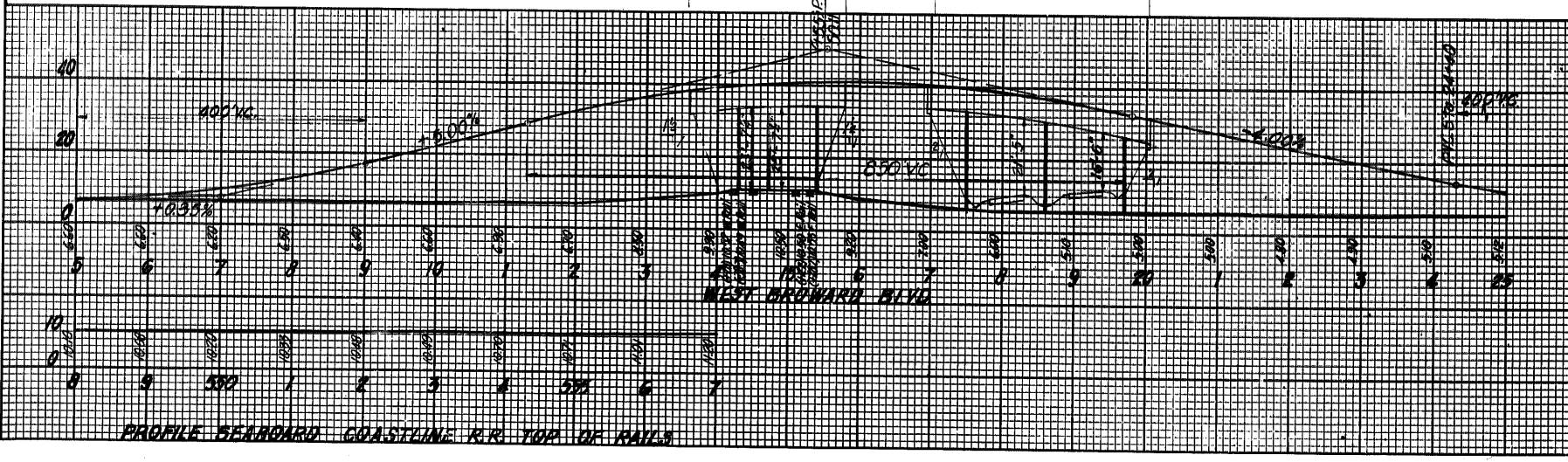
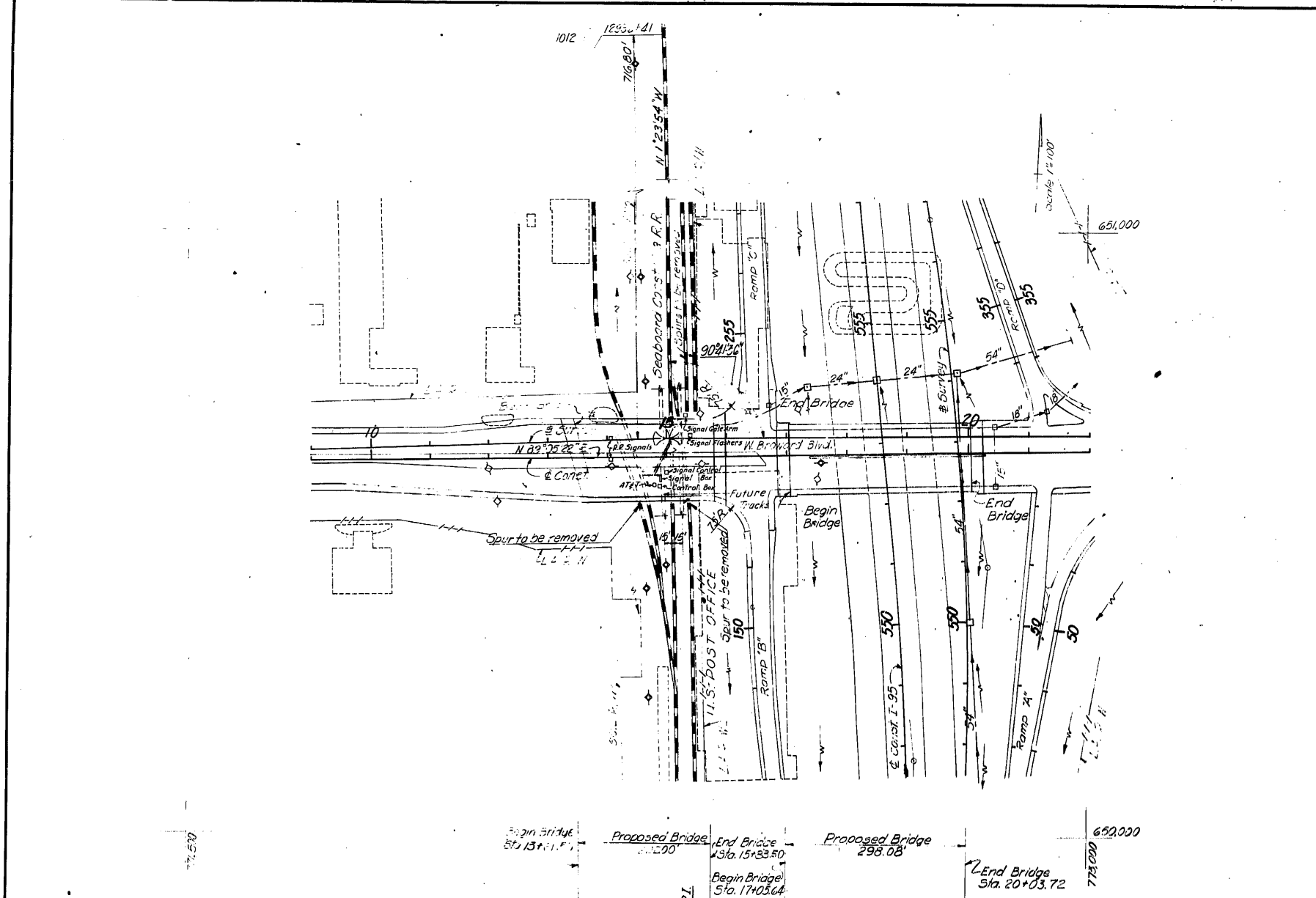
STRUCTURE RECOMMENDATIONS
 1. LOADING H&S 20-41
 2. BRIDGE ROADWAY WIDTH 49.50 @ 49.50 FT.
 3. SIDEWALKS 5'-0"

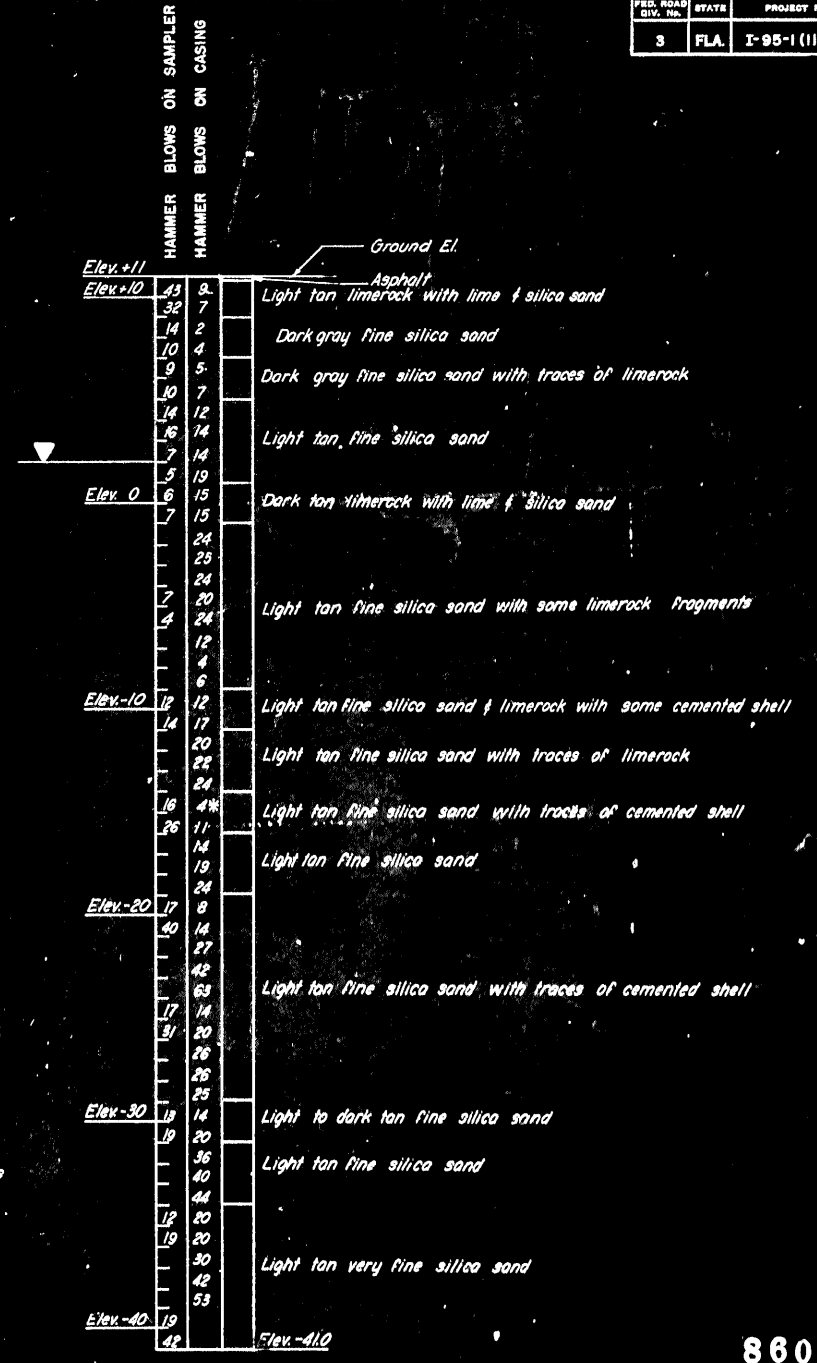
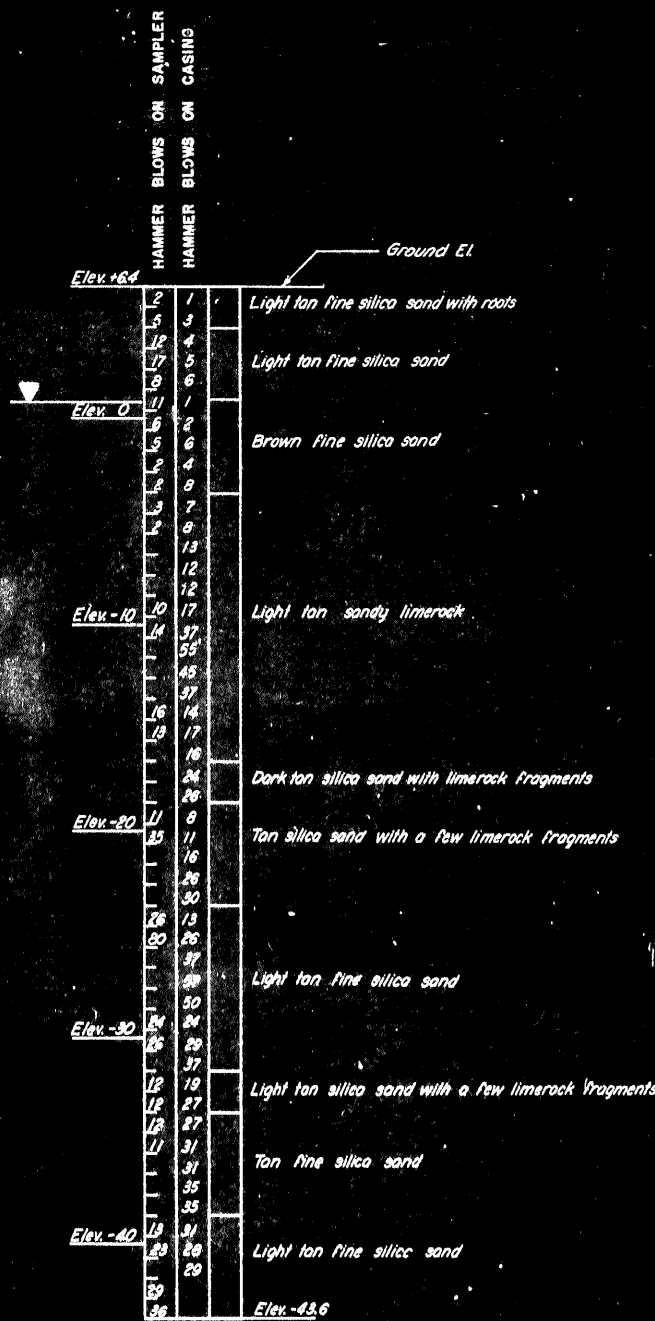
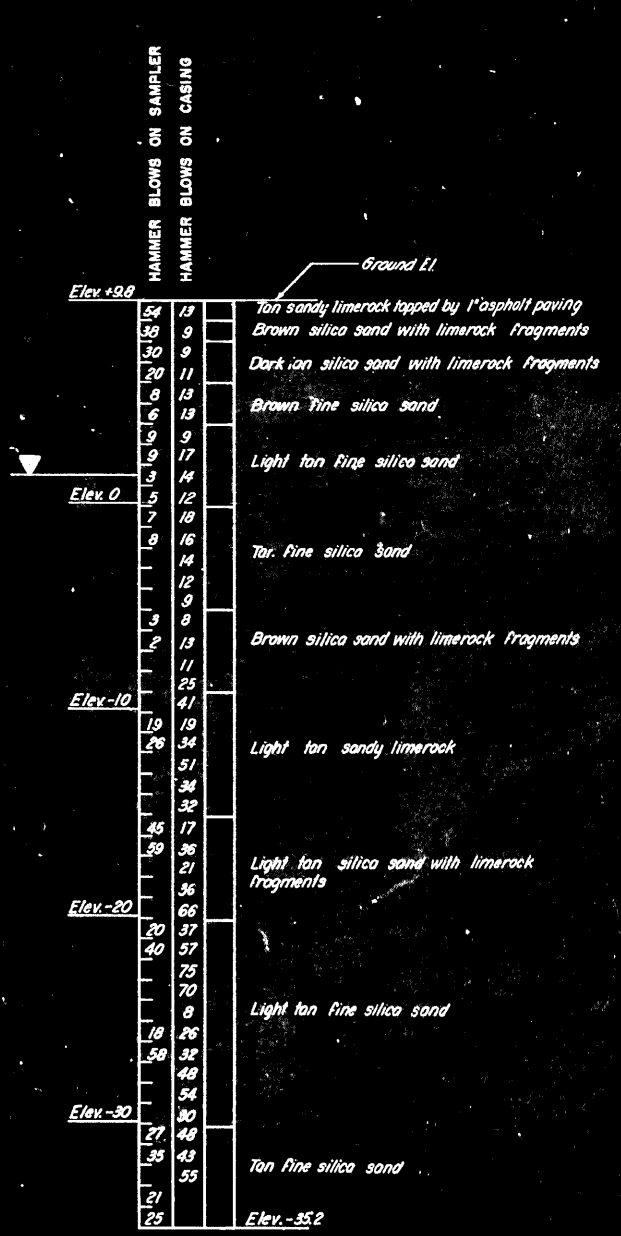
DRAINAGE RECOMMENDATIONS
 1. BEGIN BRIDGE STATION 17+61.50 END BRIDGE STATION 15+63.50
 2. CENTERLINE GRADE ELEVATION _____
 3. BRIDGE SKEW ANGLE 17° 49' 00" @ Begin Bridge Over S.C.L. R.R.
 4. CHANNEL BOTTOM, WIDTH _____ ELEVATION _____ SIDE SLOPES 1.5:1
 CENTERLINE CHANNEL BOTTOM STATION _____
 LIMITS OF CHANNEL EXCAVATION RT. _____ LT. _____
 5. CLEARANCE: NAVIGATION: HORIZ. _____ DRIFT: HORIZ. _____
 VERT. _____ ABOVE EL. _____ VERT. _____ ABOVE EL. 860257

6. DRAINAGE AREA _____
 7. WATER STAGE DATA: MAX. STAGE OF RECORD _____ DESIGN H.W. _____ NORMAL FLOW ELEV. _____
 ELEVATION _____
 DATE OF OCCURRENCE _____
 RECURRENCE INTERVAL _____
 8. DESIGN DISCHARGE _____ CFS SOURCE _____
 RECURRENCE INTERVAL _____ YEARS
 9. DESIGN VELOCITY _____ FPS

REMARKS: Broward Blvd. and Seaboard Coast Line R.R. crossing is a high point. No ditches required at this site.

RECOMMENDED DISTRICT DR. ENGR. _____
 APPROVED ENGINEER OF DRAINAGE _____





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Page No. 2

HOLE NO. 1
Sta. 13+87, 7' left of Base Line of Survey of Broward Blvd
Note: For Boring Equipment, See Sheet No. 4

HOLE NO. 2
Sta. 14+04, 59' right of Base Line of Survey of Broward Blvd

HOLE NO. 3
Sta. 14+76, 10' left of Base Line of Survey of Broward Blvd
*300 Lb. hammer on casing from elev. -14.0'

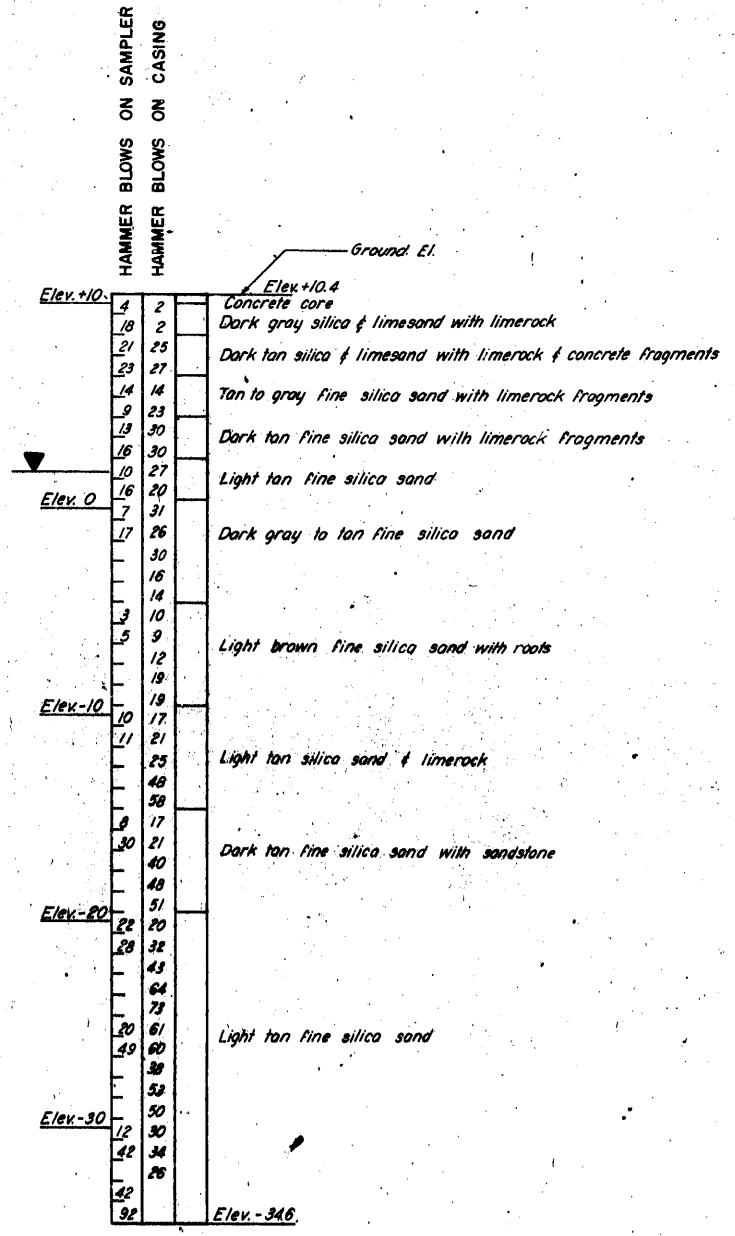
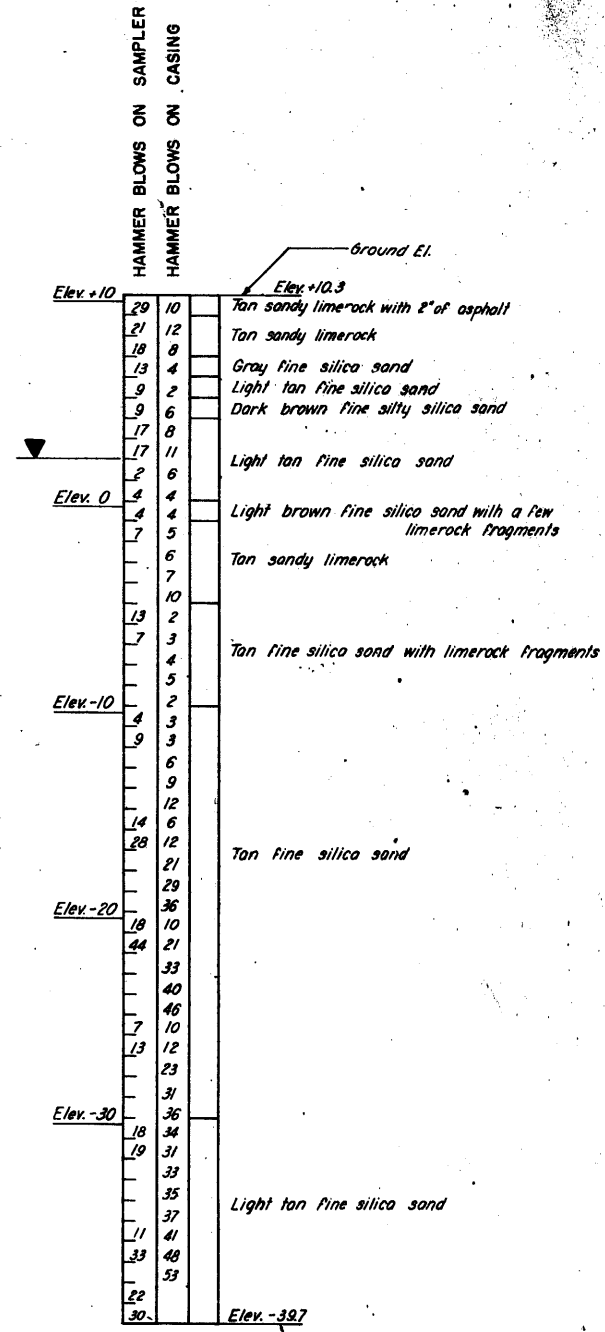
BORING DATA

STATE ROAD DEPARTMENT OF FLORIDA
STRUCTURES DIVISION
BROWARD BOULEVARD
OVER S.C.L.R.R.

REVISIONS		ROAD NO.	COUNTY	PROJECT NO.
Date	Description	9	BROWARD	86070-3436
		APPROVED BY		
		Designed by	R. J.	8-70
		Checked by	T. C.	8-70
		Quantity by		
		Checked by		
		Supervised by	V. A. A.	
		Drawing No.	3 of 27	Index No.
				10887

LEGEND

▼ Ground Water Elevation



LEGEND
▼ Ground Water Elevation

BORING EQUIPMENT
 Type of Rig : BX (Holes No. 1-E, 2-E & 5-E)
 FW-BX (Holes No. 3-E & 4-E)
 Spoon Inside Diameter : 1.5"
 Outside Diameter : 2.0"
 Casing Inside Diameter : 2.5"
 Outside Diameter : 3.0"
 Hammer Weight : 140 Lbs. (Holes No. 1-E, 2-E, 5-E); 140 Lbs.-300Lbs. (Hole No. 3-E); 300 Lbs. (Hole No. 4-E)
 Hammer Drop : 30" (Holes No. 1-E, 2-E, 5-E), 30"-18" (Hole No. 3-E), 18" (Hole No. 4-E)
 Split Spoon -
 Hammer Weight : 140 Lbs.
 Hammer Drop : 30"
 Borings by Wingerter Laboratories, Inc. July 1970

860257

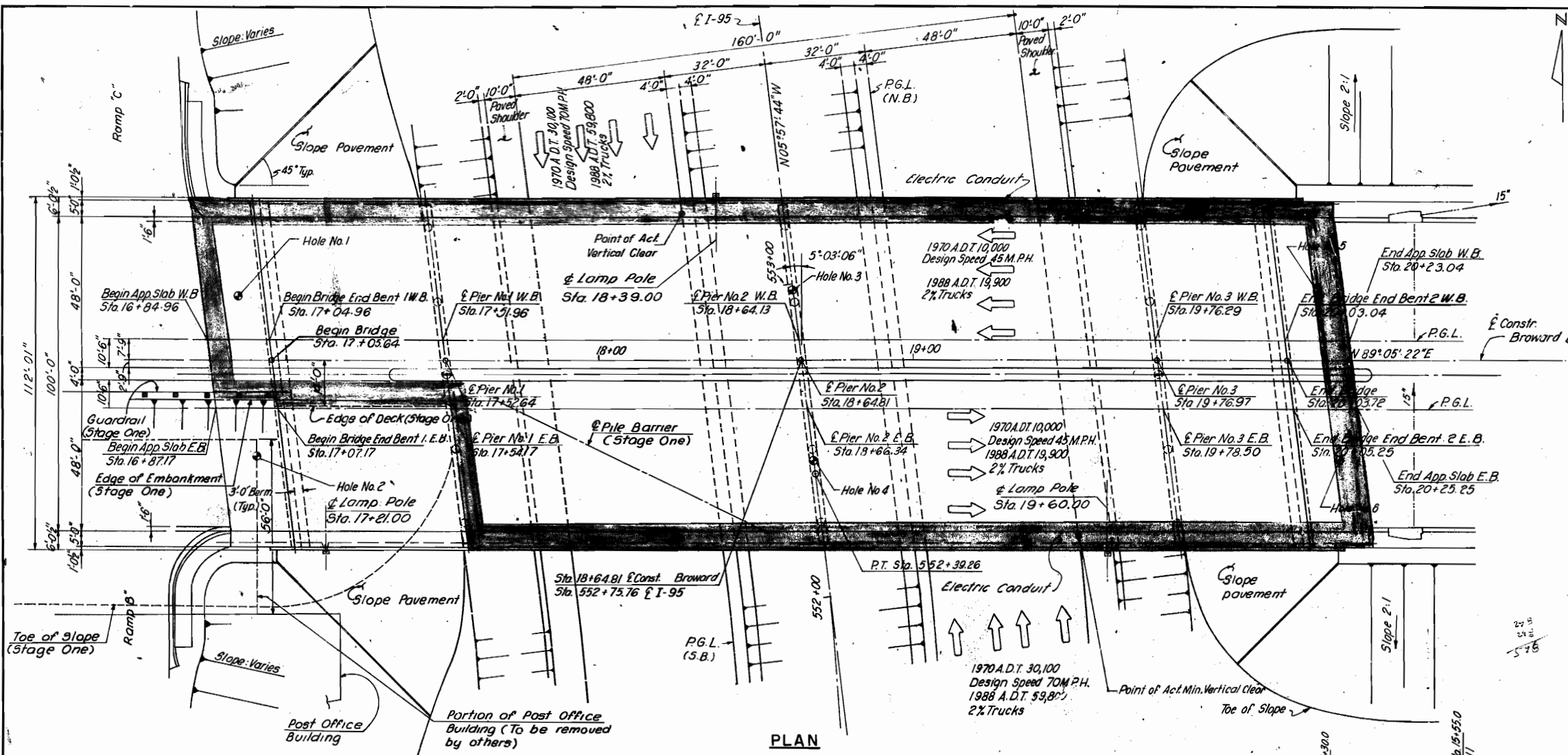
Page No. 10

BORING DATA

STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION			
BROWARD BOULEVARD OVER S.C.L.R.R.			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070-3436	
DESIGNED BY		APPROVED BY	
R. J. 8-70		[Signature]	
CHECKED BY		DRAWING NO.	
T. C. 8-70		4 of 27	
SUPERVISED BY		INDEX NO.	
V.A.A.		10887	

APPENDIX – B6

Existing Soil Boring Information from Previous Projects along the Project Corridor



GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: F.S.R.D. Standard Specifications for Road and Bridge Construction, 1966 Edition and Special Provisions.

DESIGN SPECIFICATIONS: A.A.S.H.O. Spec. for Highway Bridges, 1969 Edition and approved revisions.

DESIGN LIVE LOADING: HS 20-44 With allowance for 15 lbs. per Sq. Ft. for future wearing surface.

MAXIMUM WORKING STRESSES:

Reinforcing Steel	= 20,000 P.S.I.
Concrete: Class A	= 1,200 " Class PP-2,200 P.S.I.
Class AA	= 1,360 "
Class H	= 1,500 "
Class P	= 2,000 "

MINIMUM 28 DAY CONCRETE STRENGTH:

Class A	= 3,000 P.S.I.	Class PP-5,500 P.S.I.
Class AA	= 3,400 "	
Class H	= 3,750 "	
Class P	= 5,000 "	

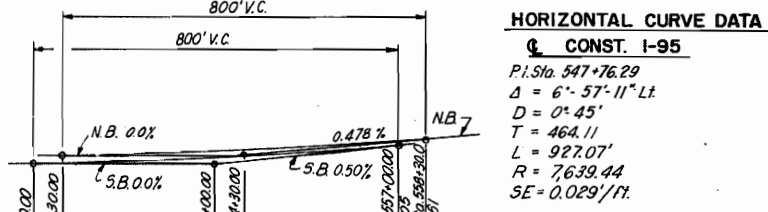
REINFORCING STEEL: All Reinforcing Steel shall be intermediate or hard grade.

SURFACE FINISH: A Class I Surface Finish shall be given to those surfaces specified in Article 400-22.2 of the General Specifications except outside faces of exterior beams, which shall be given no Special Finish.

CHAMFER: All exposed concrete edges, unless otherwise indicated shall be chamfered 3/4".

ESTIMATED BRIDGE QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
400-1-4	Class A Concrete (Superstructure)	Cu.Yd.	671
400-1-5	Class A Concrete (Substructure)	Cu.Yd.	611
400-2-4	Class A-A Concrete (Superstructure)	Cu.Yd.	226
400-6-2	Concrete Handrail (Sidewalk)	Lin.Ft.	625
415-1-2	Reinforcing Steel (Bridge)	Lb.	279,870
450-1-1	Prestressed Beams Type II	Lin.Ft.	723
450-1-3	Prestressed Beams Type IV	Lin.Ft.	5,047
455-3-2	Precast Concrete Piling Furnished (18" x 18") (Prestressed)	Lin.Ft.	7,275
455-4-2	Precast Concrete Piling Driven (18" x 18") (Prestressed)	Lin.Ft.	7,275
455-9-12	Unloaded Test Piles (18" x 18") (Prestressed)	Lin.Ft.	180
455-10-90	Test Load (90 Tons)	Each	1
455-55-2	Pile Splices (18" x 18") Concrete	Each	30
524-2-2	Concrete Slope Pavement (4" Thick)	Sq.Yd.	1,680

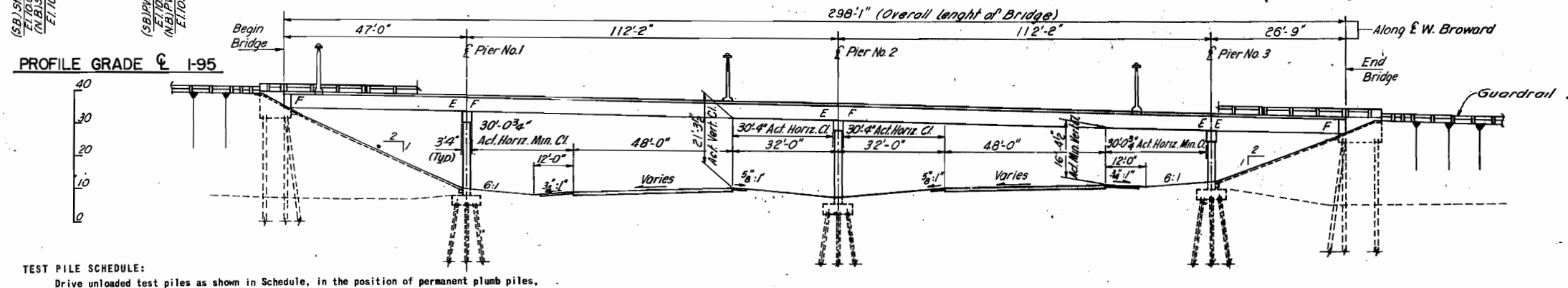
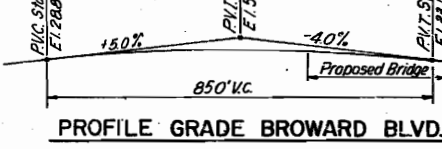


NOTE:
 This Project has been designed to allow for Two Stage Construction.

STAGE ONE: The Northern Portion of the Post Office Building (Shown with dash lines) will be removed. This will permit the Construction of the embankment at the beginning of Bridge (See toe of Slope on Plan). The Limits of the Bridge Structures to be built at this Stage are shown with shaded areas on Plan View.

Construct temporary guardrail sufficient to prevent traffic from entering incomplete side of bridge.

SECOND STAGE: The remaining Part of the Post Office Building will be removed (by others) and the Construction of the Bridge Completed.



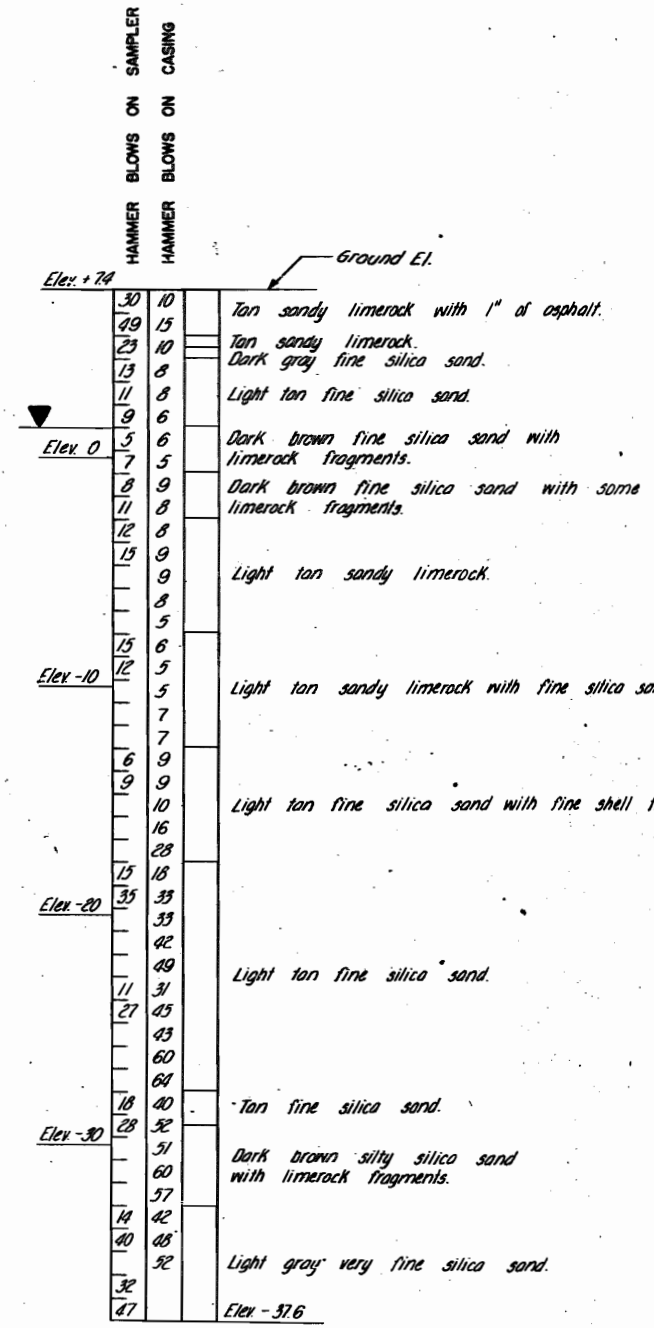
TEST PILE SCHEDULE:
 Drive unloaded test piles as shown in Schedule, in the position of permanent plumb piles, as directed by the Engineer.

END BENT NO. 1:	18" x 60'-0"
PIER NO. 1:	18" x 40'-0"
PIER NO. 2:	18" x 40'-0"
PIER NO. 3:	18" x 40'-0"

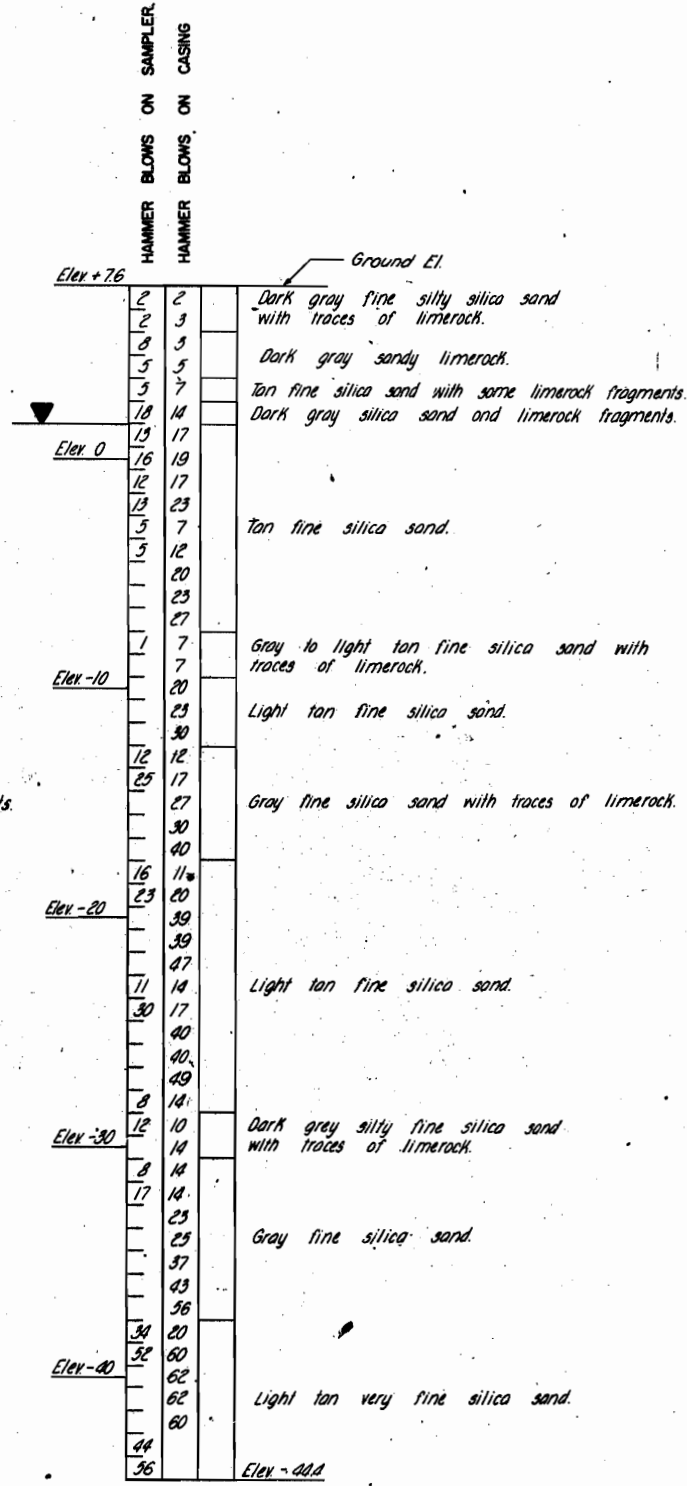
860269
Page No. 1
 (SEE INDEX PAGE No. 2)

PLAN, ELEVATION, GENERAL NOTES AND ESTIMATED BRIDGE QUANTITIES

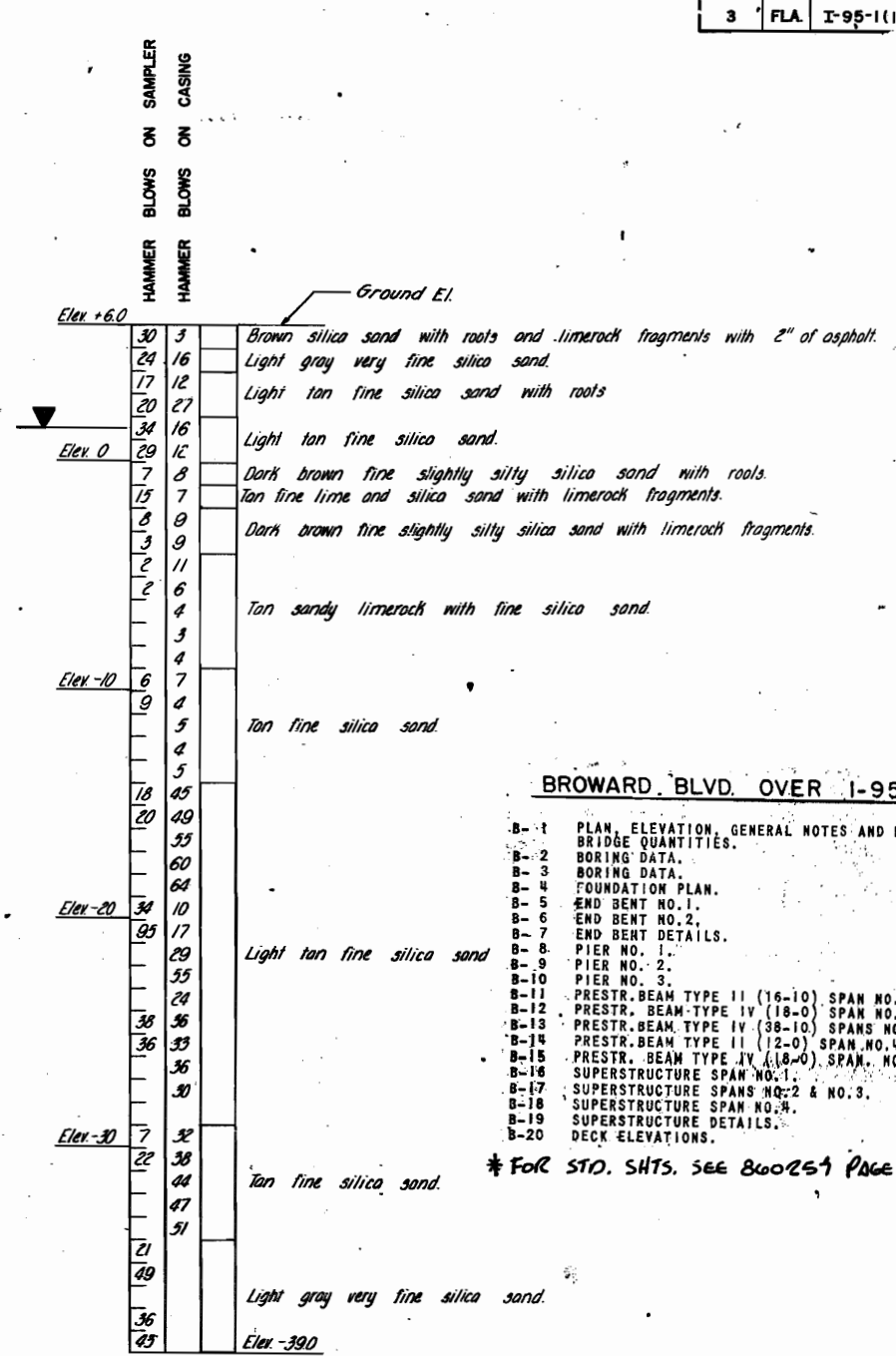
STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION			
BROWARD BOULEVARD OVER I-95			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070-3436	
DESIGNED BY	DATE	APPROVED BY	
V.A.A./R.I.	5-70	T. Allred	
CHECKED BY	DATE	ENGINEER OF STRUCTURES	
E.H.	5-70		
QUANTITIES BY	DATE	DRAWING NO.	INDEX NO.
R.B.	4-71	1 of 20	10884
CHECKED BY	DATE		
E.W.H.	6/71		
SUPERVISED BY			
V.A.A.			



HOLE NO. 1
Sta. 16+91 @ 9' Right of Baseline of survey of Broward Boulevard



HOLE NO. 2
Sta. 17+00 @ 60' Right of Baseline of survey of Broward Boulevard.
* 300 Lbs. Hammer on casing from elev. -17.0.



HOLE NO. 3
Sta. 18+61 @ 4' Right of Baseline of survey of Broward Boulevard

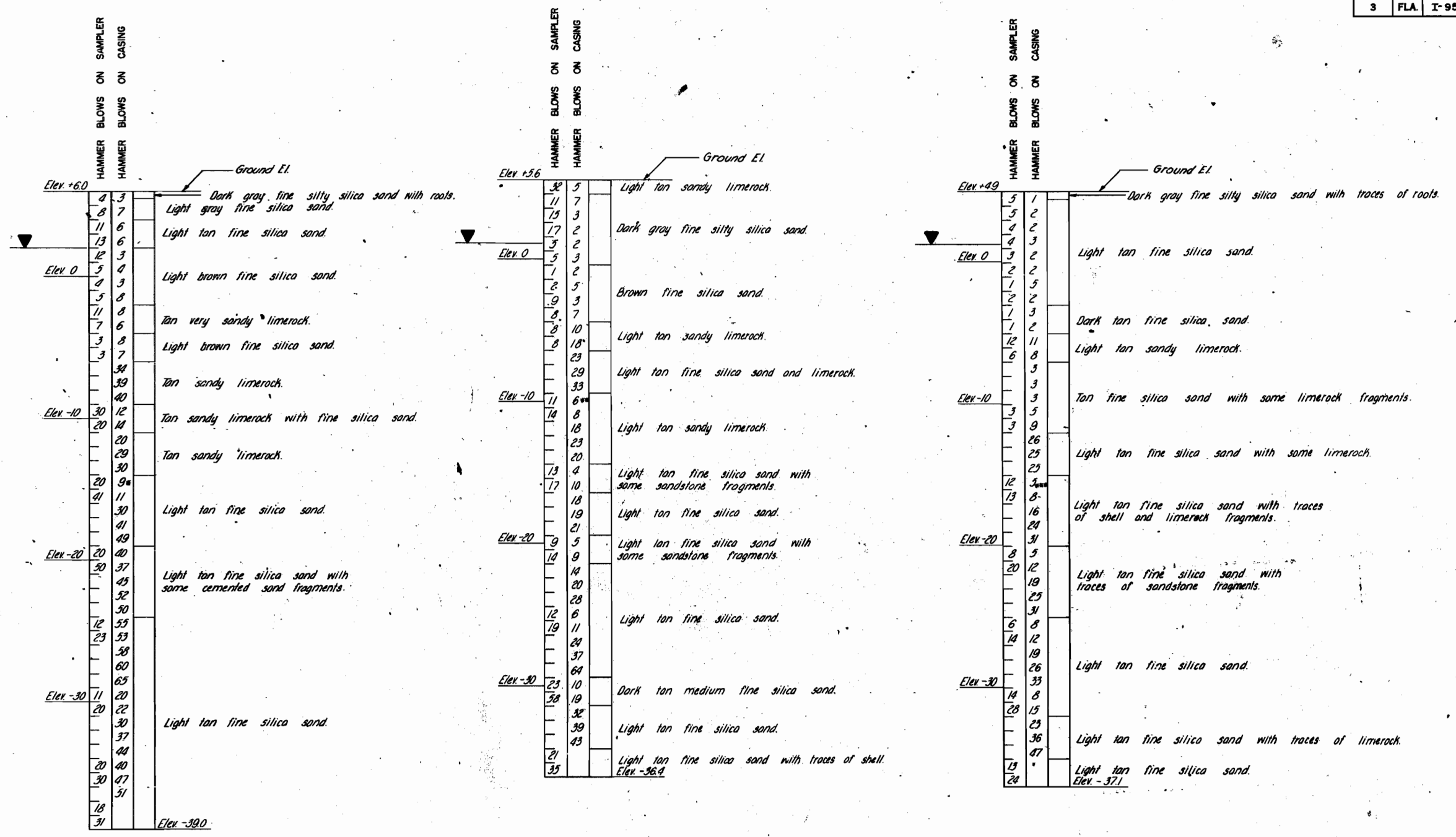
- BROWARD BLVD. OVER I-95**
- B-1 PLAN, ELEVATION, GENERAL NOTES AND ESTIMATED BRIDGE QUANTITIES.
 - B-2 BORING DATA.
 - B-3 BORING DATA.
 - B-4 FOUNDATION PLAN.
 - B-5 END BENT NO. 1.
 - B-6 END BENT NO. 2.
 - B-7 END BENT DETAILS.
 - B-8 PIER NO. 1.
 - B-9 PIER NO. 2.
 - B-10 PIER NO. 3.
 - B-11 PRESTR. BEAM TYPE II (16-10) SPAN NO. 1.
 - B-12 PRESTR. BEAM TYPE IV (18-0) SPAN NO. 1.
 - B-13 PRESTR. BEAM TYPE IV (38-10) SPANS NOS. 2 & 3.
 - B-14 PRESTR. BEAM TYPE II (12-0) SPAN NO. 4.
 - B-15 PRESTR. BEAM TYPE IV (18-0) SPAN NO. 4.
 - B-16 SUPERSTRUCTURE SPAN NO. 1.
 - B-17 SUPERSTRUCTURE SPANS NO. 2 & NO. 3.
 - B-18 SUPERSTRUCTURE SPAN NO. 4.
 - B-19 SUPERSTRUCTURE DETAILS.
 - B-20 DECK ELEVATIONS.
- * FOR STD. SHTS. SEE 860269 PAGE 1 THRU PAGE 6

LEGEND
▼ Ground Water Elevation
Note: For Boring Equipment See Sheet No. B-3-

860269
Page No. 12

RADER AND ASSOCIATES MIAMI, FLA.

BORING DATA			
STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION			
BROWARD BOULEVARD OVER I-95			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070-3436	
DESIGNED BY	DATE	APPROVED BY	
D. F.	8-70	T. C.	
CHECKED BY	DATE	ENGINEER OF STRUCTURES	
T. C.	8-70	V. A. A.	
QUANTITIES BY		DRAWING NO.	INDEX NO.
CHECKED BY		2 of 20	10884
SUPERVISED BY			



HOLE NO. 4
Sta. 18+69 @ 63' Right of Baseline of survey of Broward Blvd.
* 300 Lbs. Hammer on casing from elev. -14.0.

HOLE NO. 5
Sta. 20+15 @ 8' Right of Baseline of survey of Broward Blvd.
** 300 Lbs. Hammer on casing from elev. -3.4.

HOLE NO. 6
Sta. 20+21 @ 59' Right of Baseline of survey of Broward Blvd.
*** 300 Lbs. Hammer on casing from elev. -15.1.

BORING EQUIPMENT
Type of Rig: FW-BX
Spoon Inside Diameter: 1.5"
Spoon Outside Diameter: 2.0"
Casing Inside Diameter: 2.5"
Casing Outside Diameter: 3.0"

LEGEND
▼ Ground Water Elevation

Casing — Hammer Weight: 300 Lbs. (Holes No. 1 & 3); 140 Lbs. (300 Lbs. (Holes No. 2, 4, 5 & 6))
Hammer Drop: 18" (Holes No. 1 & 3); 30"-18" (Holes No. 2, 4, 5 & 6)
Split Spoon: 2"
Spoon — Hammer Weight: 140 lbs.
Hammer Drop: 30"

Borings by Wingert Laboratories, Inc.
July 1970

860269
Page No. 3

BORING DATA			
STATE ROAD DEPARTMENT OF FLORIDA STRUCTURES DIVISION			
BROWARD BOULEVARD OVER I-95			
ROAD NO.	COUNTY	PROJECT NO.	
9	BROWARD	86070-3436	
REVISIONS		APPROVED BY	
Date	Descriptions	Name	Date
		Designed by	A.H. 8-70
		Checked by	F.C. 8-70
		Checked by	
		Supervised by	V.A.A.
		Drawing No.	Index No.
		3 of 20	10884

December 3, 2014

HDR, Inc.
15450 New Barn Road, Suite 304
Miami Lakes, Florida 33024

Attention: Mr. Will Suero, P.E.
Project Manager

Subject: Report of a Geotechnical Exploration – Roadway
**SR 9/I-95 CDC for Broward County, From South of Davie Boulevard to North
of West Commercial Boulevard – Phase 3A-1**
Broward County, Florida
Florida Department of Transportation, District 4
FPID No. 433108-4-52-01
HRES Project No. HR12-891R


Dear Will:

HR Engineering Services, Inc. (HRES) is presenting this Report of a Geotechnical Exploration - Roadway for the subject project. This report presents our understanding of the project, outlines our exploratory procedures and documents the field and laboratory test data obtained for the proposed project.

We have enjoyed assisting you on this project and look forward to serving as your geotechnical consultant on the remainder of this project and on future projects. If you have any questions concerning this report, please call our office at (305) 888-8880.

Sincerely,

HR ENGINEERING SERVICES, INC.


Rodrigo A. Alba, E.I.
Staff Geotechnical Engineer

Distribution: Addressee (3)
File (1)



HR Engineering Services, Inc.
7815 N.W. 72nd Avenue
Medley, Florida 33166

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1.0 INTRODUCTION

The purpose of this geotechnical exploration was to obtain information concerning the site and subsurface conditions along the proposed roadway improvements. This report discusses our exploratory and testing procedures, presents our findings and includes the following items:

Field exploration Performed by GCME, Inc.

This report present the field test data performed by GCME, Inc. (GCME) for FDOT District 4, Project SR 9/I-95, from North of Oakland Park Boulevard to South of Glades Road. Broward and Palm Beach Counties, Florida; report dated October 26, 2012. The field exploration presented in this report includes:

- A total of 20 test borings, to depths ranging from 5 to 20 feet. The test borings were performed to help characterize the subsurface conditions along the proposed roadway improvements. The test borings subsurface information is presented in the Soil Profiles in Appendix A.
- A total of 8 test borings, each to a depth of 85 feet. The test borings were performed to help characterize the subsurface conditions at the proposed bridges widening along the roadway improvements. The test borings subsurface information is presented in the Report of a Geotechnical Exploration – Structures, a separate report.

Field exploration Performed by HRES, Inc.

This report present the field test data performed by HRES, Inc. for FDOT District 4, Project SR 9/I-95 CDC for Broward County; report dated October 1, 2013. The field exploration presented in this report includes:

- A total of 11 constant head percolation tests, each to one depth interval, from 0 to 15 feet. The percolation test results are presented in appendix A.

Additional Field Services Performed by HRES, Inc.

- Performed a total of 76 roadway borings, to depths ranging from 10 to 15 feet. The roadway borings were performed to help characterize the subsurface conditions along the proposed roadway improvements. The test borings subsurface information is presented in the Soil Profiles in Appendix A.
- Performed a total of 6 constant head percolation tests, each to one depth interval, from 0 to 15 feet. The percolation test results are presented in Appendix A.

- Obtained soil samples from the bottom of the North Fork New River (CB-1 and CB-2) and C-13 Canal (CB-3 and CB-4). The soil samples were tested to obtain the D_{50} to be used in the scour evaluation.
- In addition to the above listed field tests, a total of 63 test borings, to depths ranging from 40 to 100 feet were performed to help characterize the subsurface conditions at the proposed bridges widening, retaining walls and gantry structures along the roadway improvements. The test borings subsurface information is presented in the Report of a Geotechnical Exploration – Structures, a separate report.

Evaluation

- Soil Profiles.
- Broward County Soil Survey Map.

Laboratory Testing

- The results of laboratory tests performed on selected soil samples obtained from the test boring and percolation tests.
- Corrosion classification testing on selected water and soil samples.
- A brief description of our laboratory testing procedures.

2.0 PROJECT INFORMATION

2.1 GENERAL

Project information for this subsurface exploration has been provided to us by Mr. Will Suero, P.E., Project Manager of HDR, Inc. Additional information has been provided during telephone conversations.

During our geotechnical study, we have been furnished with the following project-related geotechnical reports:

- Geotechnical Report – Roadway Soils Survey and Bridge Structures
PD&E Study for SR-9/I-95, From North of Oakland Park Boulevard to South of Glades Road (1)
Prepared by: GCME, Inc.
Dated: October 26, 2012
Note: (1) Only the field information corresponding to Phase 3A-1 was included.
- Report of a Preliminary Geotechnical Exploration – Percolation and Double Ring Infiltrometer Test Results
PD&E Study for I-95, From Stirling Road to North of Oakland Park Boulevard
Prepared by: HR Engineering Services, Inc.
Dated: May 29, 2012

2.2 PROJECT DESCRIPTION

This phase of the project consists of the improvements of SR 9/I-95, from South of Davie Boulevard to North of West Commercial Boulevard in Broward County, Florida. The final work will consist of bridges widening, construction of new retaining walls, new lanes construction, new gantry structures, roadway widening, drainage improvement and milling and resurfacing.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

3.1 FIELD EXPLORATION

The primary purpose of this preliminary field exploration was as follows:

1. To define the near subsurface conditions present along the sections of the roadway to be improved.
2. To obtain soil samples for examination and classification.
3. To conduct percolation tests for drainage design.

The additional field exploration for this study was conducted by HRES. The roadway borings were performed to depths ranging from 10 to 15 feet and the structural borings (presented in a separate report) were performed to depths ranging from 20 to 100 feet, measured from the existing ground surface.

The locations of the roadway borings, test borings and percolation tests are provided in the Summary of Test Boring and Percolation Test Locations in Appendix A. The Soil Profiles in Appendix A summarize the approximate boundary between soil types. In some instances, the transition between material types may be gradual. A brief description of the exploratory sampling techniques used is presented in the Field Testing Procedures section in Appendix A. A discussion of the subsurface conditions encountered along the project alignment is provided in Section 4.2 of this report.

3.2 PERCOLATION TESTING

A total of 6 constant head percolation tests were recently performed at selected locations. In addition, 11 constant head percolation tests previously performed by HRES were included in this report. The percolation tests were performed in general accordance with the test procedures outlined in Appendix A. The hydraulic conductivity values were then calculated and reported in units of cubic feet per second, per square foot, per foot of head (cfs/ft²-ft of head). The percolation test results are presented in Appendix A.

3.3 LABORATORY TESTING

3.3.1 Soil Testing

In order to aid in classifying and estimate engineering characteristics of the subsurface materials encountered, laboratory classification tests were performed on representative soil samples obtained from the test borings and percolation tests. The laboratory testing program included the following:

- 62 Grain size distribution analyses
- 41 Fines content analyses
- 47 Organic content tests

In addition, a total of 105 moisture content tests were performed in conjunction with the classification tests. The soil laboratory test results were classified following the AASHTO Classification System. The test results are presented in Appendix B.

3.3.2 Test Results for Scour Evaluation

Soil samples were taken at the bottom of the North Fork River and C-13 Canal for D_{50} determination. The soil samples were taken at two locations per canal; at each location two soils samples were taken. The test results are presented in Appendix B. The grain size test results are summarized as follows:

Table 3.3.2 Summary of Grain Size Analysis - D_{50}

Sample Location	Sample Depth Below Bottom of Canal, ft.	D_{50} , mm
CB-1	0.0-2.0	0.25
CB-1	2.0-3.0	0.22
CB-2	0.0-1.3	0.30
CB-2	1.3-2.0	0.29
CB-3	0.0-1.1	0.69
CB-3	1.1-2.0	0.29
CB-4	0.0-1.8	0.28
CB-4	1.8-3.0	0.27

3.3.3 Corrosivity Classification Testing

Corrosivity classification testing was performed by HRES on eight water samples and one soil sample and GCME on four soil samples. This testing included pH, chlorides, sulfates contents, and resistivity results.

The Florida Department of Transportation Requirements Manual, Section 1.3 Environmental Classifications outlines the ranges of groundwater chemical properties considered corrosive to reinforced concrete substructure. In addition, that section environmentally classifies the superstructure based on factors located near the structure location. Based on this classification, an environment may be Slightly Aggressive, Moderately Aggressive, or Extremely Aggressive. The following table summarizes the laboratory test results:

Table 3.3.3 Summary of Corrosion Classification Test Results

Sample Location	Resistivity ohms-cm	pH	Sulfates ppm	Chlorides ppm	Environmental Classification (Substructure)		Performed by
					Steel	Concrete	
B-2 (water)	1,856	7.4	30	58	Moderately Aggressive	Moderately Aggressive	HRES
B-3 (water)	2,220	7.6	26	35	Moderately Aggressive	Moderately Aggressive	HRES
B-7 (water)	2,417	7.3	38	23	Moderately Aggressive	Moderately Aggressive	HRES
B-8 (water)	1,927	7.6	33	33	Moderately Aggressive	Moderately Aggressive	HRES
B-11 (water)	985	7.2	40	180	Extremely Aggressive	Moderately Aggressive	HRES
B-12 (water)	970	7.3	34	191	Extremely Aggressive	Moderately Aggressive	HRES
Northeast Sunrise Blvd. Pond (water)	1,952	7.5	30	55	Moderately Aggressive	Moderately Aggressive	HRES
C-13 Canal (water)	2,427	7.3	77	15	Moderately Aggressive	Moderately Aggressive	HRES
B-5 (soil)	3,133	7.5	77	25	Moderately Aggressive	Slightly Aggressive	HRES
B-102 (soil)	1,400	6.4	370	23	Moderately Aggressive	Moderately Aggressive	GCME

Table 3.3.3 Summary of Corrosion Classification Test Results – Cont....

Sample Location	Resistivity ohms-cm	pH	Sulfates ppm	Chlorides ppm	Environmental Classification (Substructure)		Performed by
					Steel	Concrete	
B-201 (soil)	5,500	6.5	98	24	Moderately Aggressive	Slightly Aggressive	GCME
B-302 (soil)	7,400	7.0	53	23	Moderately Aggressive	Slightly Aggressive	GCME
B-402 (soil)	7,200	8.2	32	24	Slightly Aggressive	Slightly Aggressive	GCME

The results show that the substructures will be in a Slightly to Extremely Aggressive environment. Due to their locations, the superstructures are considered to be in a Slightly Aggressive environment.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 SITE CONDITIONS

The site conditions were observed during the months of August through November, 2014.

4.2 SUBSURFACE CONDITIONS

4.2.1 Broward County Soil Survey Maps

The Soil Map of Broward County Area, Florida, published by the United States Department of Agriculture (USDA) was reviewed for general near-surface soil information within the general project vicinity. This information indicates that there are 13 mapping units in the vicinity of the project. The map soil units encountered are as follows:

Table 4.2.1 Broward County Soil Survey

Broward County, Florida, East Part (FL606)		
Map Unit Symbol	Map Unit Name	Typical Profile
2	Arents-Urban land complex (3.2% of Area of Interest)	0 to 9 inches: Cobbly sand 9 to 60 inches: Sand
3	Arents, organic substratum-Urban land complex (0.1% of Area of Interest)	0 to 12 inches: Gravelly sand 12 to 38 inches: Sand 38 to 52 inches: Muck 52 to 72 inches: Sand
4	Basinger fine sand, 0 to 2 percent slopes (7.7% of Area of Interest)	0 to 80 inches: Fine sand
10	Duette-Urban land complex (16.6% of Area of Interest)	0 to 80 inches: Sand
15	Immokalee fine sand, 0 to 2 percent slopes (1.6% of Area of Interest)	0 to 54 inches: Fine sand 54 to 80 inches: Loamy fine sand
16	Immokalee, limestone substratum-Urban land complex (7.7% of Area of Interest)	0 to 58 inches: Fine sand 58 to 62 inches: Weathered bedrock

Table 4.2.1 Miami-Dade Coil Survey (cont...)

Miami-Dade County Area, Florida (FL686)		
Map Unit Symbol	Map Unit Name	Typical Profile
17	Immokalee-Urban land complex (3.2% of Area of Interest)	0 to 72 inches: Fine sand
19	Margate fine sand (1.5% of Area of Interest)	0 to 28 inches: Fine sand 28 to 32 inches: Gravelly fine sand 32 to 36 inches: Unweathered bedrock
21	Okeelanta muck, drained, 0 to 1 percent slopes (2.2% of Area of Interest)	0 to 31 inches: Muck 31 to 65 inches: Fine sand
27	Plantation muck (0.5% of Area of Interest)	0 to 10 inches: Muck 10 to 28 inches: Fine sand 28 to 35 inches: Fine sandy loam 35 to 39 inches: Unweathered bedrock
38	Udorthents, shaped (27.9% of Area of Interest)	0 to 30 inches: Gravelly sand 30 to 50 inches: Sand 50 to 54 inches: Weathered bedrock
40	Urban land (24.8% of Area of Interest)	-
99	Water (3.1% of Area of Interest)	-

A reproduction of the USDA map for the project area is included in Appendix A.

4.2.2 Generalized Subsurface Conditions Encountered Along the Alignment

A total of eight different layers of materials were observed during the drilling of the roadway borings and percolation tests. Stratum 1a is asphaltic concrete. Stratum 1b is topsoil. Stratum 2 consists of organic silty fine sand. Stratum 3 consists of silty fine sand with some limerock. Stratum 4 consists of silty fine sand with traces of limerock. Stratum 5 consists of sandy silt. Stratum 6 consists of organic stained to slightly organic fine sand or fine sand with traces of

limerock/limestone lenses. Stratum 7 consists of the natural limestone. For a detailed subsurface condition at a particular borehole location, please refer to the Soil Profiles in Appendix A.

4.2.3 Groundwater Conditions

HRES reviewed the groundwater data provided by Broward County Office of Environmental Services, Water Management Division – Water Table Map, Average Wet Season dated February 17, 2000 (Attached in Appendix A). Based on this map, the average wet season groundwater along the project is at 1.5 feet, NAVD88: A Seasonal High Ground Water Table (SHGWT) of 2.5 feet NAVD88 may be used for design. The Seasonal High Ground Water Table (SHGWT) was estimated by adding 12 inches over the average wet season. Fluctuation in the groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, surface water runoff and other site-specific factors such as water elevation variations at the canals. Since groundwater level variations are anticipated, design drawing and specifications should accommodate such possibilities and construction planning should be based on the assumption that variations will occur.

5.0 REPORT LIMITATIONS

The purpose of this geotechnical exploration was to obtain information concerning the site and subsurface conditions in the area of the proposed roadway improvements. The findings presented in this report are based on information available from borings performed at the locations indicated. HR Engineering Services, Inc. does not bear responsibility for any conclusions, recommendations or opinions based on this report. No other warranties are expressed or implied. Furthermore, in the event that any change occurs in the design or location of the planned improvements, the applicability of this report must come under review.

APPENDIX A

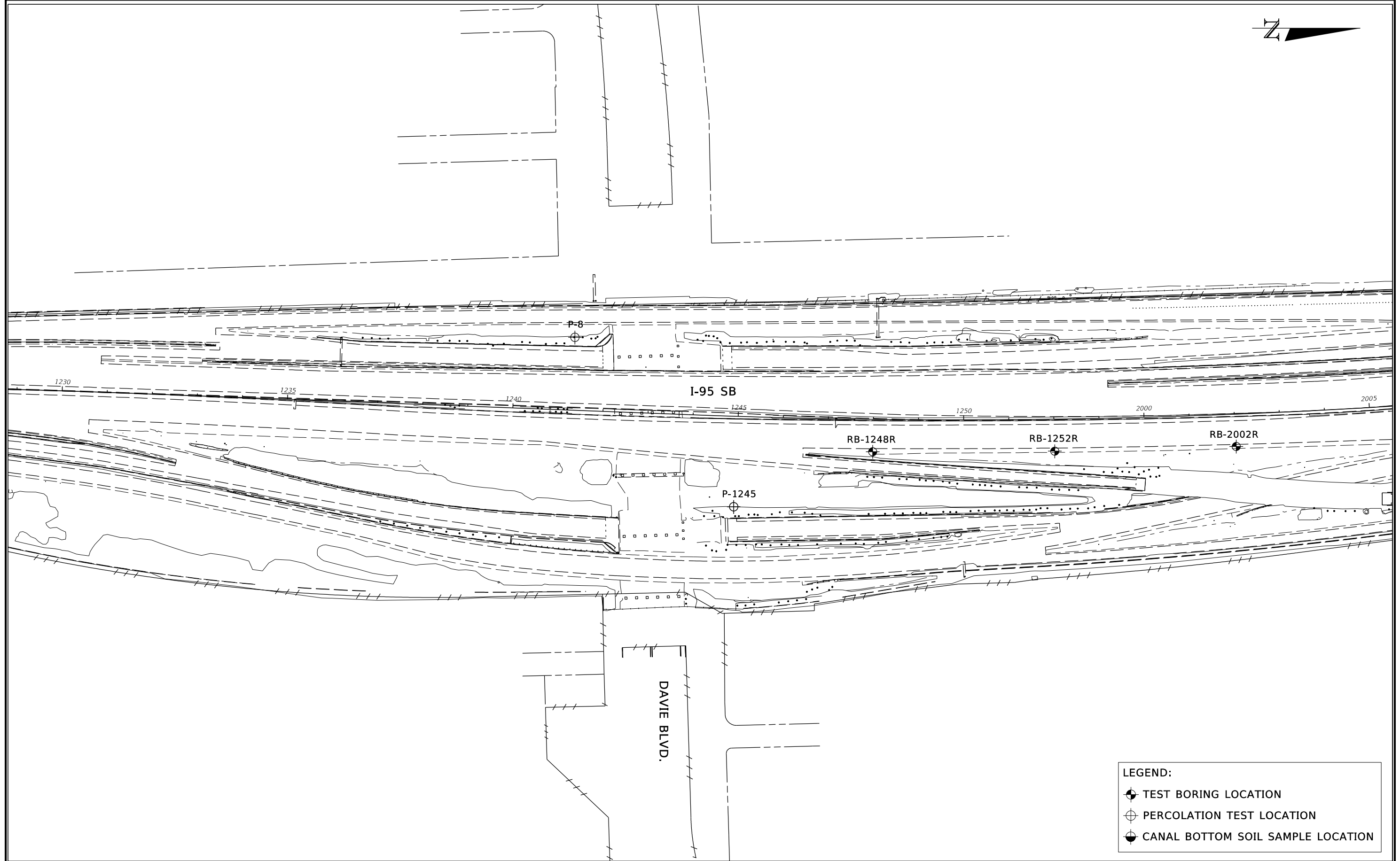
SITE LOCATION MAP	A-1
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– AVERAGE WET SEASON	A-14
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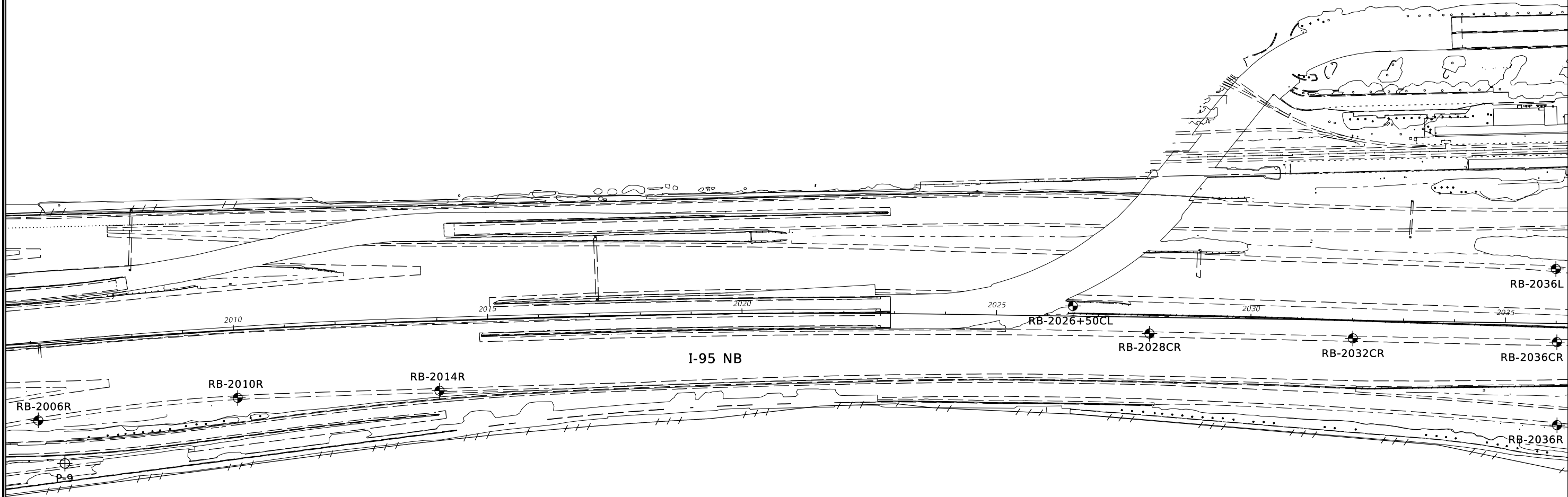
I-95 CDC, FROM SOUTH OF DAVIE BLVD.
 TO NORTH OF W. COMMERCIAL BLVD. – PHASE 3A-1
 FLORIDA DEPARTMENT OF TRANSPORTATION–D4
 BROWARD COUNTY, FLORIDA

HRES
 HR Engineering Services, Inc.

SITE LOCATION MAP		A-1
DRAWN BY: R.A.C.	DATE: 12/03/14	
PROJECT No: HR12-891R	SCALE: NTS	



REVISIONS						HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7815 NW 72nd Avenue Medley, Florida 33166 Phone: (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7991			STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE: FIELD EXPLORATION PLANS		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1		A-2
						SR 9	BROWARD	433108-4-52-01						



LEGEND:

- TEST BORING LOCATION
- ⊕ PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

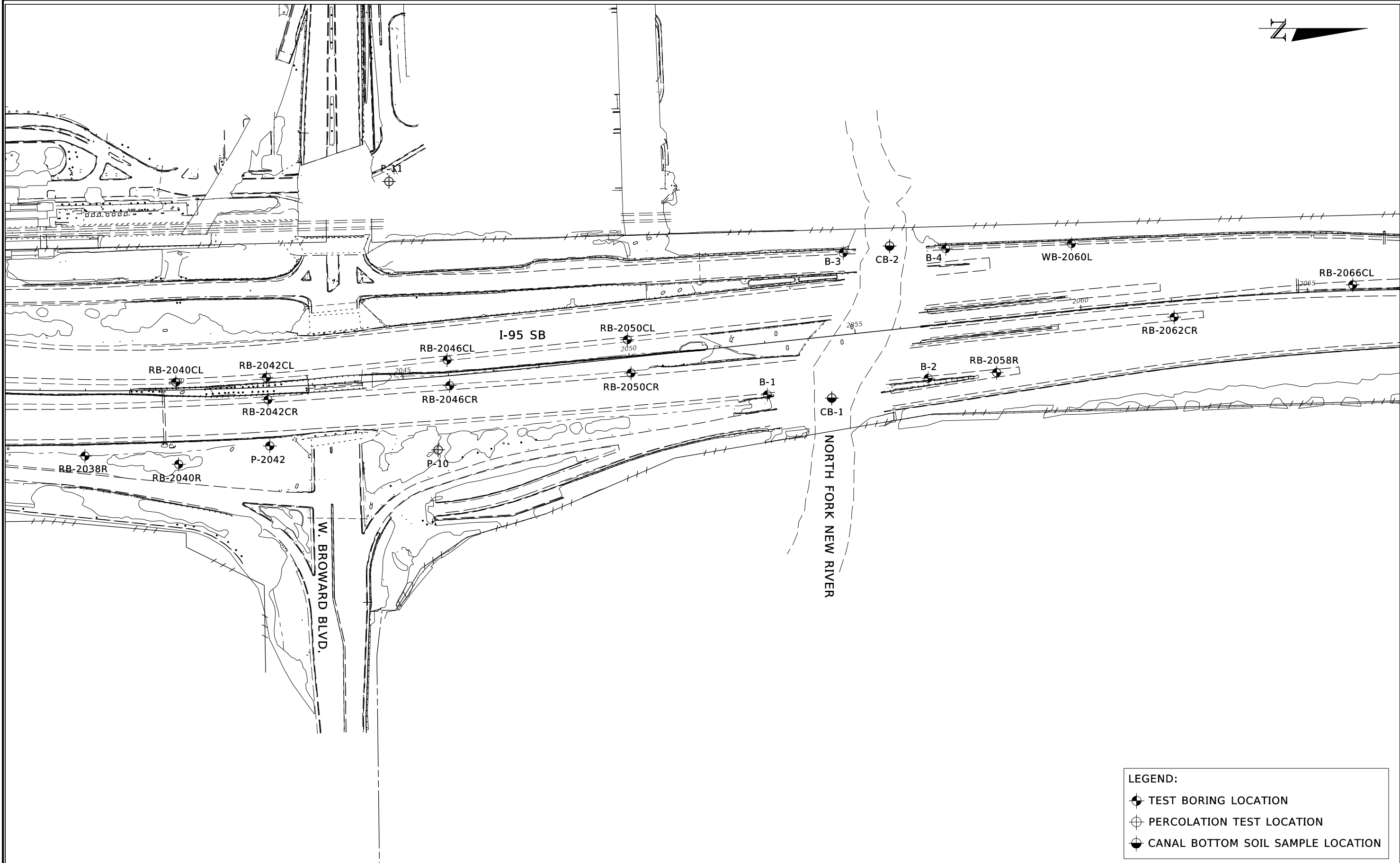
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE:	FIELD EXPLORATION PLANS	REF. DWG. NO.	
PROJECT NAME:	I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1	SHEET NO.	

A-3



LEGEND:

- TEST BORING LOCATION
- ⊕ PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

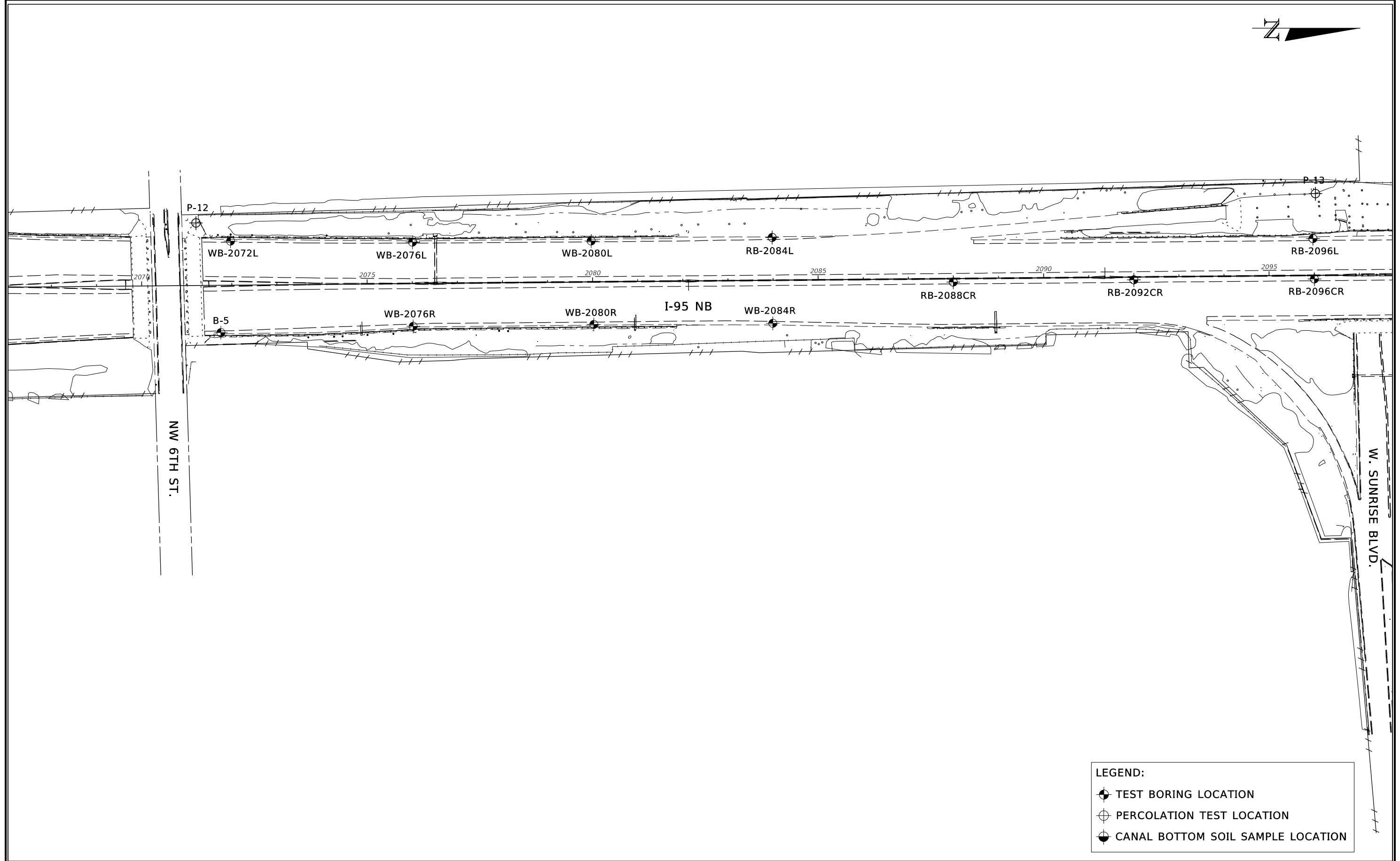
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE: FIELD EXPLORATION PLANS		REF. DWG. NO.
PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1		SHEET NO.

A-4



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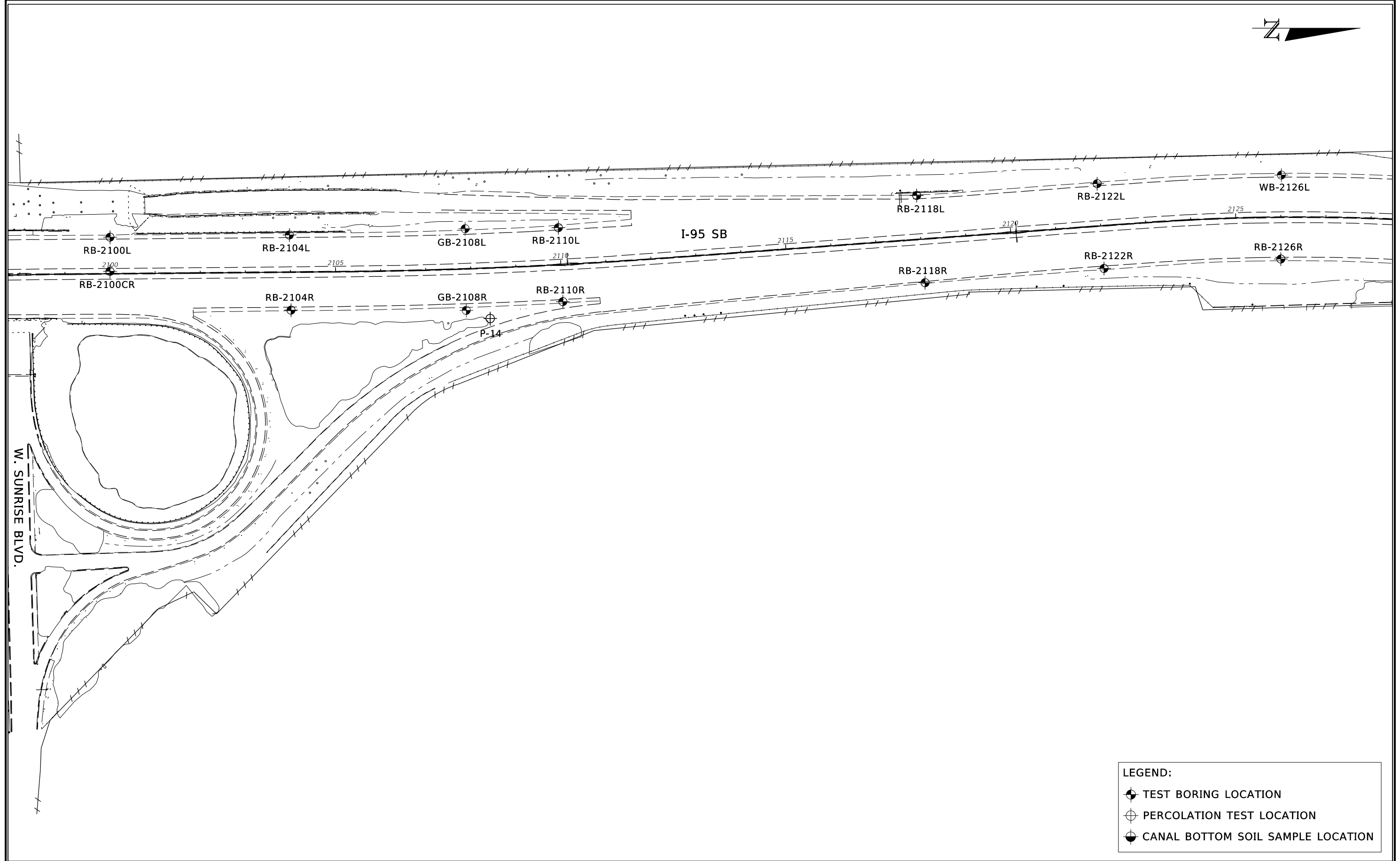
- TEST BORING LOCATION
- PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

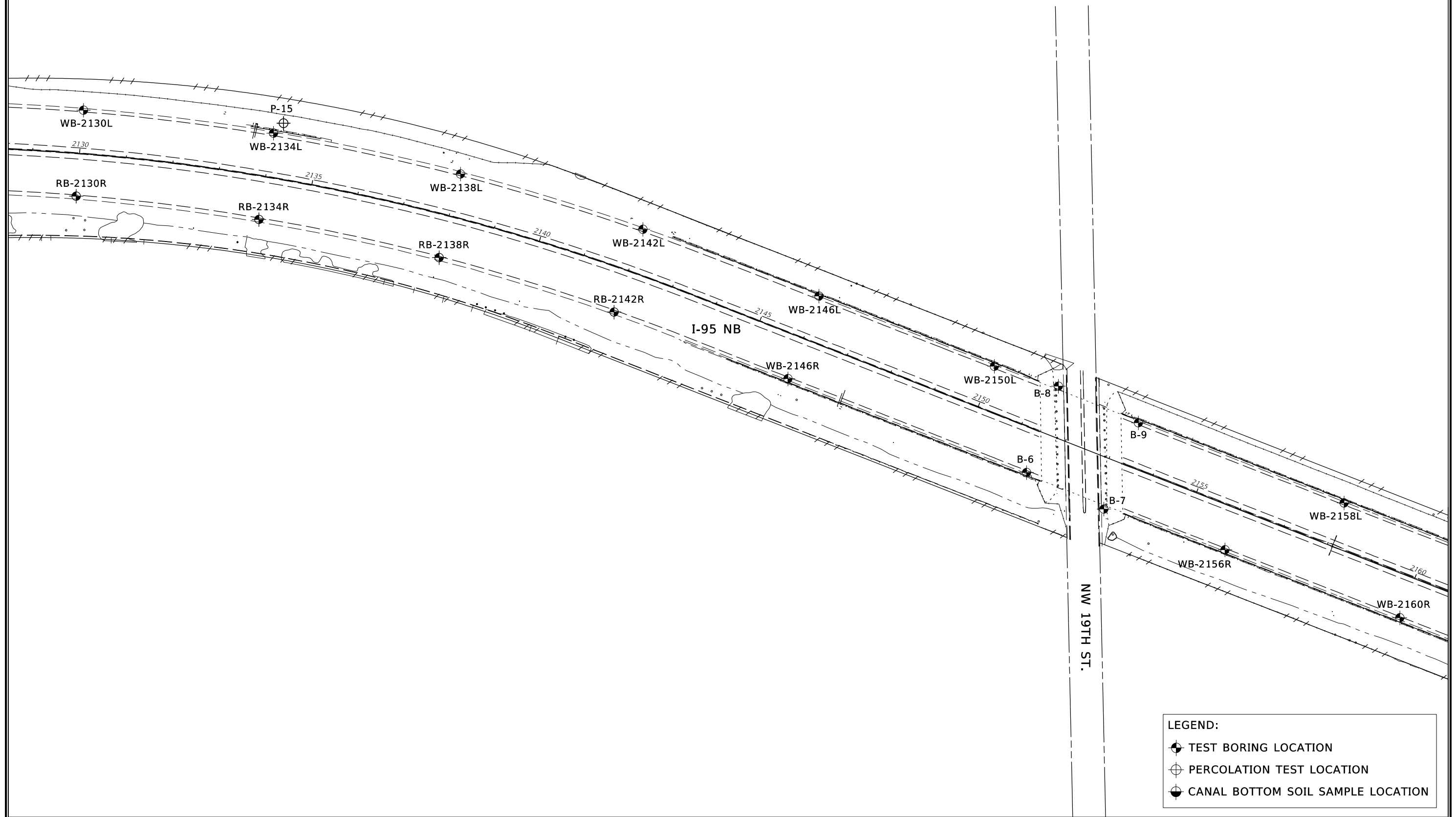
SHEET TITLE: FIELD EXPLORATION PLANS		REF. DWG. NO.
A-5		
PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1		
		SHEET NO.



LEGEND:

- TEST BORING LOCATION
- PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS						HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7815 NW 72nd Avenue Medley, Florida 33166 Phone: (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7991			STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE: FIELD EXPLORATION PLANS		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1		A-6
						SR 9	BROWARD	433108-4-52-01						



LEGEND:

- TEST BORING LOCATION
- ⊕ PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

DRAWN BY: ME 12-14
 CHECKED BY: RAC 12-14
 DESIGNED BY: RAC 12-14
 CHECKED BY: HRR 12-14

STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION

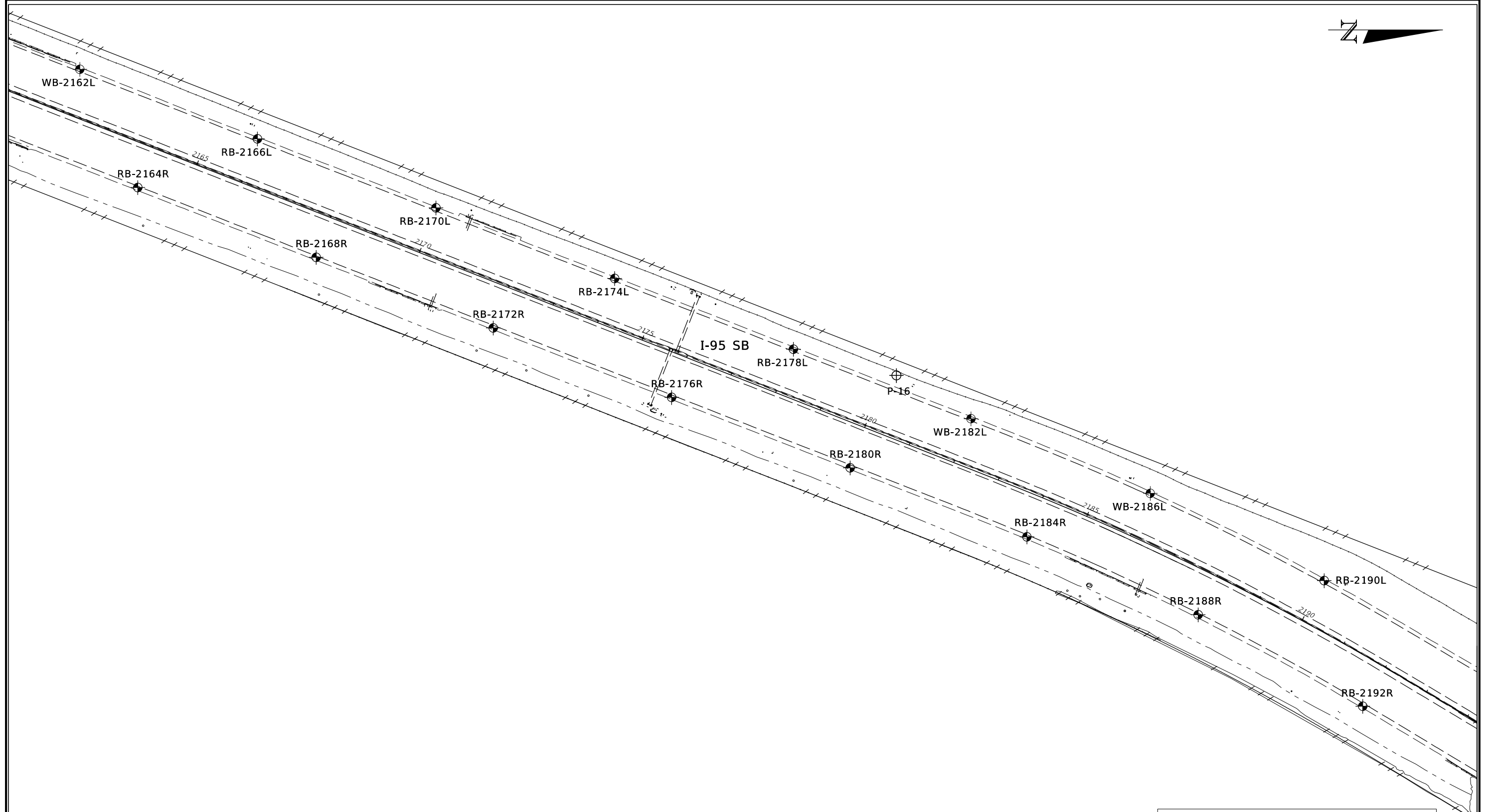
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE: FIELD EXPLORATION PLANS **A-7**

PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1

REF. DWG. NO. _____

SHEET NO. _____



LEGEND:

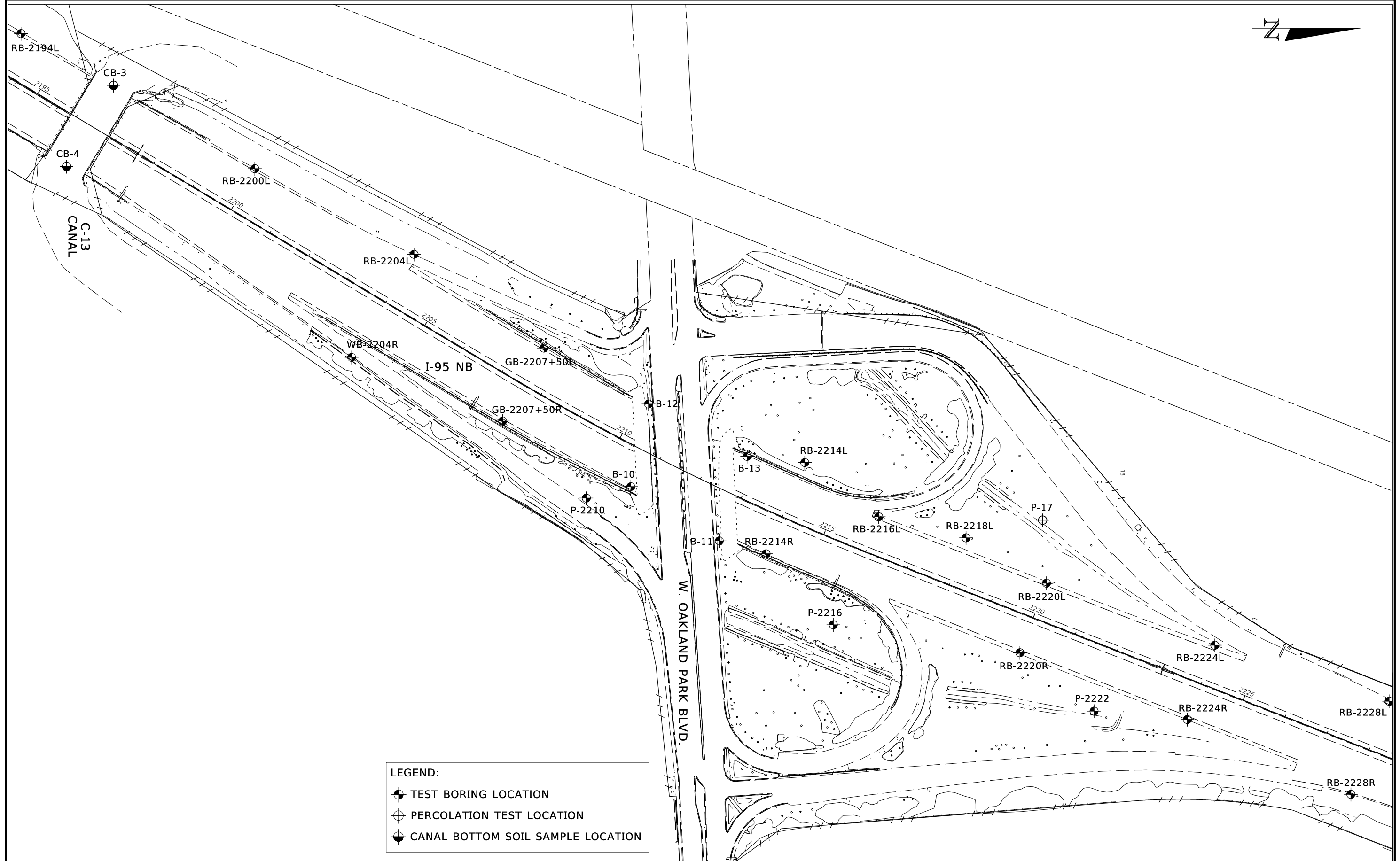
- TEST BORING LOCATION
- PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE: FIELD EXPLORATION PLANS		REF. DWG. NO.
PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1		SHEET NO.
A-8		



LEGEND:
 ● TEST BORING LOCATION
 ⊕ PERCOLATION TEST LOCATION
 ● CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
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 7815 NW 72nd Avenue Medley, Florida 33166
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 Certificate of Authorization No. 7991

DRAWN BY: ME 12-14
 CHECKED BY: RAC 12-14
 DESIGNED BY: RAC 12-14
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STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION

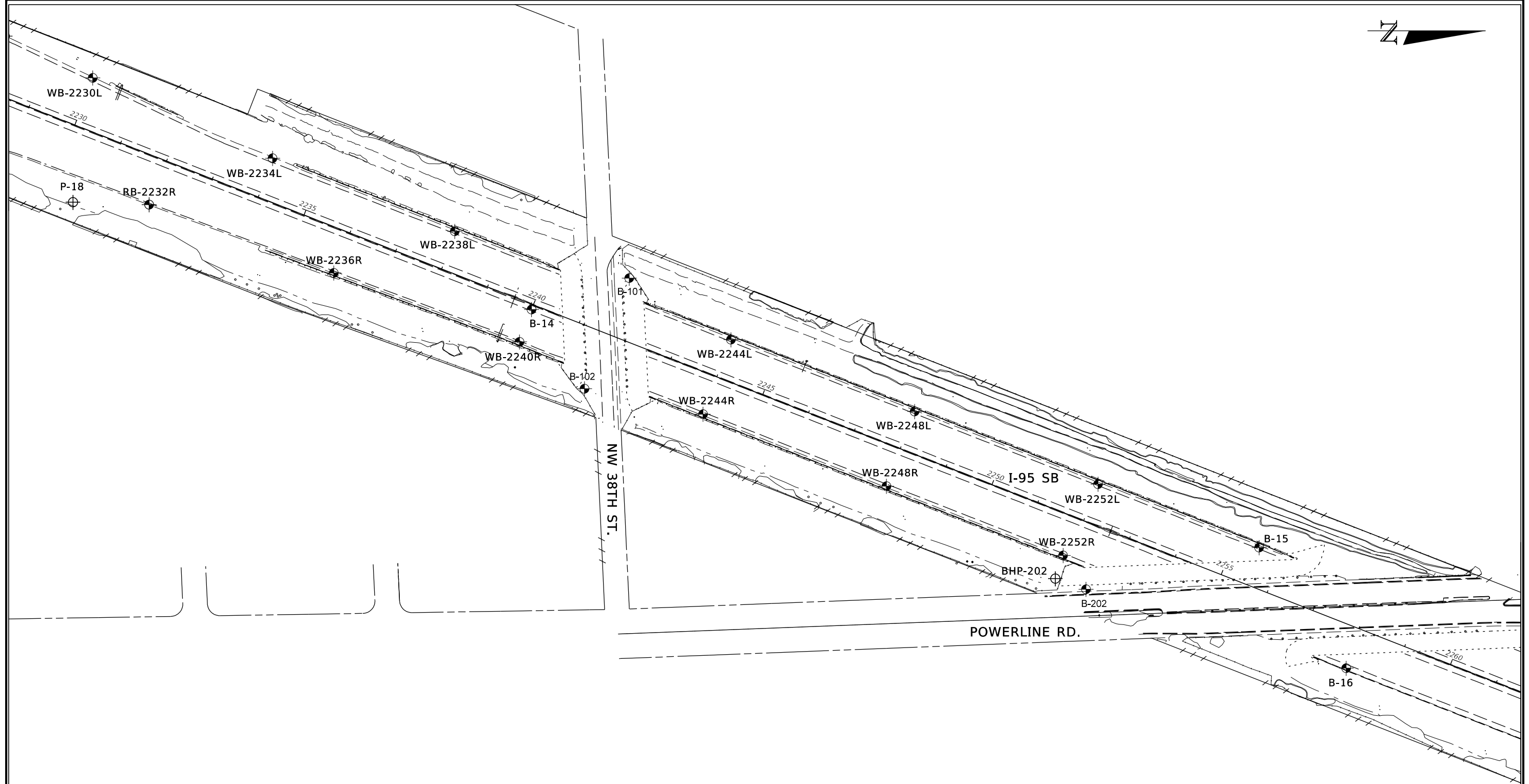
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE: FIELD EXPLORATION PLANS

PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1

REF. DWG. NO. A-9

SHEET NO.



LEGEND:

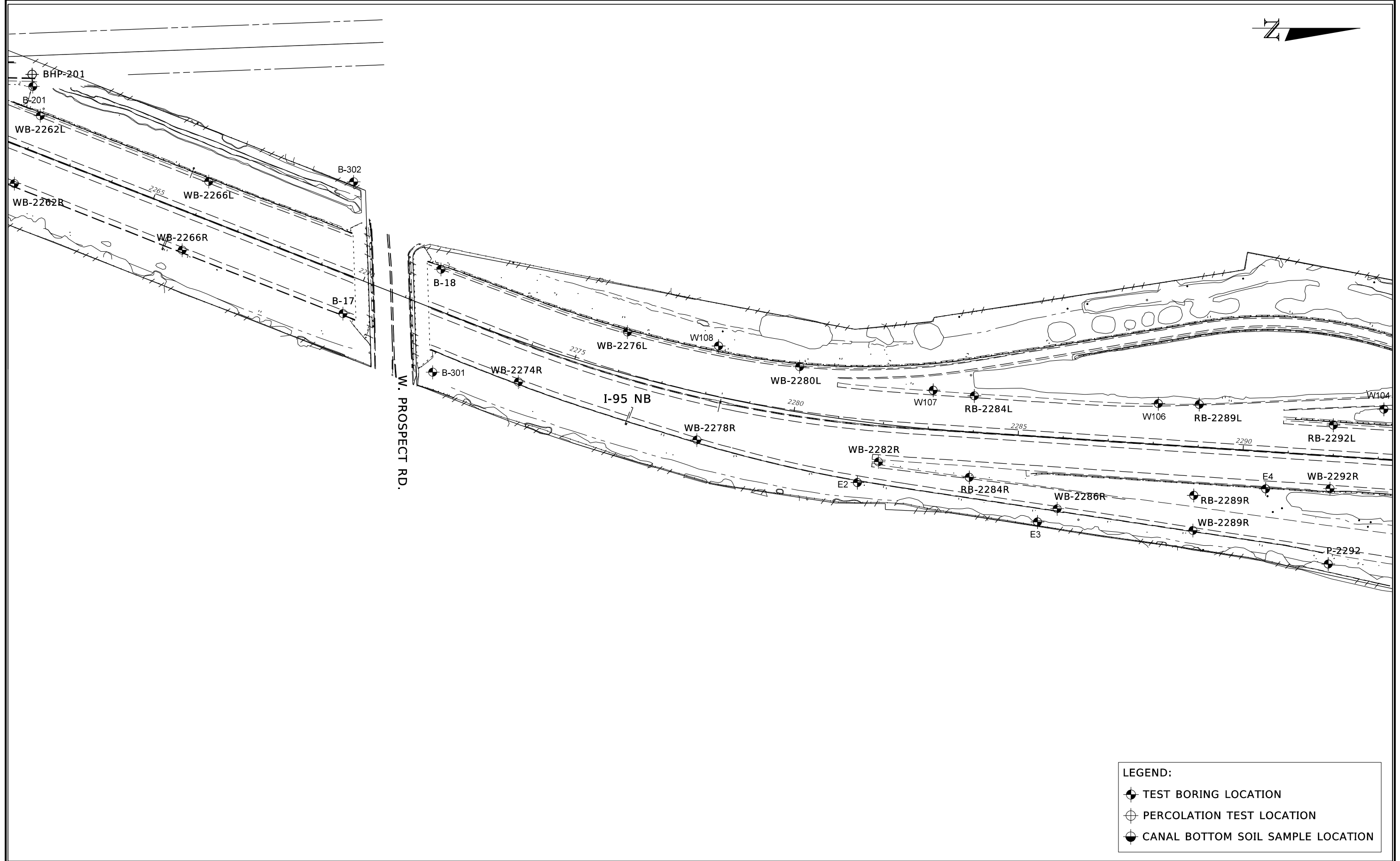
- TEST BORING LOCATION
- ⊕ PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
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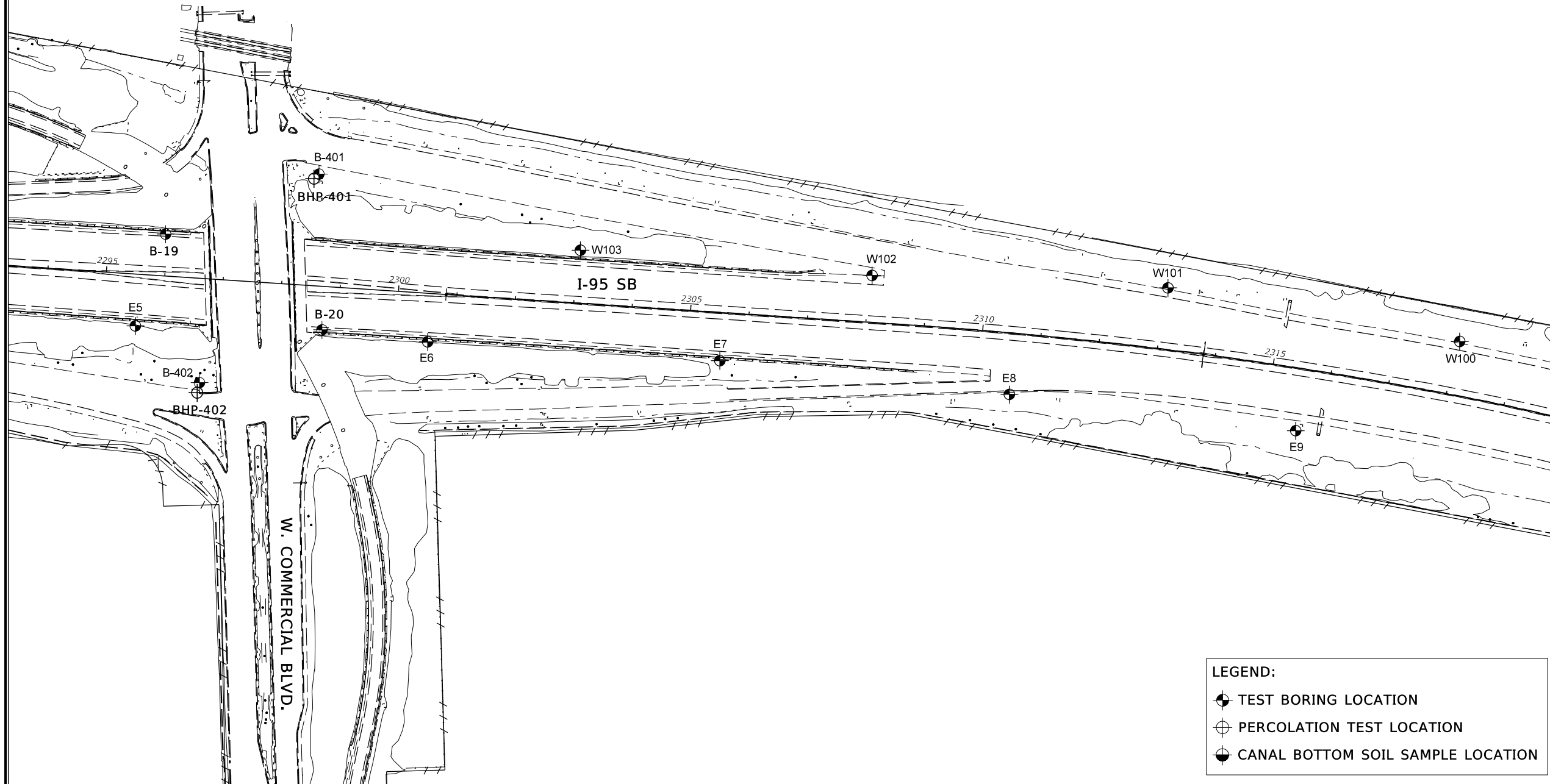
DRAWN BY: ME 12-14	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		SHEET TITLE: FIELD EXPLORATION PLANS	REF. DWG. NO.
CHECKED BY: RAC 12-14				
DESIGNED BY: RAC 12-14	ROAD NO. SR 9	COUNTY BROWARD	FINANCIAL PROJECT ID 433108-4-52-01	PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1
CHECKED BY: HRR 12-14	SHEET NO. A-10			

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LEGEND:
 ● TEST BORING LOCATION
 ⊕ PERCOLATION TEST LOCATION
 ◐ CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS						HR ENGINEERING SERVICES, INC. Hernando R. Ramos P.E. License No. 42045 7815 NW 72nd Avenue Medley, Florida 33166 Phone: (305) 888-8880 - Fax: (305) 888-8770 Certificate of Authorization No. 7991	DRAWN BY: ME 12-14 CHECKED BY: RAC 12-14 DESIGNED BY: RAC 12-14 CHECKED BY: HRR 12-14	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE: FIELD EXPLORATION PLANS A-11	REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		PROJECT NAME:
						SR 9	BROWARD	433108-4-52-01	I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1			



LEGEND:

- TEST BORING LOCATION
- PERCOLATION TEST LOCATION
- CANAL BOTTOM SOIL SAMPLE LOCATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
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STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION

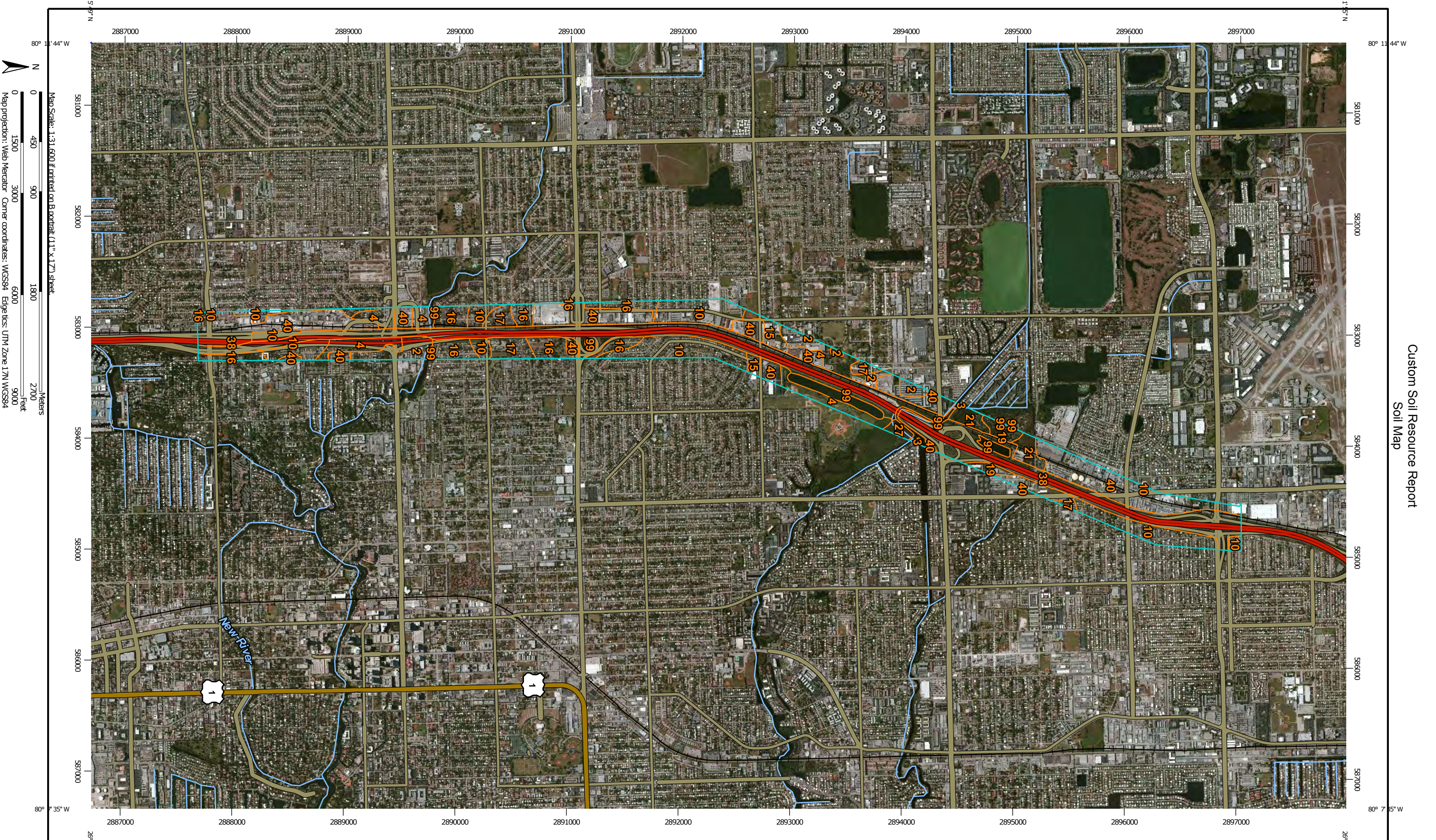
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE: FIELD EXPLORATION PLANS **A-12**

PROJECT NAME: I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1

REF. DWG. NO.

SHEET NO.



Map Scale: 1:31,600 (printed on Boretrail (11" x 17") sheet)
 0 450 900 1800 2700 Meters
 0 1500 3000 6000 9000 Feet
 Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

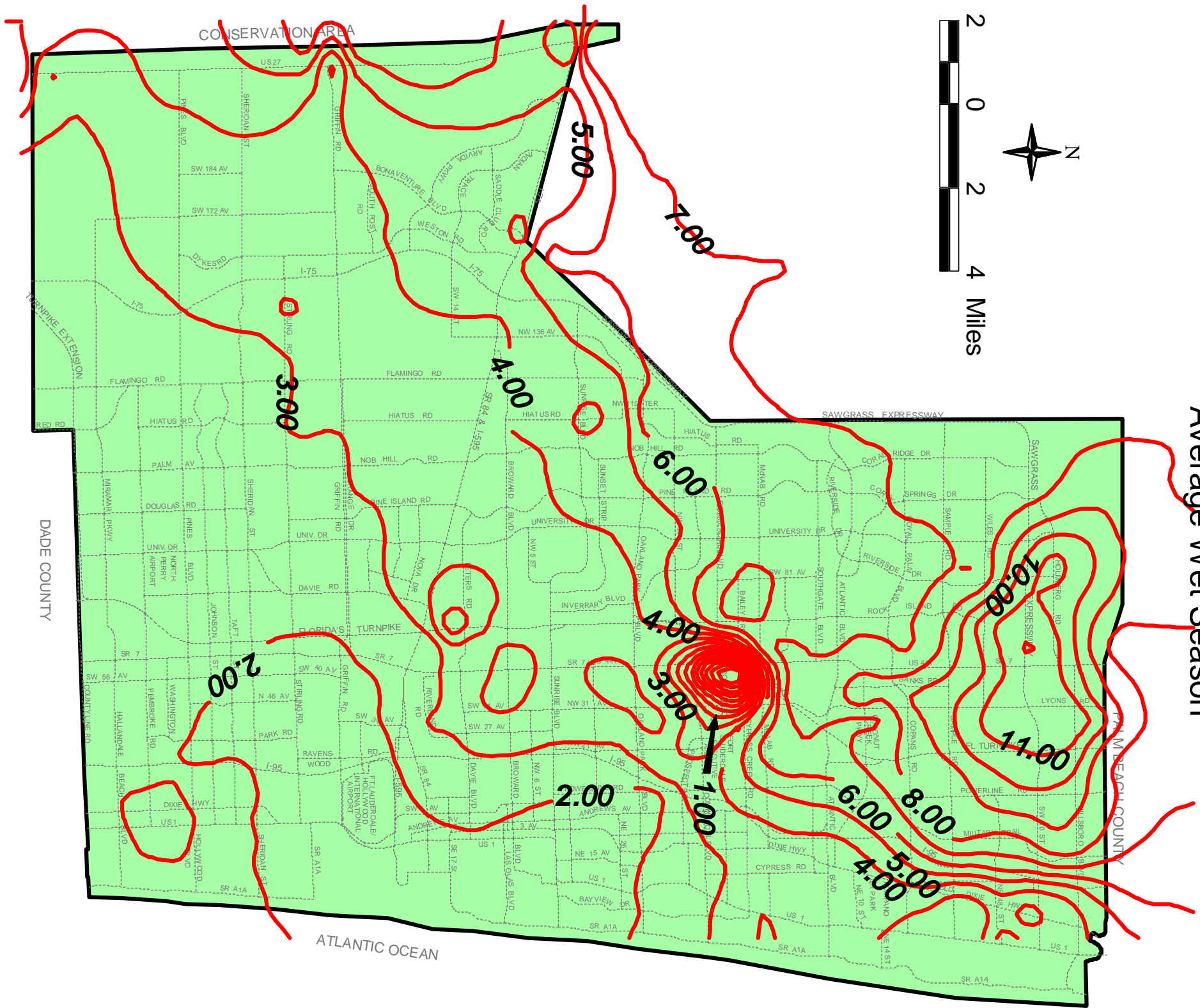
SHEET TITLE:	BROWARD COUNTY SOIL SURVEY MAP	REF. DWG. NO.	A-13
PROJECT NAME:	I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1		
SHEET NO.			



**Broward County Office of
Environmental Services
Water Management Division**

February 17, 2000

averagewet.apr



WATER TABLE MAP
Average Wet Season

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

HR ENGINEERING SERVICES, INC.
Hernando R. Ramos
P.E. License No. 42045
7815 NW 72nd Avenue Medley, Florida 33166
Phone: (305) 888-8880 - Fax: (305) 888-8770
Certificate of Authorization No. 7991

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SHEET TITLE:	BROWARD COUNTY WATER TABLE MAP AVERAGE WET SEASON	REF. DWG. NO.	A-14
PROJECT NAME:	I-95 CDC, FROM SOUTH OF DAVIE BOULEVARD TO NORTH OF WEST COMMERCIAL BOULEVARD - PHASE 3A-1	SHEET NO.	

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
P-8	645185.148	928812.862	1241+25	370.0 L
P-1245	645537.960	929188.353	1245+00	210.0 R
RB-1248R	645845.429	929066.601	1248+00	75.0 R
RB-1252R	646249.269	929065.334	1252+00	80.0 R
RB-2002R	646651.596	929054.888	2002+00	70.0 R
RB-2006R	647061.997	929113.306	2006+00	150.0 R
P-9	647114.153	929197.642	2006+35	115.0 R
RB-2010R	647453.929	929068.796	2010+00	135.0 R
RB-2014R	647850.418	929054.777	2014+00	140.0 R
RB-2026CL	649095.068	928888.323	2026+50	35.0 L
RB-2028CR	649245.540	928942.493	2028+00	25.0 R
RB-2032CR	649645.085	928951.754	2032+00	30.0 R
RB-2036L	650044.064	928815.320	2036+00	110.0 L
RB-2036CR	650046.074	928959.366	2036+00	25.0 R
RB-2036R	650046.389	929122.455	2036+00	205.0 R
RB-2038R	650243.788	929068.361	2038+00	145.0 R
RB-2040CL	650443.764	928905.634	2040+00	5.0 L
RB-2040R	650450.008	929086.404	2040+00	140.0 R
RB-2042CL	650642.897	928895.502	2042+00	20.0 L
RB-2042CR	650646.481	928944.373	2042+00	20.0 R
P-2042	650650.402	929046.073	2042+00	130.0 R
P-11	650912.769	928464.236	2045+20	550.0 L
P-10	651020.863	929054.534	2045+65	50.0 R
RB-2046CL	651040.683	928856.865	2046+00	30.0 L
RB-2046CR	651046.495	928913.269	2046+00	10.0 R
RB-2050CL	651437.340	928812.330	2050+00	30.0 L
RB-2050CR	651445.443	928885.781	2050+00	25.0 R
B-1	651745.635	928933.413	2052+70	110.0 R
CB-1	651887.447	928940.710	2054+40	135.0 R

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
B-3	651912.669	928621.271	2054+50	190.0 L
CB-2	652014.717	928606.182	2056+00	180.0 L
B-2	652099.452	928897.026	2056+50	110.0 R
B-4	652138.344	928611.956	2057+50	160.0 L
RB-2058R	652250.225	928884.578	2058+00	140.0 R
WB-2060L	652414.897	928601.003	2060+00	150.0 L
RB-2062CR	652640.936	928762.642	2062+00	10.0 R
RB-2066CL	653033.789	928691.554	2066+00	15.0 L
P-12	653554.932	928559.274	2071+35	100.0 L
B-5	653610.282	928802.389	2071+80	110.0 R
WB-2072L	653631.523	928599.473	2072+00	100.0 L
WB-2076L	654035.024	928601.819	2076+00	95.0 L
WB-2076R	654036.579	928788.510	2076+00	95.0 R
WB-2080L	654431.223	928599.290	2080+00	90.0 L
WB-2080R	654437.130	928784.310	2080+00	90.0 R
RB-2084L	654832.478	928591.479	2084+00	110.0 L
WB-2084R	654834.057	928781.775	2084+00	100.0 R
RB-2088CR	655234.050	928690.301	2088+00	5.0 R
RB-2092CR	655634.597	928685.447	2092+00	10.0 R
RB-2096L	656031.683	928593.994	2096+00	90.0 L
RB-2096CR	656034.799	928683.547	2096+00	10.0 R
P-13	656037.225	928494.215	2096+10	160.0 L
RB-2100L	656434.421	928590.767	2100+00	90.0 L
RB-2100CR	656434.178	928666.560	2100+00	5.0 R
RB-2104L	656832.060	928585.931	2104+00	95.0 L
RB-2104R	656835.669	928752.582	2104+00	90.0 R
GB-2108L	657221.644	928571.960	2108+00	110.0 L
GB-2108R	657224.254	928753.052	2108+00	110.0 R
P-14	657277.441	928771.086	2108+50	115.0 R

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
RB-2110L	657428.461	928569.655	2110+00	100.0 L
RB-2110R	657438.596	928733.638	2110+00	95.0 R
RB-2118L	658222.982	928498.308	2118+00	110.0 L
RB-2118R	658241.666	928691.761	2118+00	105.0 R
RB-2122L	658623.030	928472.132	2122+00	105.0 L
RB-2122R	658638.406	928660.027	2122+00	100.0 R
WB-2126L	659031.484	928453.120	2126+00	110.0 L
RB-2126R	659030.490	928639.149	2126+00	110.0 R
WB-2130L	659438.338	928468.239	2130+00	100.0 L
RB-2130R	659422.787	928651.407	2130+00	105.0 R
WB-2134L	659843.591	928517.160	2134+00	90.0 L
RB-2134R	659812.414	928701.082	2134+00	110.0 R
P-15	659864.902	928496.027	2134+30	110.0 L
WB-2138L	660242.180	928604.179	2138+00	100.0 L
RB-2138R	660196.790	928782.284	2138+00	105.0 R
WB-2142L	660631.153	928722.095	2142+00	100.0 L
RB-2142R	660569.758	928898.334	2142+00	105.0 R
WB-2146L	661006.469	928864.374	2146+00	90.0 L
WB-2146R	660940.347	929040.313	2146+00	90.0 R
WB-2150L	661380.378	929013.877	2150+00	90.0 L
B-6	661449.074	929240.130	2151+00	100.0 R
B-8	661516.963	929056.307	2151+50	95.0 L
B-9	661687.581	929134.278	2153+30	95.0 L
B-7	661613.877	929318.137	2153+30	170.0 R
WB-2156R	661872.154	929404.731	2156+00	90.0 R
WB-2158L	662125.967	929305.015	2158+00	90.0 L
WB-2160R	662244.946	929549.640	2160+00	90.0 R
WB-2162L	662497.300	929449.277	2162+00	100.0 L
RB-2164R	662618.475	929696.182	2164+00	100.0 R

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
RB-2166L	662868.639	929594.521	2166+00	100.0 L
RB-2168R	662991.274	929842.070	2168+00	100.0 R
RB-2170L	663241.791	929738.766	2170+00	95.0 L
RB-2172R	663361.539	929989.612	2172+00	100.0 R
RB-2174L	663615.327	929886.287	2174+00	100.0 L
RB-2176R	663734.335	930134.838	2176+00	100.0 R
RB-2178L	663988.867	930034.133	2178+00	95.0 L
RB-2180R	664107.508	930282.028	2180+00	100.0 R
P-16	664204.412	930088.843	2180+35	135.0 L
WB-2182L	664360.209	930179.366	2182+00	100.0 L
RB-2184R	664477.027	930426.286	2184+00	100.0 R
WB-2186L	664734.893	930335.400	2186+00	100.0 L
RB-2188R	664835.034	930588.986	2188+00	100.0 R
RB-2190L	665098.478	930517.746	2190+00	105.0 L
RB-2192R	665179.049	930780.312	2192+00	100.0 R
RB-2194L	665446.920	930719.212	2194+00	105.0 L
CB-3	665652.312	930834.012	2196+40	105.0 L
CB-4	665548.055	931013.790	2196+40	105.0 R
RB-2200L	665965.388	931018.643	2200+00	110.0 L
RB-2204L	666318.484	931208.590	2204+00	125.0 L
WB-2204R	666180.011	931437.135	2204+00	135.0 R
GB-2207+50L	666606.631	931416.666	2207+50	90.0 L
GB-2207+50R	666514.982	931578.319	2207+50	90.0 R
B-12	666838.256	931540.475	2210+00	120.0 L
P-2210	666700.384	931749.333	2210+00	140.0 R
B-10	666799.092	931723.765	2210+20	95.0 R
B-13	667057.109	931656.820	2212+76	86.0 L
B-11	666995.433	931843.864	2213+00	180.0 R
RB-2214L	667184.787	931670.428	2214+00	150.0 L

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
RB-2214R	667098.855	931872.717	2214+00	150.0 R
RB-2216L	667348.778	931790.735	2216+00	125.0 L
P-2216	667248.183	932030.184	2216+00	210.0 R
RB-2218L	667542.463	931837.373	2218+00	145.0 L
P-17	667712.330	931798.224	2219+55	210.0 L
RB-2220L	667720.867	931937.903	2220+00	85.0 L
RB-2220R	667661.887	932092.125	2220+00	85.0 R
P-2222	667826.303	932221.611	2222+00	160.0 R
RB-2224L	668093.986	932075.550	2224+00	100.0 L
RB-2224R	668033.257	932240.279	2224+00	90.0 R
RB-2228L	668480.467	932199.660	2228+00	130.0 L
RB-2228R	668395.655	932406.200	2228+00	110.0 R
WB-2230L	668658.769	932284.443	2230+00	100.0 L
P-18	668618.604	932536.943	2230+70	145.0 R
RB-2232R	668773.124	932541.845	2232+00	100.0 R
WB-2234L	669023.695	932447.721	2234+00	80.0 L
WB-2236R	669148.069	932680.455	2236+00	80.0 R
WB-2238L	669393.612	932595.876	2238+00	80.0 L
B-14	669549.132	932754.604	2240+00	10.0 R
WB-2240R	669525.204	932820.360	2240+00	80.0 R
B-101	669748.000	932690.900	2241+70	120.0 L
B-102	669657.000	932915.500	2241+70	120.0 R
WB-2244L	669954.473	932815.932	2244+00	80.0 L
WB-2244R	669897.659	932967.181	2244+00	80.0 R
WB-2248L	670327.287	932962.093	2248+00	85.0 L
WB-2248R	670270.110	933113.344	2248+00	80.0 R
WB-2252L	670699.745	933109.238	2252+00	85.0 L
WB-2252R	670628.713	933254.018	2252+00	80.0 R
BHP-202	670613.000	933301.000	2252+05	130.0 R

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
B-202	670675.200	933322.700	2252+70	125.0 R
B-15	671026.645	933237.981	2255+45	85.0 L
B-16	671203.448	933482.824	2258+00	80.0 R
BHP-201	671611.700	933382.700	2261+65	160.0 L
B-201	671613.200	933409.400	2261+75	135.0 L
WB-2262L	671629.782	933474.144	2262+00	80.0 L
WB-2262R	671572.239	933624.737	2262+00	80.0 R
WB-2266L	672003.324	933619.961	2266+00	80.0 L
WB-2266R	671944.338	933772.202	2266+00	80.0 R
B-302	672324.400	933620.700	2269+10	200.0 L
B-17	672300.762	933912.878	2270+00	80.0 R
B-18	672518.225	933814.706	2272+00	90.0 L
B-301	672499.700	934043.000	2272+30	130.0 R
WB-2274R	672689.974	934064.490	2274+00	80.0 R
WB-2276L	672931.709	933953.696	2276+00	100.0 L
WB-2278R	673085.580	934193.099	2278+00	80.0 R
W108	673133.600	933984.700	2278+15	120.0 L
WB-2280L	673313.527	934030.575	2280+00	110.0 L
E2	673441.600	934287.600	2281+75	130.0 R
WB-2282R	673488.297	934241.633	2282+00	90.0 R
W107	673609.500	934082.900	2283+20	90.0 L
RB-2284L	673700.718	934095.282	2284+00	95.0 L
RB-2284R	673689.540	934276.068	2284+00	100.0 R
E3	673840.800	934375.000	2285+70	185.0 R
WB-2286R	673884.469	934345.636	2286+00	150.0 R
W106	674108.600	934112.500	2288+20	90.0 L
RB-2289L	674199.571	934114.328	2289+00	95.0 L
RB-2289R	674187.439	934316.107	2289+00	100.0 R
WB-2289R	674185.403	934393.849	2289+00	170.0 R

**SUMMARY OF TEST BORING AND PERCOLATIONS TEST LOCATIONS
 SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD.
 TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
 FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
 FINANCIAL PROJECT ID No. 433108-4-52-01
 BROWARD COUNTY, FLORIDA
 HR ENGINEERING SERVICES, INC.
 HRES PROJECT No. HR12-891R
 DECEMBER 3, 2014**

TEST No.	PLANE COORDINATES		STATION	OFFSET, ft
	NORTHING	EASTING		
E4	674346.700	934301.500	2290+70	80.0 R
RB-2292L	674496.855	934160.270	2292+00	70.0 L
WB-2292R	674489.413	934301.016	2292+00	70.0 R
P-2292	674485.418	934468.304	2292+00	250.0 R
W104	674608.900	934125.000	2293+20	110.0 L
E5	674845.300	934339.900	2295+70	85.0 R
B-19	674896.860	934183.239	2296+00	70.0 L
B-402	674954.700	934437.100	2296+90	175.0 R
BHP-402	674950.800	934454.100	2296+90	195.0 R
B-20	675164.014	934346.786	2298+50	70.0 R
BHP-401	675150.400	934088.400	2298+60	185.0 L
B-401	675158.800	934080.700	2298+60	195.0 L
E6	675344.600	934367.200	2300+70	80.0 R
W103	675605.400	934210.800	2303+20	90.0 L
E7	675843.500	934399.400	2305+70	80.0 R
W102	676103.600	934253.800	2308+20	80.0 L
E8	676338.200	934457.100	2310+70	105.0 R
W101	676609.100	934275.100	2313+20	105.0 L
E9	676827.300	934519.100	2315+70	105.0 R
W100	677107.400	934366.600	2318+20	90.0 L

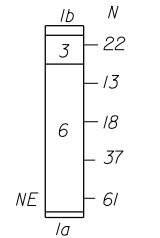
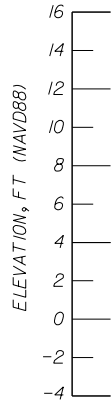
Note:

Stations and offsets are referenced to SR 9/I-95 Baseline.

Plane coordinates were taken using a hand-held GPS and are approximate within 10 feet.

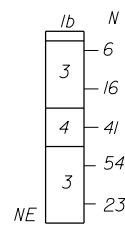
RB-1248R

NORTHING: 645845.429
 EASTING: 929066.601
 STATION: 1248+00
 OFFSET: 75.0 R
 ELEVATION: 15.3 FT
 DATE: 9/09/14



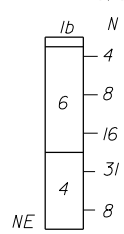
RB-1252R

NORTHING: 646249.269
 EASTING: 929065.334
 STATION: 1252+00
 OFFSET: 80.0 R
 ELEVATION: 15.0 FT
 DATE: 9/09/14



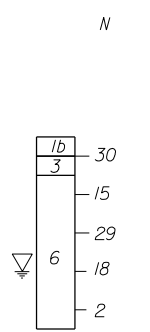
RB-2002R

NORTHING: 646651.596
 EASTING: 929054.888
 STATION: 2002+00
 OFFSET: 70.0 R
 ELEVATION: 14.7 FT
 DATE: 9/09/14



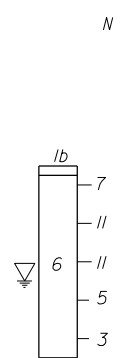
RB-2006R

NORTHING: 647061.997
 EASTING: 929113.306
 STATION: 2006+00
 OFFSET: 150.0 R
 ELEVATION: 9.5 FT
 DATE: 9/09/14



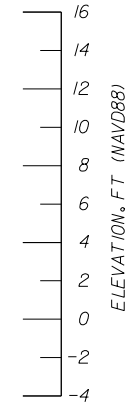
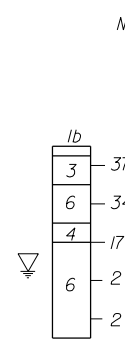
RB-2010R

NORTHING: 647453.929
 EASTING: 929068.796
 STATION: 2010+00
 OFFSET: 135.0 R
 ELEVATION: 8.0 FT
 DATE: 9/09/14



RB-2014R

NORTHING: 647850.418
 EASTING: 929054.777
 STATION: 2014+00
 OFFSET: 140.0 R
 ELEVATION: 9.0 FT
 DATE: 9/09/14



LEGEND:

- 1a. ASPHALT
- 1b. DARK ORGANIC SILTY FINE SAND (TOPSOIL), A-8
- 2. ORGANIC SILTY FINE SAND, A-8
- 3. LIMEROCK BASE OR SILTY FINE SAND WITH SOME LIMEROCK (FILL), A-1-b
- 4. SILTY FINE SAND WITH TRACES OF LIMEROCK (FILL) OR SILTY FINE SAND (FILL), A-2-4
- 5. SANDY SILT, A-4
- 6. FINE SAND WITH TRACES OF LIMEROCK/ LIMESTONE LENSES OR ORGANIC STAINED TO SLIGHTLY ORGANIC FINE SAND, A-3
- 7. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

▽ GROUND WATER LEVEL AT BORING COMPLETION

NE: NOT ENCOUNTERED

N: SPT VALUE FOR 12-INCH PENETRATION (AUTOMATIC HAMMER)

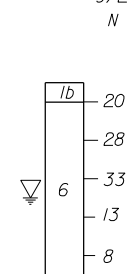
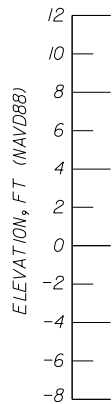
THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG

NOTE:

(1) STATIONS AND OFFSETS ARE REFERENCED TO SR 9 CONSTRUCTION BASELINE

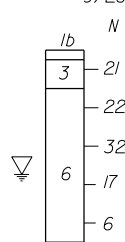
RB-2026CL

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 EASTING: 928888.323
 STATION: 2026+50
 OFFSET: 35.0 L
 ELEVATION: 8.5 FT
 DATE: 9/26/14



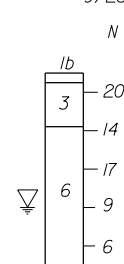
RB-2028CR

NORTHING: 649245.540
 EASTING: 928942.493
 STATION: 2028+00
 OFFSET: 25.0 R
 ELEVATION: 10.2 FT
 DATE: 9/26/14



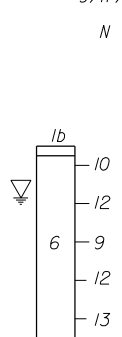
RB-2032CR

NORTHING: 649645.085
 EASTING: 928951.754
 STATION: 2032+00
 OFFSET: 30.0 R
 ELEVATION: 9.0 FT
 DATE: 9/26/14



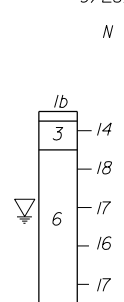
RB-2036L

NORTHING: 650044.064
 EASTING: 928815.320
 STATION: 2036+00
 OFFSET: 110.0 L
 ELEVATION: 5.2 FT
 DATE: 9/17/14



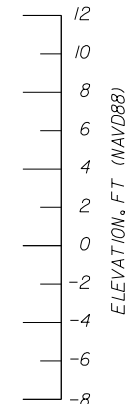
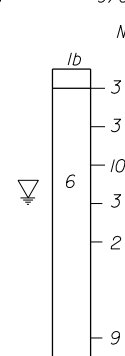
RB-2036CR

NORTHING: 650046.074
 EASTING: 928959.366
 STATION: 2036+00
 OFFSET: 25.0 R
 ELEVATION: 7.0 FT
 DATE: 9/26/14



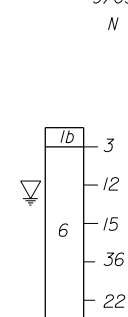
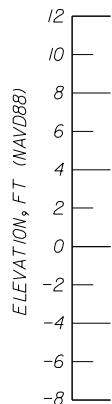
RB-2036R

NORTHING: 650046.389
 EASTING: 929122.455
 STATION: 2036+00
 OFFSET: 205.0 R
 ELEVATION: 9.2 FT
 DATE: 9/09/14



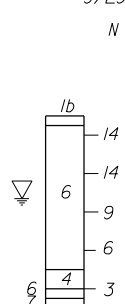
RB-2038R

NORTHING: 650243.788
 EASTING: 929068.361
 STATION: 2038+00
 OFFSET: 145.0 R
 ELEVATION: 6.2 FT
 DATE: 9/09/14



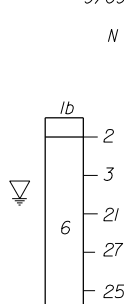
RB-2040CL

NORTHING: 650443.764
 EASTING: 928905.634
 STATION: 2040+00
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 ELEVATION: 6.8 FT
 DATE: 9/29/14



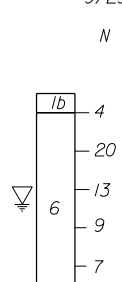
RB-2040R

NORTHING: 650450.008
 EASTING: 929086.404
 STATION: 2040+00
 OFFSET: 140.0 R
 ELEVATION: 6.7 FT
 DATE: 9/09/14



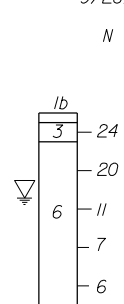
RB-2042CL

NORTHING: 650642.897
 EASTING: 928895.502
 STATION: 2042+00
 OFFSET: 20.0 L
 ELEVATION: 8.0 FT
 DATE: 9/29/14



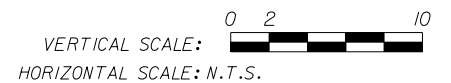
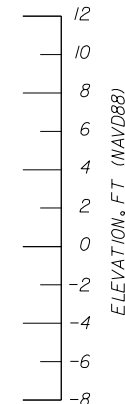
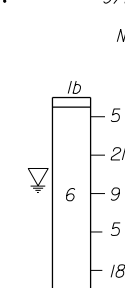
RB-2042CR

NORTHING: 650646.481
 EASTING: 928944.373
 STATION: 2042+00
 OFFSET: 20.0 R
 ELEVATION: 7.0 FT
 DATE: 9/26/14



RB-2046CL

NORTHING: 651040.683
 EASTING: 928856.865
 STATION: 2046+00
 OFFSET: 30.0 L
 ELEVATION: 7.8 FT
 DATE: 9/29/14



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

HR ENGINEERING SERVICES, INC.

Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

**STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION**

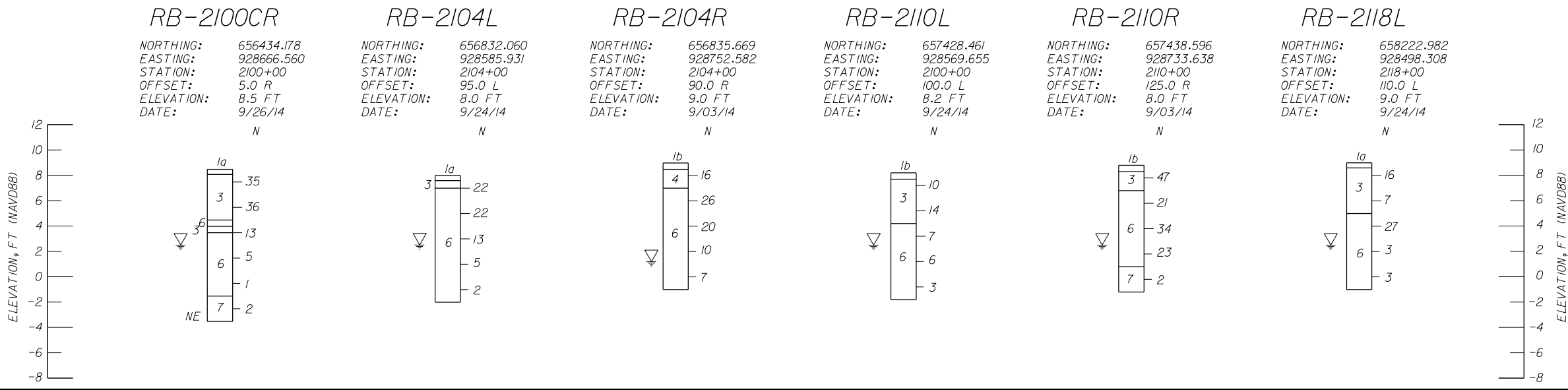
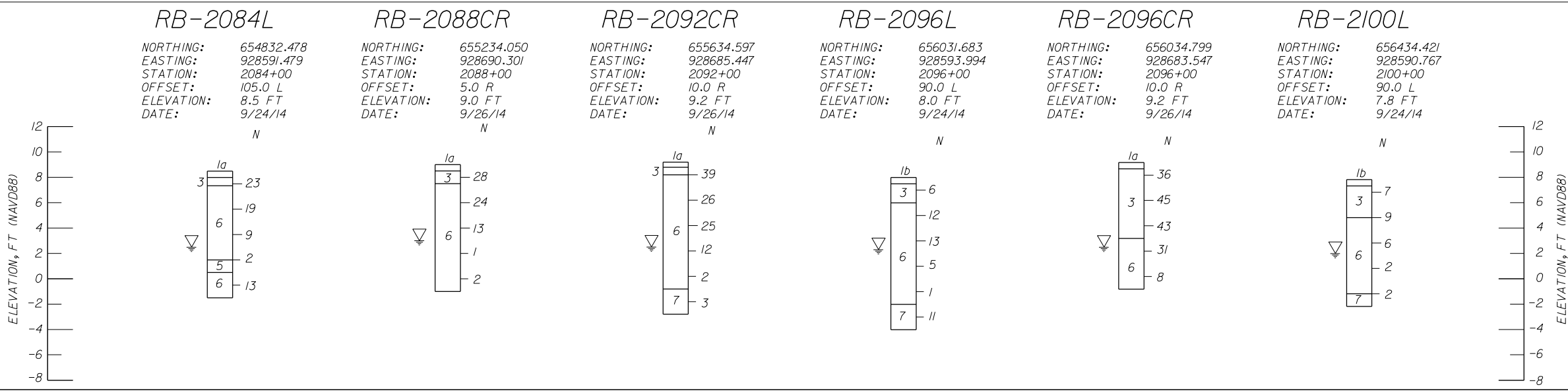
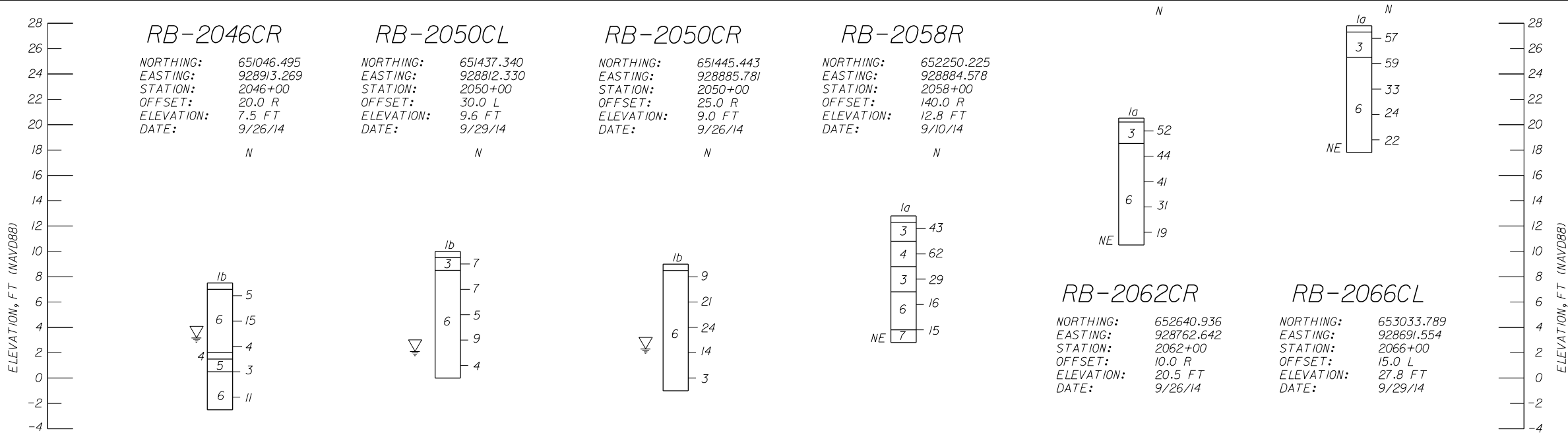
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SOIL PROFILES

SHEET NO.

A-22

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.



- LEGEND:**
- 1a. ASPHALT
 - 1b. DARK ORGANIC SILTY FINE SAND (TOPSOIL), A-B
 - 2. ORGANIC SILTY FINE SAND, A-B
 - 3. LIMEROCK BASE OR SILTY FINE SAND WITH SOME LIMEROCK (FILL), A-I-b
 - 4. SILTY FINE SAND WITH TRACES OF LIMEROCK (FILL) OR SILTY FINE SAND (FILL), A-2-4
 - 5. SANDY SILT, A-4
 - 6. FINE SAND WITH TRACES OF LIMEROCK/ LIMESTONE LENSES OR ORGANIC STAINED TO SLIGHTLY ORGANIC FINE SAND, A-3
 - 7. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

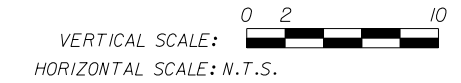
▽ GROUND WATER LEVEL AT BORING COMPLETION

NE: NOT ENCOUNTERED

N: SPT VALUE FOR 12-INCH PENETRATION (AUTOMATIC HAMMER)

THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG

NOTE:
 (1) STATIONS AND OFFSETS ARE REFERENCED TO SR 9 CONSTRUCTION BASELINE



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

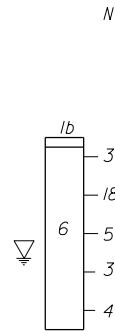
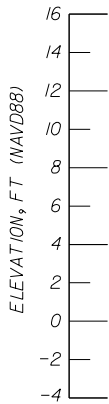
SOIL PROFILES

A-23

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

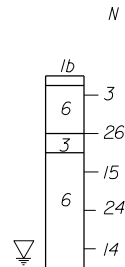
RB-2118R

NORTHING: 658241.666
 EASTING: 928691.761
 STATION: 2118+00
 OFFSET: 105.0 R
 ELEVATION: 8.8 FT
 DATE: 9/10/14



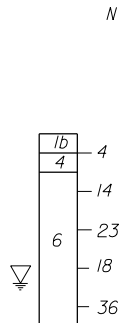
RB-2122L

NORTHING: 658623.030
 EASTING: 928472.132
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 ELEVATION: 12.0 FT
 DATE: 9/24/14



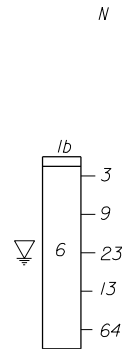
RB-2122R

NORTHING: 658638.406
 EASTING: 928660.027
 STATION: 2122+00
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 ELEVATION: 9.0 FT
 DATE: 9/10/14



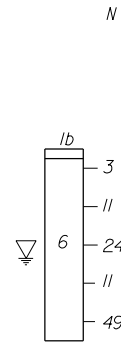
RB-2126R

NORTHING: 659030.490
 EASTING: 928639.149
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 DATE: 9/10/14



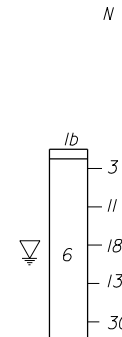
RB-2130R

NORTHING: 659422.787
 EASTING: 928651.407
 STATION: 2130+00
 OFFSET: 105.0 R
 ELEVATION: 8.2 FT
 DATE: 9/10/14



RB-2134R

NORTHING: 659812.414
 EASTING: 928701.082
 STATION: 2134+00
 OFFSET: 110.0 R
 ELEVATION: 8.2 FT
 DATE: 9/10/14



LEGEND:

- 1a. ASPHALT
- 1b. DARK ORGANIC SILTY FINE SAND (TOPSOIL), A-8
- 2. ORGANIC SILTY FINE SAND, A-8
- 3. LIMEROCK BASE OR SILTY FINE SAND WITH SOME LIMEROCK (FILL), A-1-b
- 4. SILTY FINE SAND WITH TRACES OF LIMEROCK (FILL) OR SILTY FINE SAND (FILL), A-2-4
- 5. SANDY SILT, A-4
- 6. FINE SAND WITH TRACES OF LIMEROCK/ LIMESTONE LENSES OR ORGANIC STAINED TO SLIGHTLY ORGANIC FINE SAND, A-3
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▽ GROUND WATER LEVEL AT BORING COMPLETION

NE: NOT ENCOUNTERED

N: SPT VALUE FOR 12-INCH PENETRATION (AUTOMATIC HAMMER)

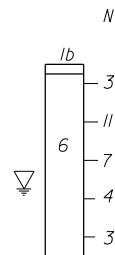
THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG

NOTE:

(1) STATIONS AND OFFSETS ARE REFERENCED TO SR 9 CONSTRUCTION BASELINE

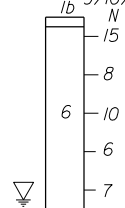
RB-2138R

NORTHING: 660196.790
 EASTING: 928782.284
 STATION: 2138+00
 OFFSET: 105.0 L
 ELEVATION: 9.0 FT
 DATE: 9/10/14



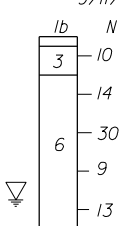
RB-2142R

NORTHING: 660569.758
 EASTING: 928898.334
 STATION: 2142+00
 OFFSET: 105.0 R
 ELEVATION: 12.0 FT
 DATE: 9/10/14



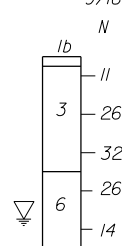
RB-2164R

NORTHING: 662618.475
 EASTING: 929696.182
 STATION: 2164+00
 OFFSET: 100.0 R
 ELEVATION: 11.0 FT
 DATE: 9/11/14



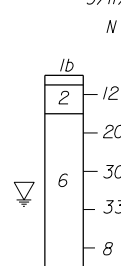
RB-2166L

NORTHING: 662868.639
 EASTING: 929594.521
 STATION: 2166+00
 OFFSET: 100.0 L
 ELEVATION: 10.0 FT
 DATE: 9/18/14



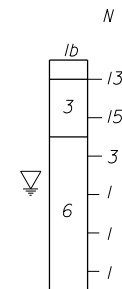
RB-2168R

NORTHING: 662991.274
 EASTING: 929842.070
 STATION: 2168+00
 OFFSET: 100.0 R
 ELEVATION: 9.0 FT
 DATE: 9/11/14



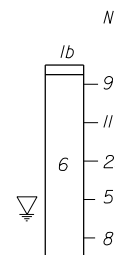
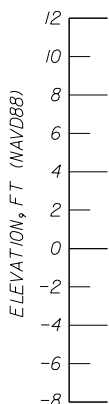
RB-2170L

NORTHING: 663241.791
 EASTING: 929738.766
 STATION: 2170+00
 OFFSET: 95.0 L
 ELEVATION: 9.5 FT
 DATE: 9/18/14



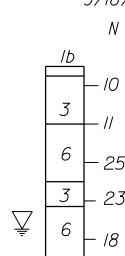
RB-2172R

NORTHING: 663361.539
 EASTING: 929989.612
 STATION: 2172+00
 OFFSET: 100.0 R
 ELEVATION: 9.0 FT
 DATE: 9/11/14



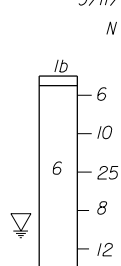
RB-2174L

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 EASTING: 929886.287
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 DATE: 9/18/14



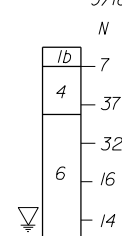
RB-2176R

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 EASTING: 930134.838
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 ELEVATION: 9.0 FT
 DATE: 9/11/14



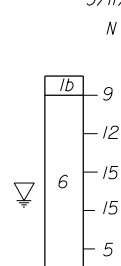
RB-2178L

NORTHING: 663988.867
 EASTING: 930034.133
 STATION: 2178+00
 OFFSET: 95.0 L
 ELEVATION: 10.5 FT
 DATE: 9/18/14



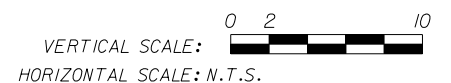
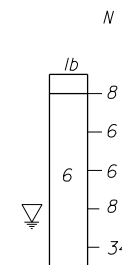
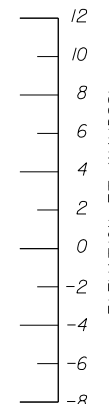
RB-2180R

NORTHING: 664107.508
 EASTING: 930282.028
 STATION: 2180+00
 OFFSET: 100.0 R
 ELEVATION: 9.0 FT
 DATE: 9/11/14



RB-2184R

NORTHING: 664477.027
 EASTING: 930426.286
 STATION: 2184+00
 OFFSET: 100.0 R
 ELEVATION: 8.5 FT
 DATE: 9/11/14



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SOIL PROFILES

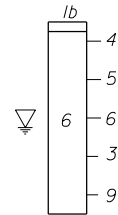
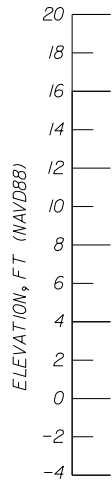
SHEET NO.

A-24

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

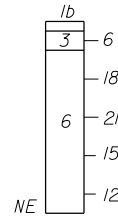
RB-2188R

NORTHING: 664835.034
 EASTING: 930588.986
 STATION: 2188+00
 OFFSET: 100.0 R
 ELEVATION: 8.0 FT
 DATE: 9/11/14



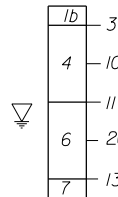
RB-2190L

NORTHING: 665098.478
 EASTING: 930517.746
 STATION: 2190+00
 OFFSET: 105.0 L
 ELEVATION: 13.0 FT
 DATE: 9/17/14



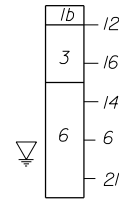
RB-2192R

NORTHING: 665179.049
 EASTING: 930780.312
 STATION: 2192+00
 OFFSET: 100.0 R
 ELEVATION: 8.5 FT
 DATE: 9/17/14



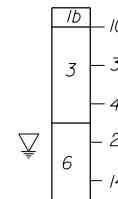
RB-2194L

NORTHING: 665446.920
 EASTING: 930719.212
 STATION: 2194+00
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 ELEVATION: 10.5 FT
 DATE: 9/17/14



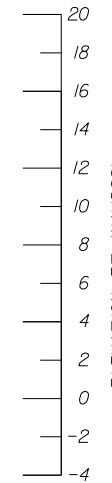
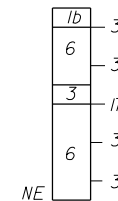
RB-2200L

NORTHING: 665965.388
 EASTING: 931018.643
 STATION: 2200+00
 OFFSET: 110.0 L
 ELEVATION: 10.0 FT
 DATE: 9/17/14



RB-2204L

NORTHING: 666318.484
 EASTING: 931208.590
 STATION: 2204+00
 OFFSET: 125.0 L
 ELEVATION: 15.0 FT
 DATE: 9/17/14



LEGEND:

- 1a. ASPHALT
- 1b. DARK ORGANIC SILTY FINE SAND (TOPSOIL), A-8
- 2. ORGANIC SILTY FINE SAND, A-8
- 3. LIMEROCK BASE OR SILTY FINE SAND WITH SOME LIMEROCK (FILL), A-1-b
- 4. SILTY FINE SAND WITH TRACES OF LIMEROCK (FILL) OR SILTY FINE SAND (FILL), A-2-4
- 5. SANDY SILT, A-4
- 6. FINE SAND WITH TRACES OF LIMEROCK/ LIMEROCK LENSES OR ORGANIC STAINED TO SLIGHTLY ORGANIC FINE SAND, A-3
- 7. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

▽ GROUND WATER LEVEL AT BORING COMPLETION

NE: NOT ENCOUNTERED

N: SPT VALUE FOR 12-INCH PENETRATION (AUTOMATIC HAMMER)

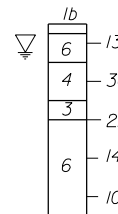
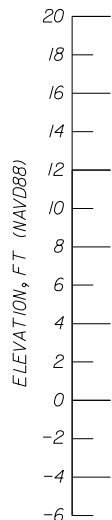
THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG

NOTE:

(1) STATIONS AND OFFSETS ARE REFERENCED TO SR 9 CONSTRUCTION BASELINE

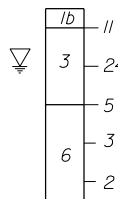
RB-2214L

NORTHING: 667184.787
 EASTING: 931670.428
 STATION: 2214+00
 OFFSET: 150.0 L
 ELEVATION: 4.0 FT
 DATE: 9/11/14

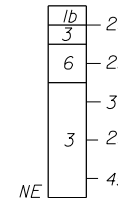


RB-2214R

NORTHING: 667098.855
 EASTING: 931872.717
 STATION: 2214+00
 OFFSET: 150.0 R
 ELEVATION: 5.5 FT
 DATE: 9/10/14



N

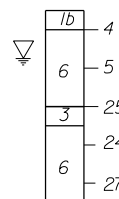


RB-2216L

NORTHING: 667348.778
 EASTING: 931790.735
 STATION: 2216+00
 OFFSET: 125.0 L
 ELEVATION: 18.0 FT
 DATE: 9/17/14

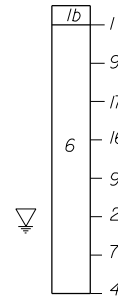
RB-2218L

NORTHING: 667542.463
 EASTING: 931837.373
 STATION: 2218+00
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 ELEVATION: 5.0 FT
 DATE: 9/17/14



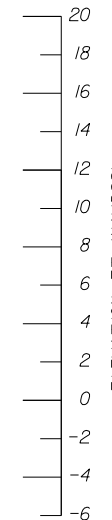
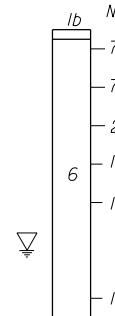
RB-2220L

NORTHING: 667720.867
 EASTING: 931937.903
 STATION: 2220+00
 OFFSET: 85.0 L
 ELEVATION: 14.0 FT
 DATE: 9/16/14



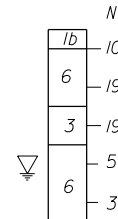
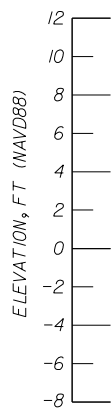
RB-2220R

NORTHING: 667661.887
 EASTING: 932092.125
 STATION: 2220+00
 OFFSET: 85.0 R
 ELEVATION: 14.0 FT
 DATE: 9/11/14



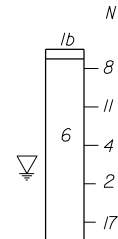
RB-2224L

NORTHING: 668093.986
 EASTING: 932075.550
 STATION: 2224+00
 OFFSET: 100.0 L
 ELEVATION: 10.0 FT
 DATE: 9/16/14



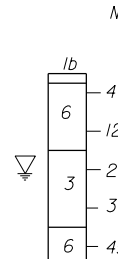
RB-2224R

NORTHING: 668033.257
 EASTING: 932240.279
 STATION: 2224+00
 OFFSET: 90.0 R
 ELEVATION: 9.0 FT
 DATE: 9/11/14



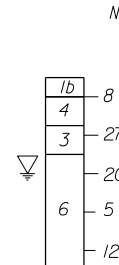
RB-2228L

NORTHING: 668480.467
 EASTING: 932199.660
 STATION: 2228+00
 OFFSET: 120.0 L
 ELEVATION: 8.0 FT
 DATE: 9/16/14



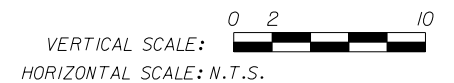
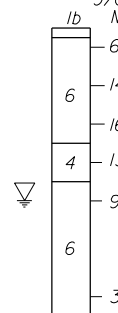
RB-2228R

NORTHING: 668395.655
 EASTING: 932406.200
 STATION: 2228+00
 OFFSET: 110.0 R
 ELEVATION: 7.5 FT
 DATE: 9/08/14



RB-2232R

NORTHING: 668773.124
 EASTING: 932541.845
 STATION: 2232+00
 OFFSET: 100.0 R
 ELEVATION: 11.5 FT
 DATE: 9/08/14



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

HR ENGINEERING SERVICES, INC.

Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
 Phone: (305) 888-8880 - Fax: (305) 888-8770
 Certificate of Authorization No. 7991

**STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION**

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SOIL PROFILES

SHEET NO.

A-25

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

RB-2284L

NORTHING: 673700.718
 EASTING: 934095.282
 STATION: 2284+00
 OFFSET: 95.0 L
 ELEVATION: 15.0 FT
 DATE: 9/12/14

RB-2284R

NORTHING: 673689.540
 EASTING: 934276.068
 STATION: 2284+00
 OFFSET: 100.0 R
 ELEVATION: 20.0 FT
 DATE: 8/29/14

RB-2289L

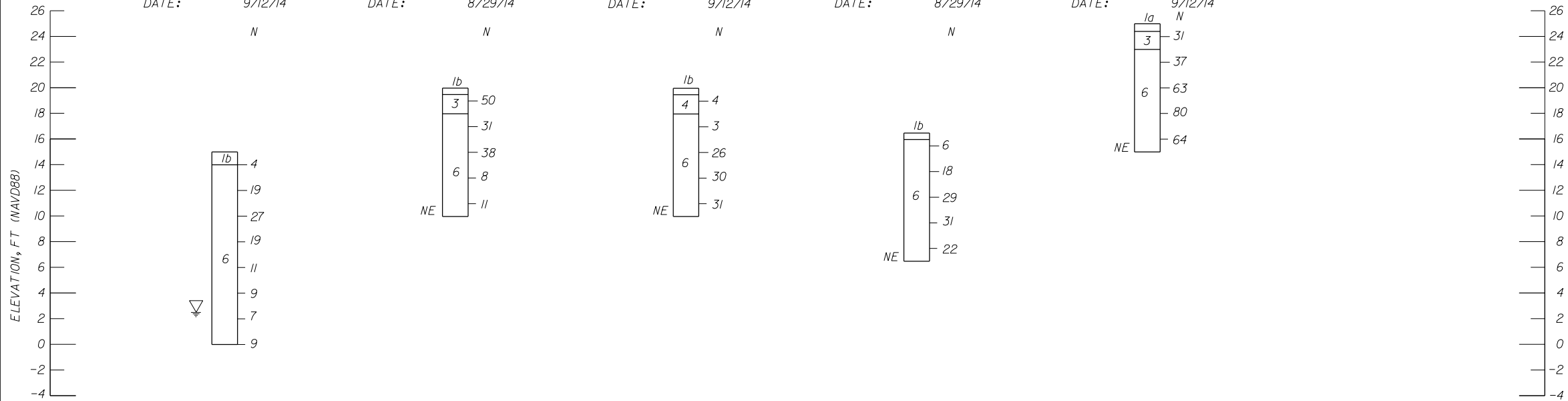
NORTHING: 674199.571
 EASTING: 934114.328
 STATION: 2289+00
 OFFSET: 95.0 L
 ELEVATION: 20.0 FT
 DATE: 9/12/14

RB-2289R

NORTHING: 674187.439
 EASTING: 934316.107
 STATION: 2289+00
 OFFSET: 100.0 R
 ELEVATION: 16.5 FT
 DATE: 8/29/14

RB-2292L

NORTHING: 674496.855
 EASTING: 934160.270
 STATION: 2292+00
 OFFSET: 70.0 L
 ELEVATION: 25.0 FT
 DATE: 9/12/14



LEGEND:

- 1a. ASPHALT
- 1b. DARK ORGANIC SILTY FINE SAND (TOPSOIL), A-8
- 2. ORGANIC SILTY FINE SAND, A-8
- 3. LIMEROCK BASE OR SILTY FINE SAND WITH SOME LIMEROCK (FILL), A-1-b
- 4. SILTY FINE SAND WITH TRACES OF LIMEROCK (FILL) OR SILTY FINE SAND (FILL), A-2-4
- 5. SANDY SILT, A-4
- 6. FINE SAND WITH TRACES OF LIMEROCK/ LIMESTONE LENSES OR ORGANIC STAINED TO SLIGHTLY ORGANIC FINE SAND, A-3
- 7. POROUS SANDY LIMESTONE AND CALCAREOUS FINE SAND

GROUND WATER LEVEL AT BORING COMPLETION

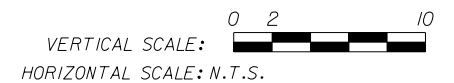
NE: NOT ENCOUNTERED

N: SPT VALUE FOR 12-INCH PENETRATION (AUTOMATIC HAMMER)

THE TEST BORINGS WERE PERFORMED BY HRES USING A CME-55 TRUCK MOUNTED RIG

NOTE:

- (1) STATIONS AND OFFSETS ARE REFERENCED TO SR 9 CONSTRUCTION BASELINE



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HR ENGINEERING SERVICES, INC.
 Hernando R. Ramos
 P.E. License No. 42045
 7815 NW 72nd Avenue Medley, Florida 33166
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	433108-4-52-01

SOIL PROFILES

SHEET NO.

A-26

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

BORING NO.
STATION
OFFSET
ELEVATION
COORDINATES
HAMMER
DATE

BHP-201
-
-
N671611.7'
E933382.7'
-
8/10/12

BHP-202
-
-
N670707.1'
E934026.3'
-
8/10/12

BHP-401
-
-
N675150.4'
E934088.4'
-
8/10/12

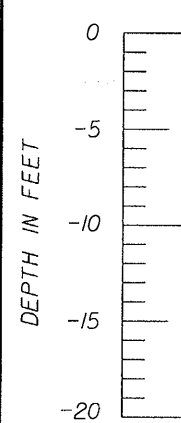
BHP-402
-
-
N674950.8'
E934454.1'
-
8/10/12

BHP-501
-
-
N680721.6'
E936784.7'
-
8/8/12

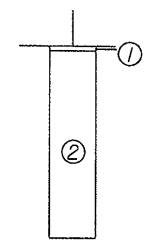
BHP-502
-
-
N680520.9'
E936968.2'
-
8/8/12

BHP-801
-
-
N690834.3'
E939085.7'
-
8/8/12

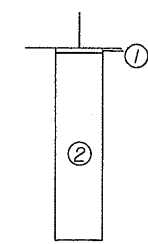
BHP-802
-
-
N690735.2'
E939359.6'
-
8/8/12



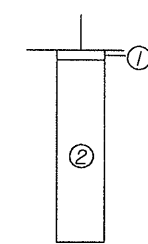
6.0' ▽
8/10/12



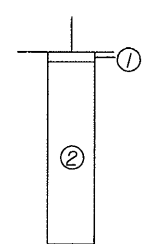
4.0' ▽
8/10/12



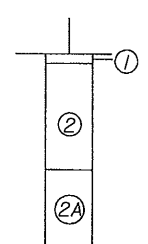
7.5' ▽
8/10/12



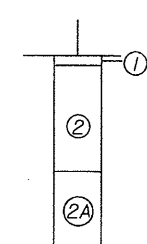
6.4' ▽
8/10/12



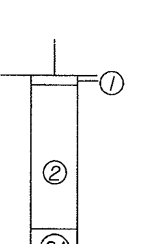
7.5' ▽
8/8/12



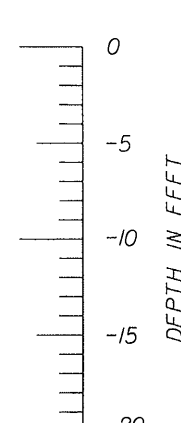
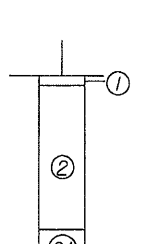
9.0' ▽
8/8/12



6.0' ▽
8/8/12



7.7' ▽
8/8/12



PHASE 3A-1

BORING NO.
STATION
OFFSET
ELEVATION
COORDINATES
HAMMER
DATE

BHP-1101
-
-
N701444.1'
E940198.6'
-
8/8/12

BHP-1102
-
-
N701242.8'
E940291.0'
-
8/7/12

BHP-1201
-
-
N706711.7'
E942712.3'
-
8/7/12

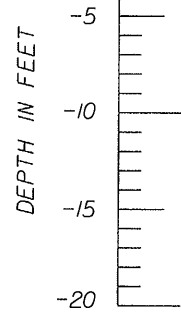
BHP-1202
-
-
N706411.3'
E943078.4'
-
8/7/12

BHP-1301
-
-
N722482.4'
E945426.6'
-
8/6/12

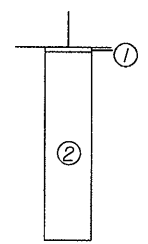
BHP-1302
-
-
N722182.0'
E945792.6'
-
8/6/12

BHP-1300A-1
-
-
N717326.0'
E944460.7'
-
8/7/12

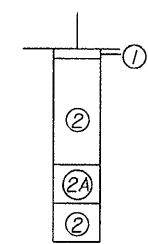
BHP-1300A-2
-
-
N717529.8'
E944732.4'
-
8/7/12



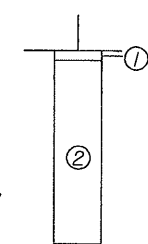
6.0' ▽
8/8/12



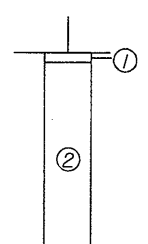
7.0' ▽
8/7/12



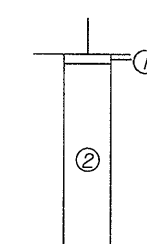
8.4' ▽
8/7/12



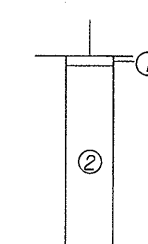
4.4' ▽
8/7/12



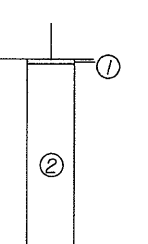
7.3' ▽
8/6/12



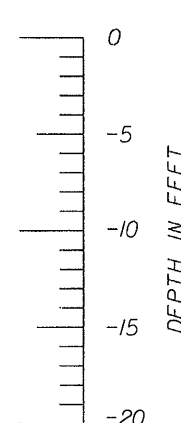
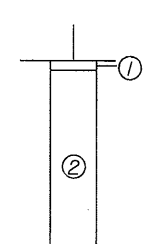
6.0' ▽
8/6/12



7.4' ▽
8/7/12



5.4' ▽
8/7/12



LEGEND

- 1. DARK BROWN TO BROWN SAND WITH SILT, SOME ORGANIC STAIN, SOME GRASS ROOTS, SOMETIMES WITH SOME LIMEROCK GRAVEL (TOPSOIL) (A-8)
- 2. LIGHT BROWN TO BROWN SAND WITH SILT, SOMETIMES WITH SOME ORGANIC STAIN, SOMETIMES WITH SOME LIMEROCK FRAGMENTS (A-3)
- 2A. LIGHT BROWN TO BROWN SAND AND LIMEROCK FRAGMENTS, WITH SILT TO SLIGHTLY SILTY (A-3/A-I-b)

NOTES

- ▽ GROUNDWATER LEVEL RECORDED, ON THE DATE OF DRILLING.
- GNE: WATER TABLE NOT ENCOUNTERED WITHIN THE DEPTH OF EXPLORATION.
- COORDINATES REPORTED ARE APPROXIMATE AND MEASURED BY FIELD CREW WITH HANDHELD GPS EQUIPMENT.
- (A-3) - AASHTO SOIL SYMBOL

SCALE: 1"=10'V

GCME PROJECT NO. 2000-01-05015

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

GCME PARTHA GHOSH, P.E.
LICENSE NO. 51377
CERTIFICATE OF AUTHORIZATION NO. 9076
6903 VISTA PARKWAY NORTH, SUITE 8
WEST PALM BEACH, FLORIDA 33411

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	BROWARD	409359-1-22-01

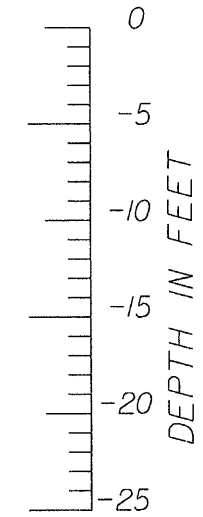
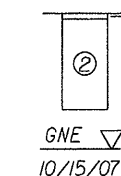
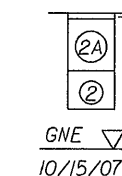
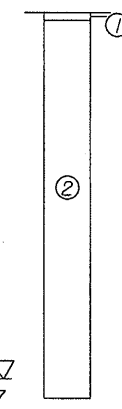
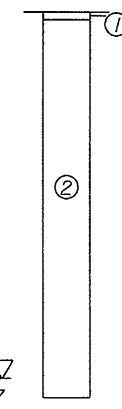
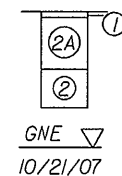
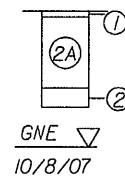
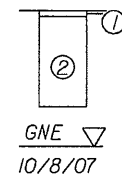
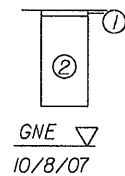
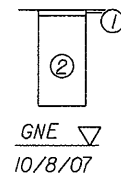
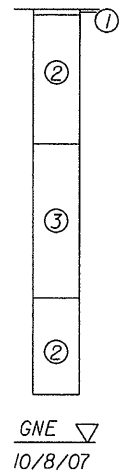
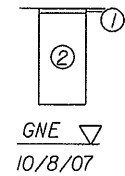
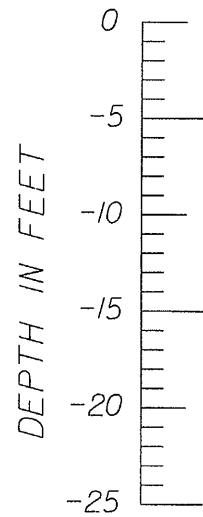
SOIL PROFILES

SHEET NO.
A-27

FIGURE: BHP-1 NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

BORING NO.
STATION
OFFSET
ELEVATION
COORDINATES
HAMMER
DATE

W97	W98	W99	W100	W101	W102	W103	W104	W106	W107	W108
82+50	77+50	832+50	827+50	822+50	817+50	812+50	802+50	797+50	792+50	787+50
78.7' LT	91.8' LT	91.0' LT	91.8' LT	105.0' LT	80.4' LT	90.6' LT	110.8' LT	90.5' LT	87.2' LT	121.4' LT
-	-	-	-	-	-	-	-	-	-	-
N678689.4' E935021.5'	N678254.5' E934755.5'	N677602.0' E934491.9'	N677107.4' E934366.6'	N676609.1' E934275.1'	N676103.6' E934253.8'	N675605.4' E934210.8'	N674608.9' E934125.0'	N674108.6' E934112.5'	N673609.5' E934082.9'	N673133.6' E933984.7'
-	-	-	-	-	-	-	-	-	-	-
10/8/07	10/8/07	10/8/07	10/8/07	10/8/07	10/8/07	10/21/07	10/8/07	10/8/07	10/15/07	10/15/07



PHASE 3A-1

LEGEND

1. DARK BROWN TO BROWN SAND WITH SILT, SOME ORGANIC STAIN, SOME GRASS ROOTS, SOMETIMES WITH SOME LIMEROCK GRAVEL (TOPSOIL) (A-8)
2. LIGHT BROWN TO BROWN SAND WITH SILT, SOMETIMES WITH SOME ORGANIC STAIN, SOMETIMES WITH SOME LIMEROCK FRAGMENTS (A-3)
- 2A. LIGHT BROWN TO BROWN SAND AND LIMEROCK FRAGMENTS, WITH SILT TO SLIGHTLY SILTY (A-3/A-1-b)
3. LIGHT BROWN TO BROWN SAND, SLIGHTLY SILTY TO SILTY, SOMETIMES WITH SOME LIMEROCK FRAGMENTS (A-2-4)
4. LIGHT GRAY TO GRAY SILTY SAND (A-4)

NOTES

- ∇ GROUNDWATER LEVEL RECORDED, ON THE DATE OF DRILLING.
- GNE: WATER TABLE NOT ENCOUNTERED WITHIN THE DEPTH OF EXPLORATION.
- STATION, OFFSET AND COORDINATES REPORTED ARE PROVIDED BY THE SURVEYORS.
- (A-3) - AASHTO SOIL SYMBOL

SCALE: 1"=10'V

GCME PROJECT NO. 2000-01-05015

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GCME PARTHA GHOSH, P.E.
LICENSE NO. 51377
CERTIFICATE OF AUTHORIZATION NO. 9076
6903 VISTA PARKWAY NORTH, SUITE 8
WEST PALM BEACH, FLORIDA 33411

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	409359-1-22-01

**SOIL PROFILES
I-95 SOUTH BOUND**

SHEET NO.
A-28

FIGURE: W-6 NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6105-23.003, F.A.C.

BORING NO.
STATION
OFFSET
ELEVATION
COORDINATES

E2
791+00
129.5' RT
N673441.6'
E934287.6'

E3
795+00
189.0' RT
N673840.8'
E934375.0'

E4
800+00
82.5' RT
N674346.7'
E934301.5'

E5
805+00
88.1' RT
N674845.3'
E934339.9'

E6
810+00
82.6' RT
N675344.6'
E934367.2'

E7
815+00
82.0' RT
N675843.5'
E934399.4'

E8
820+00
104.8' RT
N676338.2'
E934457.1'

E9
825+00
106.4' RT
N676827.3'
E934519.1'

E10
830+00
96.5' RT
N677310.6'
E934604.3'

E11
835+00
95.7' RT
N677776.9'
E934750.1'

E12
75+00
93.8' RT
N677949.6'
E934818.0'

HAMMER
DATE

10/22/07

10/3/07

10/3/07

10/10/07

10/10/07

10/10/07

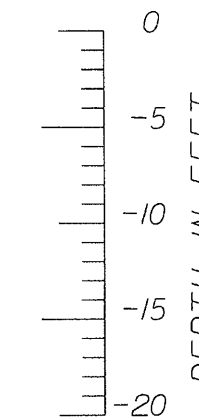
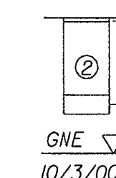
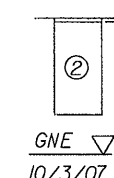
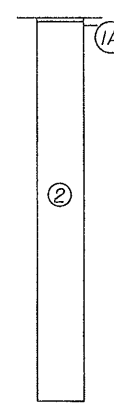
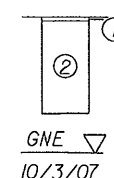
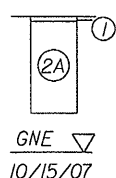
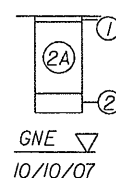
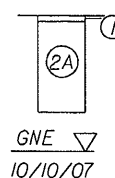
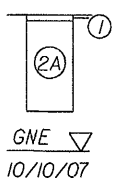
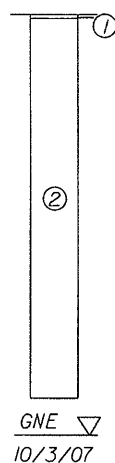
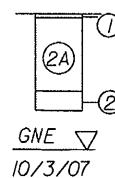
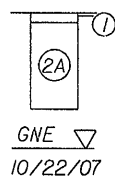
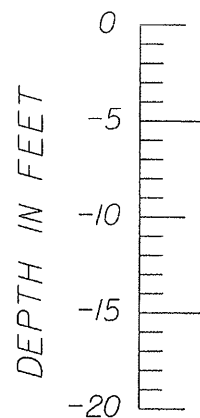
10/15/07

10/3/07

10/3/07

10/3/07

10/3/07



PHASE 3A-1

19.0' ∇
10/3/07

BORING NO.
STATION
OFFSET
ELEVATION
COORDINATES

E13
80+00
96.9' RT
N678384.9'
E935040.0'

E14
85+00
95.8' RT
N678793.8'
E935307.4'

E15
90+00
106.5' RT
N679160.8'
E935629.2'

E16
95+00
151.0' RT
N679491.2'
E936006.2'

E17
100+00
91.3' RT
N679894.0'
E936308.3'

E18
105+00
94.6' RT
N680253.4'
N936656.0'

E19
115+00
101.9' RT
N680971.7'
E937351.8'

E20
120+00
147.7' RT
N681301.6'
E937730.3'

E21
125+00
84.0' RT
N681707.2'
E938029.5'

E22
130+00
89.4' RT
N682066.2'
E938379.3'

E24
145+00
98.6' RT
N683361.4'
E939188.3'

HAMMER
DATE

10/4/07

10/4/07

10/4/07

10/4/07

10/4/07

10/4/07

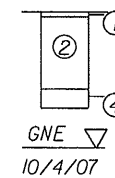
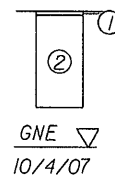
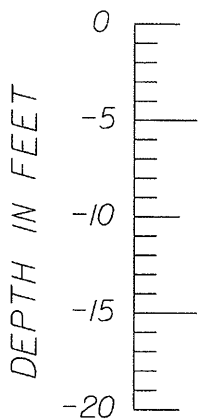
10/4/07

10/4/07

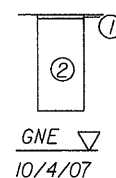
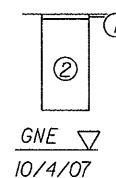
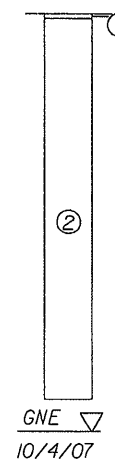
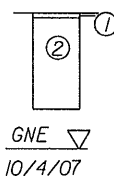
10/4/07

10/19/07

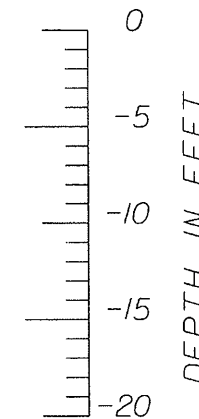
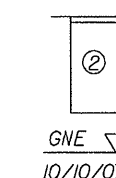
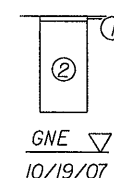
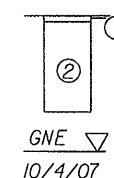
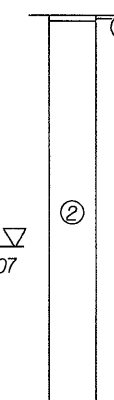
10/10/07



5.0' ∇
10/4/07



12.0' ∇
10/4/07



LEGEND

1. DARK BROWN TO BROWN SAND WITH SILT, SOME ORGANIC STAIN, SOME GRASS ROOTS, SOMETIMES WITH SOME LIMEROCK GRAVEL (TOPSOIL) (A-8)
2. LIGHT BROWN TO BROWN SAND WITH SILT, SOMETIMES WITH SOME ORGANIC STAIN, SOMETIMES WITH SOME LIMEROCK FRAGMENTS (A-3)
- 2A. LIGHT BROWN TO BROWN SAND AND LIMEROCK FRAGMENTS, WITH SILT TO SLIGHTLY SILTY (A-3/A-1-b)
3. LIGHT BROWN TO BROWN SAND, SLIGHTLY SILTY TO SILTY, SOMETIMES WITH SOME LIMEROCK FRAGMENTS (A-2-4)
4. LIGHT GRAY TO GRAY SILTY SAND (A-4)

NOTES

- ∇ GROUNDWATER LEVEL RECORDED, ON THE DATE OF DRILLING.
- GNE: WATER TABLE NOT ENCOUNTERED WITHIN THE DEPTH OF EXPLORATION.
- STATION, OFFSET AND COORDINATES REPORTED ARE PROVIDED BY THE SURVEYORS.
- (A-3) - AASHTO SOIL SYMBOL

SCALE: 1"=10'V

GCME PROJECT NO. 2000-01-05015

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GCME PARTHA GHOSH, P.E.
LICENSE NO. 51377
CERTIFICATE OF AUTHORIZATION NO. 9076
6903 VISTA PARKWAY NORTH, SUITE 8
WEST PALM BEACH, FLORIDA 33411

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	409359-1-22-01

**SOIL PROFILES
I-95 NORTH BOUND**

SHEET
NO.

A-29

FIGURE E-1 NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

SUMMARY OF PERCOLATION TEST RESULTS
USUAL OPEN-HOLE - FDOT METHOD
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD. – PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT No. 433108-4-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT NO. HR12-891R
DECEMBER 3, 2014

A-30

TEST No.	TEST DATE	STATION	OFFSET, ft	DEPTH TO WATER BEFORE TEST, H ft	DEPTH TO WATER DURING TEST ft	HEAD, Du ft	HOLE DEPTH ft	HOLE DIAMETER, d inches	RATE OF FLOW, P		k, HYDRAULIC CONDUCTIVITY cfs/ft ² -ft. Head
									gpm	cfs	
P-8	04/02/12	1241+25	370.0 L	11.2	0.0	11.2	15.0	6.0	4.5	0.01003	6.1E-05
P-1246	11/06/14	1245+00	210.0 R	3.0	0.0	3.0	15.0	6.0	3.9	0.00869	1.4E-04
P-9	04/02/12	2006+35	115.0 R	10.7	0.0	10.7	15.0	6.0	7.6	0.01693	1.0E-04
P-2042	09/20/14	2042+00	130.0 R	7.3	0.0	7.3	15.0	6.0	6.1	0.01359	1.0E-04
P-11	04/05/12	2045+20	550.0 L	8.4	0.0	8.4	15.0	6.0	15.0	0.03342	2.3E-04
P-10	04/03/12	2045+65	50.0 R	5.8	0.0	5.8	15.0	6.0	1.7	0.00379	3.5E-05
P-12	04/05/12	2071+35	100.0 L	10.4	0.0	10.4	15.0	6.0	19.0	0.04234	2.6E-04
P-13	04/04/12	2096+10	160.0 L	6.8	0.0	6.8	15.0	6.0	1.0	0.00223	1.8E-05
P-14	04/03/12	2108+50	115.0 R	9.7	0.0	9.7	15.0	6.0	12.9	0.02874	1.9E-04
P-15	04/04/12	2134+30	110.0 L	12.0	0.0	12.0	15.0	6.0	20.0	0.04456	2.6E-04
P-16	04/04/12	2180+35	135.0 L	10.6	0.0	10.6	15.0	6.0	12.0	0.02674	1.7E-04
P-2210	09/13/14	2210+00	140.0 R	7.8	0.0	7.8	15.0	6.0	2.2	0.00490	3.6E-05
P-2216	09/13/14	2216+00	210.0 R	3.5	0.0	3.5	15.0	6.0	4.0	0.00891	1.2E-04
P-17	04/03/12	2219+55	210.0 L	3.0	0.0	3.0	15.0	6.0	1.9	0.00423	6.7E-05
P-2222	09/13/14	2222+00	160.0 R	4.0	0.0	4.0	15.0	6.0	4.3	0.00958	1.2E-04
P-18	04/03/12	2230+70	145.0 R	4.0	0.0	4.0	15.0	6.0	0.5	0.00111	1.4E-05
P-2292	09/20/14	2292+00	250.0 R	5.0	0.0	5.0	15.0	6.0	5.6	0.01248	1.3E-04

for 0 to 15 ft., $K_{15} = P / 3.1416 * d * Du \{ Du/2 + Ds \}$, where $Ds = \text{Hole Depth} - H$

FIELD TESTING PROCEDURES

Test Borings – The test borings were made in general accordance with ASTM-D-1586, "Penetration Test and Split-Barrel Sampling of Soils." Each boring was advanced using a 3-inch ID casing using a tripod drilling equipment. After driving each spoon, the drilling tools were removed and soil samples were obtained with a standard 1.4-inch I.D., 2-inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140-lb safety hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Penetration Resistance". The penetration resistance, when properly interpreted, is an index to the soil strength and density.

Percolation Testing - The percolation tests were performed in order to estimate the hydraulic conductivity of the materials encountered. The Constant Head method was used. The general procedures outlined in the FDOT District 6, Drainage Section were followed. Each test was performed in a 6.0-inch outside diameter hole initially pre-drilled to a depth of 15 feet below the existing ground surface, using an hollow stem auger. Each borehole was then filled with water and the water level maintained as close as possible to the ground surface. Once the inflow stabilized or came into equilibrium with the outflow rate or seepage, the amount of water added for a period of 10 minutes was recorded and the percolation rate calculated and reported in units of cfs/ft.²-ft. of head.

APPENDIX B

**SUMMARY OF LABORATORY TEST RESULTS
LABORATORY TESTING PROCEDURES
LABORATORY TEST RESULTS**

- SOIL TESTING**
- CORROSION TESTING**
- GRAIN SIZE – D₅₀ RESULTS**

**B-1 THRU B-6
B-7**

SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-1248R	A-1-b	3	0.5-2.0	95	83	69	55	39	33	23	17	-	6	31	52	17
RB-1248R	A-3	6	8.0-9.7	100	97	94	93	85	67	22	8	-	13	6	86	8
RB-1252R	A-1-b	3	2.0-4.0	78	68	59	54	47	41	20	8	-	3	41	51	8
RB-1252R	A-2-4	4	4.0-6.0	100	96	91	86	77	64	31	17	-	7	9	74	17
RB-1252R	A-1-b	3	7.5-8.0	100	76	64	48	33	28	21	15	-	4	36	49	15
RB-1252R	A-1-b	3	8.0-10.0	90	78	69	59	46	35	21	13	-	5	31	56	13
RB-2002R	A-3	6	0.5-2.0	87	86	83	80	71	48	12	4	-	4	17	79	4
RB-2002R	A-3	6	2.0-4.0	100	98	93	89	77	52	12	5	-	5	7	88	5
RB-2002R	A-3	6	4.0-6.0	100	99	97	94	84	58	17	8	-	7	3	89	8
RB-2002R	A-2-4	4	6.0-8.0	99	88	80	74	61	44	20	12	-	8	20	68	12
RB-2006R	A-1-b	3	1.0-2.0	100	57	55	49	36	31	22	15	-	1	45	40	15
RB-2006R	A-3	6	2.0-4.0	-	-	-	-	-	-	-	4	-	11	-	-	4
RB-2006R	A-3	6	8.0-10.0	-	-	-	-	-	-	-	3	2	23	-	-	3
RB-2010R	A-3	6	2.0-3.2	-	-	-	-	-	-	-	3	-	16	-	-	3
RB-2010R	A-3	6	3.2-4.0	-	-	-	-	-	-	-	9	-	21	-	-	9
RB-2014R	A-1-b	3	0.5-2.0	98	94	83	69	50	43	31	23	-	3	17	60	23
RB-2014R	A-3	6	2.0-3.0	100	85	79	75	63	44	19	10	-	5	21	69	10
RB-2014R	A-2-4	4	4.0-5.0	88	74	67	63	52	35	16	11	-	5	33	56	11

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SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-2014R	A-3	6	8.0-10.0	-	-	-	-	-	-	-	4	4	1	-	-	4
RB-2026CL	A-3	6	1.0-2.0	100	97	94	92	78	55	28	5	-	12	6	89	5
RB-2028CR	A-1-b	3	0.5-2.0	97	85	73	63	48	36	16	8	-	8	27	65	8
RB-2028CR	A-3	6	2.0-4.0	95	87	84	80	67	43	17	8	-	7	16	76	8
RB-2032CR	A-1-b	3	0.5-2.0	91	73	60	48	34	29	20	14	-	8	40	46	14
RB-2032CR	A-1-b	3	2.0-2.8	89	76	66	57	45	36	21	12	-	9	34	54	12
RB-2036CR	A-1-b	3	0.5-2.0	90	79	67	54	36	31	21	15	-	9	33	52	15
RB-2036CR	A-3	6	6.0-8.0	-	-	-	-	-	-	-	6	2	22	-	-	6
RB-2036L	A-3	6	2.0-4.0	100	100	100	100	98	82	28	4	-	26	0	96	4
RB-2036R	A-3	6	4.0-6.0	-	-	-	-	-	-	-	3	1	4	-	-	3
RB-2038R	A-3	6	1.0-2.0	-	-	-	-	-	-	-	8	2	1	-	-	8
RB-2040CL	A-3	6	0.5-2.0	92	87	79	75	59	39	17	10	-	7	21	69	10
RB-2040CL	A-3	6	2.0-4.0	93	91	90	89	73	37	13	4	-	6	10	86	4
RB-2040CL	A-2-4	4	8.0-9.0	-	-	-	-	-	-	-	15	-	26	-	-	15
RB-2040R	A-3	6	1.0-2.0	-	-	-	-	-	-	-	4	-	1	-	-	4
RB-2040R	A-3	6	2.0-3.0	-	-	-	-	-	-	-	4	-	3	-	-	4
RB-2042CL	A-3	6	2.0-4.0	100	97	95	94	84	50	18	5	-	6	5	90	5
RB-2042CR	A-1-b	3	0.5-1.5	77	70	61	53	37	26	18	13	-	6	39	48	13

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SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-2046CL	A-3	6	4.0-6.0	100	100	99	99	96	81	37	7	-	25	1	92	7
RB-2046CR	A-2-4	4	5.5-6.0	-	-	-	-	-	-	-	29	-	37	-	-	29
RB-2046CR	A-4	5	6.0-7.0	-	-	-	-	-	-	-	57	-	48	-	-	57
RB-2050CL	A-1-b	3	0.5-1.5	95	86	73	59	44	35	22	15	-	5	27	58	15
RB-2050CR	A-3	6	0.5-2.0	94	87	78	72	60	41	17	10	-	8	22	68	10
RB-2058R	A-1-b	3	0.5-2.0	76	74	65	57	45	33	18	10	-	5	35	55	10
RB-2058R	A-2-4	4	2.0-4.0	100	96	88	79	65	53	36	23	-	3	12	65	23
RB-2058R	A-1-b	3	4.0-6.0	85	77	68	58	45	36	20	9	-	4	32	59	9
RB-2062CR	A-1-b	3	0.3-2.0	89	79	69	57	40	34	26	19	-	10	31	50	19
RB-2066CL	A-1-b	3	0.5-2.0	100	90	76	61	43	37	28	20	-	25	24	56	20
RB-2084L	A-3	6	1.5-2.0	100	99	98	97	91	72	25	6	-	9	2	92	6
RB-2088CR	A-3	6	2.0-4.0	100	95	94	93	85	60	20	6	-	4	6	88	6
RB-2088CR	A-3	6	8.0-10.0	-	-	-	-	-	-	-	5	1	31	-	-	5
RB-2092CR	A-3	6	4.0-6.0	-	-	-	-	-	-	-	8	2	8	-	-	8
RB-2092CR	A-3	6	8.0-10.0	-	-	-	-	-	-	-	6	2	18	-	-	6
RB-2096CR	A-1-b	3	0.5-2.0	-	-	-	-	-	-	-	9	2	11	-	-	9
RB-2096L	A-3	6	2.0-4.0	-	-	-	-	-	-	-	3	2	7	-	-	3
RB-2096L	A-3	6	8.0-10.0	-	-	-	-	-	-	-	3	2	21	-	-	3

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SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-2100CR	A-3	6	6.0-8.0	100	100	100	100	96	64	5	3	-	22	0	97	3
RB-2100L	A-3	6	8.0-9.0	100	100	100	100	97	71	9	6	-	40	0	94	6
RB-2104L	A-3	6	2.0-4.0	100	98	97	96	88	62	21	6	-	5	3	91	6
RB-2104R	A-2-4	4	0.5-2.0	92	78	70	64	51	34	15	11	-	6	30	59	11
RB-2110L	A-3	6	5.0-6.0	-	-	-	-	-	-	-	3	3	17	-	-	3
RB-2110R	A-3	6	6.0-8.0	100	100	100	100	92	55	7	3	-	5	0	97	3
RB-2118L	A-1-b	3	0.5-2.0	81	66	58	49	38	26	13	8	-	7	42	50	8
RB-2118R	A-3	6	2.0-4.0	100	94	84	72	55	40	17	4	-	1	16	80	4
RB-2122L	A-3	6	4.0-6.0	-	-	-	-	-	-	-	3	1	8	-	-	3
RB-2122R	A-3	6	7.0-8.0	-	-	-	-	-	-	-	8	5	17	-	-	8
RB-2122R	A-3	6	8.0-10.0	-	-	-	-	-	-	-	8	5	18	-	-	8
RB-2126R	A-3	6	2.0-3.0	-	-	-	-	-	-	-	4	3	8	-	-	4
RB-2126R	A-3	6	6.0-8.0	-	-	-	-	-	-	-	3	2	21	-	-	3
RB-2130R	A-3	6	8.0-10.0	100	100	100	98	61	17	4	2	3	16	0	98	2
RB-2134R	A-3	6	0.5-2.0	-	-	-	-	-	-	-	5	2	5	-	-	5
RB-2142R	A-3	6	2.0-3.5	-	-	-	-	-	-	-	3	4	11	-	-	3
RB-2164R	A-3	6	2.0-3.0	-	-	-	-	-	-	-	-	3	11	-	-	-
RB-2164R	A-3	6	3.0-4.0	100	98	96	94	73	35	6	1	2	6	4	95	1

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SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
RB-2166L	A-1-b	3	2.0-4.0	-	-	-	-	-	-	-	7	2	10	-	-	7
RB-2170L	A-3	6	4.0-6.0	98	93	89	85	66	39	10	4	-	6	11	85	4
RB-2172R	A-3	6	7.0-8.0	100	99	99	98	79	35	5	1	3	18	1	98	1
RB-2174L	A-3	6	7.0-8.0	100	98	94	90	69	32	7	2	2	14	6	92	2
RB-2174L	A-3	6	8.0-9.0	100	99	98	97	68	32	9	3	1	16	2	95	3
RB-2176R	A-3	6	0.5-2.0	-	-	-	-	-	-	-	5	2	2	-	-	5
RB-2178L	A-2-4	4	2.0-3.5	91	81	73	65	54	45	22	11	-	8	27	62	11
RB-2180R	A-3	6	5.0-6.0	100	100	100	100	75	29	4	1	2	5	0	99	1
RB-2184R	A-3	6	1.0-2.0	-	-	-	-	-	-	-	4	2	2	-	-	4
RB-2184R	A-3	6	7.0-8.0	100	99	98	98	79	39	6	1	3	19	2	97	1
RB-2188R	A-3	6	2.0-3.0	100	100	100	100	82	38	5	1	4	7	0	99	1
RB-2190L	A-3	6	2.0-4.0	-	-	-	-	-	-	-	4	1	8	-	-	4
RB-2194L	A-3	6	8.5-9.5	100	100	100	100	81	41	7	1	3	14	0	99	1
RB-2200L	A-1-b	3	2.0-4.0	-	-	-	-	-	-	-	7	2	12	-	-	7
P-2210	A-3	6	6.0-8.0	-	-	-	-	-	-	-	8	2	13	-	-	8
P-2210	A-3	6	8.0-11.0	-	-	-	-	-	-	-	6	2	20	-	-	6
RB-2214L	A-2-4	4	2.0-4.0	92	85	79	75	64	43	18	12	-	14	21	67	12
RB-2214R	A-3	6	6.0-8.0	100	100	100	100	82	45	8	2	-	20	0	98	2

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SUMMARY OF LABORATORY TEST RESULTS
SR 9/I-95 CDC, FROM SOUTH OF DAVIE BLVD. TO NORTH OF WEST COMMERCIAL BLVD.-PHASE 3A-1
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4
FINANCIAL PROJECT ID No. 433108-1-52-01
BROWARD COUNTY, FLORIDA
HR ENGINEERING SERVICES, INC.
HRES PROJECT No. HR12-891R
DECEMBER 3, 2014

Test Boring No.	AASHTO Class.	Stratum No.	Sample Depth (ft)	Grain Size Distribution - Percent Passing								Organic Loss of Ignition, %	Moisture Content %	Material in Sample, %		
				3/4"	3/8"	No. 4	No. 10	No. 40	No. 60	No. 100	No. 200			Gravel	Sand	Fines
P-2216	A-3	6	3.0-4.0	-	-	-	-	-	-	-	5	7	20	-	-	5
RB-2218L	A-3	6	1.0-2.0	-	-	-	-	-	-	-	4	2	7	-	-	4
RB-2220R	A-3	6	13.0-14.0	-	-	-	-	-	-	-	5	6	23	-	-	5
P-2222	A-3	6	0.3-2.0	-	-	-	-	-	-	-	6	2	9	-	-	6
RB-2224L	A-3	6	2.0-4.0	100	100	99	98	77	46	12	4	-	8	1	95	4
RB-2224R	A-3	6	0.5-2.0	-	-	-	-	-	-	-	8	2	3	-	-	8
RB-2228R	A-2-4	4	2.0-2.5	-	-	-	-	-	-	-	-	5	9	-	-	-
RB-2232R	A-3	6	0.5-1.5	-	-	-	-	-	-	-	10	4	6	-	-	10
RB-2232R	A-3	6	6.0-8.0	100	100	100	99	71	32	5	1	4	15	0	99	1
RB-2284L	A-3	6	10.0-12.0	100	100	100	100	82	41	8	4	-	9	0	96	4
RB-2284L	A-3	6	13.0-14.0	100	100	100	100	77	30	4	1	2	21	0	99	1
RB-2284R	A-3	6	7.0-8.0	100	100	100	97	64	23	4	1	3	16	0	99	1
RB-2289L	A-3	6	0.5-1.5	-	-	-	-	-	-	-	6	1	8	-	-	6
RB-2289R	A-3	6	2.0-4.0	100	97	96	95	82	44	17	10	-	5	4	86	10

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LABORATORY TESTING PROCEDURES

Grain Size Distribution – The grain size tests were performed to determine the particle size and distribution of sample tested. Each Sample was dried, weighed, and washed over a # 200 mesh sieve. The dried sample was then passed through a standard set nested sieves to determine the grain size distribution of the soil particles coarser than the # 200 sieves. This test was conducted in general accordance with ASTM D-22.

Percent Fines Content – In this test, the sample is dried and then washed over a # 200 mesh sieve. The percentage of soil by weight passing the sieve is the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in general accordance with ASTM D-1140.

Percent Organics (Organic Loss on Ignition) – The amount of organic material in a sample is determined in this test. The sample is first dried and weighed, then ignited and reweighed. The amount of organic material is expressed as a percentage.

Water Content – The water content is the ratio, expressed as a percentage of the weight of water in a given mass of soil to the weight of the soil particles. This test was conducted in general accordance with ASTM D-2216.

HR ENGINEERING SERVICES, INC.
 7815 N.W. 72nd Avenue - Medley, Florida 33166
 Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-1248R		Sample No.: 1B				
Date: 10/16/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	26.70	26.70	5	95	
3/8"	9.51	59.90	86.60	17	83	
4	4.76	67.30	153.90	31	69	AASHTO Classification:
10	2.00	64.90	218.80	45	55	
40	0.420	79.70	298.50	61	39	A-1-b
60	0.250	29.10	327.60	67	33	
100	0.149	48.50	376.10	77	23	
200	0.074	31.70	407.80	83	17	
PAN						

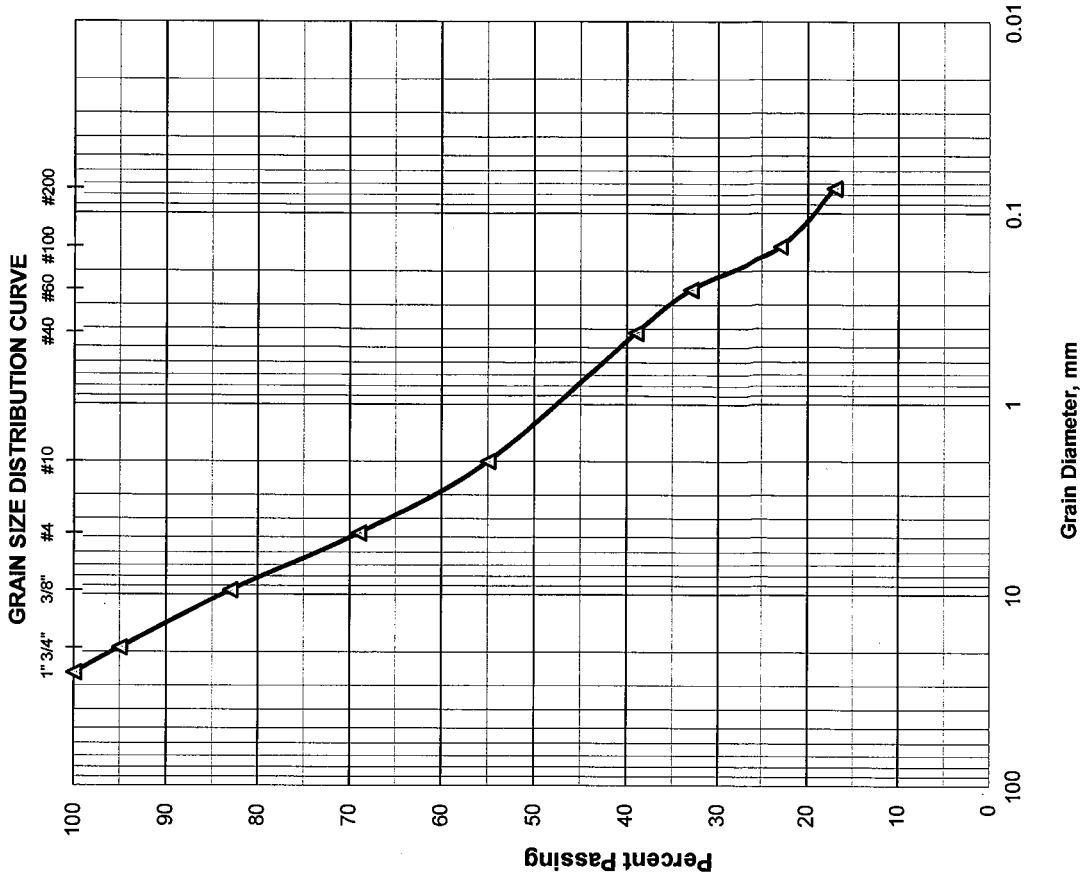
Total Dry Weight Before Wash, (gr) = **486.00**
 Percent Finer than No. 200 Sieve by Wash Method = **17%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	31
Coarse Sand	>No. 4-≤ No. 40	30
Fine Sand	>No. 40-≤ No. 200	22
Silt and Clays	>No. 200	17
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-991R				
Boring No.: RB-1248R		Sample No.: 5A				
Date: 10/16/2014		Depth: 8.0'-9.7'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	13.60	13.60	3	97	
4	4.76	8.60	22.20	6	94	AASHTO Classification:
10	2.00	5.10	27.30	7	93	
40	0.420	27.90	55.20	15	85	A-3
60	0.250	67.90	123.10	33	67	
100	0.149	164.50	287.60	78	22	
200	0.074	50.60	338.20	92	8	
PAN						

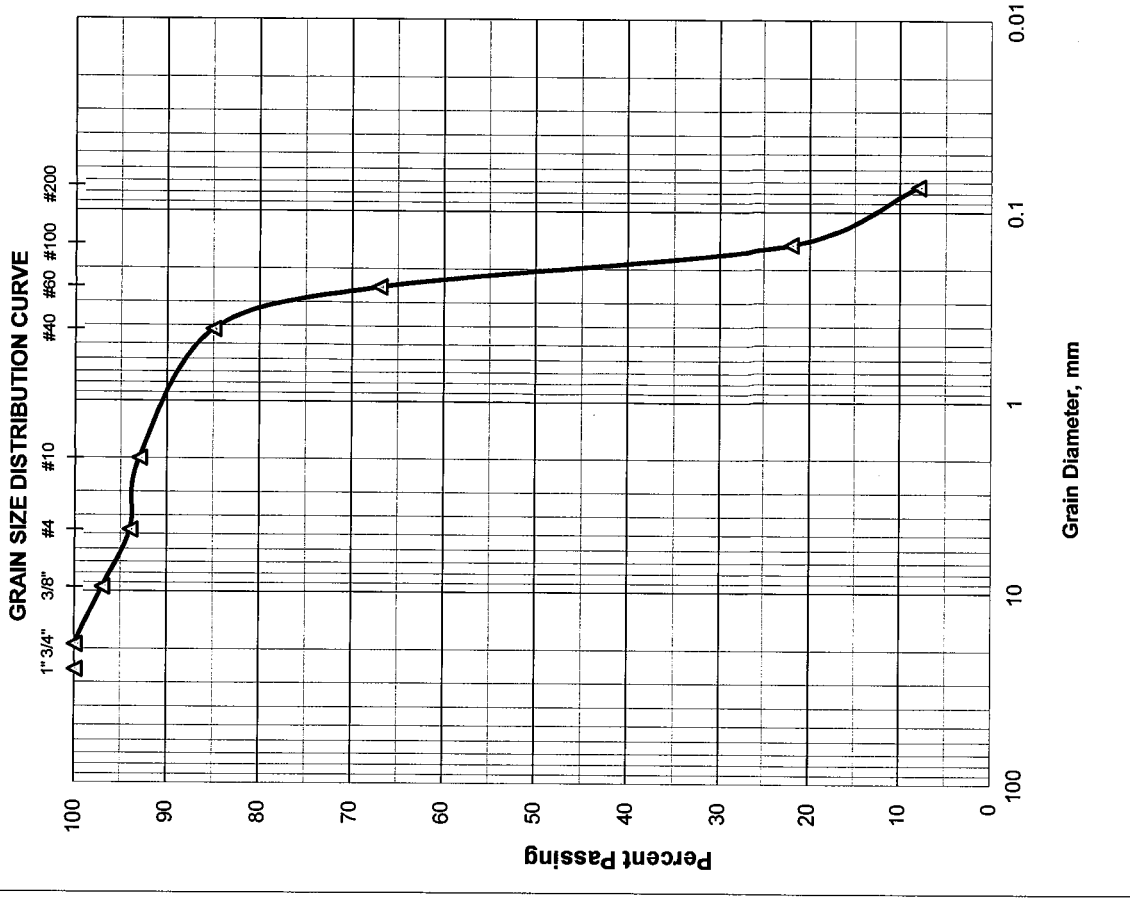
Total Dry Weight Before Wash, (gr) =	365.10
Percent Finer than No. 200 Sieve by Wash Method=	8%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	6
Coarse Sand	>No. 4 ≤ No. 40	9
Fine Sand	>No. 40 ≤ No. 200	77
Silt and Clays	>No. 200	8
Water Content		13%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-1252R		Depth: 2.0'-4.0'	
Date: 10/16/2014		Tested By: H.C.	
Sample No.: 2			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	104.50	104.50	22	78	
3/8"	9.51	45.10	149.60	32	68	
4	4.76	40.50	190.10	41	59	
10	2.00	23.50	213.60	46	54	
40	0.420	31.90	245.50	53	47	
60	0.250	27.20	272.70	59	41	
100	0.149	99.10	371.80	80	20	
200	0.074	54.00	425.80	92	8	
PAN						

AASHTO Classification: **A-1-b**

Total Dry Weight Before Wash, (gr) =	460.70
Percent Finer than No. 200 Sieve by Wash Method=	8%

Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

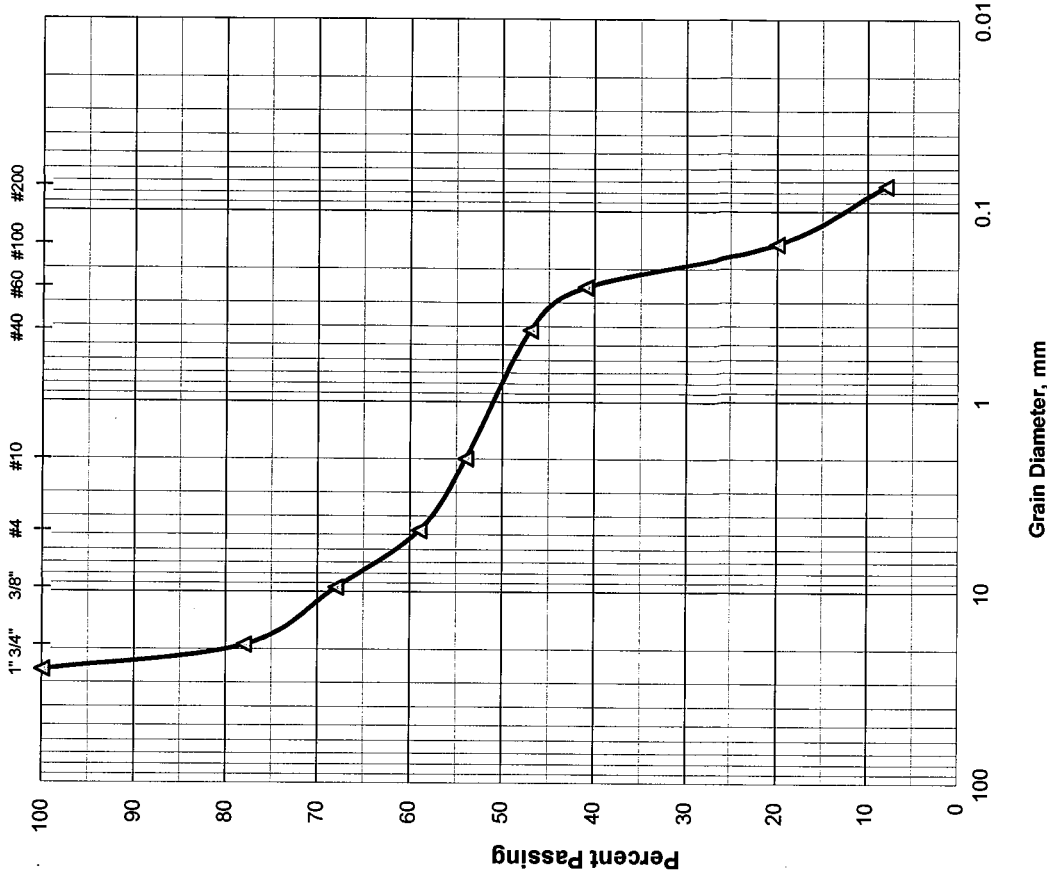
Material in Sample (%)	
Gravel	≤ No. 4 41
Coarse Sand	>No. 4-≤ No. 40 12
Fine Sand	>No. 40-≤ No. 200 39
Silt and Clays	>No. 200 8
Water Content	
	3%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045

GRAIN SIZE DISTRIBUTION CURVE



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-1252R		Depth: 4.0'-6.0'	
Date: 10/16/2014		Sample No.: 3	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	19.20	19.20	4	96	
4	4.76	23.30	42.50	9	91	AASHTO Classification:
10	2.00	21.20	63.70	14	86	A-2-4
40	0.420	38.70	102.40	23	77	
60	0.250	56.60	159.00	36	64	
100	0.149	141.10	300.10	69	31	
200	0.074	59.00	359.10	83	17	
PAN						

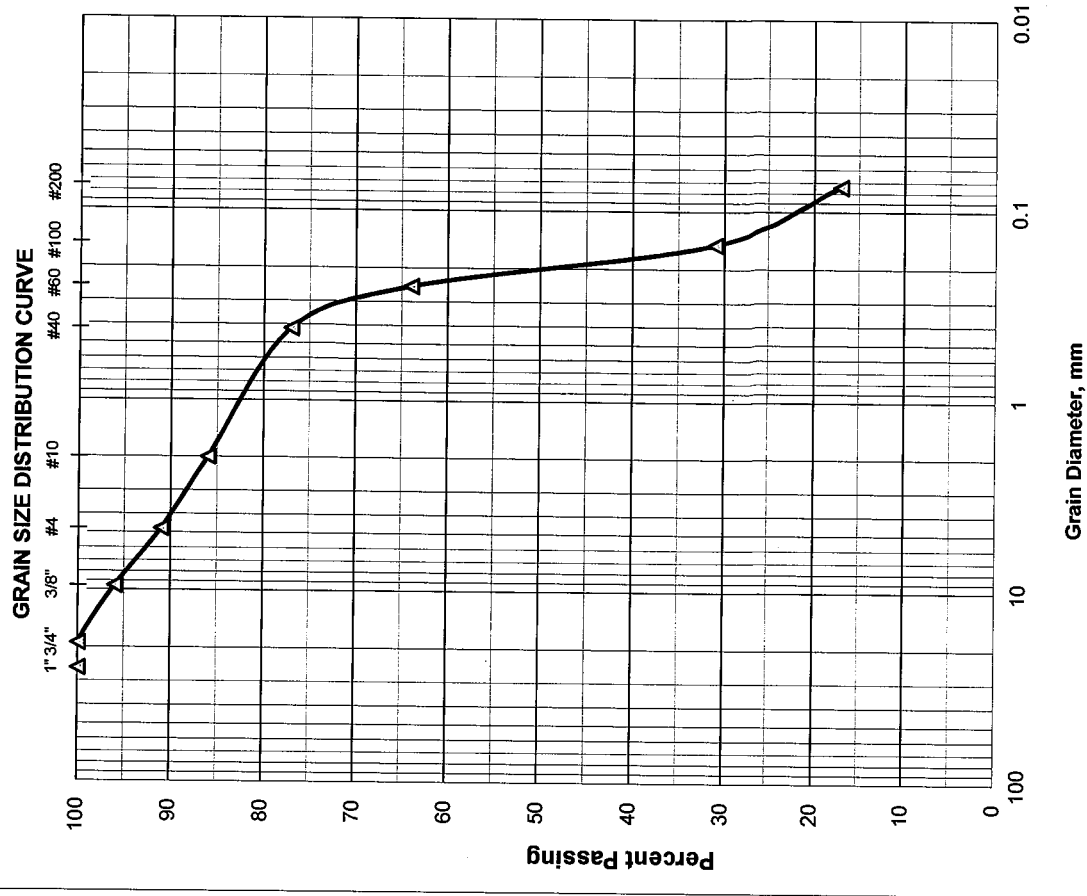
Total Dry Weight Before Wash, (gr) =	432.00
Percent Finer than No. 200 Sieve by Wash Method=	17%

Sieve Analysis Test performed in general accordance with ASTM C-136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	9
Coarse Sand	>No. 4 ≤ No. 40	14
Fine Sand	>No. 40 ≤ No. 200	60
Silt and Clays	>No. 200	17
Water Content		7%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-1252R		Sample No.: 4C				
Date: 10/16/2014		Depth: 7.5'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	26.50	26.50	24	76	
4	4.76	13.80	40.30	36	64	AASHTO Classification:
10	2.00	16.90	57.20	52	48	
40	0.420	17.30	74.50	67	33	A-1-b
60	0.250	4.90	79.40	72	28	
100	0.149	7.50	86.90	79	21	
200	0.074	7.60	94.50	85	15	
PAN						

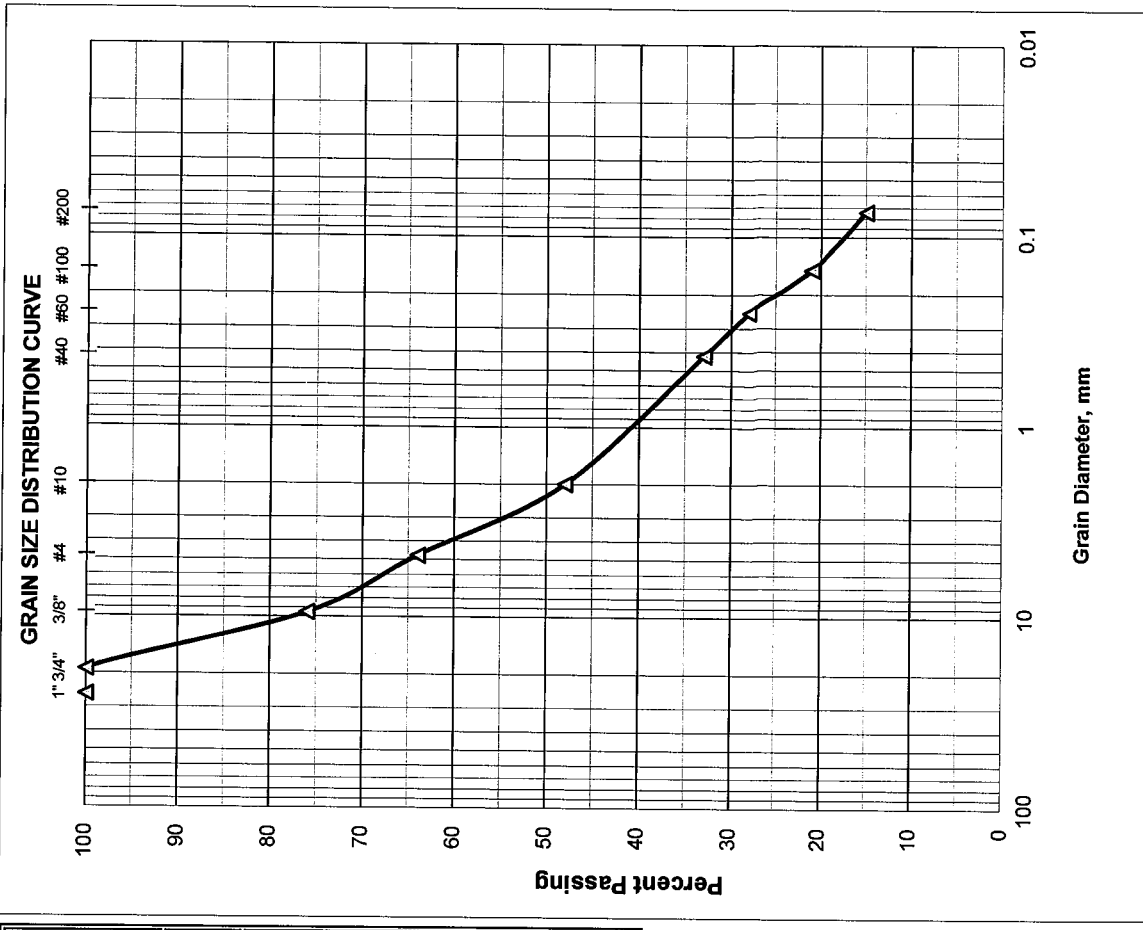
Total Dry Weight Before Wash, (gr) = **109.90**
 Percent Finer than No. 200 Sieve by Wash Method = **15%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 36
Coarse Sand	>No. 4 ≤ No. 40 31
Fine Sand	>No. 40 ≤ No. 200 18
Silt and Clays	>No. 200 15
Water Content	4%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-1252R		Depth: 8.0'-10.0'				
Date: 10/16/2014		Sample No.: 5				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	12.10	12.10	10	90	
3/8"	9.51	14.80	26.90	22	78	
4	4.76	10.20	37.10	31	69	AASHTO Classification:
10	2.00	11.40	48.50	41	59	
40	0.420	16.00	64.50	54	46	A-1-b
60	0.250	12.30	76.80	65	35	
100	0.149	16.60	93.40	79	21	
200	0.074	8.90	102.30	87	13	
PAN						

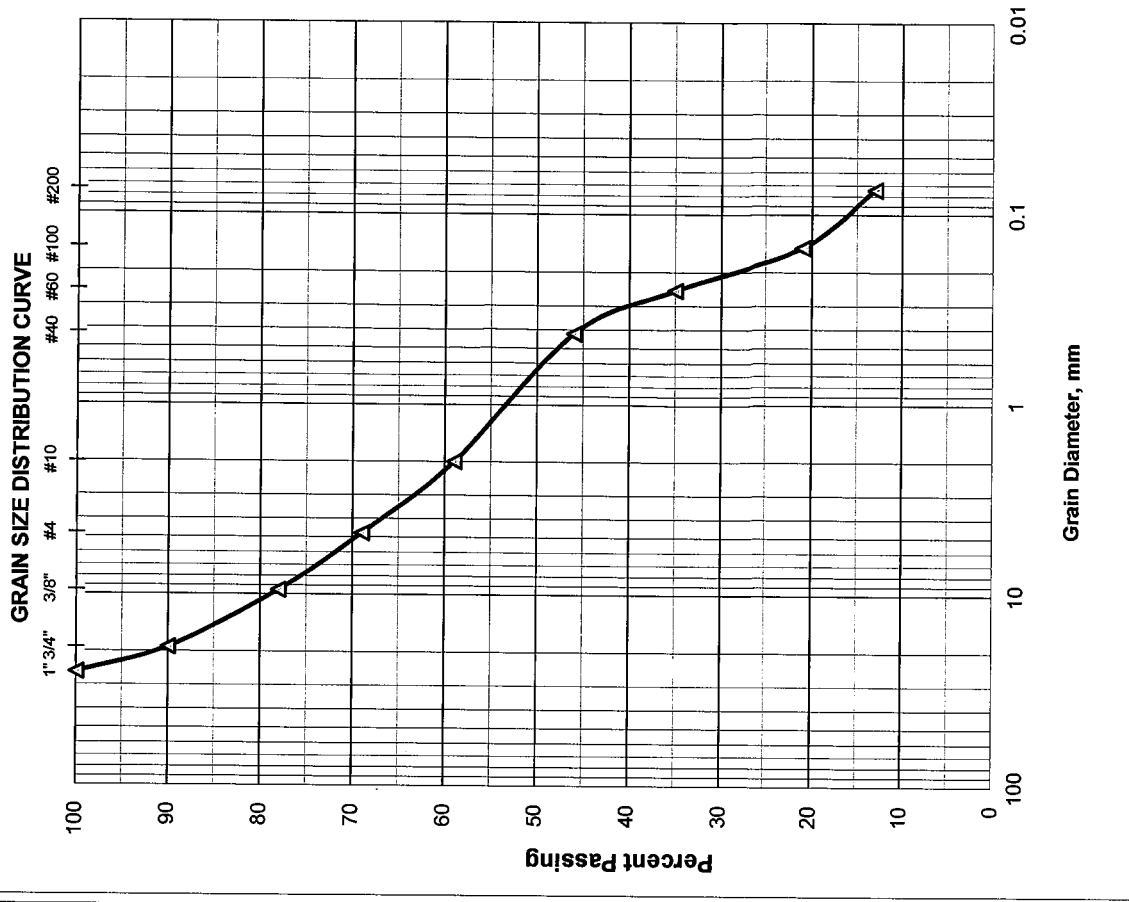
Total Dry Weight Before Wash, (gr) = **117.40**
 Percent Finer than No. 200 Sieve by Wash Method = **13%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	31
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	33
Silt and Clays	>No. 200	13
Water Content		5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2002R		Depth: 0.5'-2.0'				
Date: 10/16/2014		Sample No.: 1B				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	52.00	52.00	13	87	
3/8"	9.51	6.70	58.70	14	86	
4	4.76	11.70	70.40	17	83	AASHTO Classification:
10	2.00	10.30	80.70	20	80	A-3
40	0.420	37.80	118.50	29	71	
60	0.250	88.30	206.80	52	48	
100	0.149	144.40	351.20	88	12	
200	0.074	32.90	384.10	96	4	
PAN						

Total Dry Weight Before Wash, (gr) =	397.50
Percent Finer than No. 200 Sieve by Wash Method=	4%

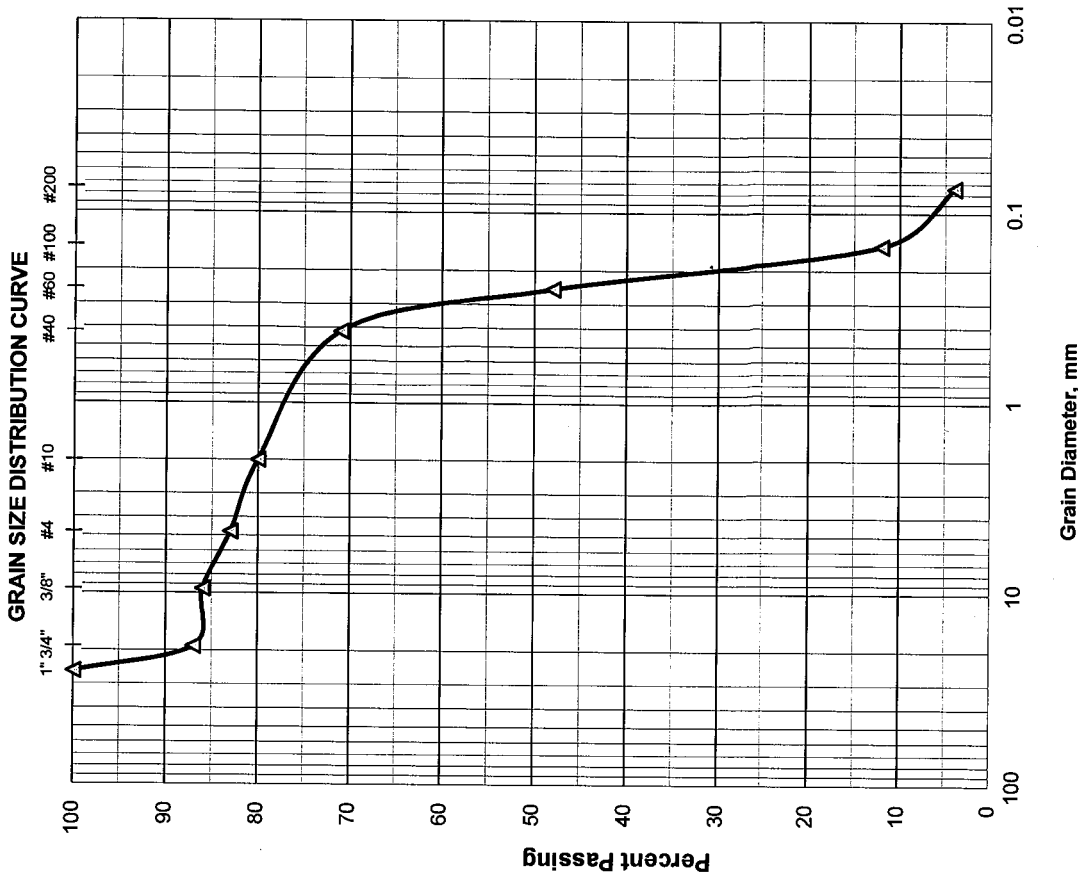
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	17
Coarse Sand	>No. 4-≤ No. 40	12
Fine Sand	>No. 40-≤ No. 200	67
Silt and Clays	>No. 200	4
Water Content		4%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2002R		Depth: 2.0'-4.0'				
Date: 10/16/2014		Tested By: H.C.				
Sample No.: 2						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	8.50	8.50	2	98	
4	4.76	18.70	27.20	7	93	AAASHTO Classification:
10	2.00	11.90	39.10	11	89	A-3
40	0.420	41.50	80.60	23	77	
60	0.250	89.20	169.80	48	52	
100	0.149	136.80	306.60	88	12	
200	0.074	25.50	332.10	95	5	
PAN						

Total Dry Weight Before Wash, (gr) = **347.80**
 Percent Finer than No. 200 Sieve by Wash Method = **5%**

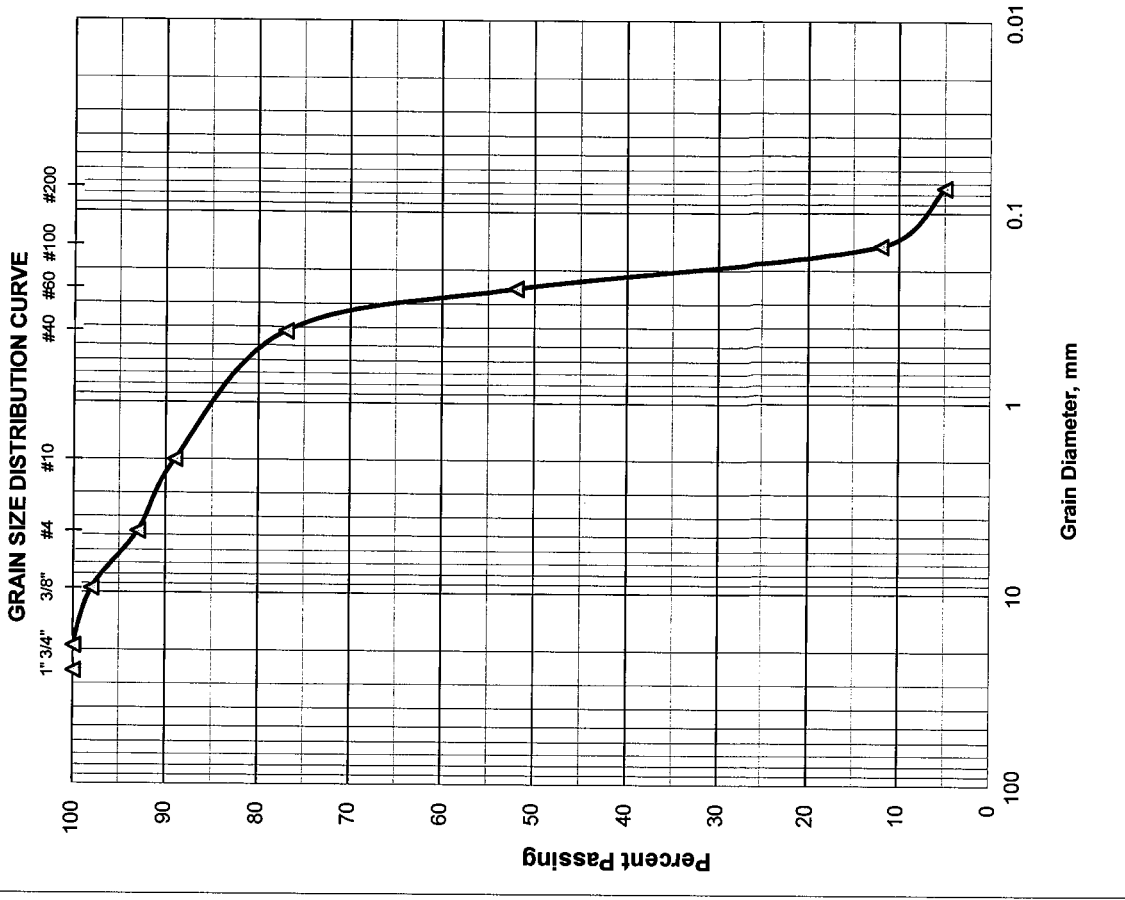
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	7
Coarse Sand	>No. 4-≤ No. 40	16
Fine Sand	>No. 40-≤ No. 200	72
Silt and Clays	>No. 200	5
Water Content		5%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2002R		Depth: 4.0'-6.0'				
Date: 10/16/2014		Tested By: H.C.				
Sample No.: 3						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	6.30	6.30	1	99	
4	4.76	11.20	17.50	3	97	AASHTO Classification:
10	2.00	9.70	27.20	6	94	
40	0.420	45.40	72.60	16	84	A-3
60	0.250	115.30	187.90	42	58	
100	0.149	177.30	365.20	83	17	
200	0.074	41.30	406.50	92	8	
PAN						

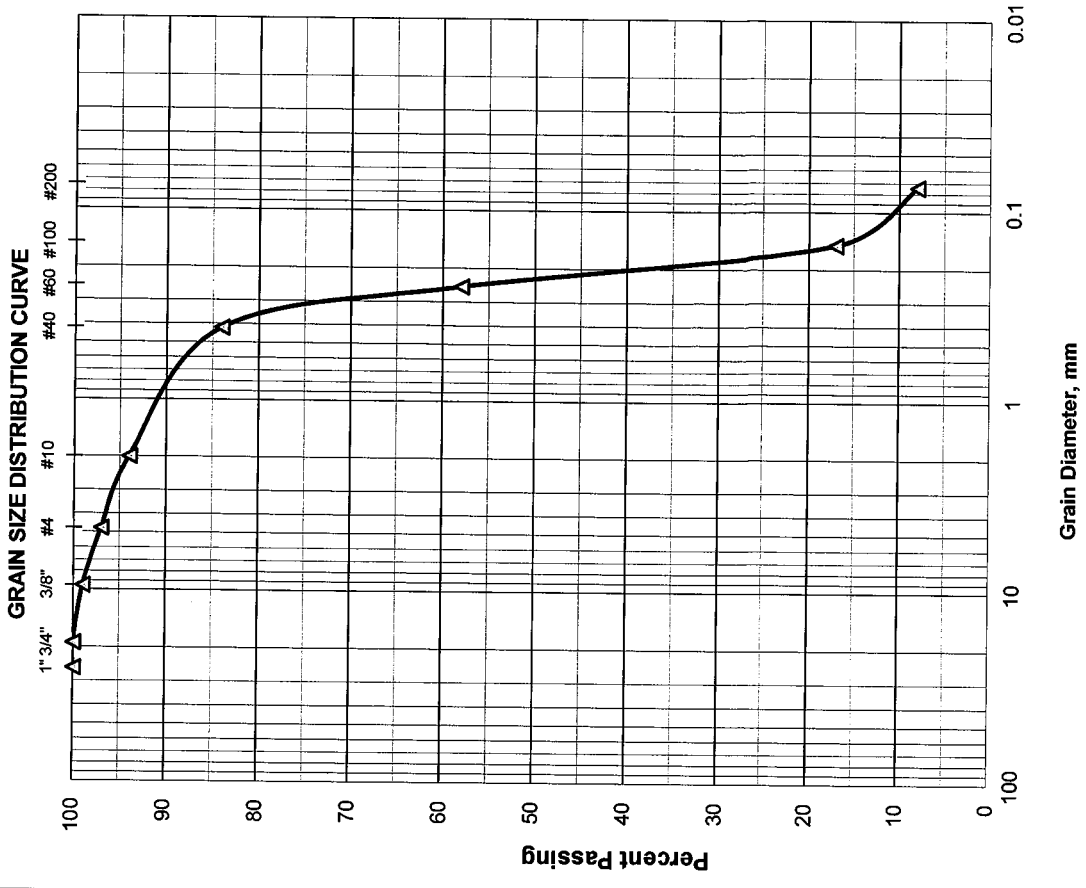
Total Dry Weight Before Wash, (gr) = **437.80**
 Percent Finer than No. 200 Sieve by Wash Method = **8%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	3
Coarse Sand	>No. 4-≤ No. 40	13
Fine Sand	>No. 40-≤ No. 200	76
Silt and Clays	>No. 200	8
Water Content		7%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2002R		Depth: 6.0'-8.0'				
Date: 10/16/2014		Sample No.: 4				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-2-4
3/4"	19.00	9.80	9.80	1	99	
3/8"	9.51	52.90	62.70	12	88	
4	4.76	41.80	104.50	20	80	
10	2.00	34.60	139.10	26	74	
40	0.420	66.50	205.60	39	61	
60	0.250	86.80	292.40	56	44	
100	0.149	121.10	413.50	80	20	
200	0.074	42.20	455.70	88	12	
PAN						

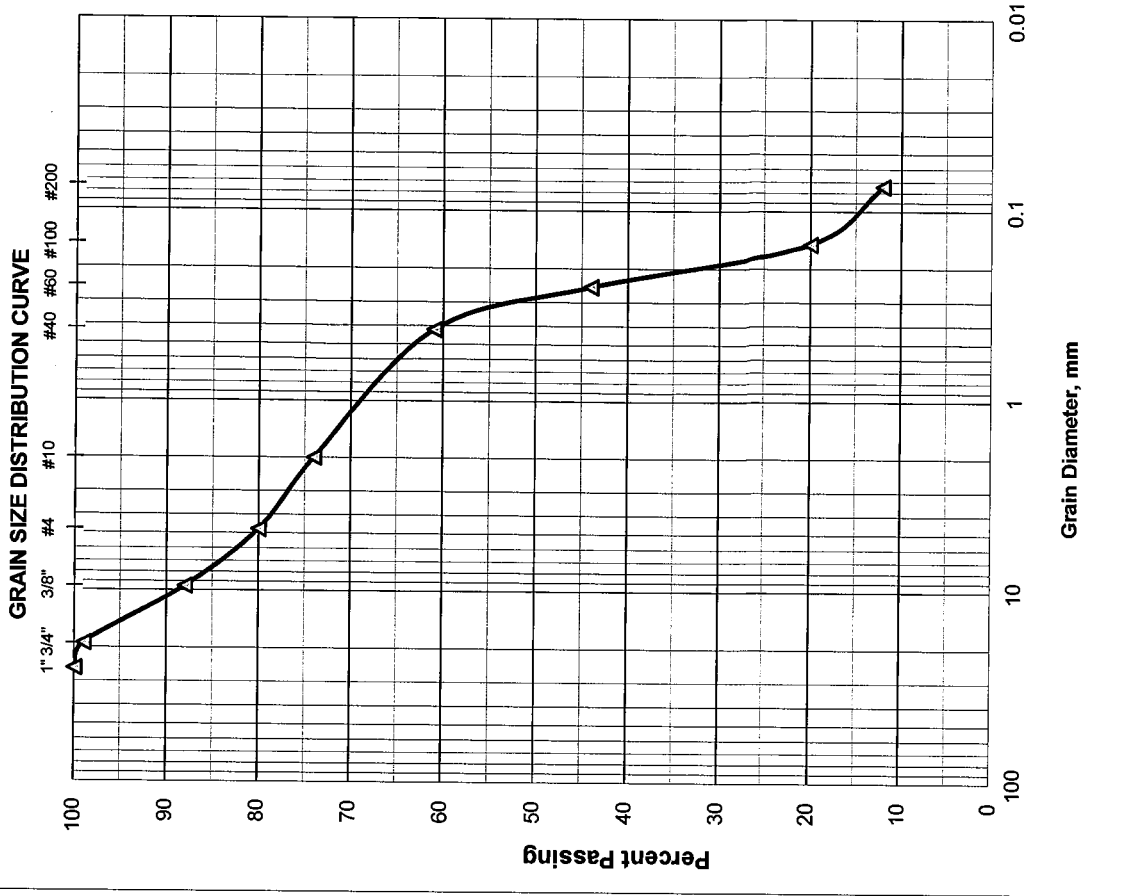
Total Dry Weight Before Wash, (gr) = **516.00**
 Percent Finer than No. 200 Sieve by Wash Method = **12%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	20
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	49
Silt and Clays	>No. 200	12
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2006R		Depth: 1.0'-2.0'	
Date: 10/16/2014		Sample No.: 1B	
		Tested By: H.C.	

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	21.10	21.10	43	57	
4	4.76	1.10	22.20	45	55	
10	2.00	2.90	25.10	51	49	
40	0.420	6.10	31.20	64	36	
60	0.250	2.50	33.70	69	31	
100	0.149	4.10	37.80	78	22	
200	0.074	3.30	41.10	85	15	
PAN						

Total Dry Weight Before Wash, (gr) =	48.30
Percent Finer than No. 200 Sieve by Wash Method =	15%

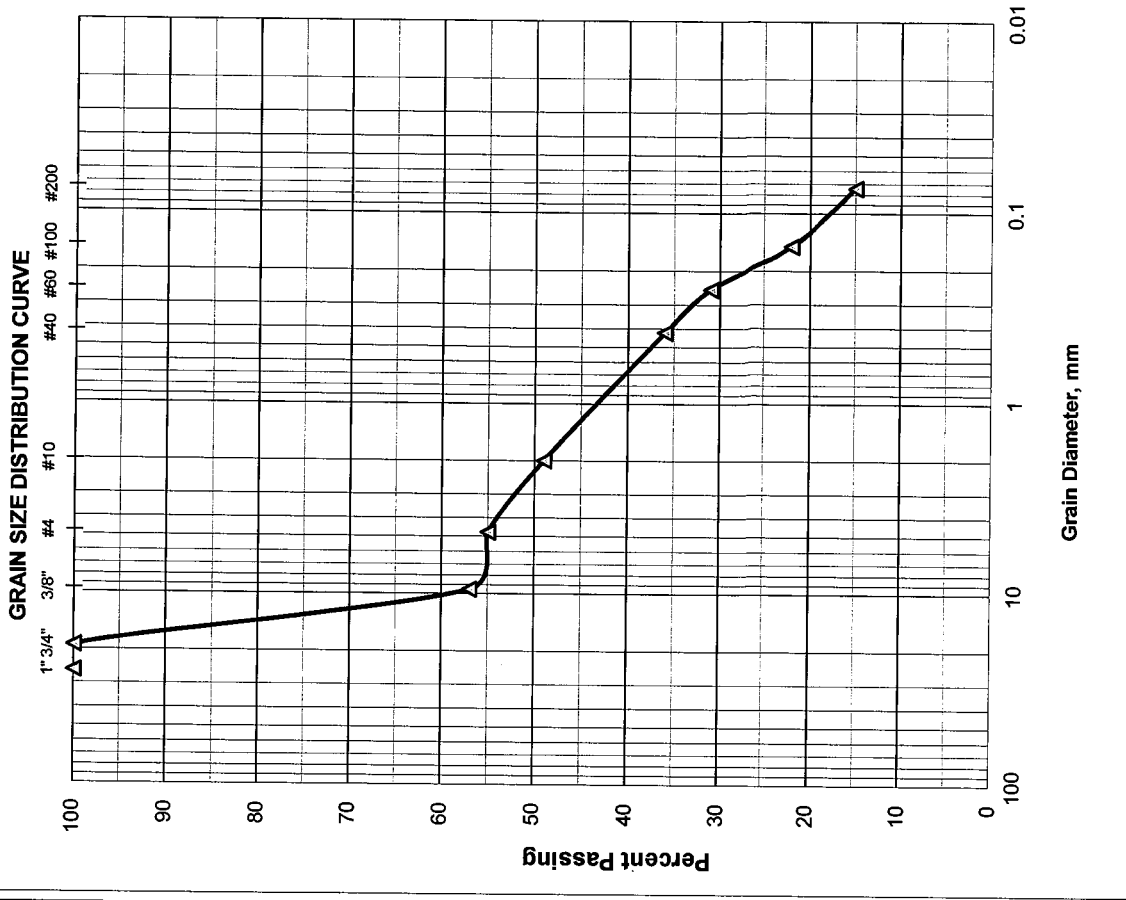
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	45
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	21
Silt and Clays	>No. 200	15
Water Content		1%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2006R Sample No.: 2 Depth: 2.0'-4.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	446.50
Wt. of Dry Soil + Can, grams	401.60
Wt. of Can, grams No. 711	9.00
Wt. of Dry Soil, grams	392.60
Wt. of Moisture, grams	44.90
Water Content, w%	11%
Wt. of Dry Soil + Can Before Wash, grams	401.60
Wt. of Can, grams No. 711	9.00
Wt. of Dry Soil Before Wash, grams	392.60
Time in / Out of Oven :	10/15/14 7:00 AM TO 10/16/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	385.70
Wt. of Dry Soil After Wash, grams	376.70
Total Loss, grams	15.90
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2006R Sample No.: 5 Depth: 8.0'-10.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	524.30
Wt. of Dry Soil + Can, grams	428.50
Wt. of Can, grams No. 712	8.10
Wt. of Dry Soil, grams	420.40
Wt. of Moisture, grams	95.80
Water Content, w%	23%
Date Sample Placed in Furnace:	10/15/14
Time in / out of furnace (minimum 6 hrs):	10/15/14 5:00 AM TO 10/15/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	29.90
Weight of Crucible and Sample After Ignition:	29.60
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	14.30
Weight Loss due to Ignition:	0.30
Percent Organics:	2%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2006R Sample No.: 5 Depth: 8.0'-10.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	524.30
Wt. of Dry Soil + Can, grams	428.50
Wt. of Can, grams No. 712	8.10
Wt. of Dry Soil, grams	420.40
Wt. of Moisture, grams	95.80
Water Content, w%	23%
Wt. of Dry Soil + Can Before Wash, grams	412.20
Wt. of Can, grams No. 712	8.10
Wt. of Dry Soil Before Wash, grams	404.10
Time in / Out of Oven :	10/15/14 7:00 AM TO 10/16/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	398.90
Wt. of Dry Soil After Wash, grams	390.80
Total Loss, grams	13.30
Percent Finer Than No. 200 Sieve	3%

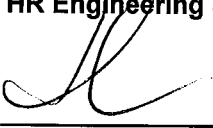
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2010R Sample No.: 2A Depth: 2.0'-3.2'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 12:00 PM TO 10/14/14 12:00 PM
Wt. of Wet Soil + Can, grams	394.80
Wt. of Dry Soil + Can, grams	340.30
Wt. of Can, grams No. 713	8.90
Wt. of Dry Soil, grams	331.40
Wt. of Moisture, grams	54.50
Water Content, w%	16%
Wt. of Dry Soil + Can Before Wash, grams	340.30
Wt. of Can, grams No. 713	8.90
Wt. of Dry Soil Before Wash, grams	331.40
Time in / Out of Oven :	10/15/14 9:00 AM TO 10/16/14 9:00 AM
Wt. of Dry Soil + Can After Wash, grams	328.80
Wt. of Dry Soil After Wash, grams	319.90
Total Loss, grams	11.50
Percent Finer Than No. 200 Sieve	3%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2010R Sample No.: 2B Depth: 3.2'-4.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/13/2014
Time in / Out of Oven :	10/13/14 1:00 PM TO 10/14/14 1:00 PM
Wt. of Wet Soil + Can, grams	221.50
Wt. of Dry Soil + Can, grams	184.50
Wt. of Can, grams No. 714	9.00
Wt. of Dry Soil, grams	175.50
Wt. of Moisture, grams	37.00
Water Content, w%	21%
Wt. of Dry Soil + Can Before Wash, grams	184.50
Wt. of Can, grams No. 714	9.00
Wt. of Dry Soil Before Wash, grams	175.50
Time in / Out of Oven :	10/15/14 9:00 AM TO 10/16/14 9:00 AM
Wt. of Dry Soil + Can After Wash, grams	168.30
Wt. of Dry Soil After Wash, grams	159.30
Total Loss, grams	16.20
Percent Finer Than No. 200 Sieve	9%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2014R		Sample No.: 1B				
Date: 10/16/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	12.10	12.10	2	98	
3/8"	9.51	12.40	24.50	6	94	
4	4.76	45.30	69.80	17	83	AASHTO Classification:
10	2.00	57.80	127.60	31	69	
40	0.420	79.40	207.00	50	50	A-1-b
60	0.250	27.80	234.80	57	43	
100	0.149	47.30	282.10	69	31	
200	0.074	34.70	316.80	77	23	
PAN						

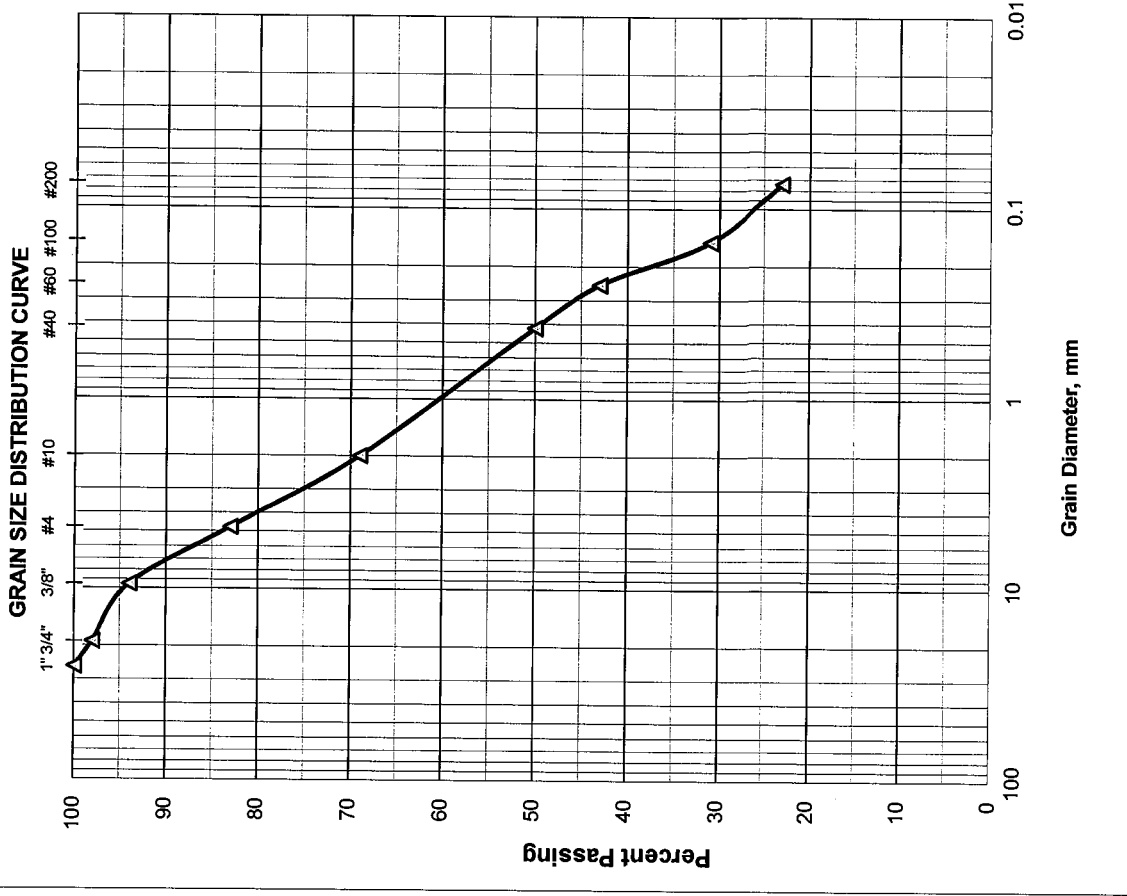
Total Dry Weight Before Wash, (gr) = **406.60**
 Percent Finer than No. 200 Sieve by Wash Method = **23%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 17
Coarse Sand	>No. 4-≤ No. 40 33
Fine Sand	>No. 40-≤ No. 200 27
Silt and Clays	>No. 200 23
Water Content	3%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2014R		Depth: 2.0'-3.0'	
Date: 10/16/2014		Sample No.: 2A	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	50.60	50.60	15	85	
4	4.76	18.50	69.10	21	79	
10	2.00	12.10	81.20	25	75	
40	0.420	40.30	121.50	37	63	
60	0.250	58.90	180.40	56	44	
100	0.149	81.90	262.30	81	19	
200	0.074	28.10	290.40	90	10	
PAN						

Total Dry Weight Before Wash, (gr) =	320.90
Percent Finer than No. 200 Sieve by Wash Method=	10%

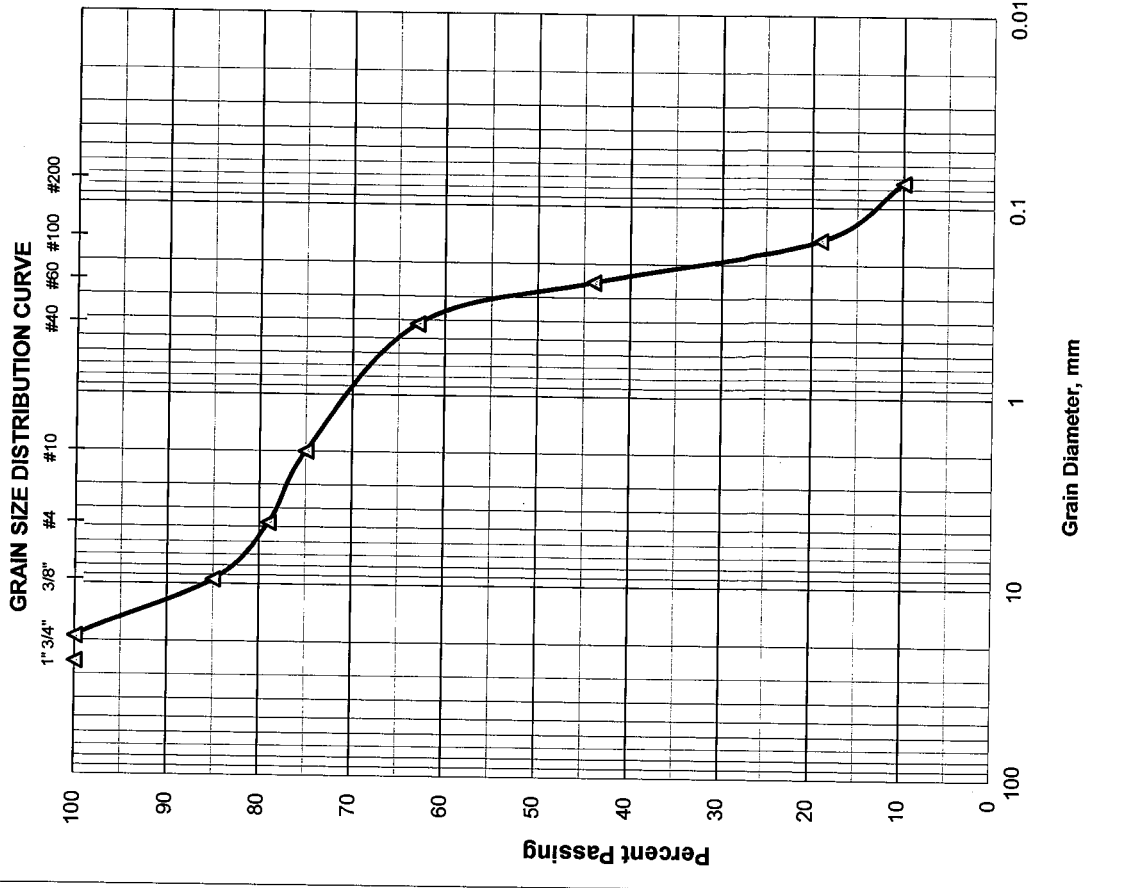
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 21
Coarse Sand	>No. 4-≤ No. 40 16
Fine Sand	>No. 40-≤ No. 200 53
Silt and Clays	>No. 200 10
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2014R		Depth: 4.0'-5.0'	
Date: 10/16/2014		Sample No.: 3A	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-2-4
3/4"	19.00	32.50	32.50	12	88	
3/8"	9.51	34.20	66.70	26	74	
4	4.76	18.60	85.30	33	67	
10	2.00	11.00	96.30	37	63	
40	0.420	28.90	125.20	48	52	
60	0.250	42.10	167.30	65	35	
100	0.149	48.20	215.50	84	16	
200	0.074	13.70	229.20	89	11	
PAN						

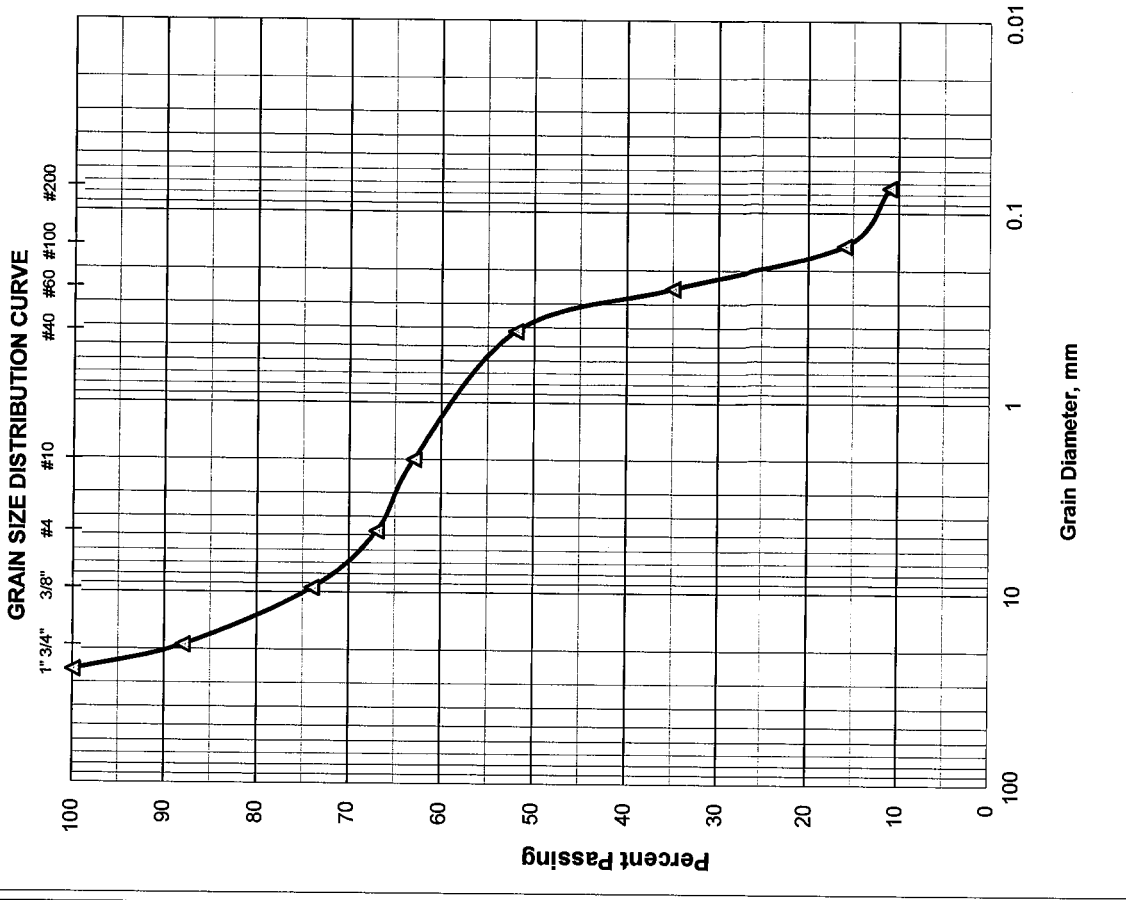
Total Dry Weight Before Wash, (gr) =	256.20
Percent Finer than No. 200 Sieve by Wash Method =	11%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 33
Coarse Sand	>No. 4-≤ No. 40 15
Fine Sand	>No. 40-≤ No. 200 41
Silt and Clays	>No. 200 11
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2014R Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	255.50
Wt. of Dry Soil + Can, grams	254.10
Wt. of Can, grams No. 610	9.00
Wt. of Dry Soil, grams	245.10
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	27.60
Weight of Crucible and Sample After Ignition:	27.10
Weight of Crucible: No. 54	15.00
Weight of Oven-Dried Soil:	12.60
Weight Loss due to Ignition:	0.50
Percent Organics:	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2014R Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	255.50
Wt. of Dry Soil + Can, grams	254.10
Wt. of Can, grams No. 610	9.00
Wt. of Dry Soil, grams	245.10
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Wt. of Dry Soil + Can Before Wash, grams	241.60
Wt. of Can, grams No. 610	9.00
Wt. of Dry Soil Before Wash, grams	232.60
Time in / Out of Oven :	11/09/14 10:00 AM TO 11/10/14 10:00 AM
Wt. of Dry Soil + Can After Wash, grams	231.40
Wt. of Dry Soil After Wash, grams	222.40
Total Loss, grams	10.20
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2026CL		Sample No.: 1B				
Date: 11/06/14		Depth: 1.0'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	8.10	8.10	3	97	
4	4.76	7.60	15.70	6	94	AASHTO Classification:
10	2.00	5.70	21.40	8	92	
40	0.420	34.90	56.30	22	78	A-3
60	0.250	58.30	114.60	45	55	
100	0.149	66.90	181.50	72	28	
200	0.074	59.80	241.30	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	251.90
Percent Finer than No. 200 Sieve by Wash Method=	5%

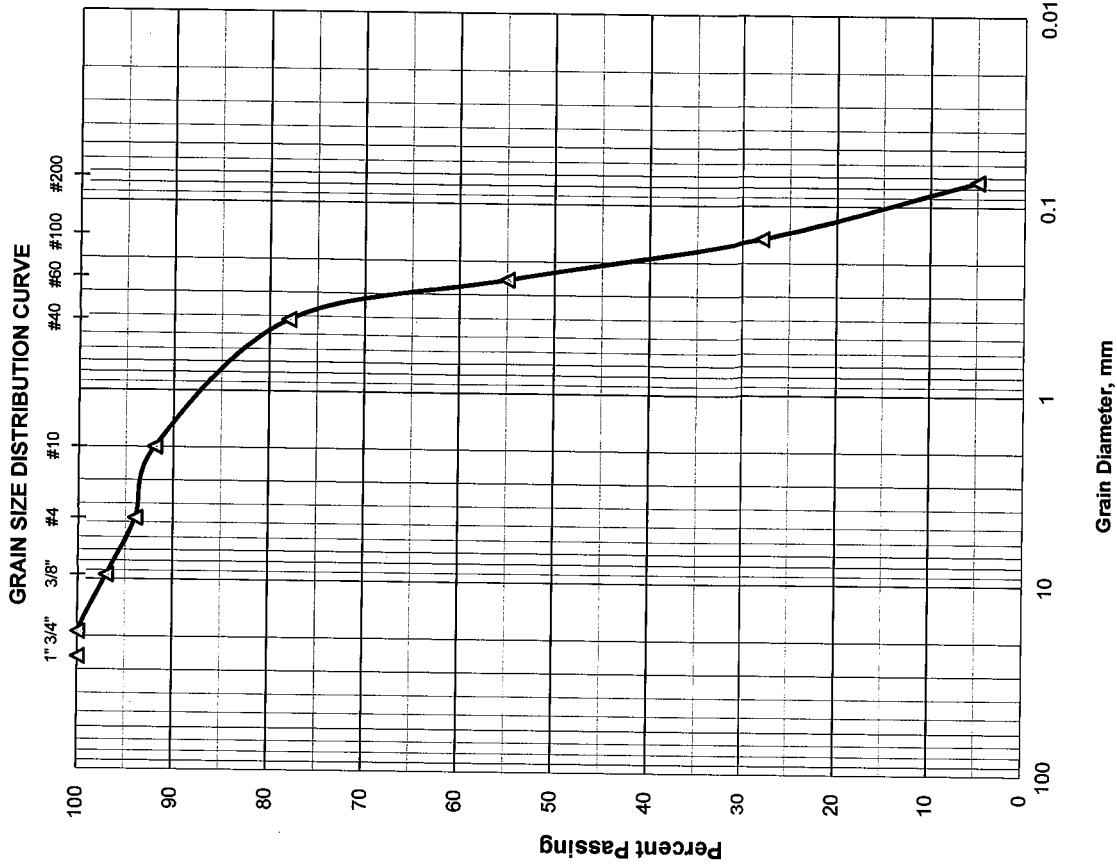
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4
Coarse Sand	>No. 4-≤ No. 40
Fine Sand	>No. 40-≤ No. 200
Silt and Clays	>No. 200
Water Content	12%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.
 7815 N.W. 72nd Avenue - Medley, Florida 33166
 Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2028CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	14.90	14.90	3	97	
3/8"	9.51	48.90	63.80	15	85	
4	4.76	47.40	111.20	27	73	
10	2.00	43.10	154.30	37	63	
40	0.420	59.60	213.90	52	48	
60	0.250	49.40	263.30	64	36	
100	0.149	78.20	341.50	84	16	
200	0.074	32.80	374.30	92	8	
PAN						

Total Dry Weight Before Wash, (gr) =	406.10
Percent Finer than No. 200 Sieve by Wash Method=	8%

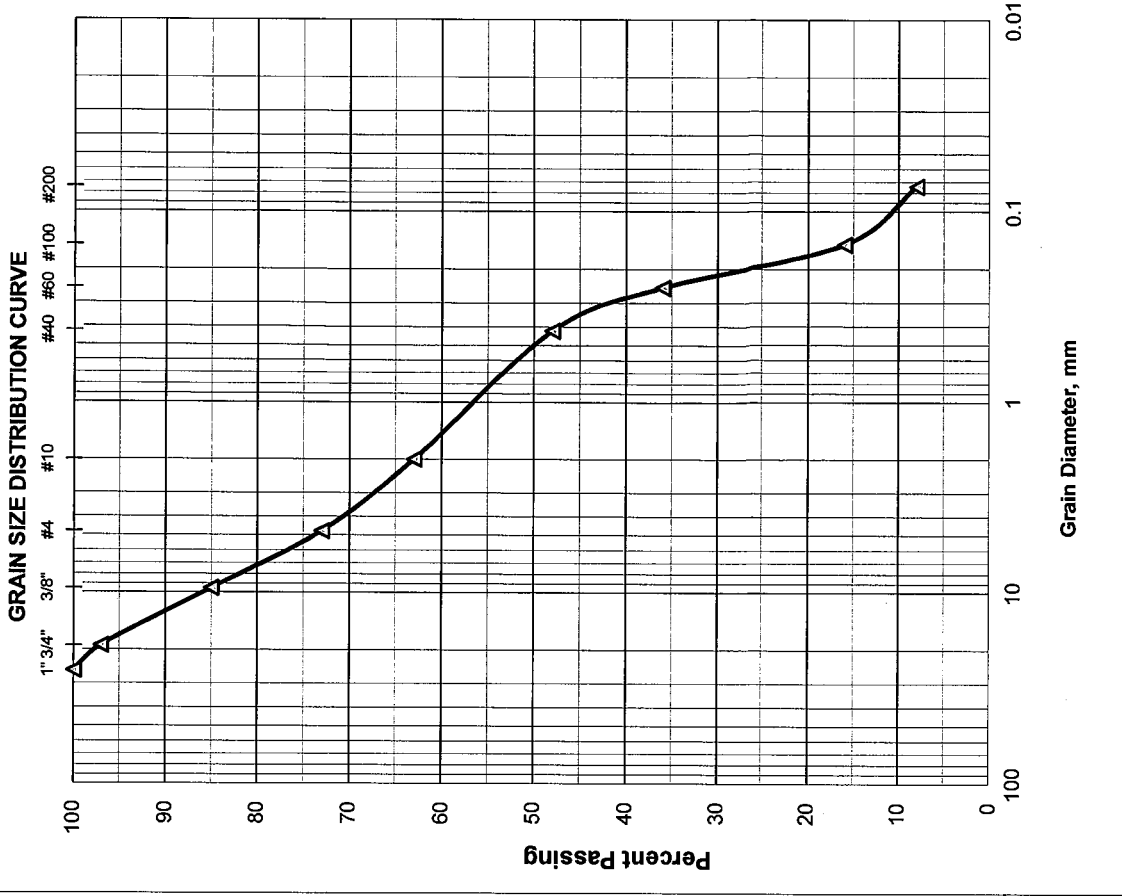
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 27
Coarse Sand	>No. 4-≤ No. 40 25
Fine Sand	>No. 40-≤ No. 200 40
Silt and Clays	>No. 200 8
Water Content	8%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2028CR		Sample No.: 2				
Date: 10/17/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	31.10	31.10	5	95	
3/8"	9.51	40.90	72.00	13	87	
4	4.76	20.50	92.50	16	84	
10	2.00	19.30	111.80	20	80	
40	0.420	75.50	187.30	33	67	
60	0.250	130.10	317.40	57	43	
100	0.149	141.90	459.30	83	17	
200	0.074	53.20	512.50	92	8	
PAN						

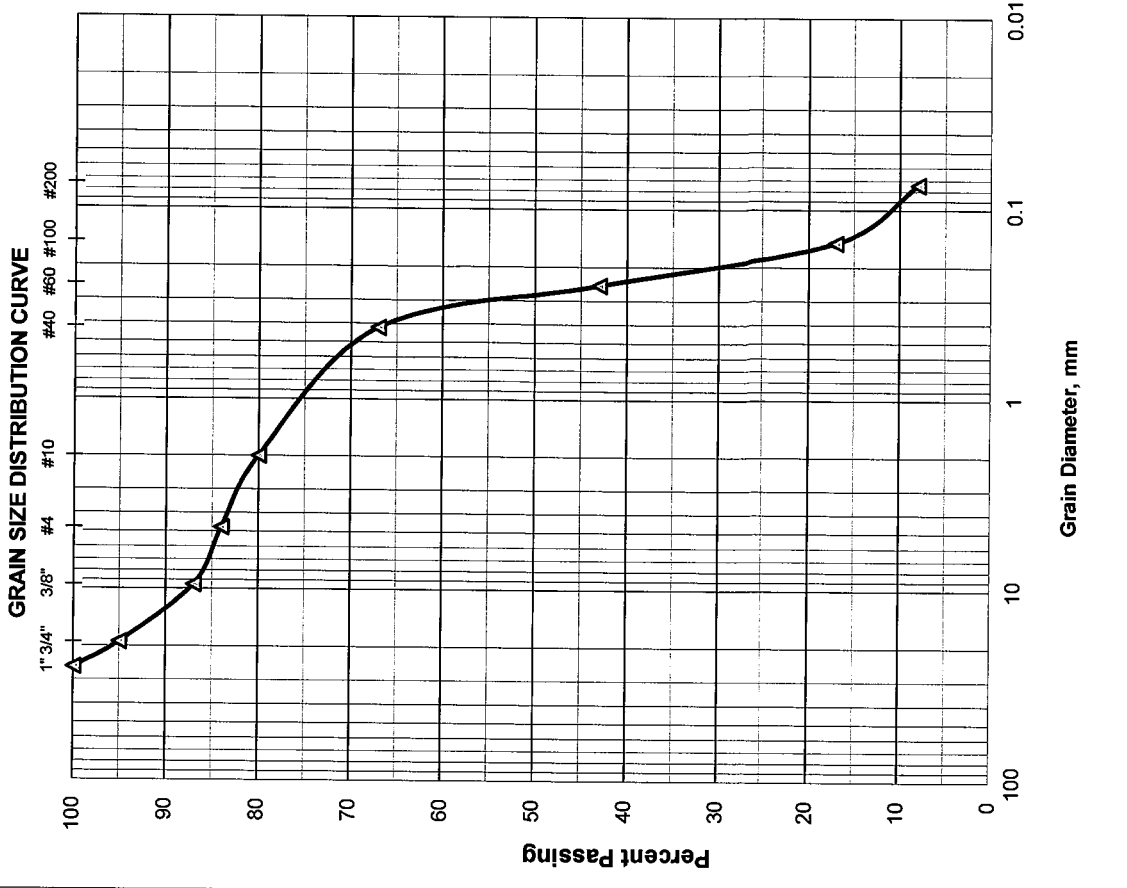
Total Dry Weight Before Wash, (gr) = **551.70**
 Percent Finer than No. 200 Sieve by Wash Method = **8%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	16
Coarse Sand	>No. 4-≤ No. 40	17
Fine Sand	>No. 40-≤ No. 200	59
Silt and Clays	>No. 200	8
Water Content		7%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2032CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	44.30	44.30	9	91	
3/8"	9.51	79.90	124.20	27	73	
4	4.76	62.10	186.30	40	60	
10	2.00	52.40	238.70	52	48	
40	0.420	66.00	304.70	66	34	
60	0.250	23.80	328.50	71	29	
100	0.149	39.60	368.10	80	20	
200	0.074	27.20	395.30	86	14	
PAN						

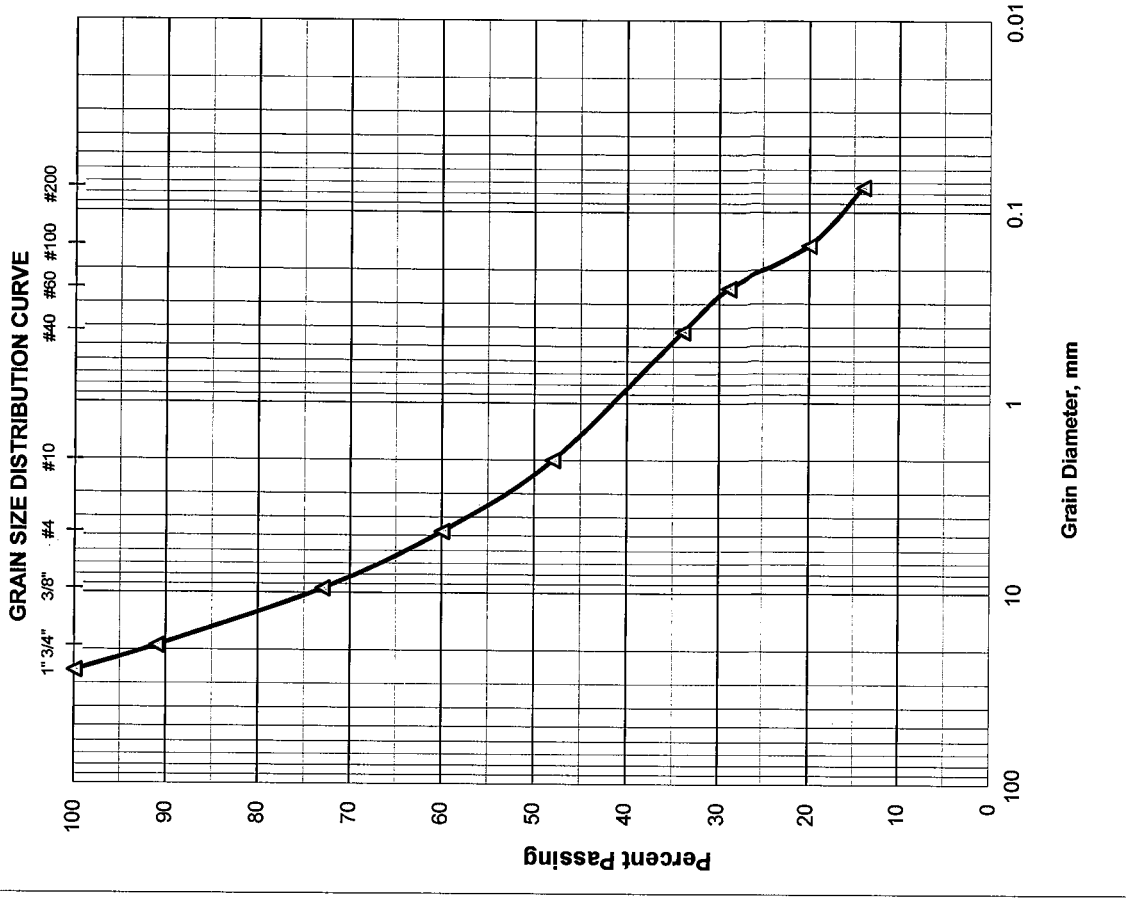
Total Dry Weight Before Wash, (gr) =	456.90
Percent Finer than No. 200 Sieve by Wash Method =	14%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	40
Coarse Sand	>No. 4-≤ No. 40	26
Fine Sand	>No. 40-≤ No. 200	20
Silt and Clays	>No. 200	14
Water Content		8%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2032CR		Sample No.: 2A				
Date: 10/17/2014		Depth: 2.0'-2.8'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	28.20	28.20	11	89	
3/8"	9.51	35.50	63.70	24	76	
4	4.76	23.90	87.60	34	66	AASHTO Classification:
10	2.00	23.60	111.20	43	57	
40	0.420	30.30	141.50	55	45	
60	0.250	24.10	165.60	64	36	A-1-b
100	0.149	38.10	203.70	79	21	
200	0.074	21.40	225.10	88	12	
PAN						

Total Dry Weight Before Wash, (gr) =	254.90
Percent Finer than No. 200 Sieve by Wash Method=	12%

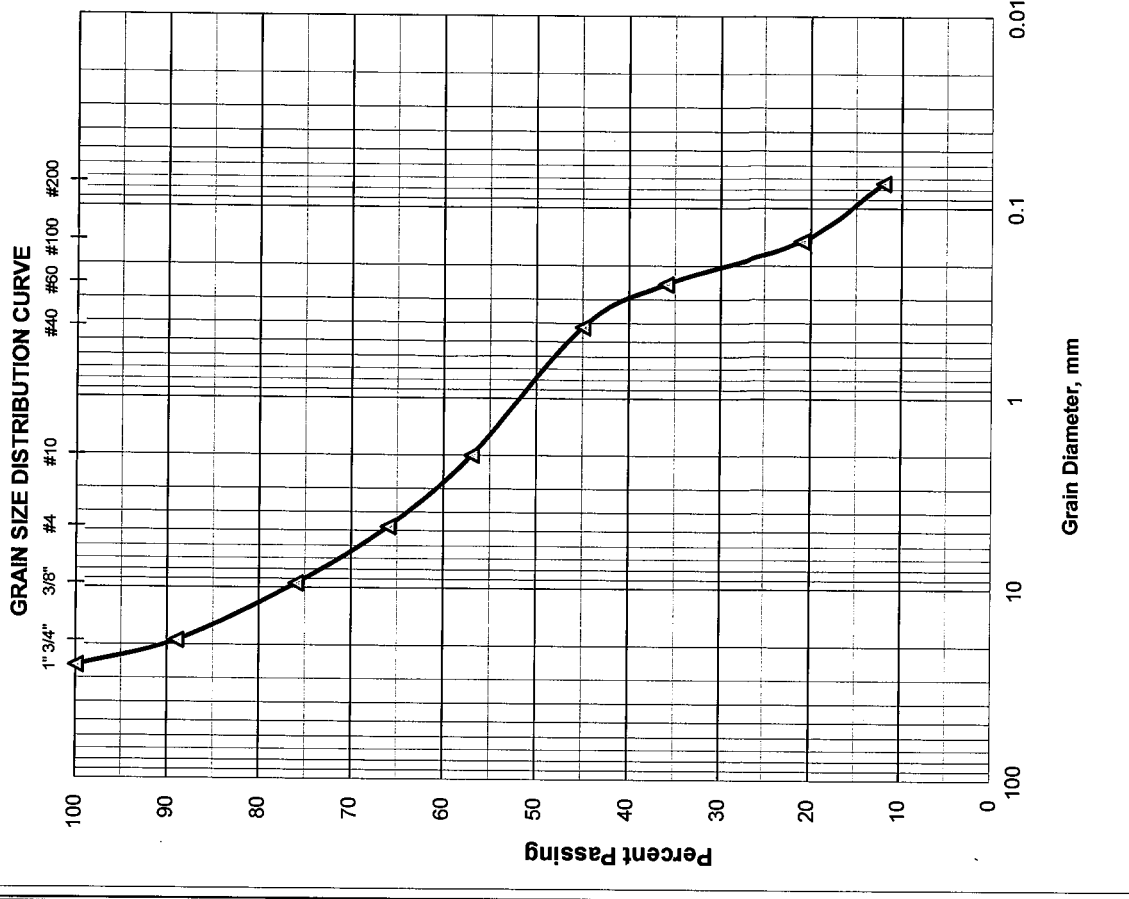
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	34
Coarse Sand	>No. 4-≤ No. 40	21
Fine Sand	>No. 40-≤ No. 200	33
Silt and Clays	>No. 200	12
Water Content		9%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2036CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	53.90	53.90	10	90	
3/8"	9.51	61.70	115.60	21	79	
4	4.76	60.10	175.70	33	67	AASHTO Classification:
10	2.00	71.90	247.60	46	54	A-1-b
40	0.420	91.70	339.30	64	36	
60	0.250	29.50	368.80	69	31	
100	0.149	51.30	420.10	79	21	
200	0.074	32.70	452.80	85	15	
PAN						

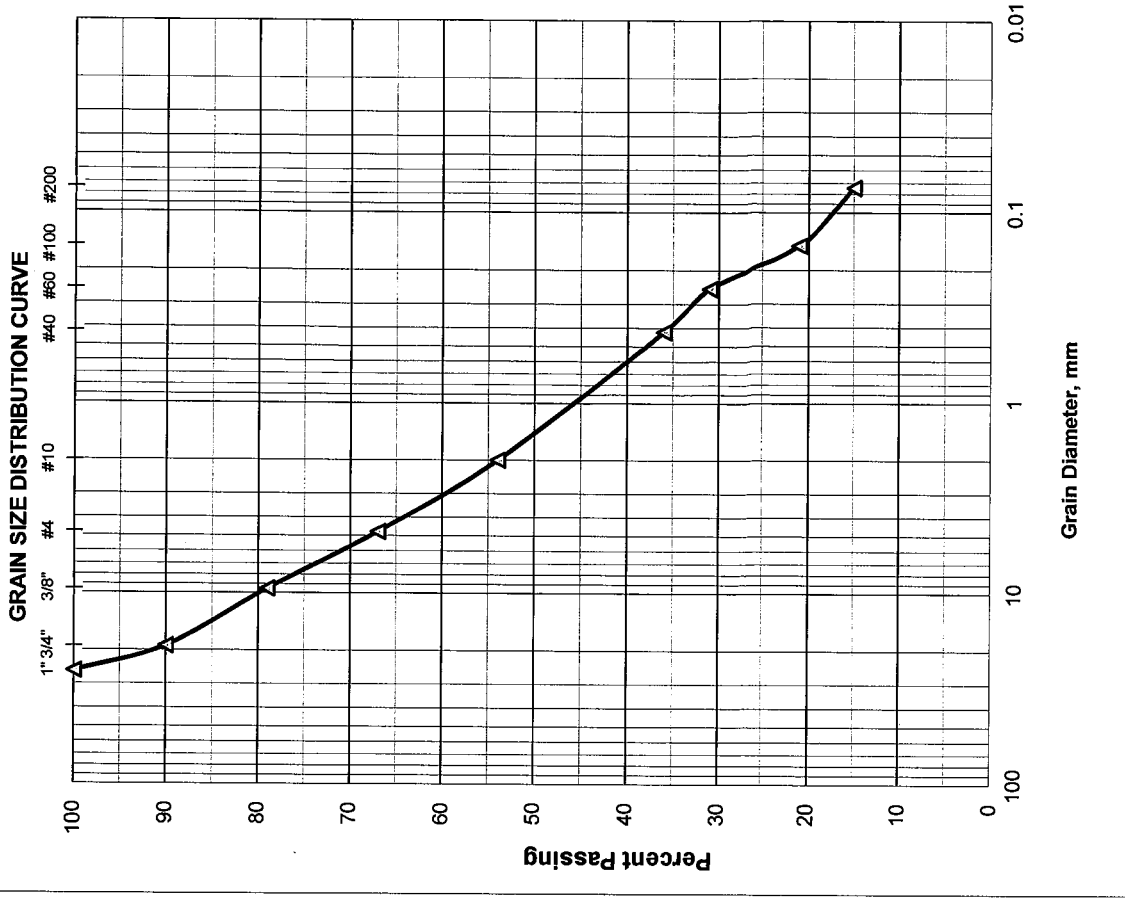
Total Dry Weight Before Wash, (gr) = **529.70**
 Percent Finer than No. 200 Sieve by Wash Method = **15%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 33
Coarse Sand	>No. 4-s No. 40 31
Fine Sand	>No. 40-s No. 200 21
Silt and Clays	>No. 200 15
Water Content 9%	

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036CR Sample No.: 4 Depth: 6.0'-8.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	560.90
Wt. of Dry Soil + Can, grams	460.20
Wt. of Can, grams No. 805	8.20
Wt. of Dry Soil, grams	452.00
Wt. of Moisture, grams	100.70
Water Content, w%	22%
Date Sample Placed in Furnace:	10/16/14
Time in / out of furnace (minimum 6 hrs):	10/16/14 5:00 AM TO 10/16/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	27.70
Weight of Crucible and Sample After Ignition:	27.50
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	12.10
Weight Loss due to Ignition:	0.20
Percent Organics:	2%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036CR Sample No.: 4 Depth: 6.0'-8.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	560.90
Wt. of Dry Soil + Can, grams	460.20
Wt. of Can, grams No. 805	8.20
Wt. of Dry Soil, grams	452.00
Wt. of Moisture, grams	100.70
Water Content, w%	22%
Wt. of Dry Soil + Can Before Wash, grams	443.90
Wt. of Can, grams No. 805	8.20
Wt. of Dry Soil Before Wash, grams	435.70
Time in / Out of Oven :	10/15/14 7:00 PM TO 10/16/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	416.80
Wt. of Dry Soil After Wash, grams	408.60
Total Loss, grams	27.10
Percent Finer Than No. 200 Sieve	6%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2036L		Depth: 2.0'-4.0'				
Date: 11/6/2014		Tested By: H.C.				
Sample No.: 2						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	AASHTO Classification:
10	2.00	0.10	0.10	0	100	
40	0.420	8.70	8.80	2	98	A-3
60	0.250	48.50	57.30	18	82	
100	0.149	162.80	220.10	72	28	
200	0.074	71.10	291.20	96	4	
PAN						

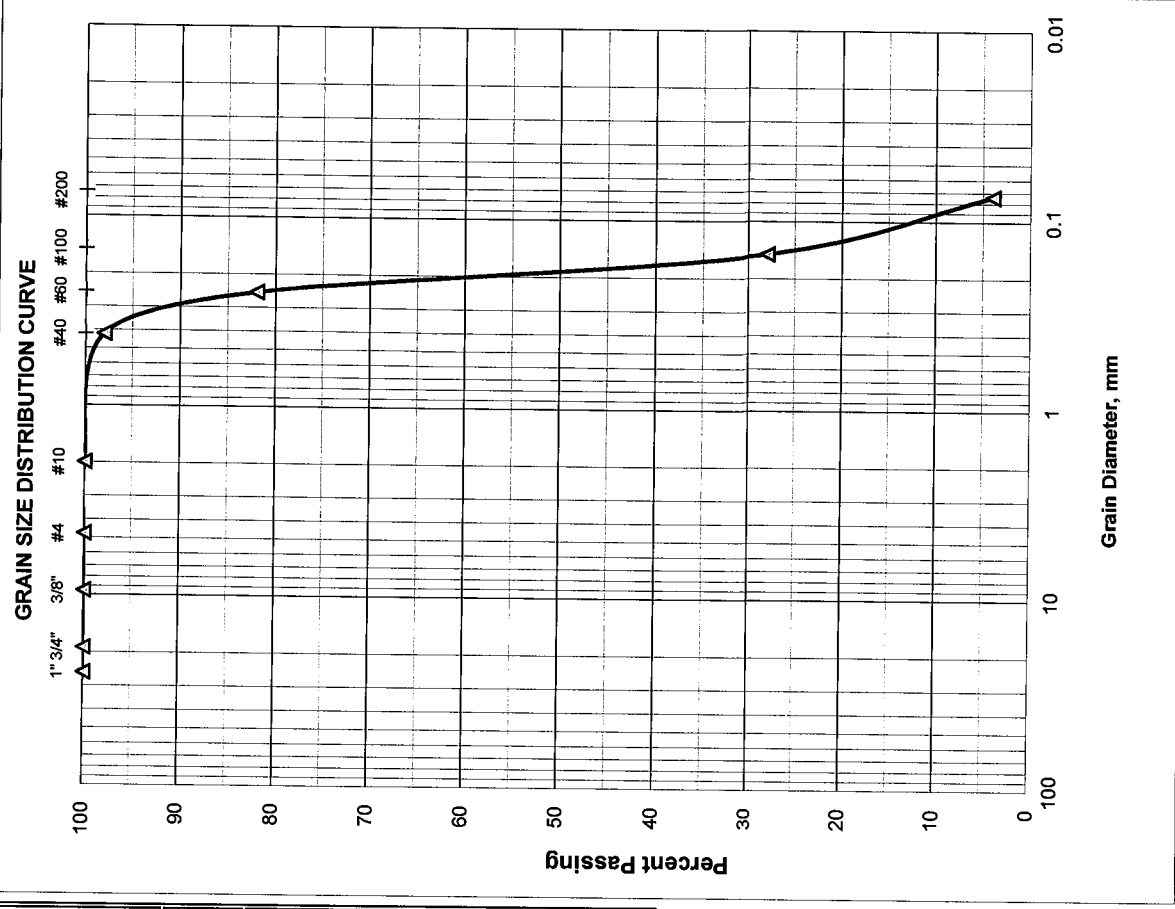
Total Dry Weight Before Wash, (gr) =	303.20
Percent Finer than No. 200 Sieve by Wash Method=	4%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	2
Fine Sand	>No. 40-≤ No. 200	94
Silt and Clays	>No. 200	4
Water Content		26%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	461.10
Wt. of Dry Soil + Can, grams	442.90
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil, grams	434.50
Wt. of Moisture, grams	18.20
Water Content, w%	4%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	31.60
Weight of Crucible and Sample After Ignition:	31.40
Weight of Crucible: No. 299	16.50
Weight of Oven-Dried Soil:	15.10
Weight Loss due to Ignition:	0.20
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2036R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	461.10
Wt. of Dry Soil + Can, grams	442.90
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil, grams	434.50
Wt. of Moisture, grams	18.20
Water Content, w%	4%
Wt. of Dry Soil + Can Before Wash, grams	419.80
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil Before Wash, grams	411.40
Time in / Out of Oven :	11/05/14 7:00 PM TO 11/06/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	405.90
Wt. of Dry Soil After Wash, grams	397.50
Total Loss, grams	13.90
Percent Finer Than No. 200 Sieve	3%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2038R Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	265.40
Wt. of Dry Soil + Can, grams	264.00
Wt. of Can, grams No. 703	9.20
Wt. of Dry Soil, grams	254.80
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	27.20
Weight of Crucible and Sample After Ignition:	26.90
Weight of Crucible: No. 54	15.10
Weight of Oven-Dried Soil:	12.10
Weight Loss due to Ignition:	0.30
Percent Organics:	2%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2038R Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 5:00 AM TO 11/05/14 5:00 AM
Wt. of Wet Soil + Can, grams	265.40
Wt. of Dry Soil + Can, grams	264.00
Wt. of Can, grams No. 703	9.20
Wt. of Dry Soil, grams	254.80
Wt. of Moisture, grams	1.40
Water Content, w%	1%
Wt. of Dry Soil + Can Before Wash, grams	252.50
Wt. of Can, grams No. 703	9.20
Wt. of Dry Soil Before Wash, grams	243.30
Time in / Out of Oven :	11/05/14 4:00 PM TO 11/06/14 4:00 PM
Wt. of Dry Soil + Can After Wash, grams	233.50
Wt. of Dry Soil After Wash, grams	224.30
Total Loss, grams	19.00
Percent Finer Than No. 200 Sieve	8%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2040CL		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	35.60	35.60	8	92	
3/8"	9.51	23.70	59.30	13	87	
4	4.76	35.80	95.10	21	79	AASHTO Classification:
10	2.00	20.10	115.20	25	75	A-3
40	0.420	68.70	183.90	41	59	
60	0.250	89.30	273.20	61	39	
100	0.149	96.30	369.50	83	17	
200	0.074	31.10	400.60	90	10	
PAN						

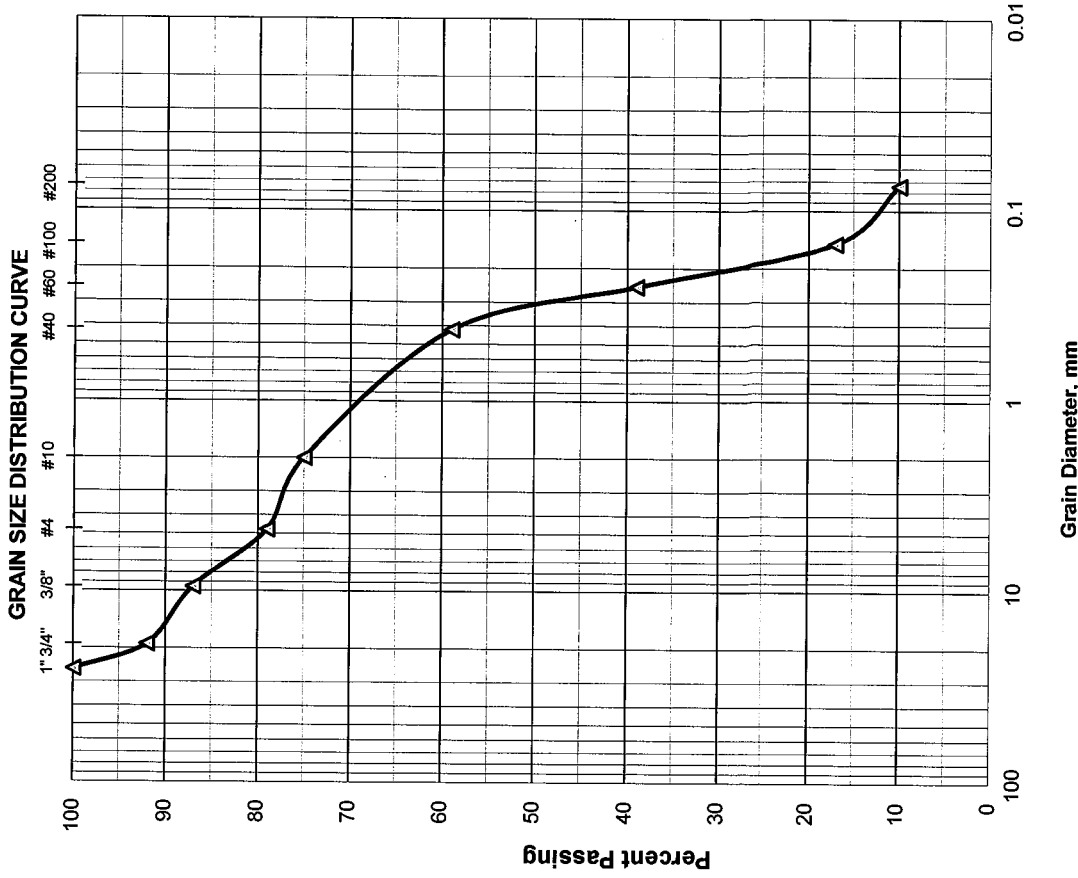
Total Dry Weight Before Wash, (gr) = **444.80**
 Percent Finer than No. 200 Sieve by Wash Method = **10%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	21
Coarse Sand	>No. 4-≤ No. 40	20
Fine Sand	>No. 40-≤ No. 200	49
Silt and Clays	>No. 200	10
Water Content		7%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2040CL		Depth: 2.0'-4.0'				
Date: 10/17/2014		Tested By: H.C.				
Sample No.: 2						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	33.40	33.40	7	93	
3/8"	9.51	7.50	40.90	9	91	
4	4.76	3.20	44.10	10	90	
10	2.00	3.70	47.80	11	89	
40	0.420	72.20	120.00	27	73	
60	0.250	150.50	270.50	63	37	
100	0.149	105.90	376.40	87	13	
200	0.074	37.90	414.30	96	4	
PAN						
						AASHTO Classification: A-3

Total Dry Weight Before Wash, (gr) =	429.20
Percent Finer than No. 200 Sieve by Wash Method =	4%

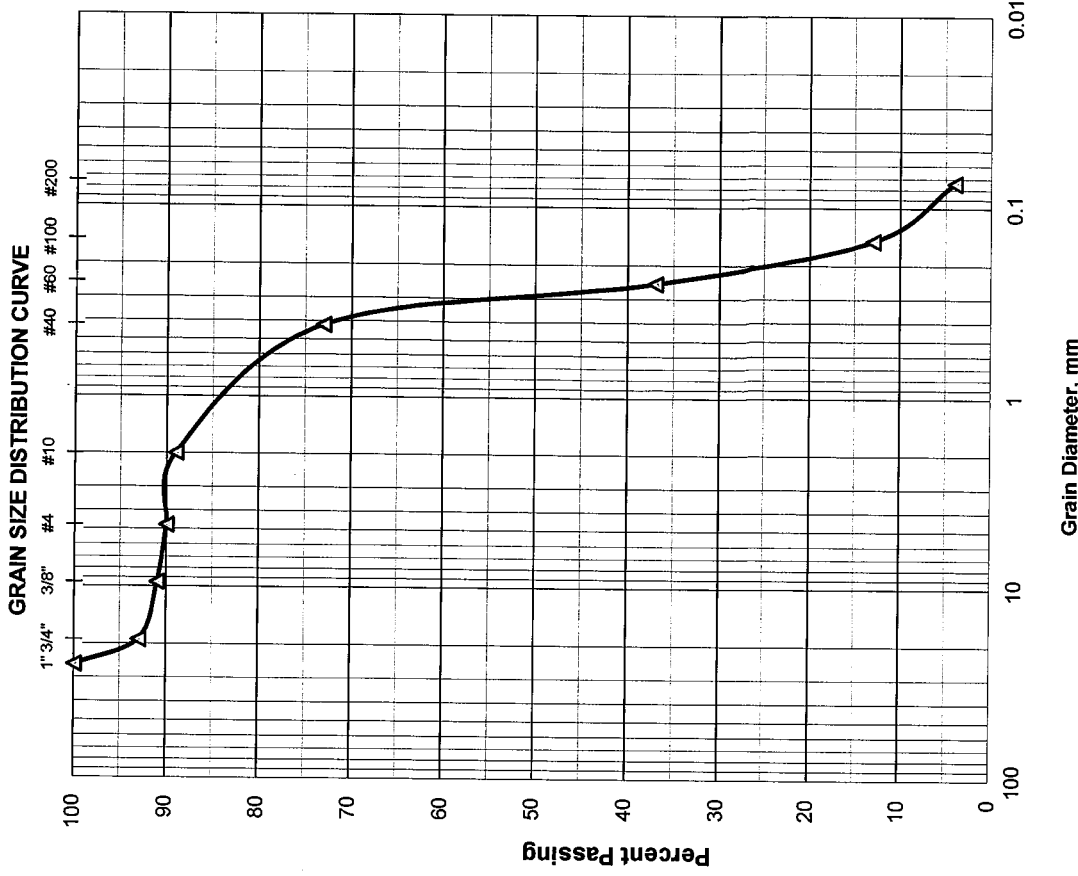
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	10
Coarse Sand	>No. 4-≤ No. 40	17
Fine Sand	>No. 40-≤ No. 200	69
Silt and Clays	>No. 200	4
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2040CL Sample No.: 5A Depth: 8.0'-9.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	525.70
Wt. of Dry Soil + Can, grams	417.60
Wt. of Can, grams No. 808	8.90
Wt. of Dry Soil, grams	408.70
Wt. of Moisture, grams	108.10
Water Content, w%	26%
Wt. of Dry Soil + Can Before Wash, grams	417.60
Wt. of Can, grams No. 808	8.90
Wt. of Dry Soil Before Wash, grams	408.70
Time in / Out of Oven :	10/15/14 7:00 PM TO 10/16/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	358.10
Wt. of Dry Soil After Wash, grams	349.20
Total Loss, grams	59.50
Percent Finer Than No. 200 Sieve	15%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-2-4



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2040R Sample No.: 1B Depth: 1.0'-2.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	372.80
Wt. of Dry Soil + Can, grams	368.20
Wt. of Can, grams No. 809	8.90
Wt. of Dry Soil, grams	359.30
Wt. of Moisture, grams	4.60
Water Content, w%	1%
Wt. of Dry Soil + Can Before Wash, grams	368.20
Wt. of Can, grams No. 809	8.90
Wt. of Dry Soil Before Wash, grams	359.30
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	354.60
Wt. of Dry Soil After Wash, grams	345.70
Total Loss, grams	13.60
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.

Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

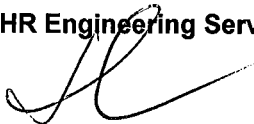
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2040R Sample No.: 2A Depth: 2.0'-3.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	296.50
Wt. of Dry Soil + Can, grams	287.60
Wt. of Can, grams No. 810	8.30
Wt. of Dry Soil, grams	279.30
Wt. of Moisture, grams	8.90
Water Content, w%	3%
Wt. of Dry Soil + Can Before Wash, grams	287.60
Wt. of Can, grams No. 810	8.30
Wt. of Dry Soil Before Wash, grams	279.30
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	277.20
Wt. of Dry Soil After Wash, grams	268.90
Total Loss, grams	10.40
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-391R				
Boring No.: RB-2042CL		Sample No.: 2				
Date: 11/6/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	21.50	21.50	3	97	
4	4.76	7.90	29.40	5	95	
10	2.00	4.50	33.90	6	94	
40	0.420	58.20	92.10	16	84	
60	0.250	185.50	277.60	50	50	
100	0.149	175.60	453.20	82	18	
200	0.074	69.90	523.10	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	547.70
Percent Finer than No. 200 Sieve by Wash Method=	5%

Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

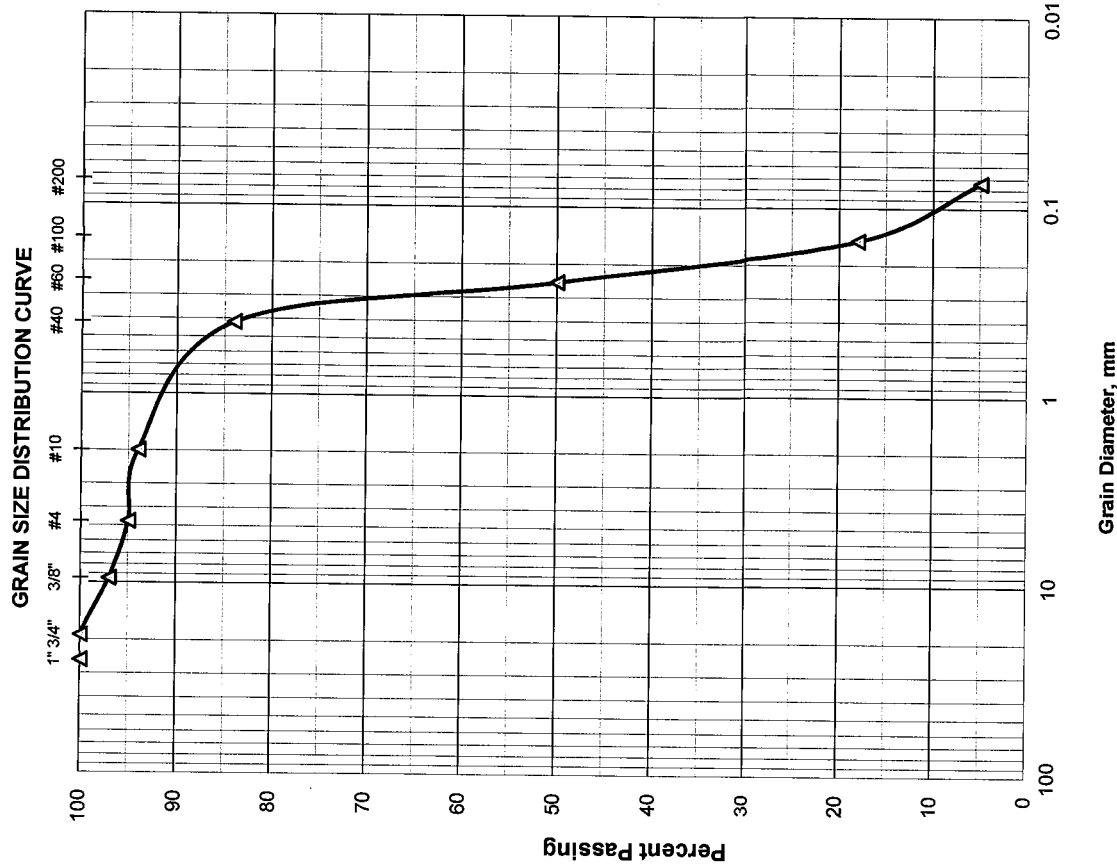
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	5
Coarse Sand	>No. 4-≤ No. 40	11
Fine Sand	>No. 40-≤ No. 200	79
Silt and Clays	>No. 200	5
Water Content		6%

Respectfully Submitted,
 HR Engineering Services, Inc.



Hermando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2042CR		Sample No.: 1B	
Date: 10/17/2014		Depth: 0.5'-1.5'	
		Tested By: H.C.	

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	73.80	73.80	23	77	
3/8"	9.51	23.30	97.10	30	70	
4	4.76	26.20	123.30	39	61	AASHTO Classification:
10	2.00	27.20	150.50	47	53	
40	0.420	49.90	200.40	63	37	A-1-b
60	0.250	31.90	232.30	74	26	
100	0.149	26.60	258.90	82	18	
200	0.074	16.80	275.70	87	13	
PAN						

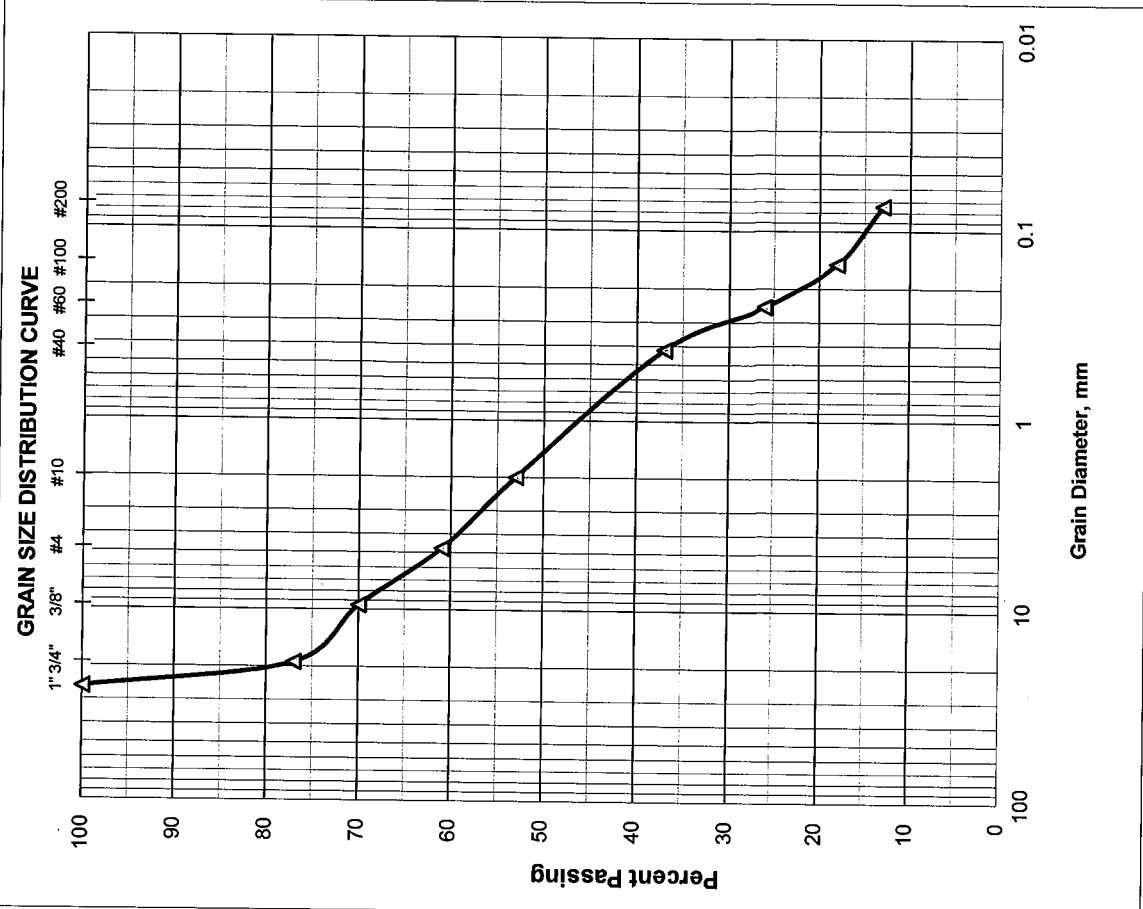
Total Dry Weight Before Wash, (gr) =	313.90
Percent Finer than No. 200 Sieve by Wash Method=	13%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	39
Coarse Sand	>No. 4-≤ No. 40	24
Fine Sand	>No. 40-≤ No. 200	24
Silt and Clays	>No. 200	13
Water Content		6%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-391R				
Boring No.: RB-2046CL		Sample No.: 3				
Date: 11/6/2014		Depth: 4.0'-6.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	3.20	3.20	0	100	
4	4.76	1.50	4.70	1	99	AASHTO Classification:
10	2.00	1.40	6.10	1	99	
40	0.420	15.40	21.50	4	96	A-3
60	0.250	67.30	88.80	19	81	
100	0.149	196.60	285.40	63	37	
200	0.074	133.10	418.50	93	7	
PAN						

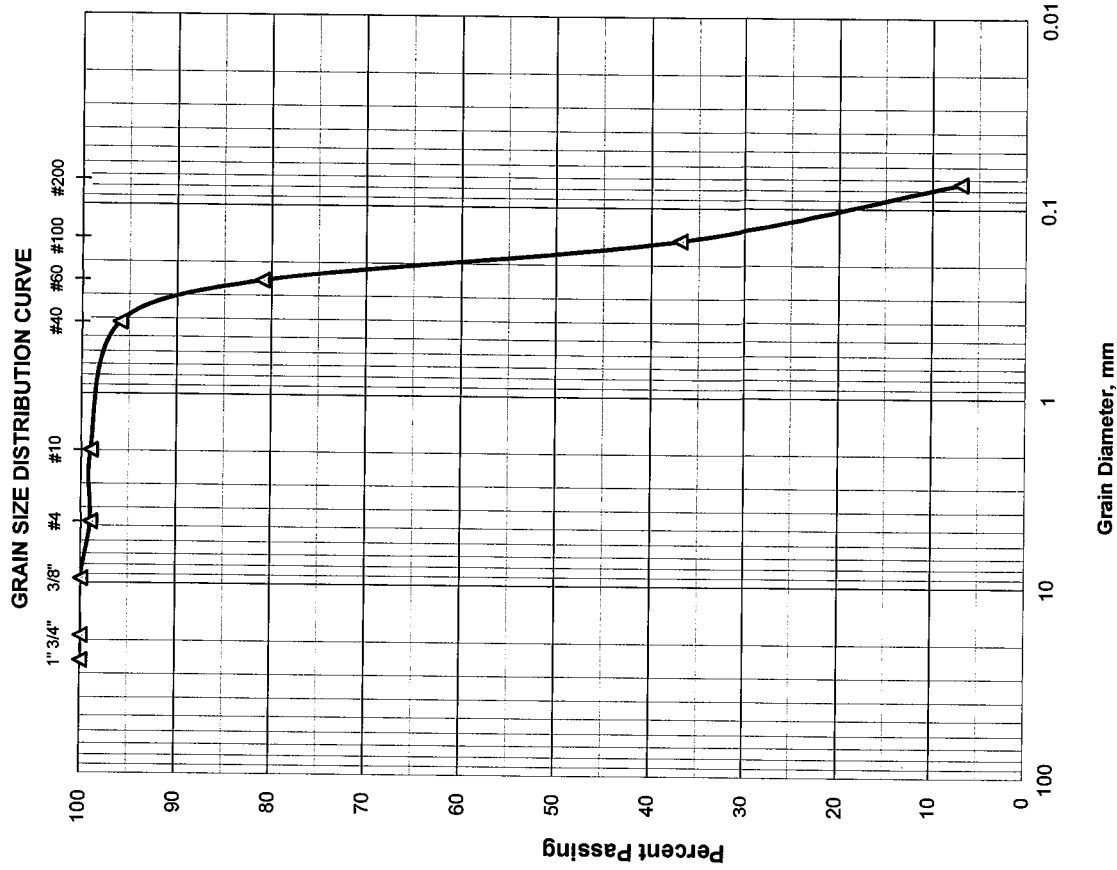
Total Dry Weight Before Wash, (gr) = **448.70**
 Percent Finer than No. 200 Sieve by Wash Method = **7%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	1
Coarse Sand	>No. 4-≤ No. 40	3
Fine Sand	>No. 40-≤ No. 200	89
Silt and Clays	>No. 200	7
Water Content		25%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2046CR Sample No.: 3B Depth: 5.5'-6.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	84.70
Wt. of Dry Soil + Can, grams	64.10
Wt. of Can, grams No. 812	8.90
Wt. of Dry Soil, grams	55.20
Wt. of Moisture, grams	20.60
Water Content, w%	37%
Wt. of Dry Soil + Can Before Wash, grams	64.10
Wt. of Can, grams No. 812	8.90
Wt. of Dry Soil Before Wash, grams	55.20
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	48.30
Wt. of Dry Soil After Wash, grams	39.40
Total Loss, grams	15.80
Percent Finer Than No. 200 Sieve	29%

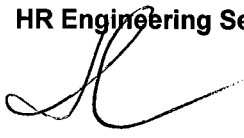
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-2-4


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2046CR Sample No.: 4A Depth: 6.0'-7.0'
Date: 10/10/14

Technician:	H.C.
Date Sample Placed in Oven:	10/14/2014
Time in / Out of Oven :	10/14/14 6:00 AM TO 10/15/14 6:00 AM
Wt. of Wet Soil + Can, grams	328.80
Wt. of Dry Soil + Can, grams	225.10
Wt. of Can, grams No. 813	8.90
Wt. of Dry Soil, grams	216.20
Wt. of Moisture, grams	103.70
Water Content, w%	48%
Wt. of Dry Soil + Can Before Wash, grams	225.10
Wt. of Can, grams No. 813	8.90
Wt. of Dry Soil Before Wash, grams	216.20
Time in / Out of Oven :	10/16/14 7:00 AM TO 10/17/14 7:00 AM
Wt. of Dry Soil + Can After Wash, grams	102.90
Wt. of Dry Soil After Wash, grams	94.00
Total Loss, grams	122.20
Percent Finer Than No. 200 Sieve	57%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-4


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2050CL		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-1.5'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	10.30	10.30	5	95	
3/8"	9.51	17.80	28.10	14	86	
4	4.76	24.70	52.80	27	73	
10	2.00	24.70	77.50	41	59	
40	0.420	29.80	107.30	56	44	
60	0.250	15.60	122.90	65	35	
100	0.149	24.60	147.50	78	22	
200	0.074	14.40	161.90	85	15	
PAN						

Total Dry Weight Before Wash, (gr) =	189.00
Percent Finer than No. 200 Sieve by Wash Method=	15%

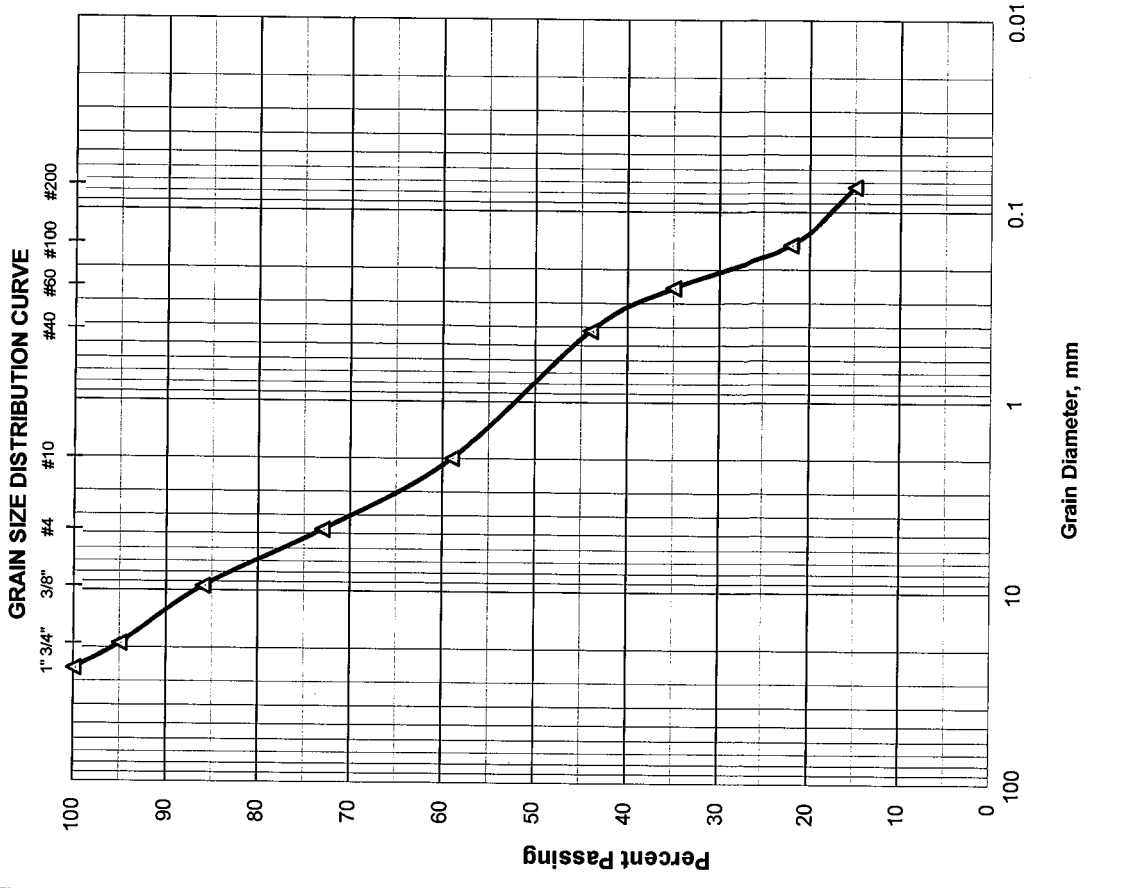
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	27
Coarse Sand	>No. 4-≤ No. 40	29
Fine Sand	>No. 40-≤ No. 200	29
Silt and Clays	>No. 200	15
Water Content		5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2050CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.5'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	30.10	30.10	6	94	
3/8"	9.51	32.50	62.60	13	87	
4	4.76	40.50	103.10	22	78	AASHTO Classification:
10	2.00	24.60	127.70	28	72	A-3
40	0.420	55.50	183.20	40	60	
60	0.250	89.10	272.30	59	41	
100	0.149	108.60	380.90	83	17	
200	0.074	29.60	410.50	90	10	
PAN						

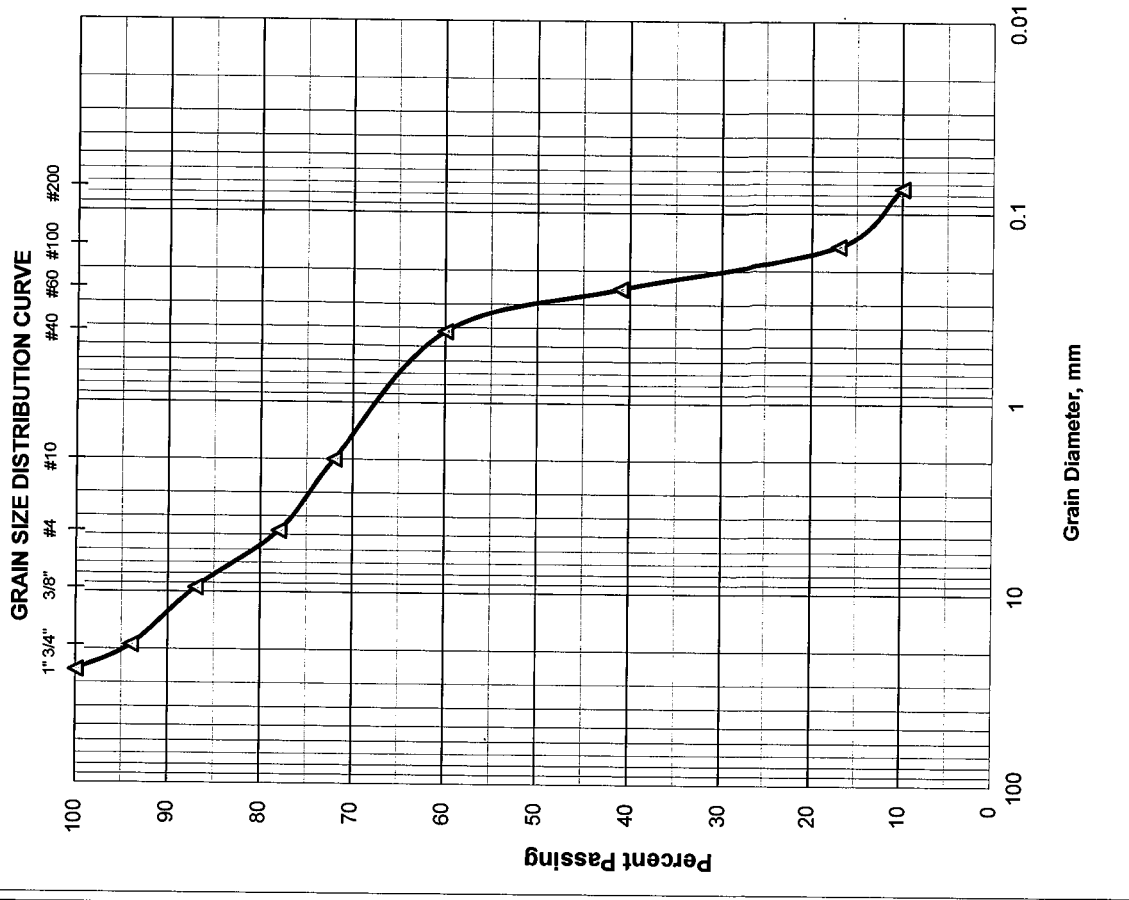
Total Dry Weight Before Wash, (gr) =	455.80
Percent Finer than No. 200 Sieve by Wash Method=	10%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	22
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	50
Silt and Clays	>No. 200	10
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2058R		Depth: 0.5'-2.0'				
Date: 10/17/2014		Sample No.: 1B				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	15.40	15.40	24	76	
3/8"	9.51	1.20	16.60	26	74	
4	4.76	5.70	22.30	35	65	
10	2.00	4.80	27.10	43	57	
40	0.420	7.20	34.30	55	45	
60	0.250	7.40	41.70	67	33	
100	0.149	9.40	51.10	82	18	
200	0.074	5.20	56.30	90	10	
PAN						

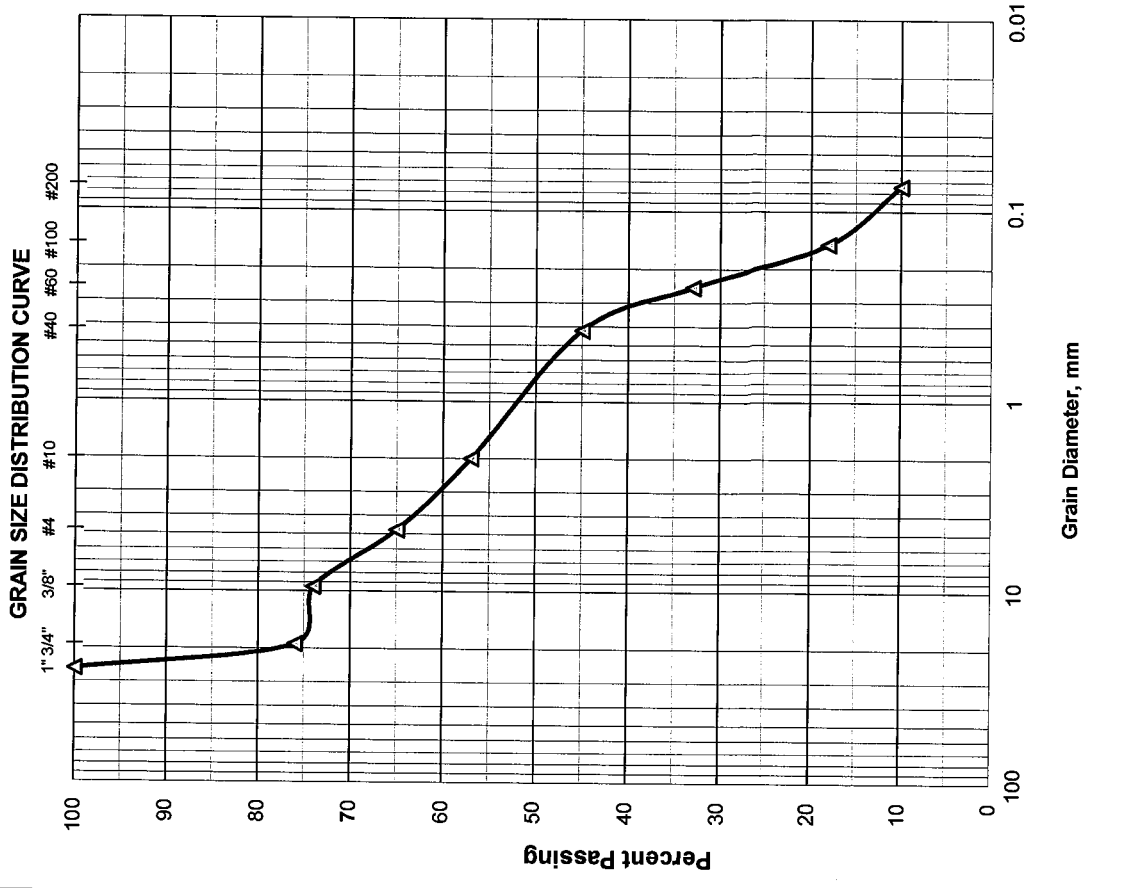
Total Dry Weight Before Wash, (gr) = **62.20**
 Percent Finer than No. 200 Sieve by Wash Method = **10%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 35
Coarse Sand	>No. 4-≤ No. 40 20
Fine Sand	>No. 40-≤ No. 200 35
Silt and Clays	>No. 200 10
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2058R		Depth: 2.0'-4.0'	
Date: 10/17/2014		Sample No.: 2	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	15.40	15.40	4	96	
4	4.76	33.40	48.80	12	88	AASHTO Classification:
10	2.00	33.30	82.10	21	79	
40	0.420	52.90	135.00	35	65	A-2-4
60	0.250	42.30	177.30	47	53	
100	0.149	67.20	244.50	64	36	
200	0.074	48.60	293.10	77	23	
PAN						

Total Dry Weight Before Wash, (gr) =	376.60
Percent Finer than No. 200 Sieve by Wash Method =	23%

Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

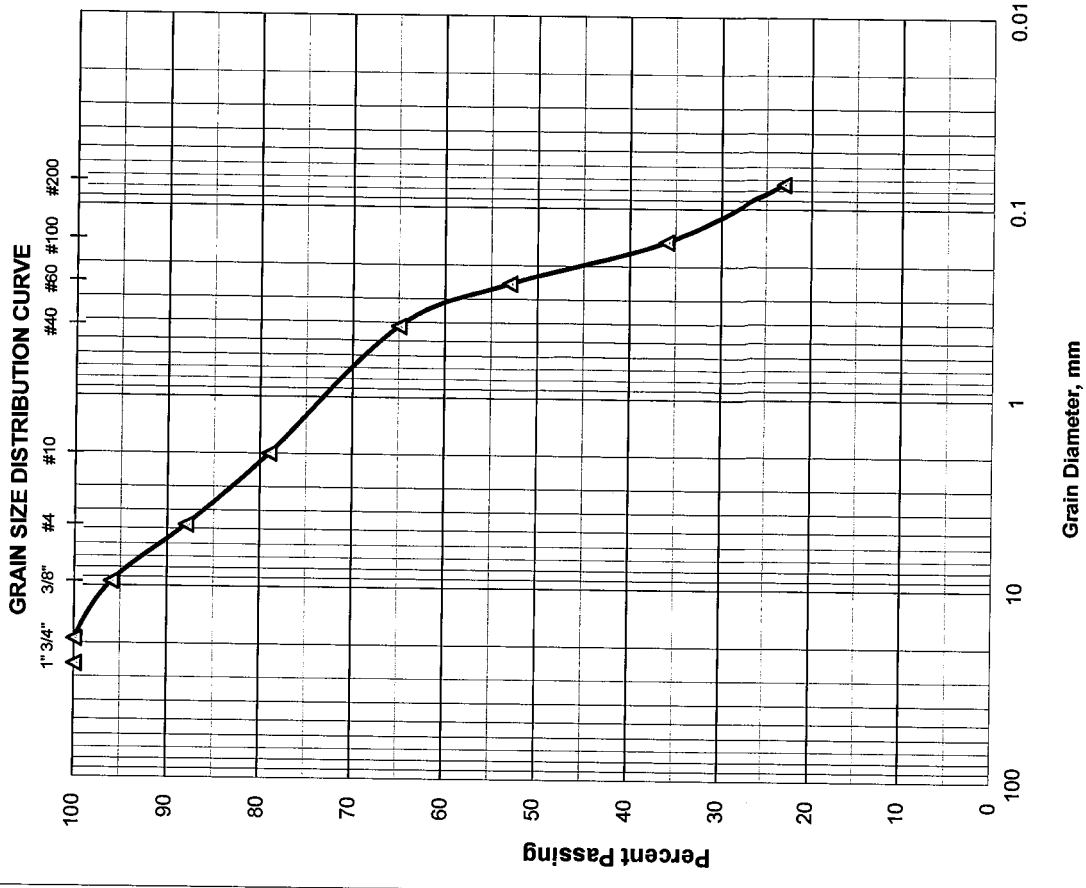
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 12
Coarse Sand	>No. 4-≤ No. 40 23
Fine Sand	>No. 40-≤ No. 200 42
Silt and Clays	>No. 200 23
Water Content	3%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2058R		Depth: 4.0'-6.0'	
Date: 10/17/2014		Sample No.: 3	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	69.80	69.80	15	85	
3/8"	9.51	34.70	104.50	23	77	
4	4.76	38.40	142.90	32	68	AASHTO Classification:
10	2.00	46.70	189.60	42	58	
40	0.420	59.90	249.50	55	45	A-1-b
60	0.250	38.20	287.70	64	36	
100	0.149	69.80	357.50	80	20	
200	0.074	49.70	407.20	91	9	
PAN						

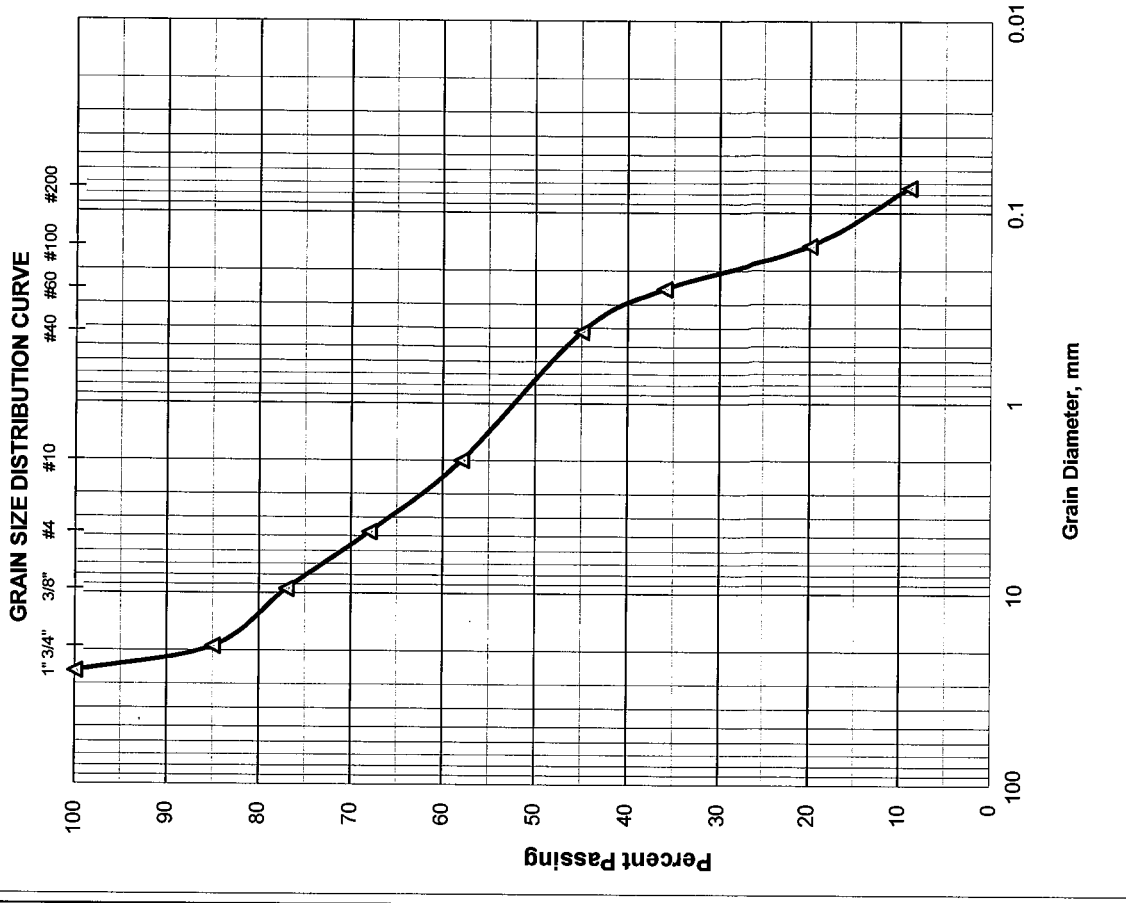
Total Dry Weight Before Wash, (gr) = **446.50**
 Percent Finer than No. 200 Sieve by Wash Method = **9%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	32
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	36
Silt and Clays	>No. 200	9
Water Content		4%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2062CR		Sample No.: 1B				
Date: 10/17/2014		Depth: 0.3'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	62.10	62.10	11	89	
3/8"	9.51	54.50	116.60	21	79	
4	4.76	54.50	171.10	31	69	AASHTO Classification:
10	2.00	65.10	236.20	43	57	
40	0.420	93.90	330.10	60	40	A-1-b
60	0.250	29.20	359.30	66	34	
100	0.149	46.80	406.10	74	26	
200	0.074	35.20	441.30	81	19	
PAN						

Total Dry Weight Before Wash, (gr) =	542.00
Percent Finer than No. 200 Sieve by Wash Method =	19%

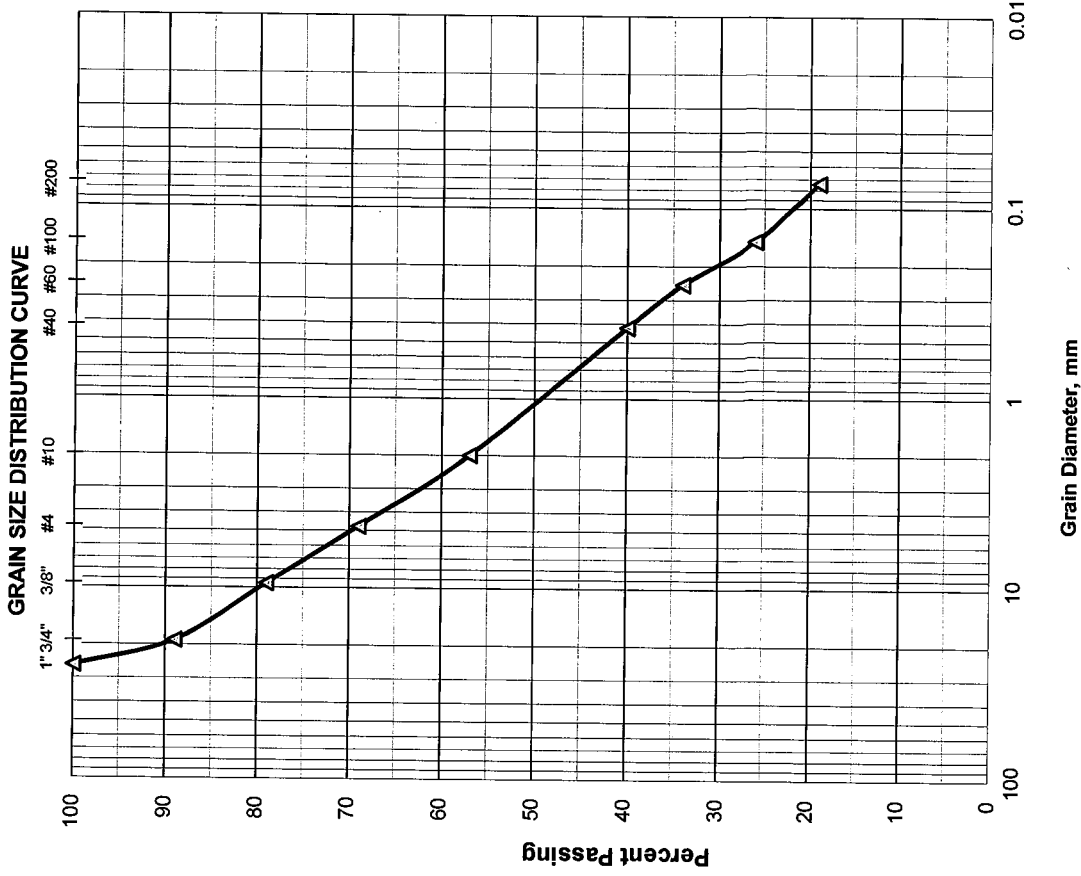
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method =

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 31
Coarse Sand	>No. 4-≤ No. 40 29
Fine Sand	>No. 40-≤ No. 200 21
Silt and Clays	>No. 200 19
Water Content	10%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET


Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2084L	Sample No.: 1B	Depth: 1.5'-2.0'				
Date: 11/6/2014	Tested By: H.C.					
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	5.70	5.70	1	99	
4	4.76	3.10	8.80	2	98	AASHTO Classification:
10	2.00	3.30	12.10	3	97	
40	0.420	23.10	35.20	9	91	A-3
60	0.250	70.70	105.90	28	72	
100	0.149	178.20	284.10	75	25	
200	0.074	71.90	356.00	94	6	
PAN						

376.30
6%

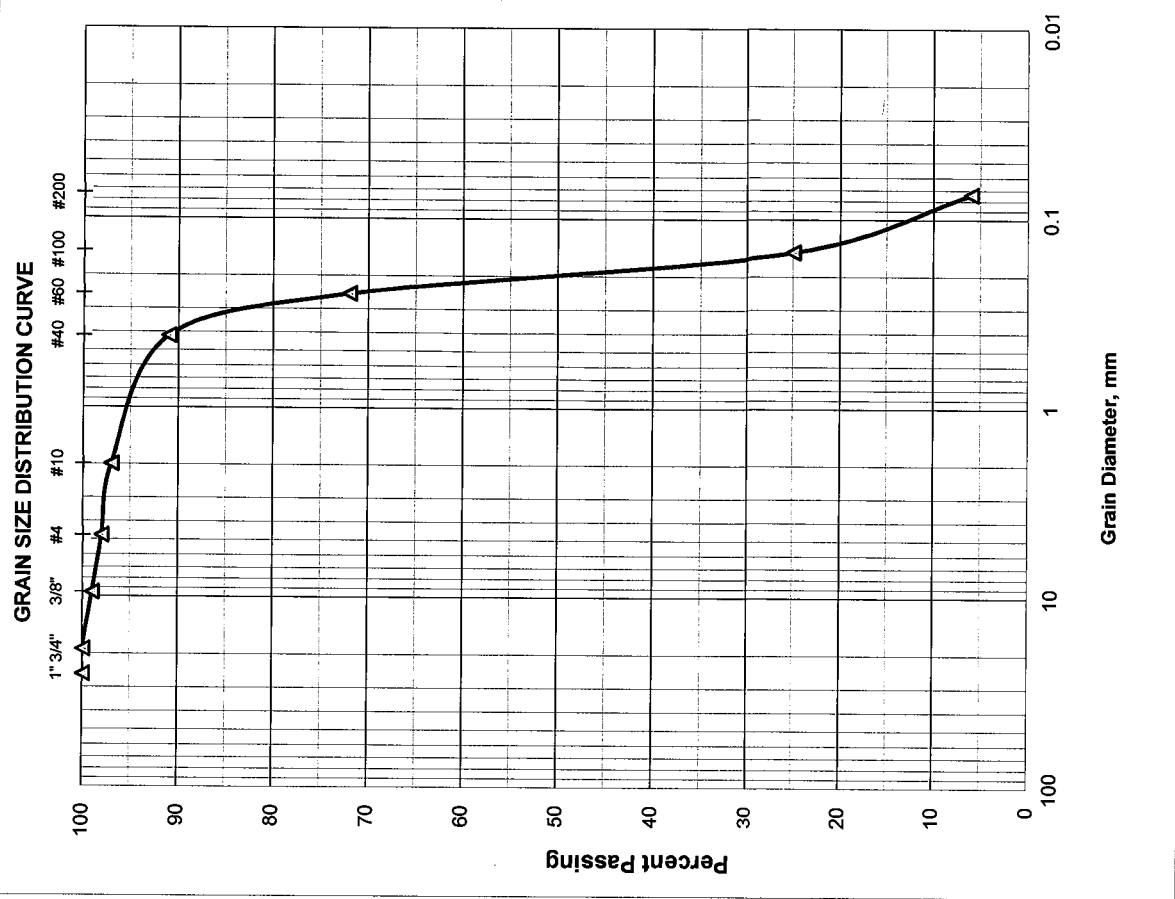
Total Dry Weight Before Wash, (gr) =
 Percent Finer than No. 200 Sieve by Wash Method=

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 2
Coarse Sand	>No. 4-≤ No. 40 7
Fine Sand	>No. 40-≤ No. 200 85
Silt and Clays	>No. 200 6
Water Content	9%

Respectfully Submitted,
HR Engineering Services, Inc.


Hernando R. Ramos, P.E.
 Florida Registration No. 42045




GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2088CR		Sample No.: 2				
Date: 11/6/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	26.60	26.60	5	95	
4	4.76	5.10	31.70	6	94	AASHTO Classification:
10	2.00	5.90	37.60	7	93	
40	0.420	42.20	79.80	15	85	A-3
60	0.250	123.90	203.70	40	60	
100	0.149	204.90	408.60	80	20	
200	0.074	73.30	481.90	94	6	
PAN						

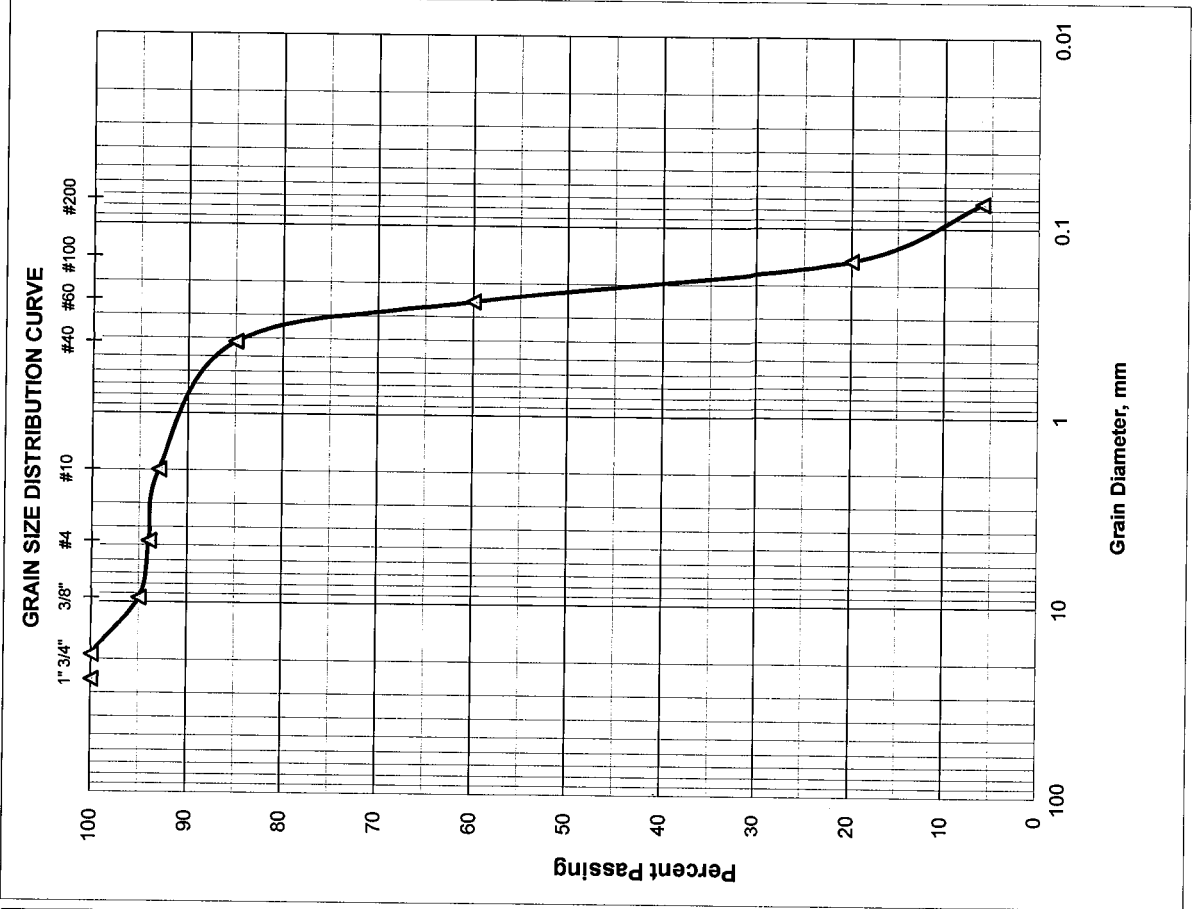
Total Dry Weight Before Wash, (gr) = **509.20**
 Percent Finer than No. 200 Sieve by Wash Method = **6%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	6
Coarse Sand	>No. 4 ≤ No. 40	9
Fine Sand	>No. 40 ≤ No. 200	79
Silt and Clays	>No. 200	6
Water Content		4%

Respectfully Submitted,
HR Engineering Services, Inc.


Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2088CR Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	324.40
Wt. of Dry Soil + Can, grams	249.60
Wt. of Can, grams No. 611	9.20
Wt. of Dry Soil, grams	240.40
Wt. of Moisture, grams	74.80
Water Content, w%	31%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	26.30
Weight of Crucible and Sample After Ignition:	26.20
Weight of Crucible: No. 209	15.40
Weight of Oven-Dried Soil:	10.90
Weight Loss due to Ignition:	0.10
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2088CR Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	324.40
Wt. of Dry Soil + Can, grams	249.60
Wt. of Can, grams No. 611	9.20
Wt. of Dry Soil, grams	240.40
Wt. of Moisture, grams	74.80
Water Content, w%	31%
Wt. of Dry Soil + Can Before Wash, grams	238.70
Wt. of Can, grams No. 611	9.20
Wt. of Dry Soil Before Wash, grams	229.50
Time in / Out of Oven :	11/09/14 11:00 AM TO 11/10/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	227.20
Wt. of Dry Soil After Wash, grams	218.00
Total Loss, grams	11.50
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

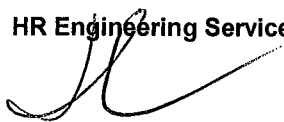
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2092R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	615.80
Wt. of Dry Soil + Can, grams	571.40
Wt. of Can, grams No. 709	9.00
Wt. of Dry Soil, grams	562.40
Wt. of Moisture, grams	44.40
Water Content, w%	8%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	27.00
Weight of Crucible and Sample After Ignition:	26.80
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2092R Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	615.80
Wt. of Dry Soil + Can, grams	571.40
Wt. of Can, grams No. 709	9.00
Wt. of Dry Soil, grams	562.40
Wt. of Moisture, grams	44.40
Water Content, w%	8%
Wt. of Dry Soil + Can Before Wash, grams	561.10
Wt. of Can, grams No. 709	9.00
Wt. of Dry Soil Before Wash, grams	552.10
Time in / Out of Oven :	11/05/14 7:00 PM TO 11/06/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	517.50
Wt. of Dry Soil After Wash, grams	508.50
Total Loss, grams	43.60
Percent Finer Than No. 200 Sieve	8%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

**REPORT OF MOISTURE AND
ORGANIC CONTENT BY LOSS ON IGNITION**

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
 Boring No.: RB-2092CR Sample No.: 5 Depth: 8.0'-10.0'
 Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	314.70
Wt. of Dry Soil + Can, grams	267.40
Wt. of Can, grams No. 612	9.10
Wt. of Dry Soil, grams	258.30
Wt. of Moisture, grams	47.30
Water Content, w%	18%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	28.00
Weight of Crucible and Sample After Ignition:	27.80
Weight of Crucible: No. 299	16.50
Weight of Oven-Dried Soil:	11.50
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2092CR Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	314.70
Wt. of Dry Soil + Can, grams	267.40
Wt. of Can, grams No. 612	9.10
Wt. of Dry Soil, grams	258.30
Wt. of Moisture, grams	47.30
Water Content, w%	18%
Wt. of Dry Soil + Can Before Wash, grams	255.80
Wt. of Can, grams No. 612	9.10
Wt. of Dry Soil Before Wash, grams	246.70
Time in / Out of Oven :	11/09/14 11:00 AM TO 11/10/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	241.30
Wt. of Dry Soil After Wash, grams	232.20
Total Loss, grams	14.50
Percent Finer Than No. 200 Sieve	6%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096CR Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	300.10
Wt. of Dry Soil + Can, grams	271.50
Wt. of Can, grams No. 710	8.90
Wt. of Dry Soil, grams	262.60
Wt. of Moisture, grams	28.60
Water Content, w%	11%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	27.50
Weight of Crucible and Sample After Ignition:	27.30
Weight of Crucible: No. 227	16.10
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

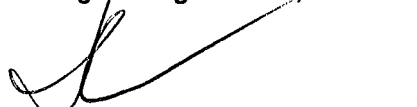
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-1-b


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096CR Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	300.10
Wt. of Dry Soil + Can, grams	271.50
Wt. of Can, grams No. 710	8.90
Wt. of Dry Soil, grams	262.60
Wt. of Moisture, grams	28.60
Water Content, w%	11%
Wt. of Dry Soil + Can Before Wash, grams	248.30
Wt. of Can, grams No. 710	8.90
Wt. of Dry Soil Before Wash, grams	239.40
Time in / Out of Oven :	11/05/14 7:00 PM TO 11/06/14 7:00 PM
Wt. of Dry Soil + Can After Wash, grams	225.70
Wt. of Dry Soil After Wash, grams	216.80
Total Loss, grams	22.60
Percent Finer Than No. 200 Sieve	9%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-1-b


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	598.50
Wt. of Dry Soil + Can, grams	558.50
Wt. of Can, grams No. 711	8.80
Wt. of Dry Soil, grams	549.70
Wt. of Moisture, grams	40.00
Water Content, w%	7%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	28.80
Weight of Crucible and Sample After Ignition:	28.60
Weight of Crucible: No. 234	17.50
Weight of Oven-Dried Soil:	11.30
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:00 AM TO 11/05/14 6:00 AM
Wt. of Wet Soil + Can, grams	598.50
Wt. of Dry Soil + Can, grams	558.50
Wt. of Can, grams No. 711	8.80
Wt. of Dry Soil, grams	549.70
Wt. of Moisture, grams	40.00
Water Content, w%	7%
Wt. of Dry Soil + Can Before Wash, grams	547.70
Wt. of Can, grams No. 711	8.80
Wt. of Dry Soil Before Wash, grams	538.90
Time in / Out of Oven :	11/05/14 8:00 PM TO 11/06/14 8:00 PM
Wt. of Dry Soil + Can After Wash, grams	534.00
Wt. of Dry Soil After Wash, grams	525.20
Total Loss, grams	13.70
Percent Finer Than No. 200 Sieve	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	472.50
Wt. of Dry Soil + Can, grams	393.60
Wt. of Can, grams No. 613	9.00
Wt. of Dry Soil, grams	384.60
Wt. of Moisture, grams	78.90
Water Content, w%	21%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	33.80
Weight of Crucible and Sample After Ignition:	33.50
Weight of Crucible: No. 44	20.90
Weight of Oven-Dried Soil:	12.90
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2096L Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	472.50
Wt. of Dry Soil + Can, grams	393.60
Wt. of Can, grams No. 613	9.00
Wt. of Dry Soil, grams	384.60
Wt. of Moisture, grams	78.90
Water Content, w%	21%
Wt. of Dry Soil + Can Before Wash, grams	380.80
Wt. of Can, grams No. 613	9.00
Wt. of Dry Soil Before Wash, grams	371.80
Time in / Out of Oven :	11/09/14 11:00 AM TO 11/10/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	368.90
Wt. of Dry Soil After Wash, grams	359.90
Total Loss, grams	11.90
Percent Finer Than No. 200 Sieve	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-391R	
Boring No.: RB-2100CR		Sample No.: 4	
Date: 11/6/2014		Depth: 6.0'-8.0'	
		Tested By: H.C.	


Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	
10	2.00	0.10	0.10	0	100	
40	0.420	22.40	22.50	4	96	
60	0.250	165.20	187.70	36	64	
100	0.149	301.10	488.80	95	5	
200	0.074	12.60	501.40	97	3	
PAN						

Total Dry Weight Before Wash, (gr) =	513.60
Percent Finer than No. 200 Sieve by Wash Method=	3%

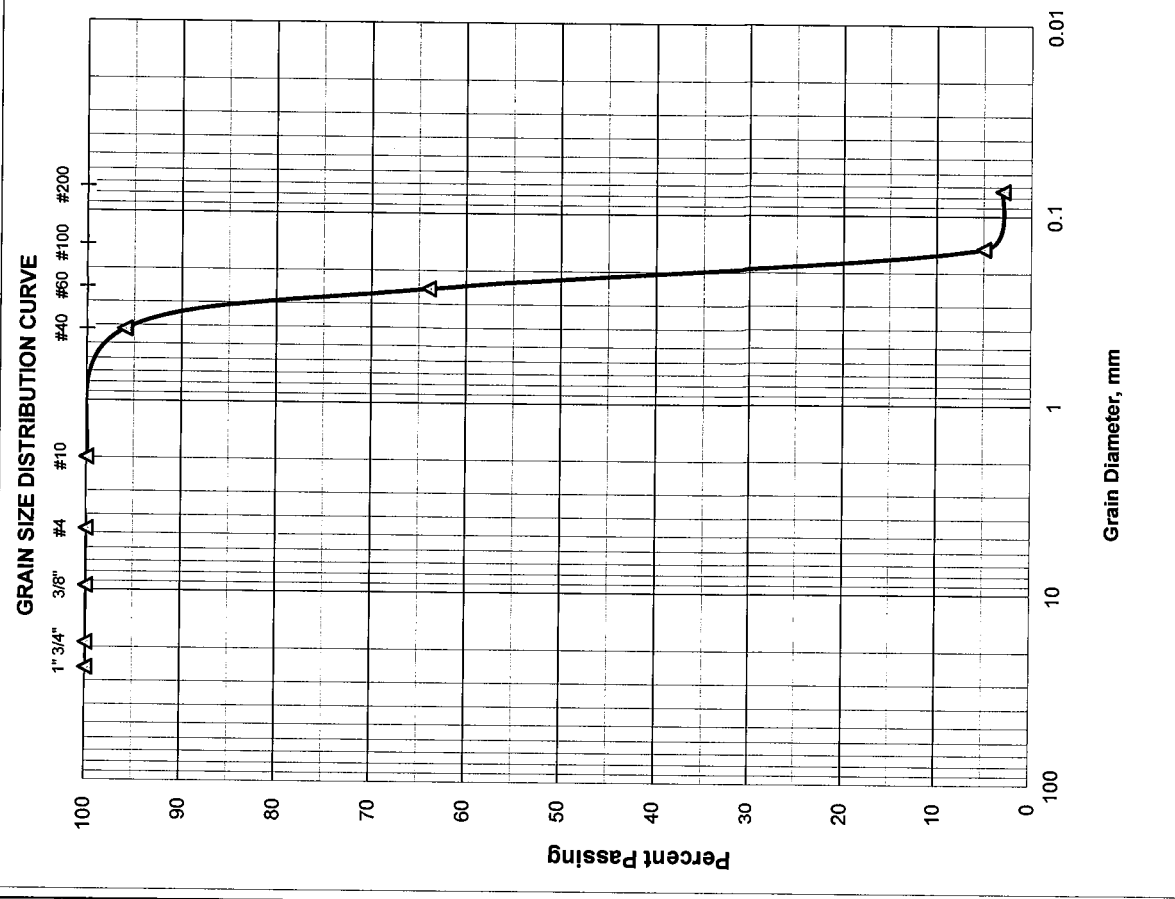
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 0
Coarse Sand	>No. 4-≤ No. 40 4
Fine Sand	>No. 40-≤ No. 200 93
Silt and Clays	>No. 200 3
Water Content	
	22%

Respectfully Submitted,
HR Engineering Services, Inc.



Hermando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2100L		Sample No.: 5				
Date: 11/6/2014		Depth: 8.0'-9.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	AASHTO Classification:
10	2.00	0.00	0.00	0	100	
40	0.420	7.50	7.50	3	97	A-3
60	0.250	53.40	60.90	29	71	
100	0.149	125.50	186.40	91	9	
200	0.074	5.40	191.80	94	6	
PAN						

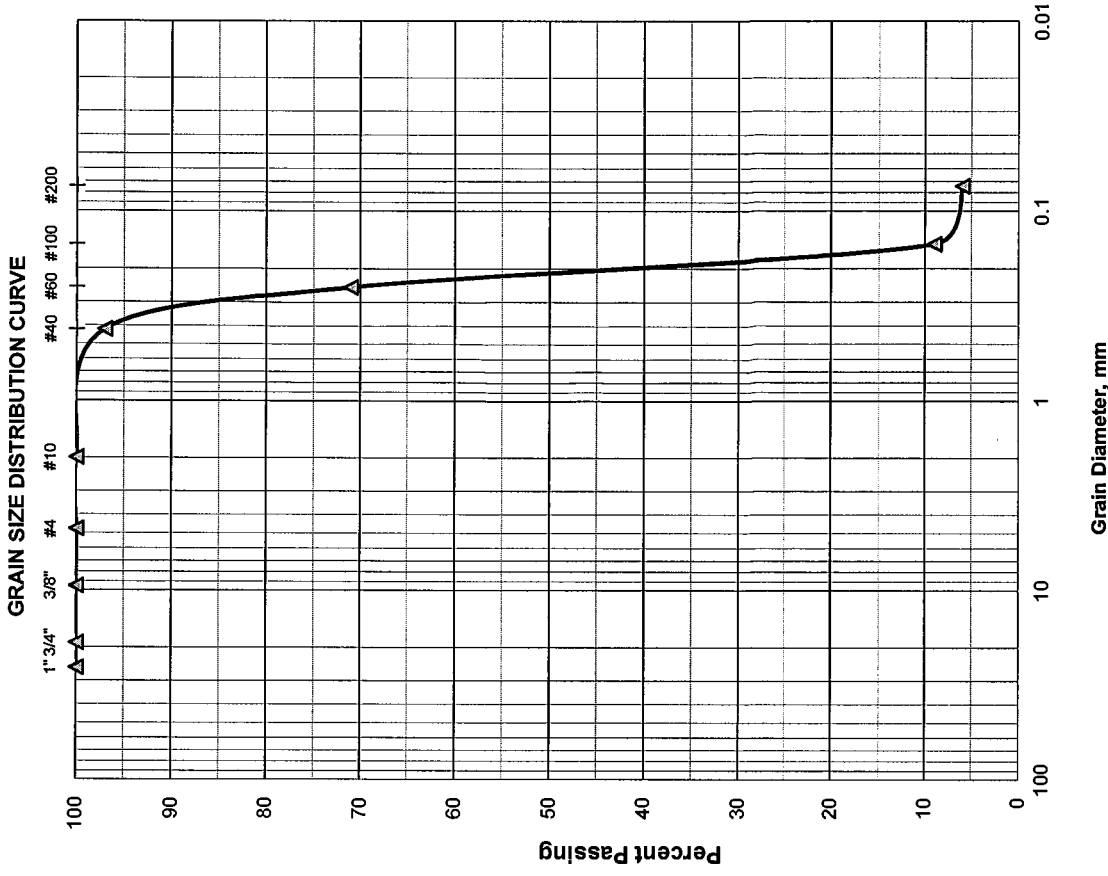
Total Dry Weight Before Wash, (gr) = **203.10**
 Percent Finer than No. 200 Sieve by Wash Method = **6%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 0
Coarse Sand	>No. 4-≤ No. 40 3
Fine Sand	>No. 40-≤ No. 200 91
Silt and Clays	>No. 200 6
Water Content	40%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2104L		Sample No.: 2				
Date: 11/7/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	12.10	12.10	2	98	
4	4.76	6.70	18.80	3	97	AASHTO Classification:
10	2.00	3.70	22.50	4	96	
40	0.420	46.30	68.80	12	88	A-3
60	0.250	144.30	213.10	38	62	
100	0.149	233.50	446.60	79	21	
200	0.074	81.70	528.30	94	6	
PAN						

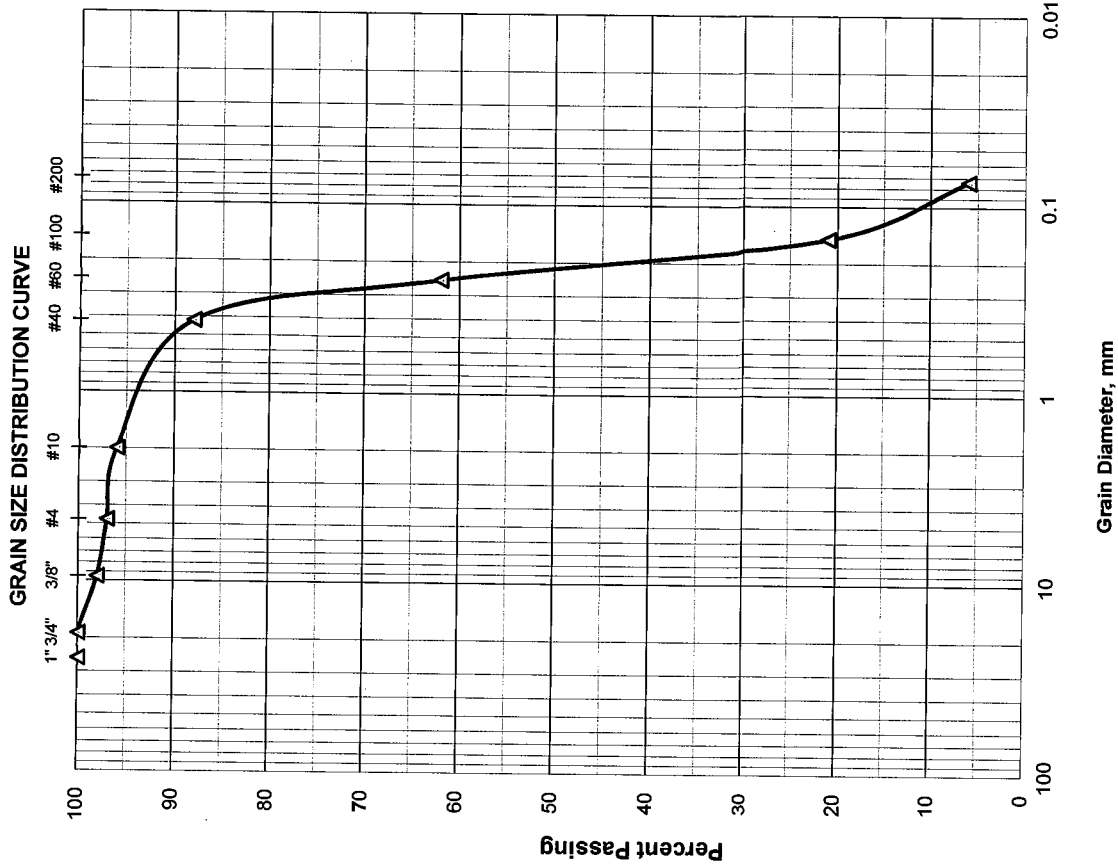
Total Dry Weight Before Wash, (gr) = **559.90**
 Percent Finer than No. 200 Sieve by Wash Method = **6%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 3
Coarse Sand	>No. 4-≤ No. 40 9
Fine Sand	>No. 40-≤ No. 200 82
Silt and Clays	>No. 200 6
Water Content	5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2104R		Depth: 0.5'-2.0'				
Date: 11/7/2014		Sample No.: 1B				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	56.80	56.80	8	92	
3/8"	9.51	99.80	156.60	22	78	
4	4.76	56.10	212.70	30	70	AASHTO Classification:
10	2.00	38.90	251.60	36	64	
40	0.420	91.20	342.80	49	51	A-2-4
60	0.250	119.10	461.90	66	34	
100	0.149	129.40	591.30	85	15	
200	0.074	30.80	622.10	89	11	
PAN						

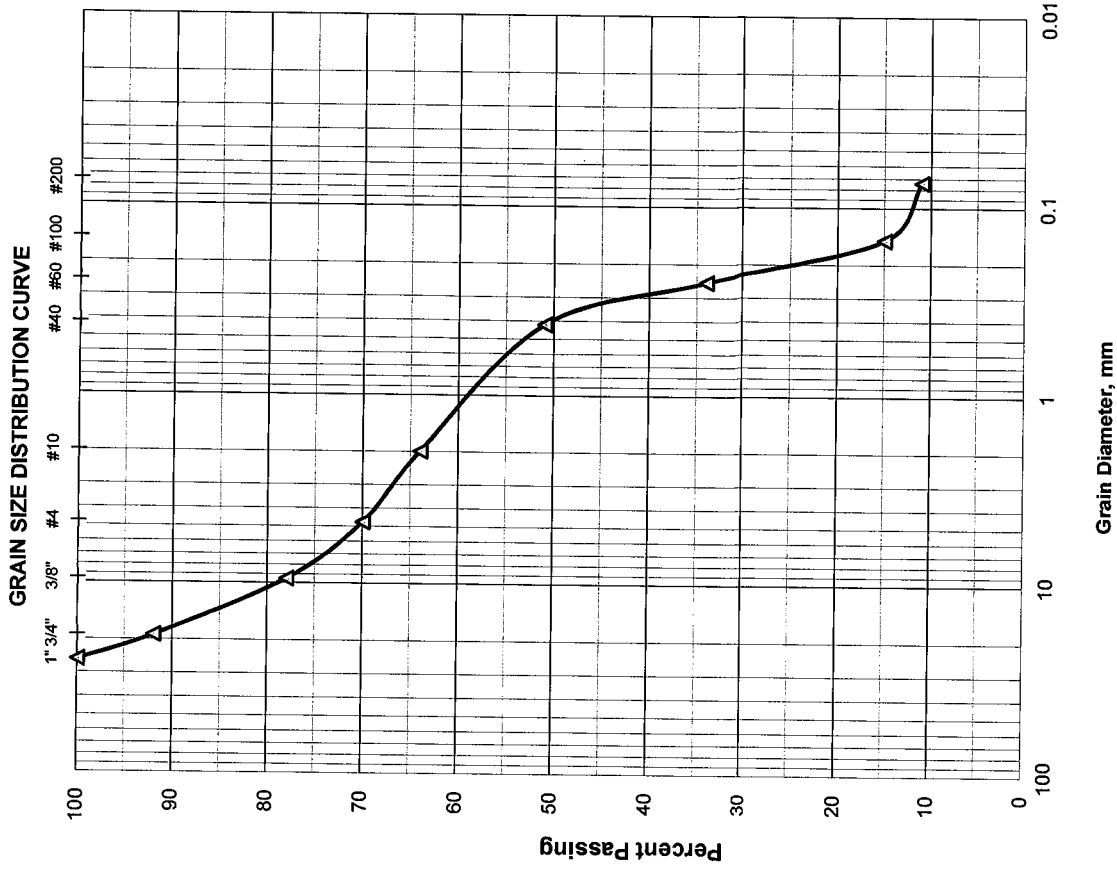
Total Dry Weight Before Wash, (gr) = **694.10**
 Percent Finer than No. 200 Sieve by Wash Method = **11%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	30
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	40
Silt and Clays	>No. 200	11
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



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7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

**REPORT OF MOISTURE AND
ORGANIC CONTENT BY LOSS ON IGNITION**

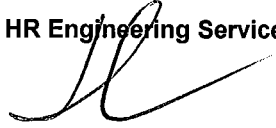
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
 Boring No.: RB-2110L Sample No.: 3B Depth: 5.0'-6.0'
 Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:30 AM TO 11/05/14 6:30 AM
Wt. of Wet Soil + Can, grams	614.50
Wt. of Dry Soil + Can, grams	525.10
Wt. of Can, grams No. 750	9.40
Wt. of Dry Soil, grams	515.70
Wt. of Moisture, grams	89.40
Water Content, w%	17%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	26.50
Weight of Crucible and Sample After Ignition:	26.20
Weight of Crucible: No. 165	15.70
Weight of Oven-Dried Soil:	10.80
Weight Loss due to Ignition:	0.30
Percent Organics:	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

**REPORT OF MOISTURE AND
PERCENT PASSING THE No. 200 SIEVE**

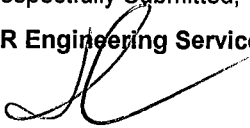
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
 Boring No.: RB-2110L Sample No.: 3B Depth: 5.0'-6.0'
 Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 6:30 AM TO 11/05/14 6:30 AM
Wt. of Wet Soil + Can, grams	614.50
Wt. of Dry Soil + Can, grams	525.10
Wt. of Can, grams No. 750	9.40
Wt. of Dry Soil, grams	515.70
Wt. of Moisture, grams	89.40
Water Content, w%	17%
Wt. of Dry Soil + Can Before Wash, grams	515.00
Wt. of Can, grams No. 750	9.40
Wt. of Dry Soil Before Wash, grams	505.60
Time in / Out of Oven :	11/05/14 8:00 PM TO 11/06/14 8:00 PM
Wt. of Dry Soil + Can After Wash, grams	498.80
Wt. of Dry Soil After Wash, grams	489.40
Total Loss, grams	16.20
Percent Finer Than No. 200 Sieve	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2110R		Sample No.: 4				
Date: 11/7/2014		Depth: 6.0'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	
10	2.00	0.00	0.00	0	100	
40	0.420	37.30	37.30	8	92	
60	0.250	172.50	209.80	45	55	
100	0.149	218.90	428.70	93	7	
200	0.074	17.40	446.10	97	3	
PAN						

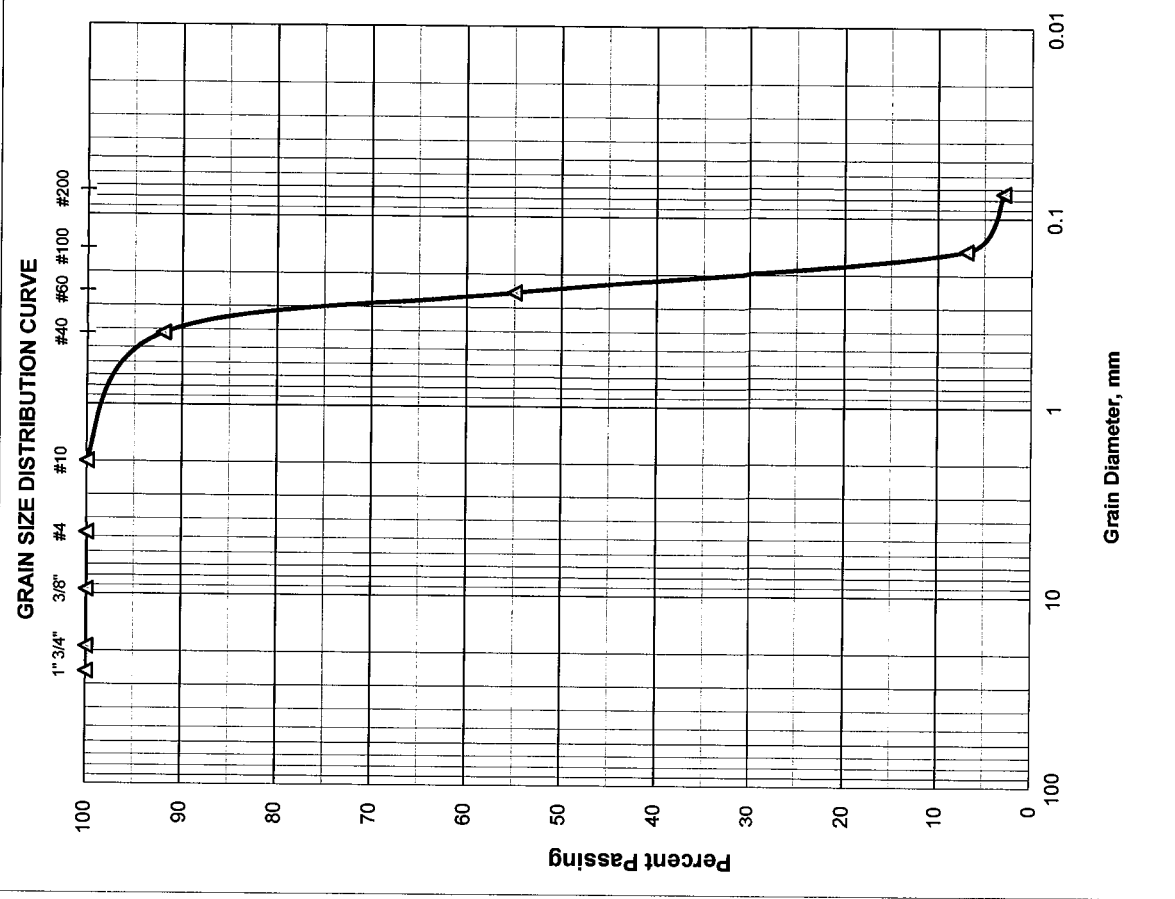
Total Dry Weight Before Wash, (gr) = **456.90**
 Percent Finer than No. 200 Sieve by Wash Method = **3%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	8
Fine Sand	>No. 40-≤ No. 200	89
Silt and Clays	>No. 200	3
Water Content		5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hermando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2118L		Sample No.: 1B				
Date: 11/7/2014		Depth: 0.5'-2.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-1-b
3/4"	19.00	93.60	93.60	19	81	
3/8"	9.51	73.60	167.20	34	66	
4	4.76	39.60	206.80	42	58	
10	2.00	42.50	249.30	51	49	
40	0.420	52.40	301.70	62	38	
60	0.250	55.40	357.10	74	26	
100	0.149	66.80	423.90	87	13	
200	0.074	23.20	447.10	92	8	
PAN						

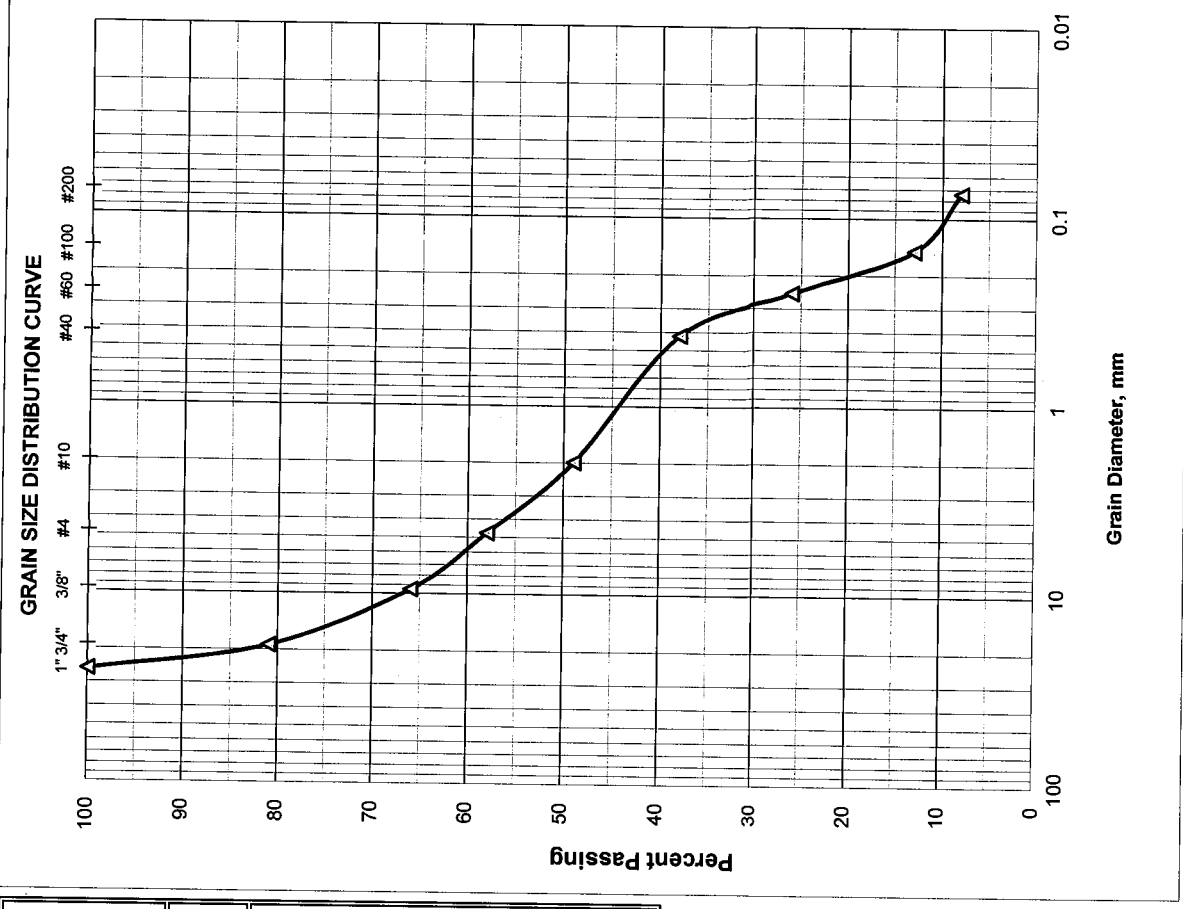
Total Dry Weight Before Wash, (gr) = **482.00**
 Percent Finer than No. 200 Sieve by Wash Method = **8%**

Sieve Analysis Test performed in general accordance with ASTM C-136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	42
Coarse Sand	>No. 4-≤ No. 40	20
Fine Sand	>No. 40-≤ No. 200	30
Silt and Clays	>No. 200	8
Water Content		7%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: J-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2118R		Sample No.: 2				
Date: 11/7/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	17.70	17.70	6	94	
4	4.76	30.40	48.10	16	84	
10	2.00	33.30	81.40	28	72	
40	0.420	51.80	133.20	45	55	
60	0.250	41.50	174.70	60	40	
100	0.149	67.20	241.90	83	17	
200	0.074	36.50	278.40	96	4	
PAN						

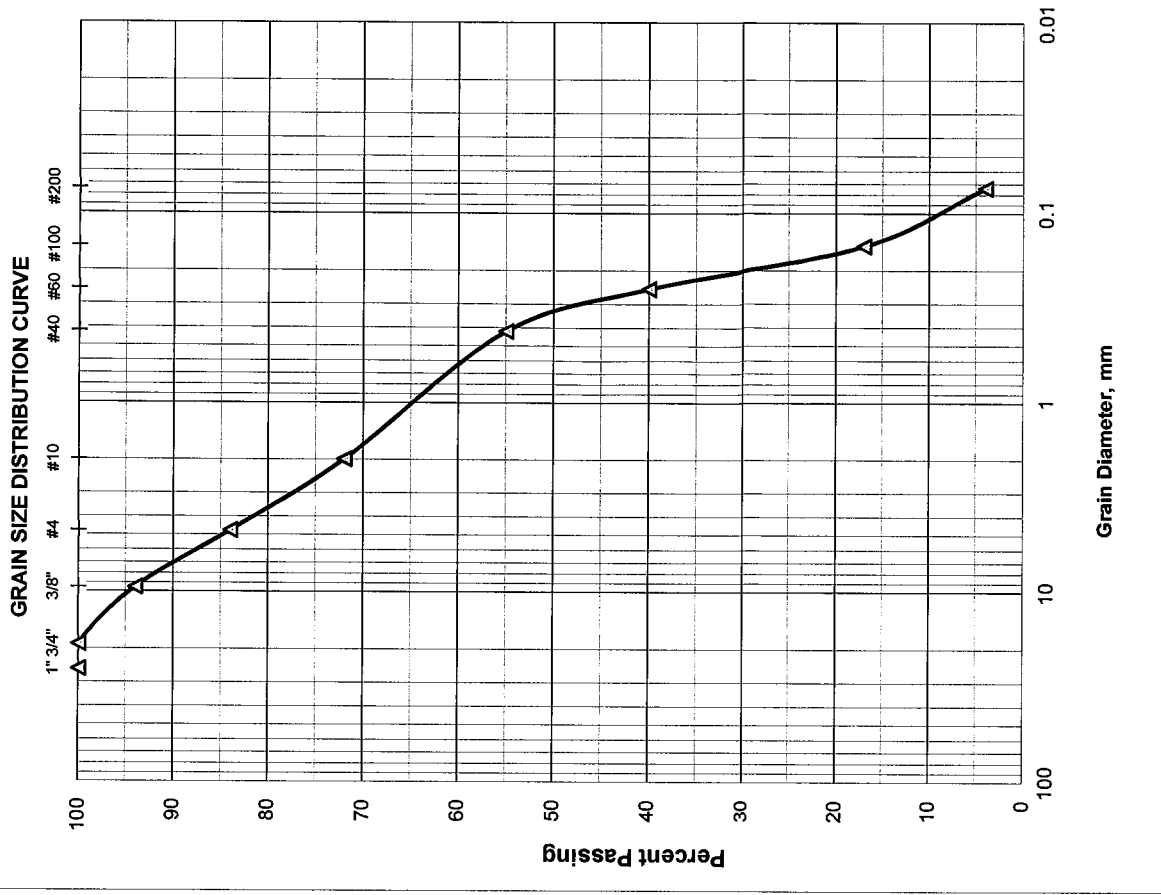
Total Dry Weight Before Wash, (gr) = **290.00**
 Percent Finer than No. 200 Sieve by Wash Method = **4%**

Sieve Analysis Test performed in general accordance with ASTM C-136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	16
Coarse Sand	>No. 4-≤ No. 40	29
Fine Sand	>No. 40-≤ No. 200	51
Silt and Clays	>No. 200	4
Water Content		1%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

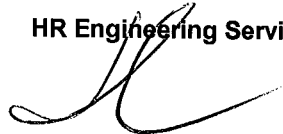
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2122L Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	457.80
Wt. of Dry Soil + Can, grams	424.50
Wt. of Can, grams No. 754	8.40
Wt. of Dry Soil, grams	416.10
Wt. of Moisture, grams	33.30
Water Content, w%	8%
Date Sample Placed in Furnace:	11/05/14
Time in / out of furnace (minimum 6 hrs):	11/05/14 12:00 PM TO 11/05/14 6:00 PM
Weight of Crucible & Oven-Dried Sample:	26.40
Weight of Crucible and Sample After Ignition:	26.20
Weight of Crucible: No. LC-6	11.50
Weight of Oven-Dried Soil:	14.90
Weight Loss due to Ignition:	0.20
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2122L Sample No.: 3 Depth: 4.0'-6.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	457.80
Wt. of Dry Soil + Can, grams	424.50
Wt. of Can, grams No. 754	8.40
Wt. of Dry Soil, grams	416.10
Wt. of Moisture, grams	33.30
Water Content, w%	8%
Wt. of Dry Soil + Can Before Wash, grams	410.20
Wt. of Can, grams No. 754	8.40
Wt. of Dry Soil Before Wash, grams	401.80
Time in / Out of Oven :	11/05/14 8:00 PM TO 11/06/14 8:00 PM
Wt. of Dry Soil + Can After Wash, grams	399.10
Wt. of Dry Soil After Wash, grams	390.70
Total Loss, grams	11.10
Percent Finer Than No. 200 Sieve	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2122R Sample No.: 4B Depth: 7.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	367.80
Wt. of Dry Soil + Can, grams	364.60
Wt. of Can, grams No. 614	9.10
Wt. of Dry Soil, grams	355.50
Wt. of Moisture, grams	3.20
Water Content, w%	1%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	31.50
Weight of Crucible and Sample After Ignition:	30.90
Weight of Crucible: No. 289	20.50
Weight of Oven-Dried Soil:	11.00
Weight Loss due to Ignition:	0.60
Percent Organics:	5%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2122R Sample No.: 4B Depth: 7.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	367.80
Wt. of Dry Soil + Can, grams	364.60
Wt. of Can, grams No. 614	9.10
Wt. of Dry Soil, grams	355.50
Wt. of Moisture, grams	3.20
Water Content, w%	1%
Wt. of Dry Soil + Can Before Wash, grams	353.60
Wt. of Can, grams No. 614	9.10
Wt. of Dry Soil Before Wash, grams	344.50
Time in / Out of Oven :	11/09/14 11:00 AM TO 11/10/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	324.70
Wt. of Dry Soil After Wash, grams	315.60
Total Loss, grams	28.90
Percent Finer Than No. 200 Sieve	8%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2122R Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	471.90
Wt. of Dry Soil + Can, grams	402.30
Wt. of Can, grams No. 615	9.20
Wt. of Dry Soil, grams	393.10
Wt. of Moisture, grams	69.60
Water Content, w%	18%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	34.20
Weight of Crucible and Sample After Ignition:	33.60
Weight of Crucible: No. 239	21.60
Weight of Oven-Dried Soil:	12.60
Weight Loss due to Ignition:	0.60
Percent Organics:	5%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2126R Sample No.: 2A Depth: 2.0'-3.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	322.30
Wt. of Dry Soil + Can, grams	299.70
Wt. of Can, grams No. 650	8.90
Wt. of Dry Soil, grams	290.80
Wt. of Moisture, grams	22.60
Water Content, w%	8%
Date Sample Placed in Furnace:	11/09/14
Time in / out of furnace (minimum 6 hrs):	11/09/14 11:00 AM TO 11/09/14 5:00 PM
Weight of Crucible & Oven-Dried Sample:	33.30
Weight of Crucible and Sample After Ignition:	32.90
Weight of Crucible: No. 239	19.30
Weight of Oven-Dried Soil:	14.00
Weight Loss due to Ignition:	0.40
Percent Organics:	3%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2126R Sample No.: 2A Depth: 2.0'-3.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 8:00 AM TO 11/08/14 8:00 AM
Wt. of Wet Soil + Can, grams	322.30
Wt. of Dry Soil + Can, grams	299.70
Wt. of Can, grams No. 650	8.90
Wt. of Dry Soil, grams	290.80
Wt. of Moisture, grams	22.60
Water Content, w%	8%
Wt. of Dry Soil + Can Before Wash, grams	285.90
Wt. of Can, grams No. 650	8.90
Wt. of Dry Soil Before Wash, grams	277.00
Time in / Out of Oven :	11/09/14 11:30 AM TO 11/10/14 11:30 AM
Wt. of Dry Soil + Can After Wash, grams	275.10
Wt. of Dry Soil After Wash, grams	266.20
Total Loss, grams	10.80
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

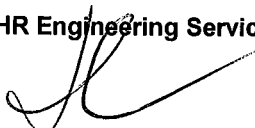
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2126R Sample No.: 4 Depth: 6.0'-8.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	523.20
Wt. of Dry Soil + Can, grams	434.30
Wt. of Can, grams No. 755	9.00
Wt. of Dry Soil, grams	425.30
Wt. of Moisture, grams	88.90
Water Content, w%	21%
Date Sample Placed in Furnace:	11/06/14
Time in / out of furnace (minimum 6 hrs):	11/06/14 4:00 AM TO 11/06/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	28.10
Weight of Crucible and Sample After Ignition:	27.90
Weight of Crucible: No. 83	16.30
Weight of Oven-Dried Soil:	11.80
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R

Boring No.: RB-2126R Sample No.: 4 Depth: 6.0'-8.0'

Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	523.20
Wt. of Dry Soil + Can, grams	434.30
Wt. of Can, grams No. 755	9.00
Wt. of Dry Soil, grams	425.30
Wt. of Moisture, grams	88.90
Water Content, w%	21%
Wt. of Dry Soil + Can Before Wash, grams	423.40
Wt. of Can, grams No. 755	9.00
Wt. of Dry Soil Before Wash, grams	414.40
Time in / Out of Oven :	11/05/14 8:00 PM TO 11/06/14 8:00 PM
Wt. of Dry Soil + Can After Wash, grams	409.40
Wt. of Dry Soil After Wash, grams	400.40
Total Loss, grams	14.00
Percent Finer Than No. 200 Sieve	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2130R Sample No.: 5 Depth: 8.0'-10.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 1:00 PM TO 11/10/14 1:00 PM
Wt. of Wet Soil + Can, grams	445.20
Wt. of Dry Soil + Can, grams	385.10
Wt. of Can, grams No. 700	8.40
Wt. of Dry Soil, grams	376.70
Wt. of Moisture, grams	60.10
Water Content, w%	16%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 7:00 AM TO 11/10/14 1:00 PM
Weight of Crucible & Oven-Dried Sample:	31.50
Weight of Crucible and Sample After Ignition:	31.10
Weight of Crucible: No. 11	18.30
Weight of Oven-Dried Soil:	13.20
Weight Loss due to Ignition:	0.40
Percent Organics:	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2130R		Depth: 8.0'-10.0'				
Date: 11/10/2014		Tested By: H.C.				
Sample No.: 5		AASHTO Classification: A-3				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	
10	2.00	10.00	10.00	2	98	
40	0.420	133.50	143.50	39	61	
60	0.250	159.40	302.90	83	17	
100	0.149	47.30	350.20	96	4	
200	0.074	8.70	358.90	98	2	
PAN						

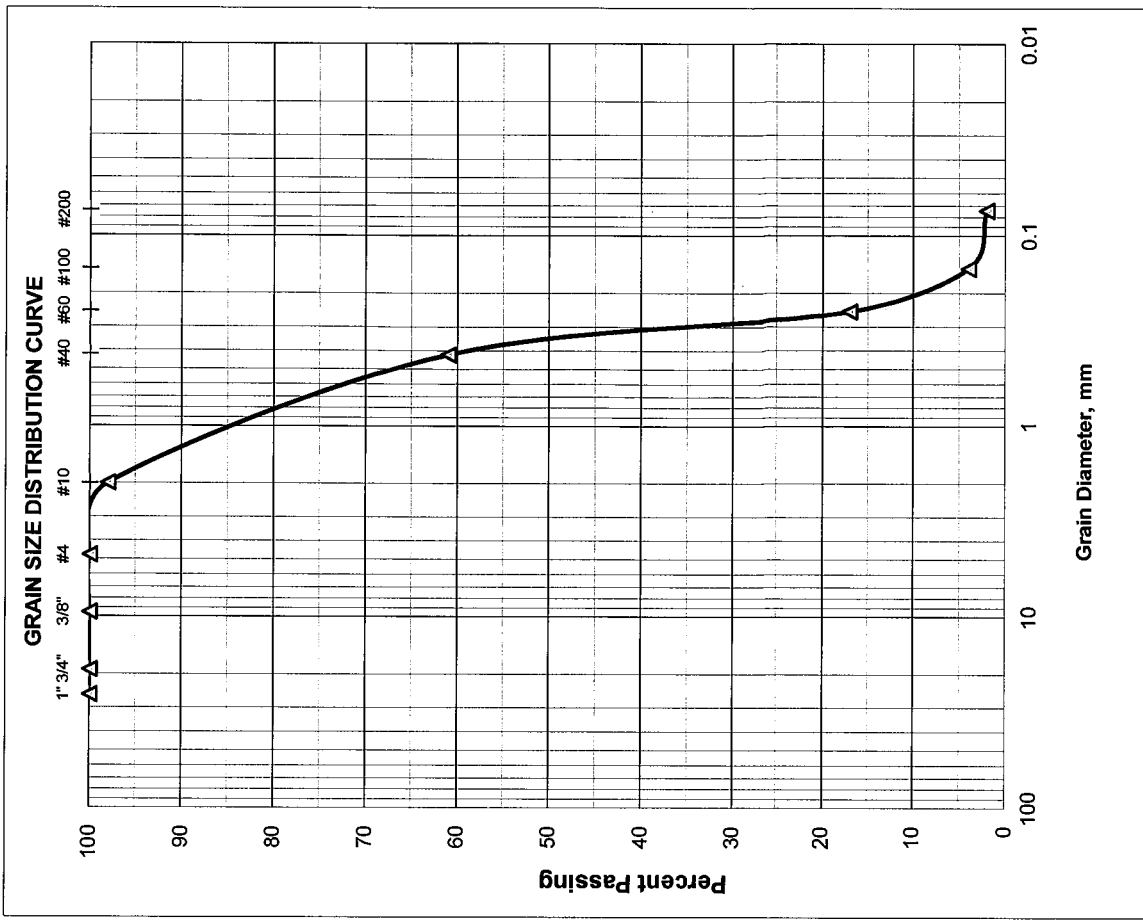
Total Dry Weight Before Wash, (gr) = **363.70**
 Percent Finer than No. 200 Sieve by Wash Method = **2%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	39
Fine Sand	>No. 40-≤ No. 200	59
Silt and Clays	>No. 200	2
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2134R Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	382.80
Wt. of Dry Soil + Can, grams	365.20
Wt. of Can, grams No. 756	8.40
Wt. of Dry Soil, grams	356.80
Wt. of Moisture, grams	17.60
Water Content, w%	5%
Date Sample Placed in Furnace:	11/06/14
Time in / out of furnace (minimum 6 hrs):	11/06/14 4:00 AM TO 11/06/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	27.10
Weight of Crucible and Sample After Ignition:	26.90
Weight of Crucible: No. 13	15.70
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:
A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2134R Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	382.80
Wt. of Dry Soil + Can, grams	365.20
Wt. of Can, grams No. 756	8.40
Wt. of Dry Soil, grams	356.80
Wt. of Moisture, grams	17.60
Water Content, w%	5%
Wt. of Dry Soil + Can Before Wash, grams	354.30
Wt. of Can, grams No. 756	8.40
Wt. of Dry Soil Before Wash, grams	345.90
Time in / Out of Oven :	11/06/14 6:00 AM TO 11/07/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	337.60
Wt. of Dry Soil After Wash, grams	329.20
Total Loss, grams	16.70
Percent Finer Than No. 200 Sieve	5%

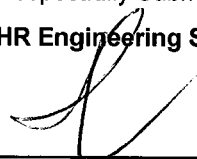
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2142R Sample No.: 2A Depth: 2.0'-3.5'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	426.90
Wt. of Dry Soil + Can, grams	384.30
Wt. of Can, grams No. 757	9.20
Wt. of Dry Soil, grams	375.10
Wt. of Moisture, grams	42.60
Water Content, w%	11%
Date Sample Placed in Furnace:	11/06/14
Time in / out of furnace (minimum 6 hrs):	11/06/14 4:00 AM TO 11/06/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	26.50
Weight of Crucible and Sample After Ignition:	26.10
Weight of Crucible: No. 209	15.40
Weight of Oven-Dried Soil:	11.10
Weight Loss due to Ignition:	0.40
Percent Organics:	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2142R Sample No.: 2A Depth: 2.0'-3.5'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	426.90
Wt. of Dry Soil + Can, grams	384.30
Wt. of Can, grams No. 757	9.20
Wt. of Dry Soil, grams	375.10
Wt. of Moisture, grams	42.60
Water Content, w%	11%
Wt. of Dry Soil + Can Before Wash, grams	374.40
Wt. of Can, grams No. 757	9.20
Wt. of Dry Soil Before Wash, grams	365.20
Time in / Out of Oven :	11/06/14 6:00 AM TO 11/07/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	363.40
Wt. of Dry Soil After Wash, grams	354.20
Total Loss, grams	11.00
Percent Finer Than No. 200 Sieve	3%

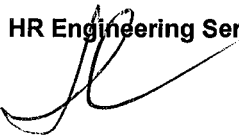
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166
Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: RB-2164R Sample No.: 2A Depth: 2.0'-3.0'
Date: 09/25/14

Technician:	H.C.
Date Sample Placed in Oven:	09/26/2014
Time in / Out of Oven :	09/26/14 2:30 PM TO 09/27/14 2:30 PM
Wt. of Wet Soil + Can, grams	211.40
Wt. of Dry Soil + Can, grams	191.30
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil, grams	182.90
Wt. of Moisture, grams	20.10
Water Content, w%	11%
Date Sample Placed in Furnace:	10/01/14
Time in / out of furnace (minimum 6 hrs):	10/01/14 5:30 AM TO 10/01/14 11:30 AM
Weight of Crucible & Oven-Dried Sample:	28.70
Weight of Crucible and Sample After Ignition:	28.30
Weight of Crucible: No. 28	15.70
Weight of Oven-Dried Soil:	13.00
Weight Loss due to Ignition:	0.40
Percent Organics:	3%

Note: The test was performed in general accordance with AASHTO T- 267-86, ASTM D 2974-87

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2164R Sample No.: 2B Depth: 3.0'-4.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 1:00 PM TO 11/10/14 1:00 PM
Wt. of Wet Soil + Can, grams	283.70
Wt. of Dry Soil + Can, grams	267.60
Wt. of Can, grams No. 701	9.00
Wt. of Dry Soil, grams	258.60
Wt. of Moisture, grams	16.10
Water Content, w%	6%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 7:00 AM TO 11/10/14 1:00 PM
Weight of Crucible & Oven-Dried Sample:	31.00
Weight of Crucible and Sample After Ignition:	30.70
Weight of Crucible: No. 23	18.60
Weight of Oven-Dried Soil:	12.40
Weight Loss due to Ignition:	0.30
Percent Organics:	2%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.
 7815 N.W. 72nd Avenue - Medley, Florida 33166
 Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2164R		Sample No.: 2B				
Date: 11/10/2014		Depth: 3.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	5.40	5.40	2	98	
4	4.76	5.20	10.60	4	96	AASHTO Classification:
10	2.00	5.80	16.40	6	94	A-3
40	0.420	51.70	68.10	27	73	
60	0.250	92.40	160.50	65	35	
100	0.149	72.90	233.40	94	6	
200	0.074	11.40	244.80	99	1	
PAN						

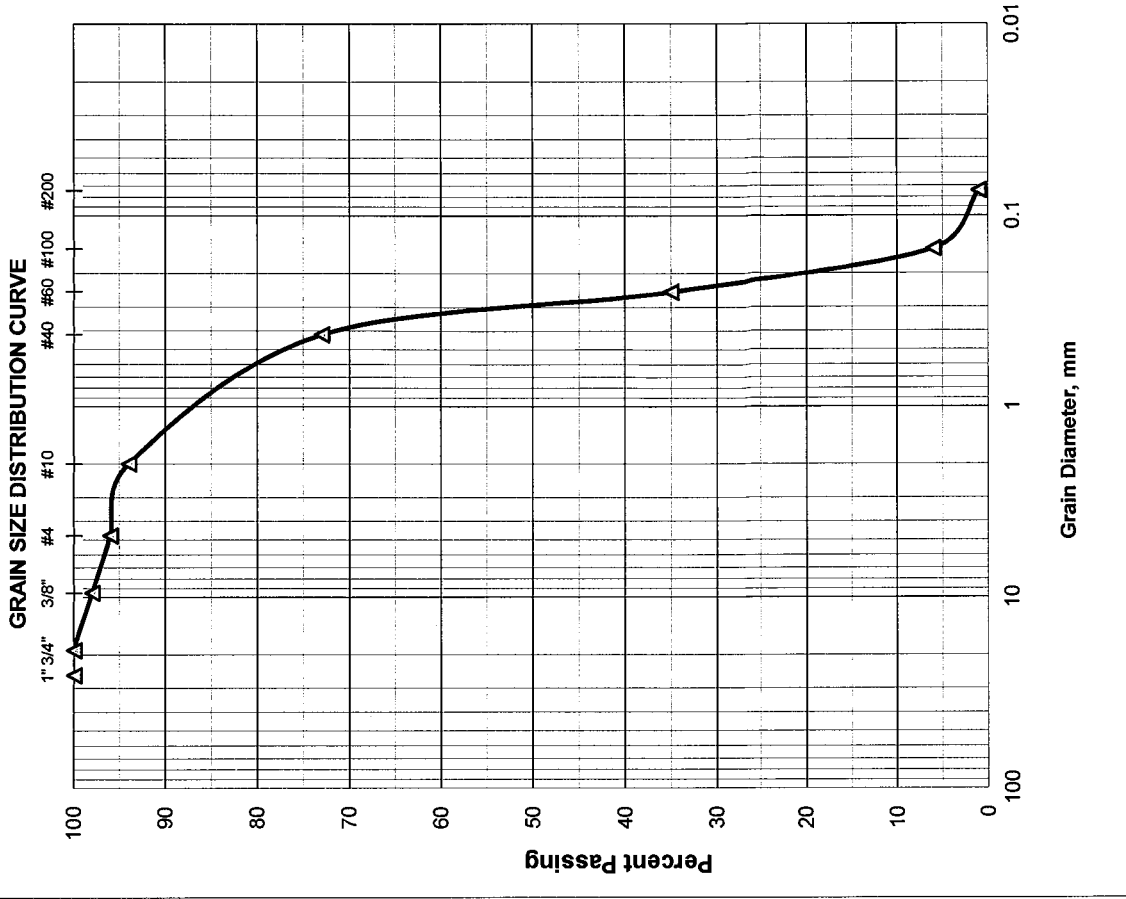
Total Dry Weight Before Wash, (gr) =	246.40
Percent Finer than No. 200 Sieve by Wash Method=	1%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	4
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	72
Silt and Clays	>No. 200	1
Water Content		6%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hermando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2166L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	539.10
Wt. of Dry Soil + Can, grams	490.20
Wt. of Can, grams No. 758	9.20
Wt. of Dry Soil, grams	481.00
Wt. of Moisture, grams	48.90
Water Content, w%	10%
Date Sample Placed in Furnace:	11/06/14
Time in / out of furnace (minimum 6 hrs):	11/06/14 4:00 AM TO 11/06/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	30.30
Weight of Crucible and Sample After Ignition:	30.10
Weight of Crucible: No. 169	18.00
Weight of Oven-Dried Soil:	12.30
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-1-b


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2166L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	539.10
Wt. of Dry Soil + Can, grams	490.20
Wt. of Can, grams No. 758	9.20
Wt. of Dry Soil, grams	481.00
Wt. of Moisture, grams	48.90
Water Content, w%	10%
Wt. of Dry Soil + Can Before Wash, grams	463.60
Wt. of Can, grams No. 758	9.20
Wt. of Dry Soil Before Wash, grams	454.40
Time in / Out of Oven :	11/06/14 6:00 AM TO 11/07/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	429.70
Wt. of Dry Soil After Wash, grams	420.50
Total Loss, grams	33.90
Percent Finer Than No. 200 Sieve	7%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-1-b

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2170L		Sample No.: 3				
Date: 11/7/2014		Depth: 4.0'-6.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	13.90	13.90	2	98	
3/8"	9.51	25.30	39.20	7	93	
4	4.76	22.10	61.30	11	89	AAASHTO Classification:
10	2.00	20.40	81.70	15	85	A-3
40	0.420	95.50	177.20	34	66	
60	0.250	141.40	318.60	61	39	
100	0.149	147.80	466.40	90	10	
200	0.074	33.30	499.70	96	4	
PAN						

Total Dry Weight Before Wash, (gr) =	516.90
Percent Finer than No. 200 Sieve by Wash Method=	4%

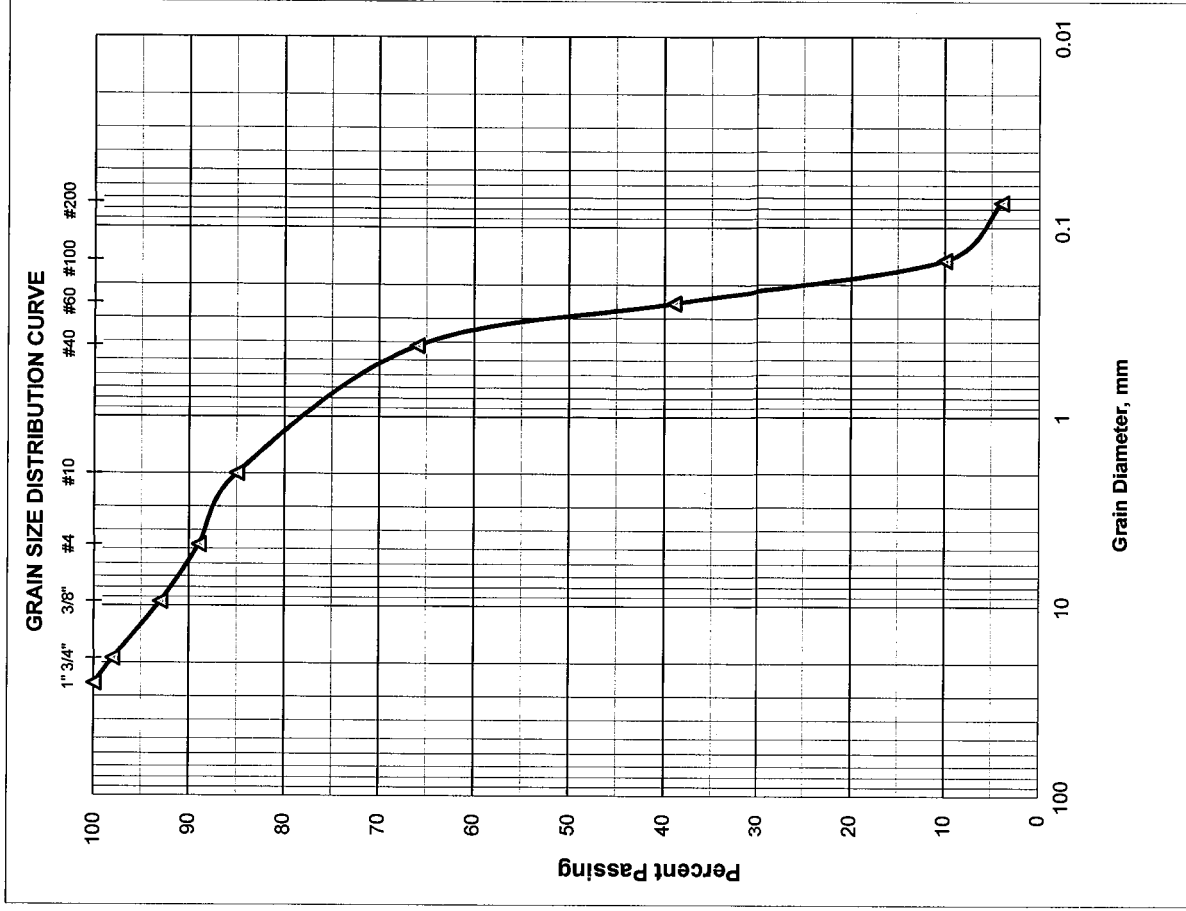
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 11
Coarse Sand	>No. 4-≤ No. 40 23
Fine Sand	>No. 40-≤ No. 200 62
Silt and Clays	>No. 200 4
Water Content	6%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2172R Sample No.: 4B Depth: 7.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 1:00 PM TO 11/10/14 1:00 PM
Wt. of Wet Soil + Can, grams	296.30
Wt. of Dry Soil + Can, grams	253.10
Wt. of Can, grams No. 702	8.40
Wt. of Dry Soil, grams	244.70
Wt. of Moisture, grams	43.20
Water Content, w%	18%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 7:00 AM TO 11/10/14 1:00 PM
Weight of Crucible & Oven-Dried Sample:	30.50
Weight of Crucible and Sample After Ignition:	30.20
Weight of Crucible: No. 93	18.50
Weight of Oven-Dried Soil:	12.00
Weight Loss due to Ignition:	0.30
Percent Organics:	3%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2172R		Sample No.: 4B				
Date: 11/10/2014		Depth: 7.0'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	3.80	3.80	1	99	
4	4.76	0.00	3.80	1	99	
10	2.00	1.10	4.90	2	98	
40	0.420	45.20	50.10	21	79	
60	0.250	101.50	151.60	65	35	
100	0.149	68.90	220.50	95	5	
200	0.074	9.90	230.40	99	1	
PAN						

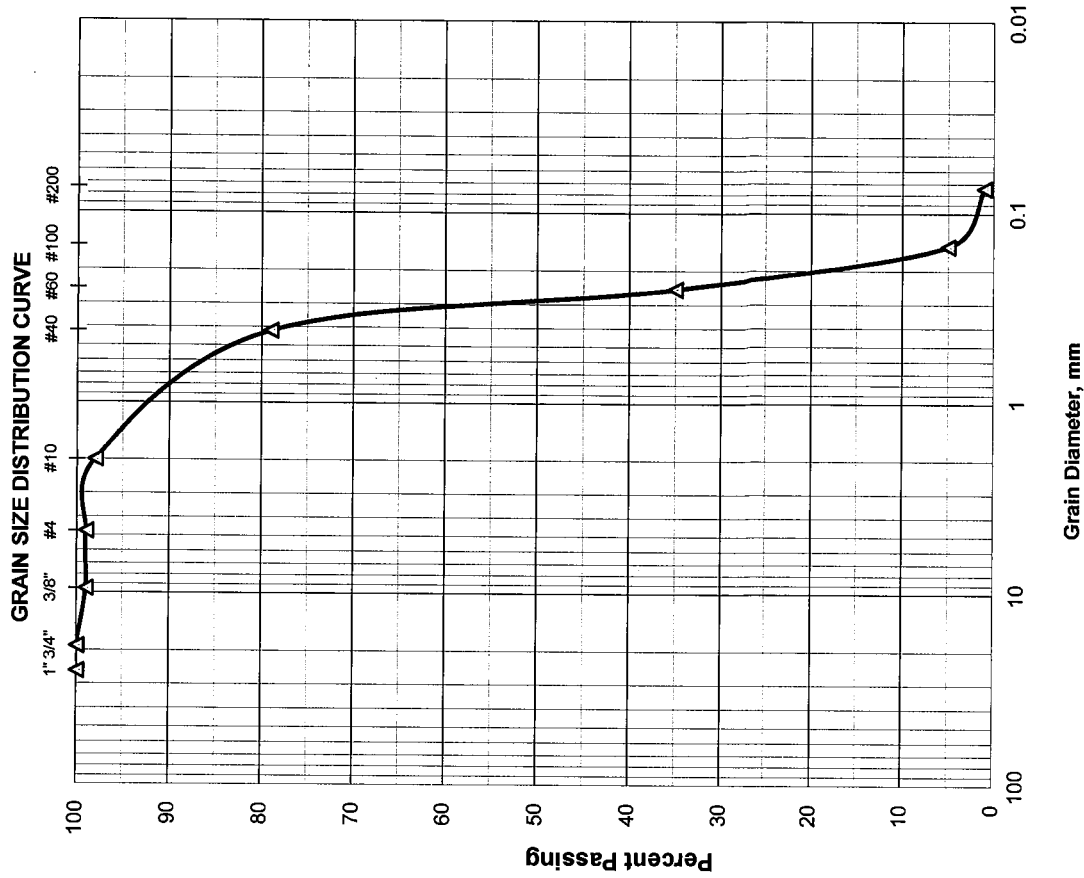
Total Dry Weight Before Wash, (gr) =	232.10
Percent Finer than No. 200 Sieve by Wash Method =	1%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	1
Coarse Sand	>No. 4-≤ No. 40	20
Fine Sand	>No. 40-≤ No. 200	78
Silt and Clays	>No. 200	1
Water Content		6%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

**REPORT OF MOISTURE AND
ORGANIC CONTENT BY LOSS ON IGNITION**

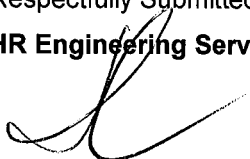
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2174L Sample No.: 4B Depth: 7.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 1:00 PM TO 11/10/14 1:00 PM
Wt. of Wet Soil + Can, grams	353.10
Wt. of Dry Soil + Can, grams	351.60
Wt. of Can, grams No. 703	9.00
Wt. of Dry Soil, grams	342.60
Wt. of Moisture, grams	1.50
Water Content, w%	1%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 7:00 AM TO 11/10/14 1:00 PM
Weight of Crucible & Oven-Dried Sample:	30.40
Weight of Crucible and Sample After Ignition:	30.10
Weight of Crucible: No. 166	18.10
Weight of Oven-Dried Soil:	12.30
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.
 7815 N.W. 72nd Avenue - Medley, Florida 33166
 Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2174L		Sample No.: 4B				
Date: 11/10/2014		Depth: 7.0'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	8.40	8.40	2	98	
4	4.76	14.30	22.70	6	94	
10	2.00	10.50	33.20	10	90	
40	0.420	70.60	103.80	31	69	
60	0.250	121.70	225.50	68	32	
100	0.149	82.60	308.10	93	7	
200	0.074	16.00	324.10	98	2	
PAN						

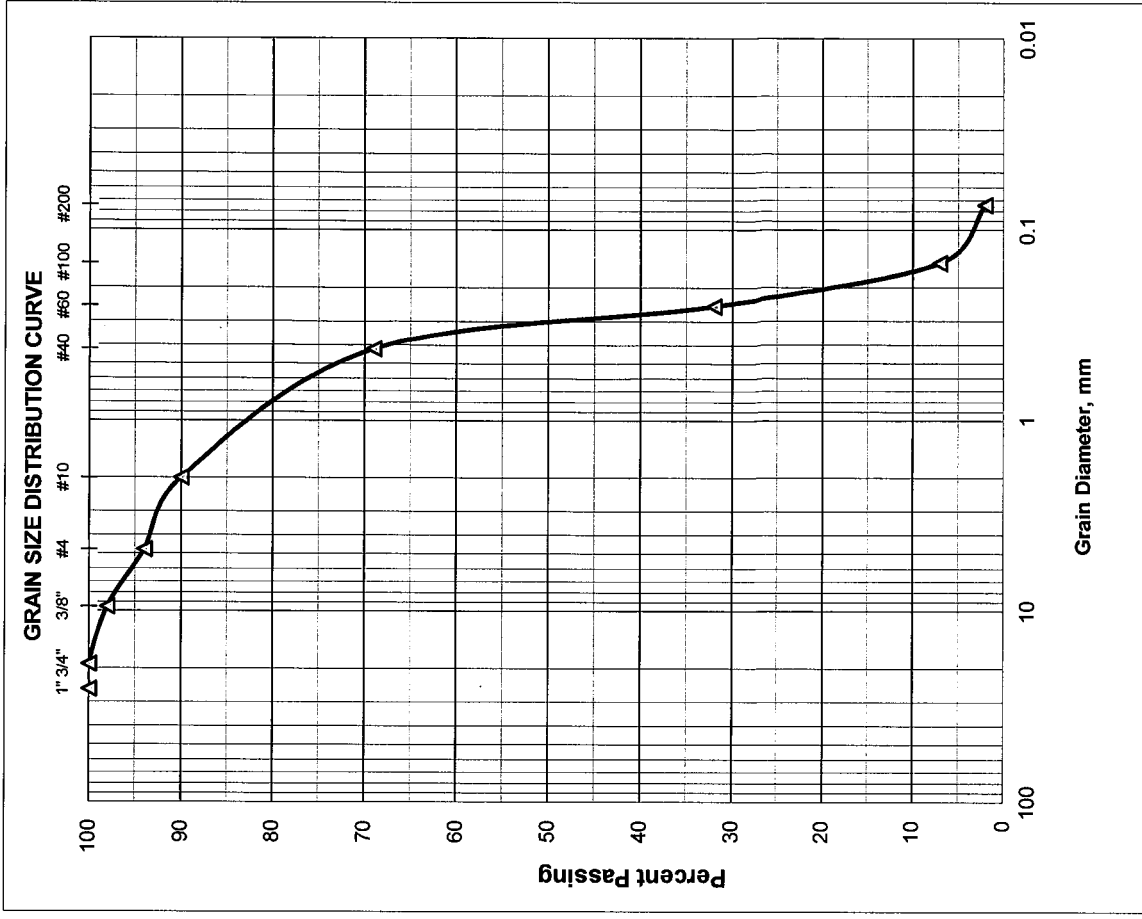
Total Dry Weight Before Wash, (gr) =	330.50
Percent Finer than No. 200 Sieve by Wash Method=	2%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	6
Coarse Sand	>No. 4-≤ No. 40	25
Fine Sand	>No. 40-≤ No. 200	67
Silt and Clays	>No. 200	2
Water Content		1%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2174L Sample No.: 5A Depth: 8.0'-9.0'
Date: 11/07/14

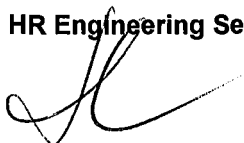
Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 1:00 PM TO 11/10/14 1:00 PM
Wt. of Wet Soil + Can, grams	340.30
Wt. of Dry Soil + Can, grams	294.10
Wt. of Can, grams No. 704	9.10
Wt. of Dry Soil, grams	285.00
Wt. of Moisture, grams	46.20
Water Content, w%	16%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 7:00 AM TO 11/10/14 1:00 PM
Weight of Crucible & Oven-Dried Sample:	29.80
Weight of Crucible and Sample After Ignition:	29.70
Weight of Crucible: No. 166	17.50
Weight of Oven-Dried Soil:	12.30
Weight Loss due to Ignition:	0.10
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

AASHTO Classification:

A-3

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2174L		Sample No.: 5A				
Date: 11/10/2014		Depth: 8.0'-9.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	5.00	5.00	1	99	
4	4.76	2.20	7.20	2	98	AASHTO Classification:
10	2.00	1.30	8.50	3	97	A-3
40	0.420	79.10	87.60	32	68	
60	0.250	99.30	186.90	68	32	
100	0.149	62.60	249.50	91	9	
200	0.074	17.30	266.80	97	3	
PAN						

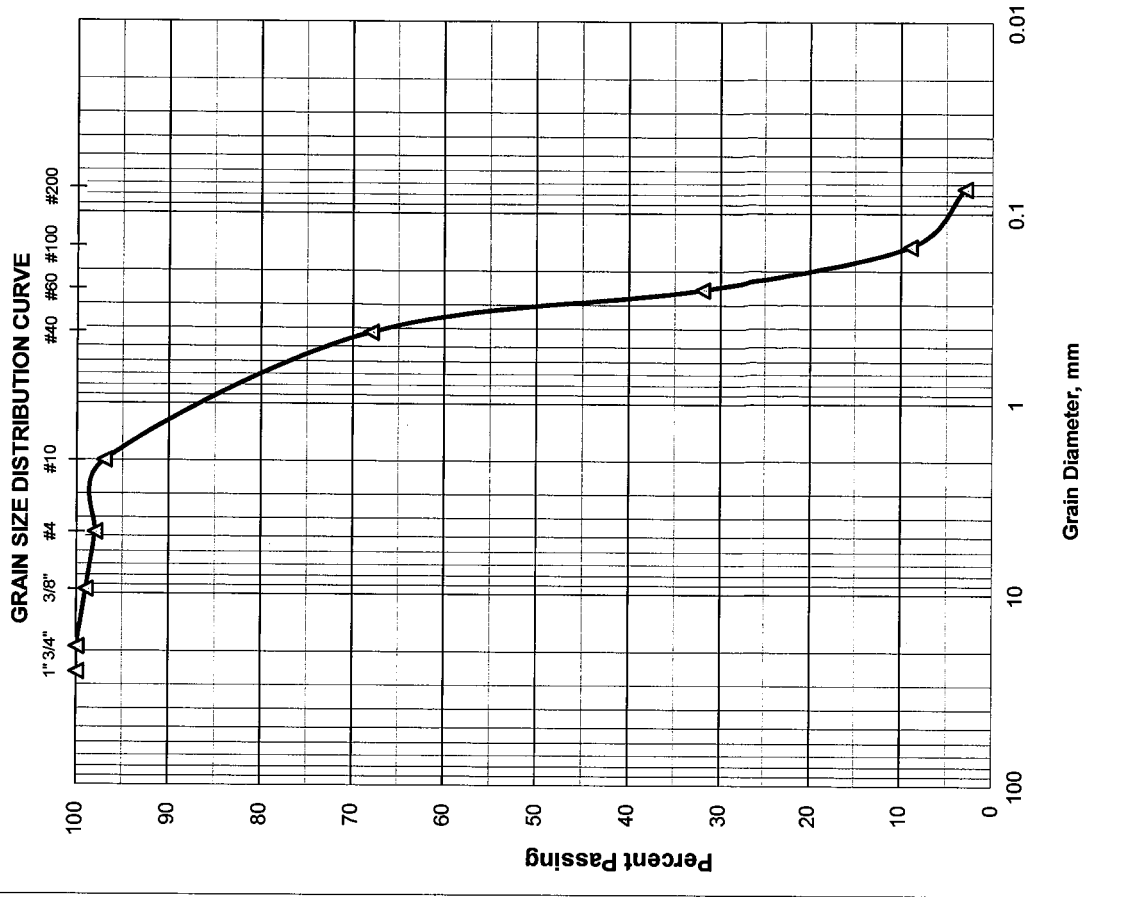
Total Dry Weight Before Wash, (gr) =	272.80
Percent Finer than No. 200 Sieve by Wash Method=	3%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	2
Coarse Sand	>No. 4-≤ No. 40	30
Fine Sand	>No. 40-≤ No. 200	65
Silt and Clays	>No. 200	3
Water Content		16%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hermendo R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2176R Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	353.60
Wt. of Dry Soil + Can, grams	346.20
Wt. of Can, grams No. 760	9.20
Wt. of Dry Soil, grams	337.00
Wt. of Moisture, grams	7.40
Water Content, w%	2%
Date Sample Placed in Furnace:	11/06/14
Time in / out of furnace (minimum 6 hrs):	11/06/14 4:00 AM TO 11/06/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	31.10
Weight of Crucible and Sample After Ignition:	30.80
Weight of Crucible: No. 25	18.00
Weight of Oven-Dried Soil:	13.10
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2176R Sample No.: 1B Depth: 0.5'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:00 PM TO 11/05/14 12:00 PM
Wt. of Wet Soil + Can, grams	353.60
Wt. of Dry Soil + Can, grams	346.20
Wt. of Can, grams No. 760	9.20
Wt. of Dry Soil, grams	337.00
Wt. of Moisture, grams	7.40
Water Content, w%	2%
Wt. of Dry Soil + Can Before Wash, grams	325.50
Wt. of Can, grams No. 760	9.20
Wt. of Dry Soil Before Wash, grams	316.30
Time in / Out of Oven :	11/06/14 6:00 AM TO 11/07/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	310.10
Wt. of Dry Soil After Wash, grams	300.90
Total Loss, grams	15.40
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-991R	
Boring No.: RB-2178L		Sample No.: 2A	
Date: 11/7/2014		Depth: 2.0'-3.5'	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-2-4
3/4"	19.00	33.80	33.80	9	91	
3/8"	9.51	34.80	68.60	19	81	
4	4.76	28.70	97.30	27	73	
10	2.00	28.20	125.50	35	65	
40	0.420	37.80	163.30	46	54	
60	0.250	35.20	198.50	55	45	
100	0.149	78.60	277.10	78	22	
200	0.074	41.80	318.90	89	11	
PAN						

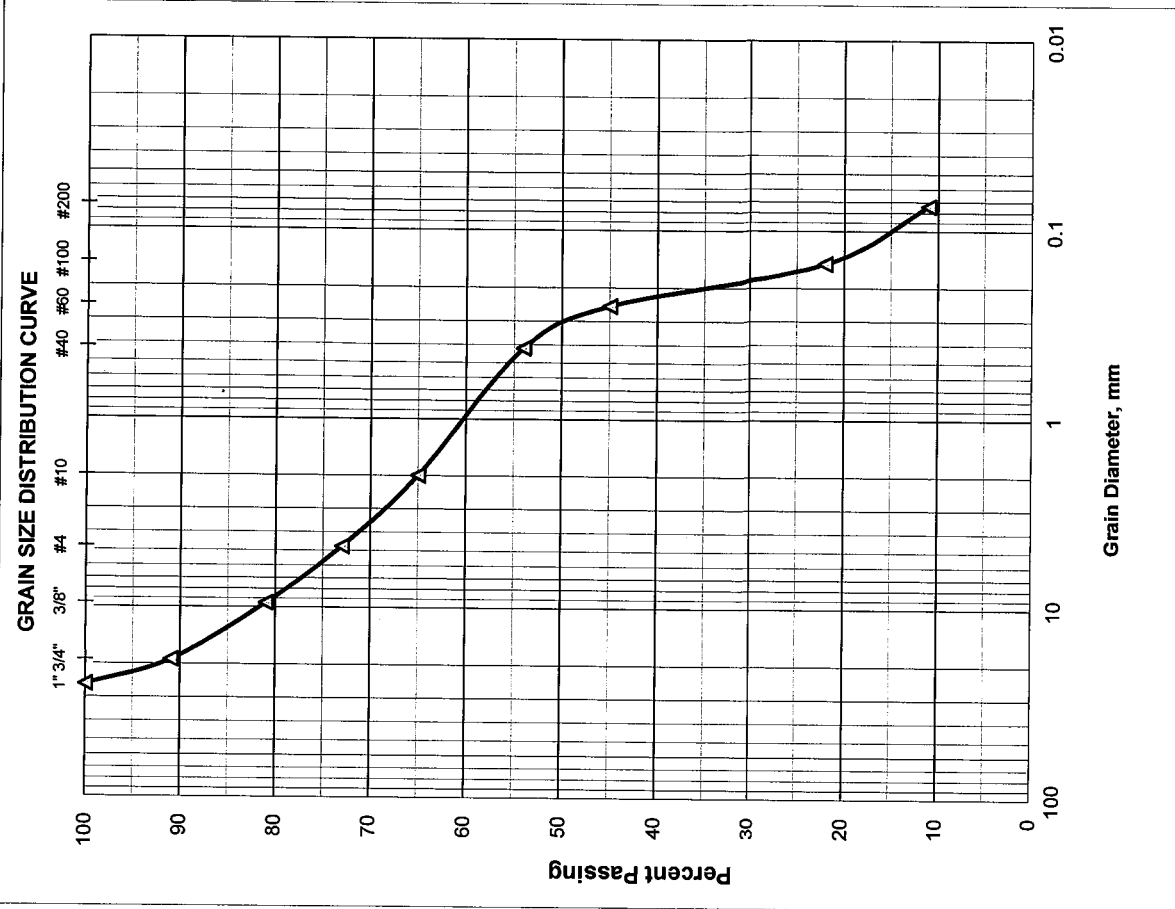
Total Dry Weight Before Wash, (gr) = **354.60**
 Percent Finer than No. 200 Sieve by Wash Method = **11%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	27
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	43
Silt and Clays	>No. 200	11
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



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REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2184R Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:30 PM TO 11/05/14 12:30 PM
Wt. of Wet Soil + Can, grams	348.30
Wt. of Dry Soil + Can, grams	341.40
Wt. of Can, grams No. 762	8.90
Wt. of Dry Soil, grams	332.50
Wt. of Moisture, grams	6.90
Water Content, w%	2%
Date Sample Placed in Furnace:	11/06/14
Time in / out of furnace (minimum 6 hrs):	11/06/14 4:00 AM TO 11/06/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	30.70
Weight of Crucible and Sample After Ignition:	30.40
Weight of Crucible: No. 23	18.50
Weight of Oven-Dried Soil:	12.20
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2184R Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:30 PM TO 11/05/14 12:30 PM
Wt. of Wet Soil + Can, grams	348.30
Wt. of Dry Soil + Can, grams	341.40
Wt. of Can, grams No. 762	8.90
Wt. of Dry Soil, grams	332.50
Wt. of Moisture, grams	6.90
Water Content, w%	2%
Wt. of Dry Soil + Can Before Wash, grams	330.10
Wt. of Can, grams No. 762	8.90
Wt. of Dry Soil Before Wash, grams	321.20
Time in / Out of Oven :	11/06/14 6:00 AM TO 11/07/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	318.80
Wt. of Dry Soil After Wash, grams	309.90
Total Loss, grams	11.30
Percent Finer Than No. 200 Sieve	4%

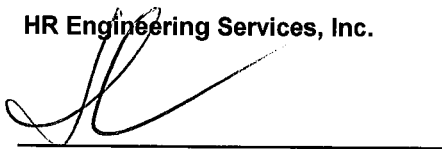
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

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REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2180R Sample No.: 3B Depth: 5.0'-6.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 1:00 PM TO 11/10/14 1:00 PM
Wt. of Wet Soil + Can, grams	415.40
Wt. of Dry Soil + Can, grams	395.20
Wt. of Can, grams No. 705	8.50
Wt. of Dry Soil, grams	386.70
Wt. of Moisture, grams	20.20
Water Content, w%	5%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 7:00 AM TO 11/10/14 1:00 PM
Weight of Crucible & Oven-Dried Sample:	30.40
Weight of Crucible and Sample After Ignition:	30.10
Weight of Crucible: No. 250	18.10
Weight of Oven-Dried Soil:	12.30
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2180R		Sample No.: 3B				
Date: 11/10/2014		Depth: 5.0'-6.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.50	0.50	0	100	
10	2.00	0.90	1.40	0	100	
40	0.420	95.30	96.70	25	75	
60	0.250	170.80	267.50	71	29	
100	0.149	95.10	362.60	96	4	
200	0.074	10.30	372.90	99	1	
PAN						

Total Dry Weight Before Wash, (gr) =	374.60
Percent Finer than No. 200 Sieve by Wash Method=	1%

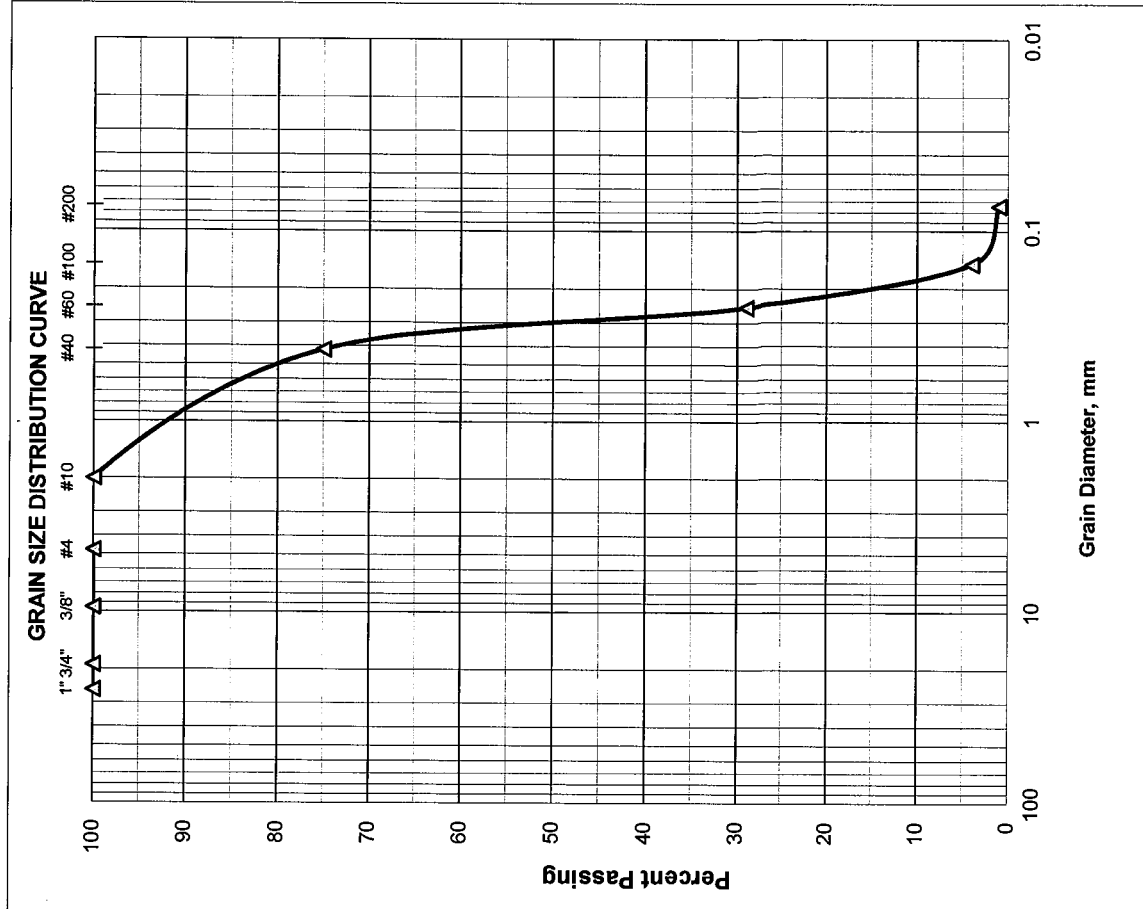
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	25
Fine Sand	>No. 40-≤ No. 200	74
Silt and Clays	>No. 200	1
Water Content		5%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2184R		Sample No.: 4B				
Date: 11/10/2014		Depth: 7.0'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	3.20	3.20	1	99	
4	4.76	3.50	6.70	2	98	AASHTO Classification:
10	2.00	0.70	7.40	2	98	A-3
40	0.420	52.20	59.60	21	79	
60	0.250	109.70	169.30	61	39	
100	0.149	92.20	261.50	94	6	
200	0.074	14.20	275.70	99	1	
PAN						

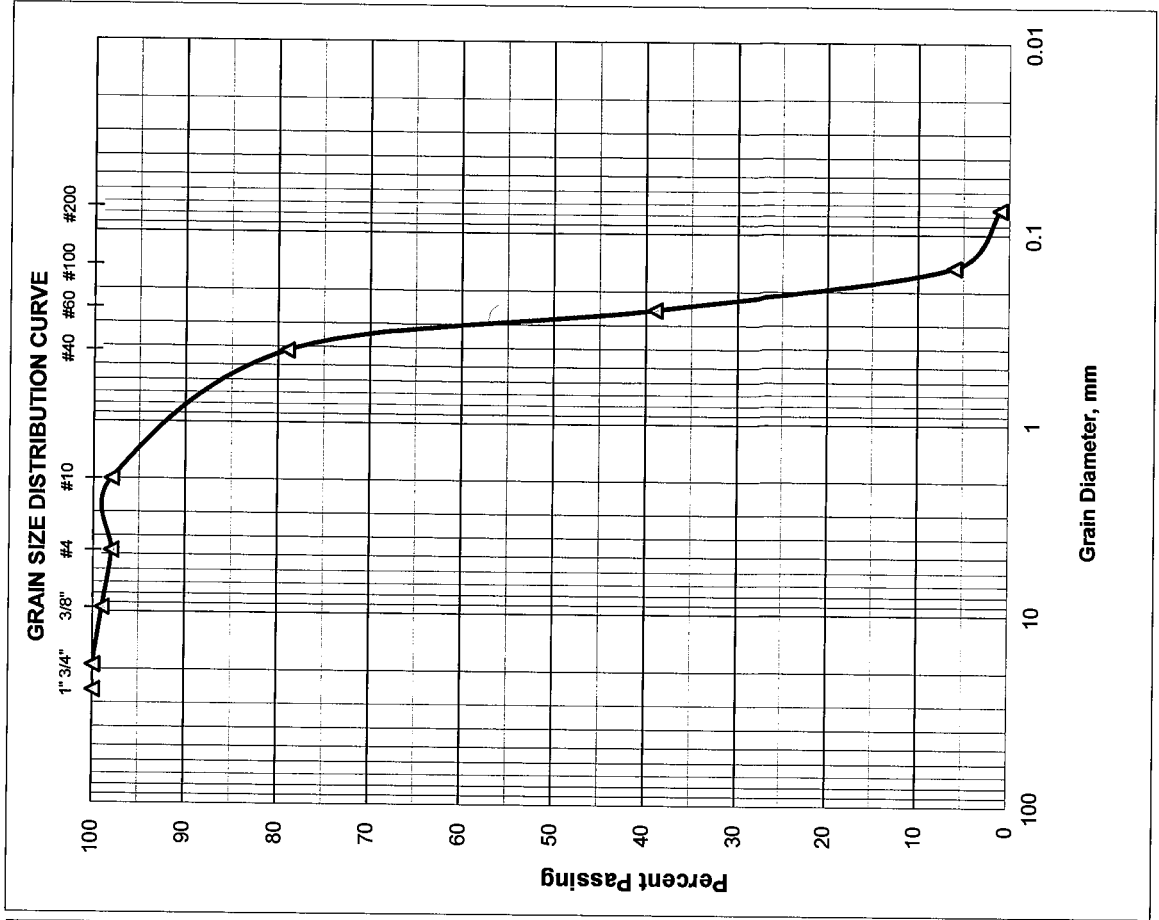
Total Dry Weight Before Wash, (gr) = **276.90**
 Percent Finer than No. 200 Sieve by Wash Method = **1%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	2
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	78
Silt and Clays	>No. 200	1
Water Content		19%

Respectfully Submitted,
HR Engineering Services, Inc.

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REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

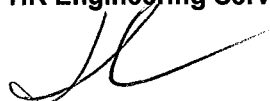
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2188R Sample No.: 2A Depth: 2.0'-3.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 1:00 PM TO 11/10/14 1:00 PM
Wt. of Wet Soil + Can, grams	337.10
Wt. of Dry Soil + Can, grams	316.50
Wt. of Can, grams No. 707	8.50
Wt. of Dry Soil, grams	308.00
Wt. of Moisture, grams	20.60
Water Content, w%	7%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 1:00 PM TO 11/10/14 7:00 PM
Weight of Crucible & Oven-Dried Sample:	27.10
Weight of Crucible and Sample After Ignition:	26.70
Weight of Crucible: No. 165	15.70
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.40
Percent Organics:	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2188R		Sample No.: 2A				
Date: 11/10/2014		Depth: 2.0'-3.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	1.10	1.10	0	100	
4	4.76	0.70	1.80	0	100	AASHTO Classification:
10	2.00	0.80	2.60	0	100	
40	0.420	53.10	55.70	18	82	A-3
60	0.250	129.40	185.10	62	38	
100	0.149	99.30	284.40	95	5	
200	0.074	11.80	296.20	99	1	
PAN						

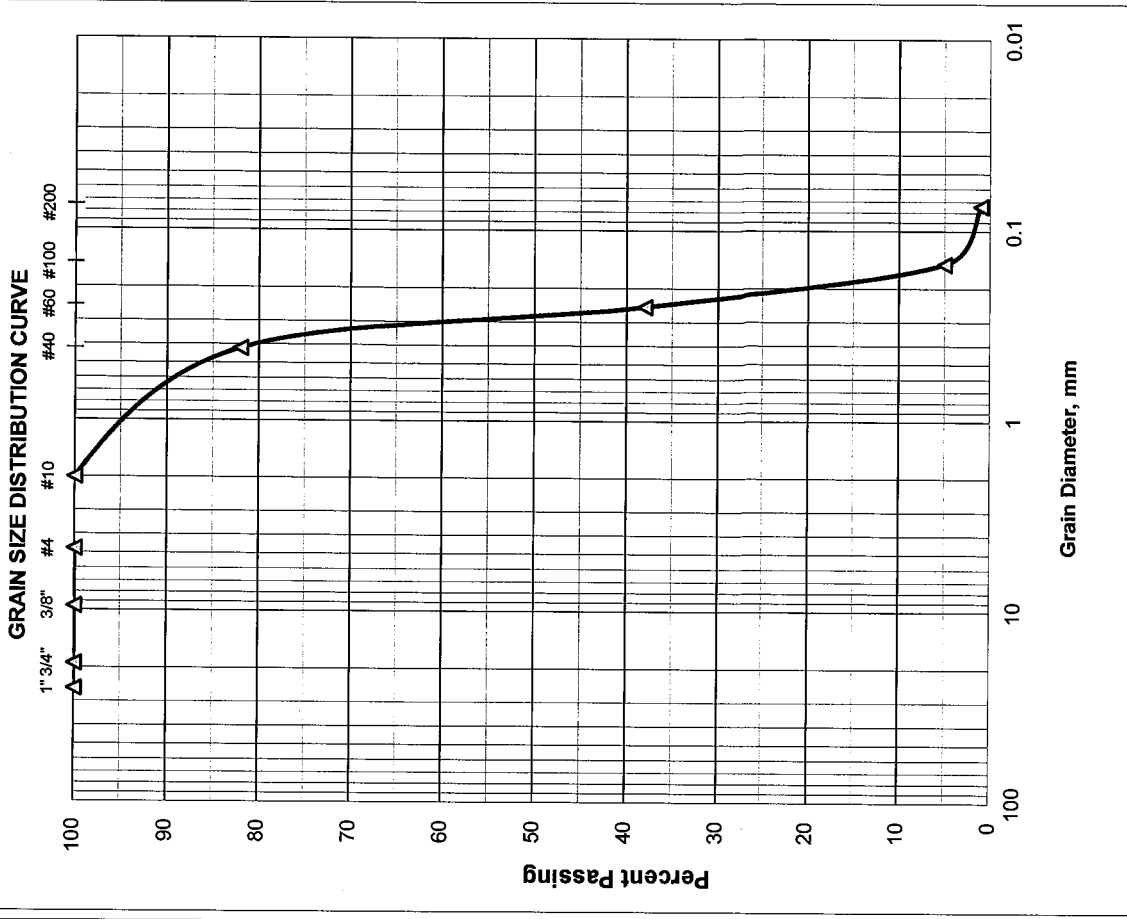
Total Dry Weight Before Wash, (gr) = **297.00**
 Percent Finer than No. 200 Sieve by Wash Method = **1%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	81
Silt and Clays	>No. 200	1
Water Content		7%

Respectfully Submitted,
HR Engineering Services, Inc.

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REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2190L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

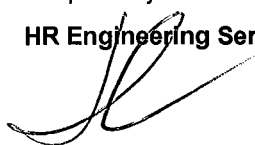
Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:30 PM TO 11/05/14 12:30 PM
Wt. of Wet Soil + Can, grams	543.20
Wt. of Dry Soil + Can, grams	503.00
Wt. of Can, grams No. 763	9.00
Wt. of Dry Soil, grams	494.00
Wt. of Moisture, grams	40.20
Water Content, w%	8%
Date Sample Placed in Furnace:	11/06/14
Time in / out of furnace (minimum 6 hrs):	11/06/14 4:00 AM TO 11/06/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	31.00
Weight of Crucible and Sample After Ignition:	30.90
Weight of Crucible: No. 11	18.30
Weight of Oven-Dried Soil:	12.70
Weight Loss due to Ignition:	0.10
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

AASHTO Classification:

A-3

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REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2190L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/04/2014
Time in / Out of Oven :	11/04/14 12:30 PM TO 11/05/14 12:30 PM
Wt. of Wet Soil + Can, grams	543.20
Wt. of Dry Soil + Can, grams	503.00
Wt. of Can, grams No. 763	9.00
Wt. of Dry Soil, grams	494.00
Wt. of Moisture, grams	40.20
Water Content, w%	8%
Wt. of Dry Soil + Can Before Wash, grams	490.90
Wt. of Can, grams No. 763	9.00
Wt. of Dry Soil Before Wash, grams	481.90
Time in / Out of Oven :	11/06/14 6:00 AM TO 11/07/14 6:00 AM
Wt. of Dry Soil + Can After Wash, grams	469.40
Wt. of Dry Soil After Wash, grams	460.40
Total Loss, grams	21.50
Percent Finer Than No. 200 Sieve	4%

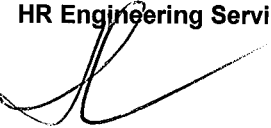
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


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Florida Registration No. 42045

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REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2194L Sample No.: 5B Depth: 8.5'-9.5'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:00 PM TO 11/10/14 2:00 PM
Wt. of Wet Soil + Can, grams	317.50
Wt. of Dry Soil + Can, grams	278.90
Wt. of Can, grams No. 708	8.60
Wt. of Dry Soil, grams	270.30
Wt. of Moisture, grams	38.60
Water Content, w%	14%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 1:00 PM TO 11/10/14 7:00 PM
Weight of Crucible & Oven-Dried Sample:	27.00
Weight of Crucible and Sample After Ignition:	26.70
Weight of Crucible: No. 165	15.40
Weight of Oven-Dried Soil:	11.60
Weight Loss due to Ignition:	0.30
Percent Organics:	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.

Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2194L		Sample No.: 5B				
Date: 11/10/2014		Depth: 8.5'-9.5'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	
10	2.00	0.00	0.00	0	100	
40	0.420	50.70	50.70	19	81	
60	0.250	104.60	155.30	59	41	
100	0.149	86.60	241.90	93	7	
200	0.074	14.80	256.70	99	1	
PAN						

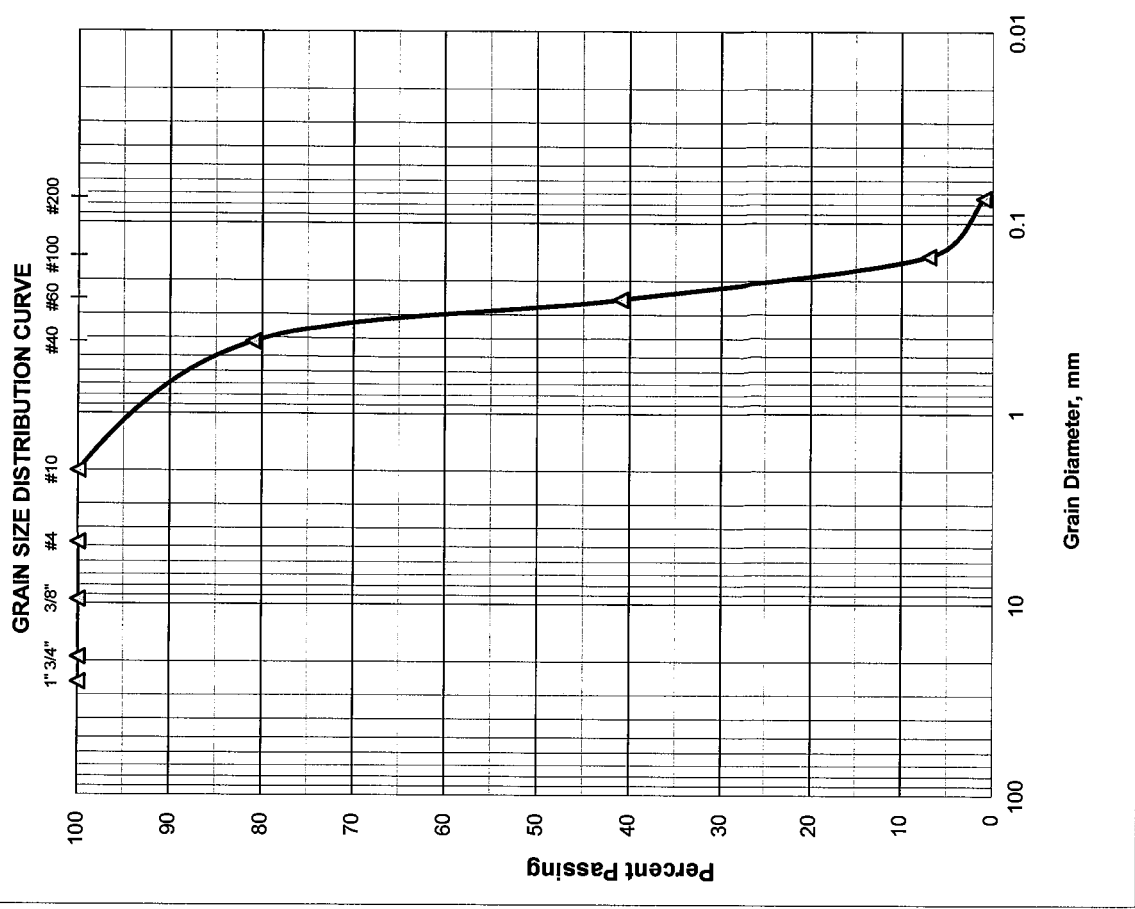
Total Dry Weight Before Wash, (gr) =	258.90
Percent Finer than No. 200 Sieve by Wash Method=	1%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	19
Fine Sand	>No. 40-≤ No. 200	80
Silt and Clays	>No. 200	1
Water Content		14%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



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7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2200L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	634.20
Wt. of Dry Soil + Can, grams	568.40
Wt. of Can, grams No. 400	8.90
Wt. of Dry Soil, grams	559.50
Wt. of Moisture, grams	65.80
Water Content, w%	12%
Date Sample Placed in Furnace:	11/07/14
Time in / out of furnace (minimum 6 hrs):	11/07/14 4:00 AM TO 11/07/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	27.80
Weight of Crucible and Sample After Ignition:	27.50
Weight of Crucible: No. 165	15.70
Weight of Oven-Dried Soil:	12.10
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

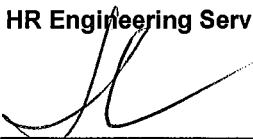
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-1-b


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2200L Sample No.: 2 Depth: 2.0'-4.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	634.20
Wt. of Dry Soil + Can, grams	568.40
Wt. of Can, grams No. 400	8.90
Wt. of Dry Soil, grams	559.50
Wt. of Moisture, grams	65.80
Water Content, w%	12%
Wt. of Dry Soil + Can Before Wash, grams	555.10
Wt. of Can, grams No. 400	8.90
Wt. of Dry Soil Before Wash, grams	546.20
Time in / Out of Oven :	11/06/14 5:00 PM TO 11/07/14 5:00 PM
Wt. of Dry Soil + Can After Wash, grams	517.50
Wt. of Dry Soil After Wash, grams	508.60
Total Loss, grams	37.60
Percent Finer Than No. 200 Sieve	7%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,

HR Engineering Services, Inc.



AASHTO Classification:

A-1-b

Hernando R. Ramos, P.E.

Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2214L		Depth: 2.0'-4.0'				
Sample No.: 2		Tested By: H.C.				
Date: 11/7/2014						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	32.10	32.10	8	92	
3/8"	9.51	29.40	61.50	15	85	
4	4.76	22.10	83.60	21	79	AASHTO Classification:
10	2.00	13.90	97.50	25	75	
40	0.420	44.50	142.00	36	64	A-2-4
60	0.250	83.10	225.10	57	43	
100	0.149	94.30	319.40	82	18	
200	0.074	24.50	343.90	88	12	
PAN						

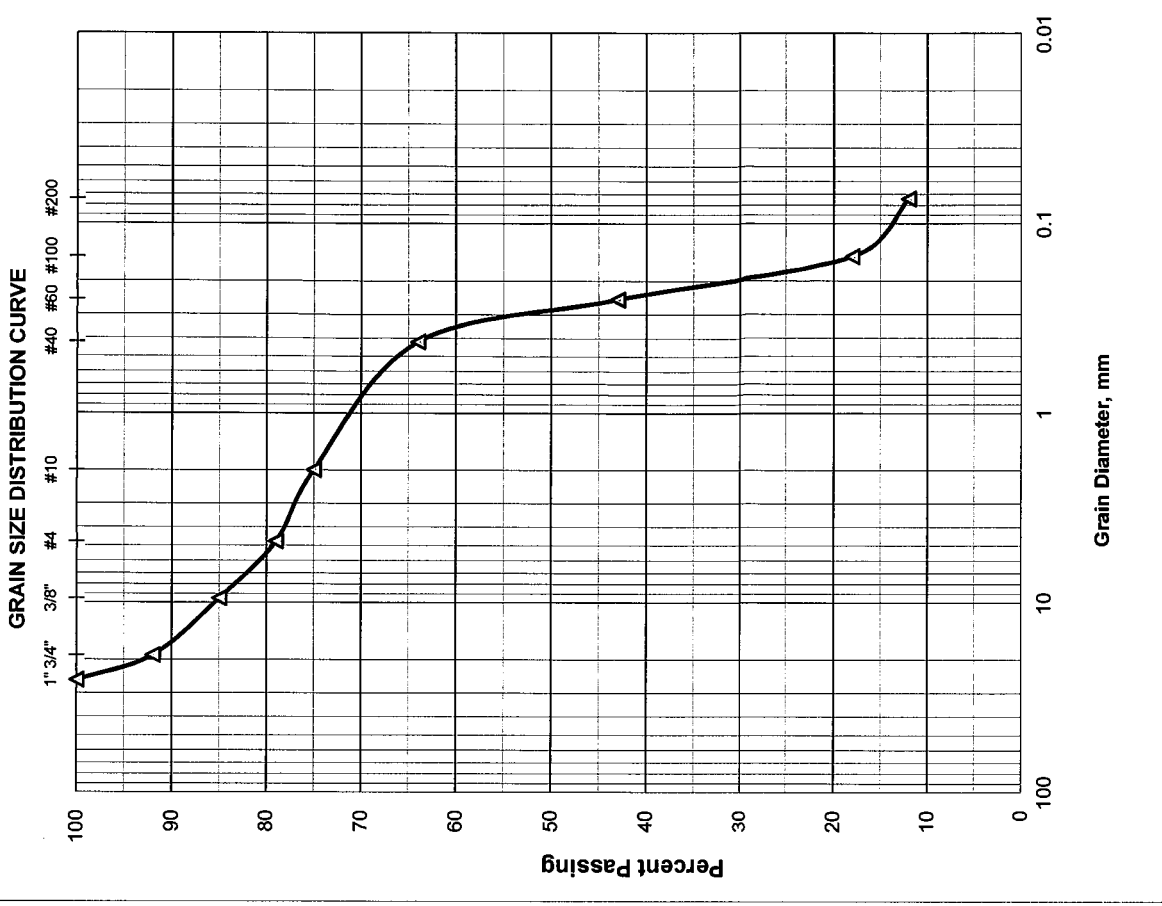
Total Dry Weight Before Wash, (gr) =	389.30
Percent Finer than No. 200 Sieve by Wash Method=	12%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 21
Coarse Sand	>No. 4-≤ No. 40 15
Fine Sand	No. 40-≤ No. 200 52
Silt and Clays	>No. 200 12
Water Content	14%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2214R		Depth: 6.0'-8.0'				
Sample No.: 4		Tested By: H.C.				
Date: 11/7/2014						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	AASHTO Classification:
10	2.00	0.00	0.00	0	100	
40	0.420	99.90	99.90	18	82	A-3
60	0.250	200.50	300.40	55	45	
100	0.149	204.20	504.60	92	8	
200	0.074	32.60	537.20	98	2	
PAN						

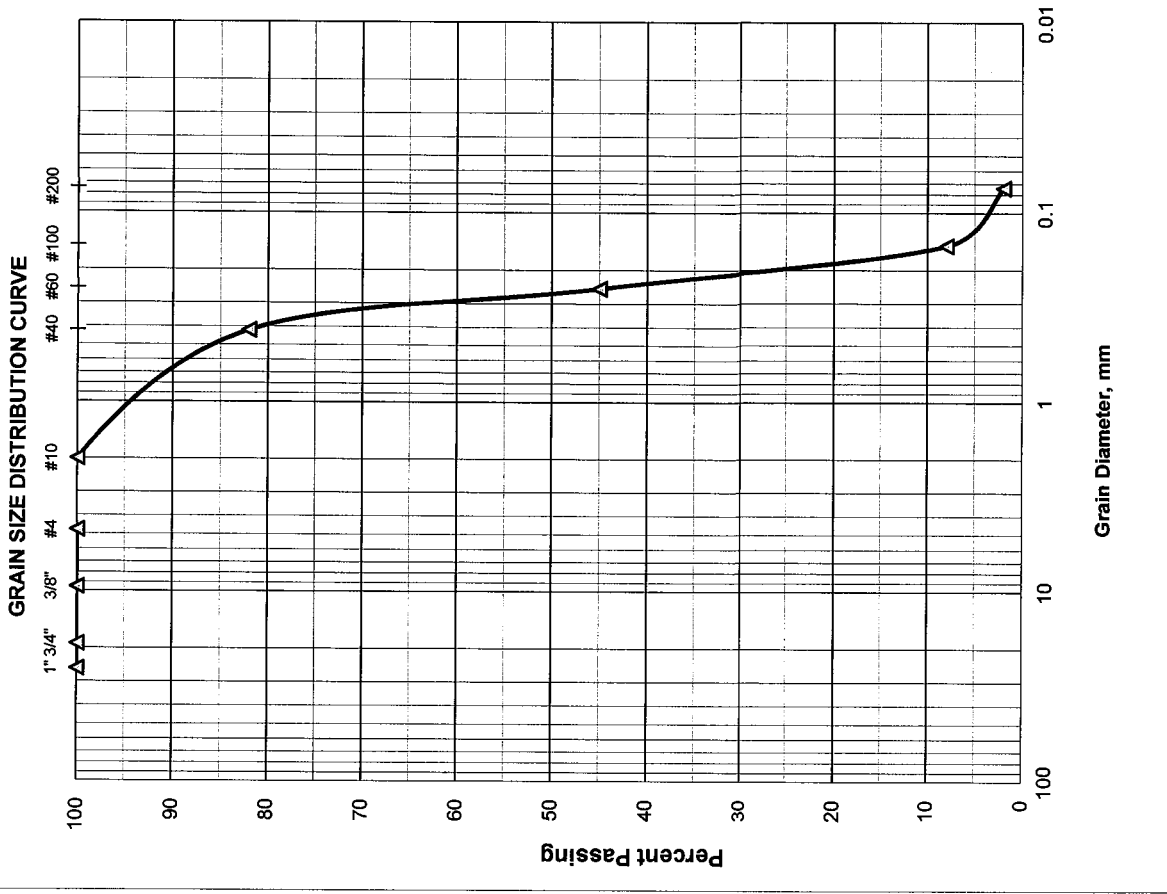
Total Dry Weight Before Wash, (gr) =	544.20
Percent Finer than No. 200 Sieve by Wash Method=	2%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	>No. 40-≤ No. 200	80
Silt and Clays	>No. 200	2
Water Content		20%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2218L Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	357.50
Wt. of Dry Soil + Can, grams	335.20
Wt. of Can, grams No. 403	9.20
Wt. of Dry Soil, grams	326.00
Wt. of Moisture, grams	22.30
Water Content, w%	7%
Date Sample Placed in Furnace:	11/07/14
Time in / out of furnace (minimum 6 hrs):	11/07/14 4:00 AM TO 11/07/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	28.80
Weight of Crucible and Sample After Ignition:	28.50
Weight of Crucible: No. 299	16.40
Weight of Oven-Dried Soil:	12.40
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

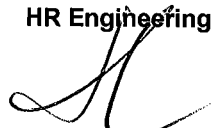
Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2218L Sample No.: 1B Depth: 1.0'-2.0'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	357.50
Wt. of Dry Soil + Can, grams	335.20
Wt. of Can, grams No. 403	9.20
Wt. of Dry Soil, grams	326.00
Wt. of Moisture, grams	22.30
Water Content, w%	7%
Wt. of Dry Soil + Can Before Wash, grams	323.10
Wt. of Can, grams No. 403	9.20
Wt. of Dry Soil Before Wash, grams	313.90
Time in / Out of Oven :	11/06/14 5:00 PM TO 11/07/14 5:00 PM
Wt. of Dry Soil + Can After Wash, grams	309.40
Wt. of Dry Soil After Wash, grams	300.20
Total Loss, grams	13.70
Percent Finer Than No. 200 Sieve	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2220R Sample No.: 6A Depth: 13.0'-14.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:00 PM TO 11/10/14 2:00 PM
Wt. of Wet Soil + Can, grams	208.70
Wt. of Dry Soil + Can, grams	204.40
Wt. of Can, grams No. 709	9.10
Wt. of Dry Soil, grams	195.30
Wt. of Moisture, grams	4.30
Water Content, w%	2%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 1:00 PM TO 11/10/14 7:00 PM
Weight of Crucible & Oven-Dried Sample:	26.90
Weight of Crucible and Sample After Ignition:	26.50
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	11.30
Weight Loss due to Ignition:	0.40
Percent Organics:	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2220R		Sample No.: 6A				
Date: 11/10/2014		Depth: 13.0'-14.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	
10	2.00	1.60	1.60	0	100	
40	0.420	22.50	24.10	13	87	
60	0.250	62.20	86.30	46	54	
100	0.149	79.30	165.60	90	10	
200	0.074	16.80	182.40	99	1	
PAN						

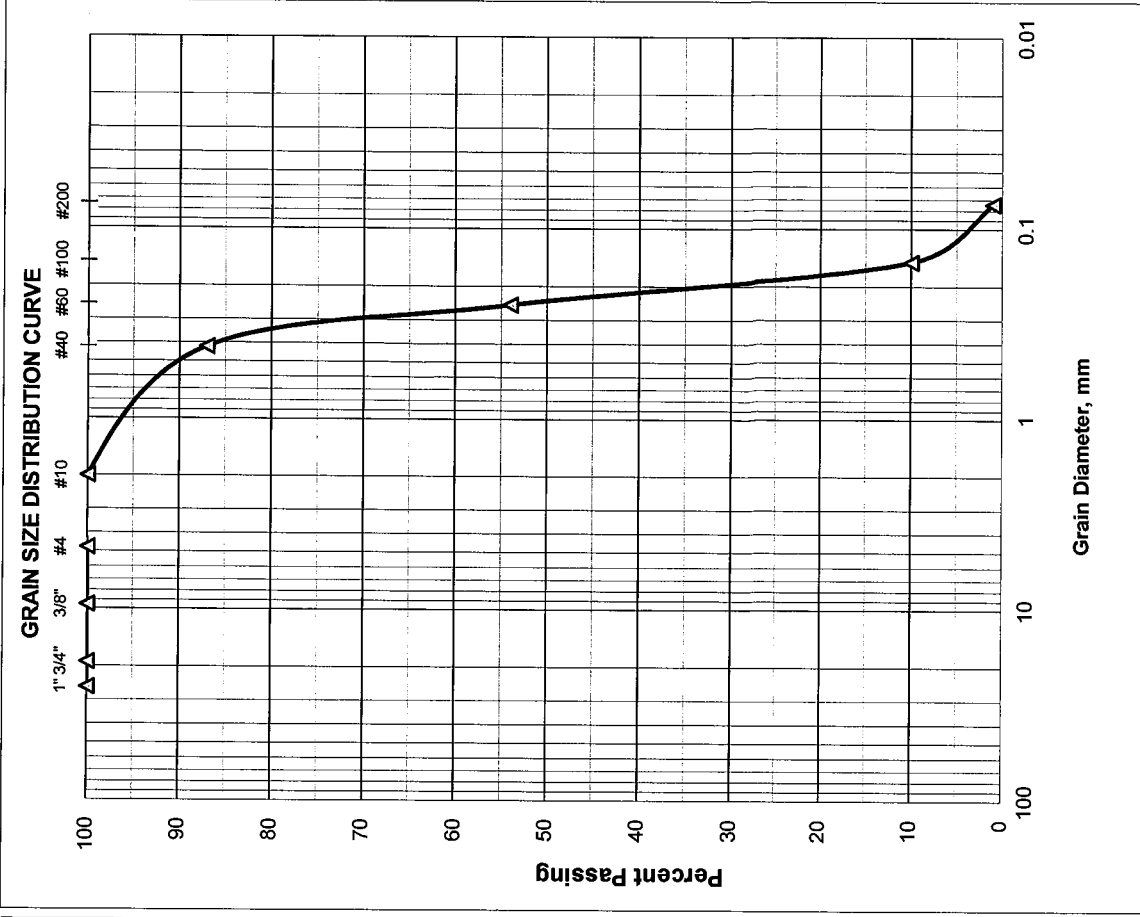
Total Dry Weight Before Wash, (gr) =	184.00
Percent Finer than No. 200 Sieve by Wash Method=	1%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	13
Fine Sand	>No. 40-≤ No. 200	86
Silt and Clays	>No. 200	1
Water Content		2%

Respectfully Submitted,
HR Engineering Services, Inc.

Hermendo R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2224L		Sample No.: 2				
Date: 11/7/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	6.00	6.00	1	99	AASHTO Classification:
10	2.00	5.70	11.70	2	98	
40	0.420	85.40	97.10	23	77	A-3
60	0.250	126.80	223.90	54	46	
100	0.149	141.80	365.70	88	12	
200	0.074	30.20	395.90	96	4	
PAN						

Total Dry Weight Before Wash, (gr) = **412.30**
 Percent Finer than No. 200 Sieve by Wash Method = **4%**

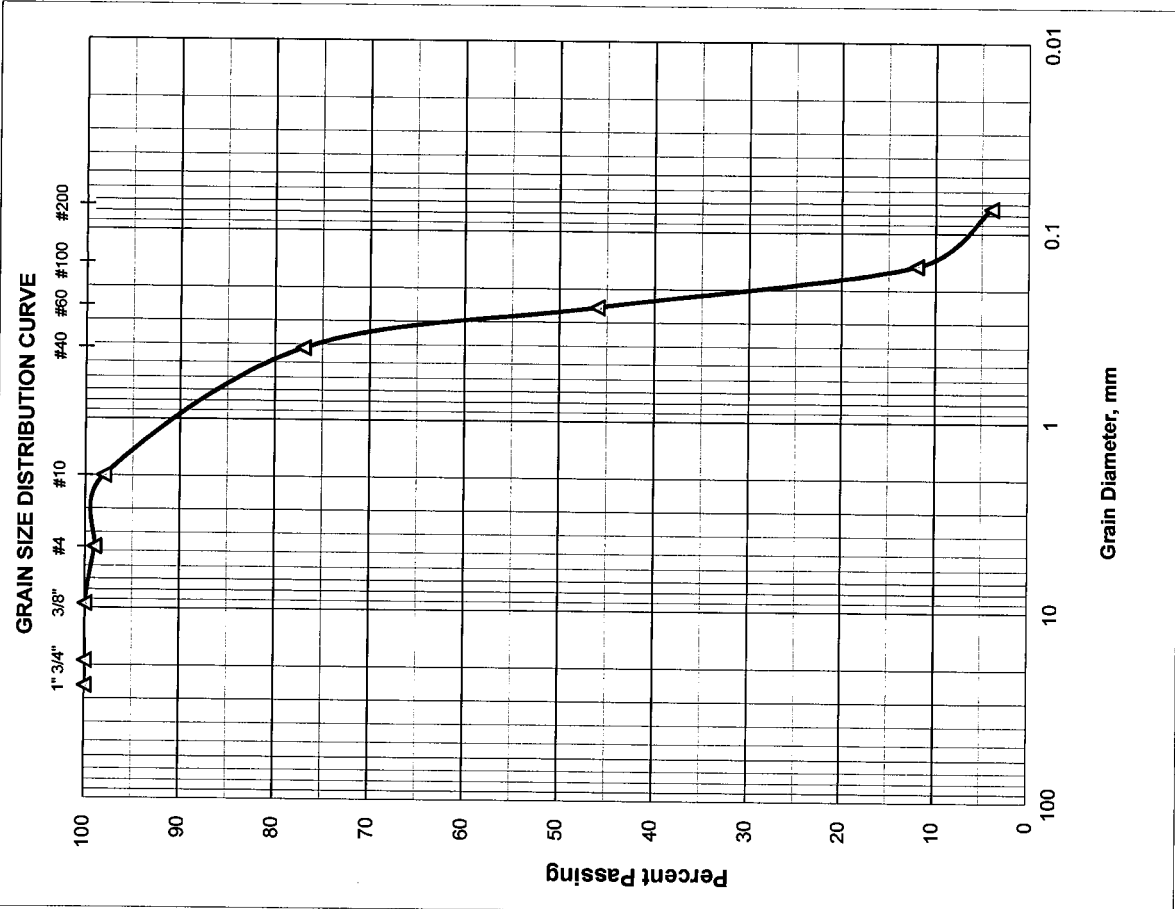
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	1
Coarse Sand	>No. 4-≤ No. 40	22
Fine Sand	No. 40-≤ No. 200	73
Silt and Clays	>No. 200	4
Water Content		8%

Respectfully Submitted,
HR Engineering Services, Inc.



Hermando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Project No.: HR12-891R
Boring No.: RB-2228R Sample No.: 2A Depth: 2.0'-2.5'
Date: 09/10/14

Technician:	H.C.
Date Sample Placed in Oven:	09/10/2014
Time in / Out of Oven :	09/10/14 4:00 PM TO 09/11/14 4:00 PM
Wt. of Wet Soil + Can, grams	295.10
Wt. of Dry Soil + Can, grams	272.30
Wt. of Can, grams No. 902	8.30
Wt. of Dry Soil, grams	264.00
Wt. of Moisture, grams	22.80
Water Content, w%	9%
Date Sample Placed in Furnace:	09/12/14
Time in / out of furnace (minimum 6 hrs):	09/12/14 5:30 AM TO 09/12/14 11:30 AM
Weight of Crucible & Oven-Dried Sample:	29.30
Weight of Crucible and Sample After Ignition:	28.60
Weight of Crucible: No. 165	15.70
Weight of Oven-Dried Soil:	13.60
Weight Loss due to Ignition:	0.70
Percent Organics:	5%

Note: The test was performed in general accordance with AASHTO T- 267-86, ASTM D 2974-87

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:
A-2-4



Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2232R Sample No.: 1B Depth: 0.5'-1.5'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	421.70
Wt. of Dry Soil + Can, grams	398.50
Wt. of Can, grams No. 406	8.90
Wt. of Dry Soil, grams	389.60
Wt. of Moisture, grams	23.20
Water Content, w%	6%
Date Sample Placed in Furnace:	11/07/14
Time in / out of furnace (minimum 6 hrs):	11/07/14 4:00 AM TO 11/07/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	27.30
Weight of Crucible and Sample After Ignition:	26.80
Weight of Crucible: No. 28	15.60
Weight of Oven-Dried Soil:	11.70
Weight Loss due to Ignition:	0.50
Percent Organics:	4%


Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

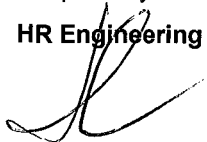
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2232R Sample No.: 1B Depth: 0.5'-1.5'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	421.70
Wt. of Dry Soil + Can, grams	398.50
Wt. of Can, grams No. 406	8.90
Wt. of Dry Soil, grams	389.60
Wt. of Moisture, grams	23.20
Water Content, w%	6%
Wt. of Dry Soil + Can Before Wash, grams	387.20
Wt. of Can, grams No. 406	8.90
Wt. of Dry Soil Before Wash, grams	378.30
Time in / Out of Oven :	11/06/14 5:00 PM TO 11/07/14 5:00 PM
Wt. of Dry Soil + Can After Wash, grams	350.90
Wt. of Dry Soil After Wash, grams	342.00
Total Loss, grams	36.30
Percent Finer Than No. 200 Sieve	10%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

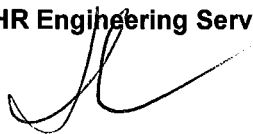
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2232R Sample No.: 4 Depth: 6.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:00 PM TO 11/10/14 2:00 PM
Wt. of Wet Soil + Can, grams	306.80
Wt. of Dry Soil + Can, grams	266.90
Wt. of Can, grams No. 710	8.90
Wt. of Dry Soil, grams	258.00
Wt. of Moisture, grams	39.90
Water Content, w%	15%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 1:00 PM TO 11/10/14 7:00 PM
Weight of Crucible & Oven-Dried Sample:	26.60
Weight of Crucible and Sample After Ignition:	26.10
Weight of Crucible: No. 54	15.00
Weight of Oven-Dried Soil:	11.60
Weight Loss due to Ignition:	0.50
Percent Organics:	4%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2232R		Sample No.: 4				
Date: 11/10/2014		Depth: 6.0'-8.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	AASHTO Classification:
10	2.00	4.10	4.10	1	99	A-3
40	0.420	68.70	72.80	29	71	
60	0.250	94.80	167.60	68	32	
100	0.149	67.90	235.50	95	5	
200	0.074	8.90	244.40	99	1	
PAN						

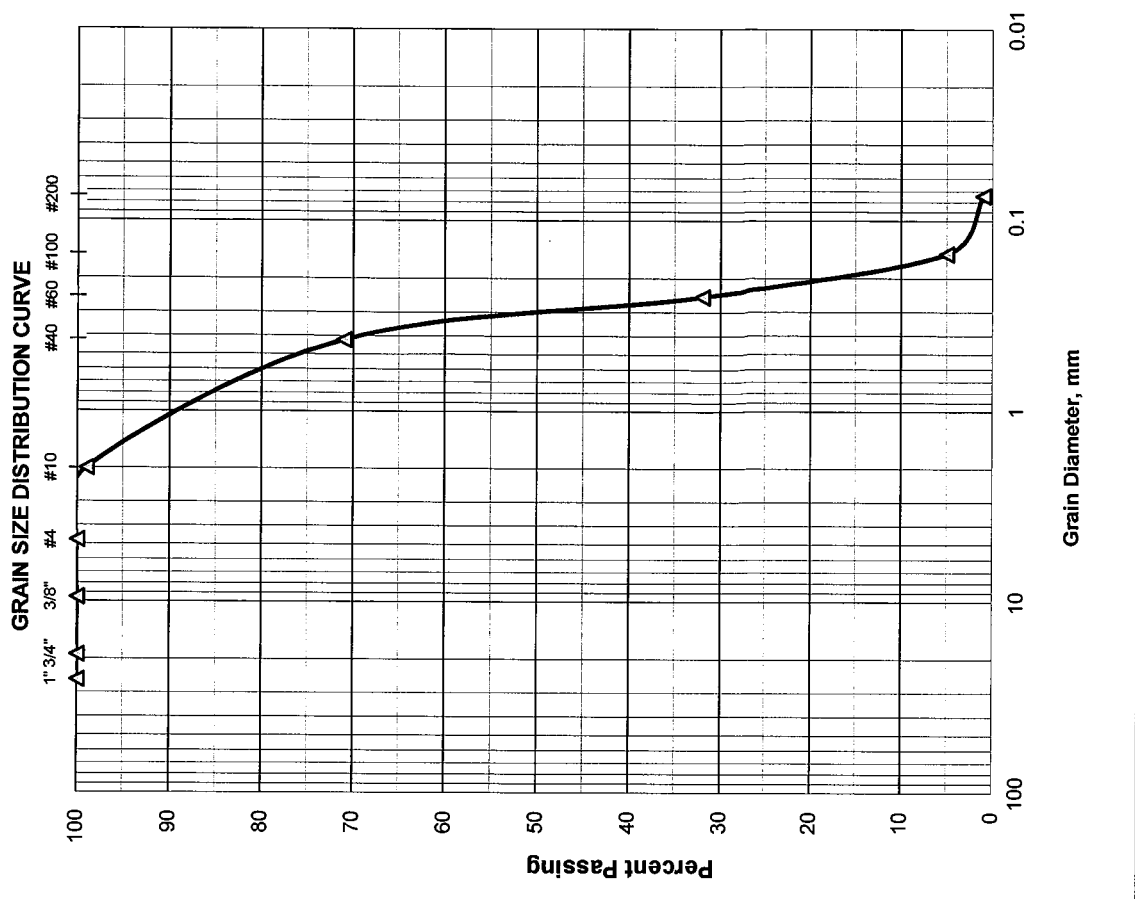
Total Dry Weight Before Wash, (gr) = **246.40**
 Percent Finer than No. 200 Sieve by Wash Method = **1%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	29
Fine Sand	>No. 40-≤ No. 200	70
Silt and Clays	>No. 200	1
Water Content		15%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2284L		Sample No.: 6				
Date: 11/7/2014		Depth: 10.0'-12.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	
10	2.00	0.20	0.20	0	100	
40	0.420	77.90	78.10	18	82	
60	0.250	169.30	247.40	59	41	
100	0.149	135.80	383.20	92	8	
200	0.074	18.20	401.40	96	4	
PAN						

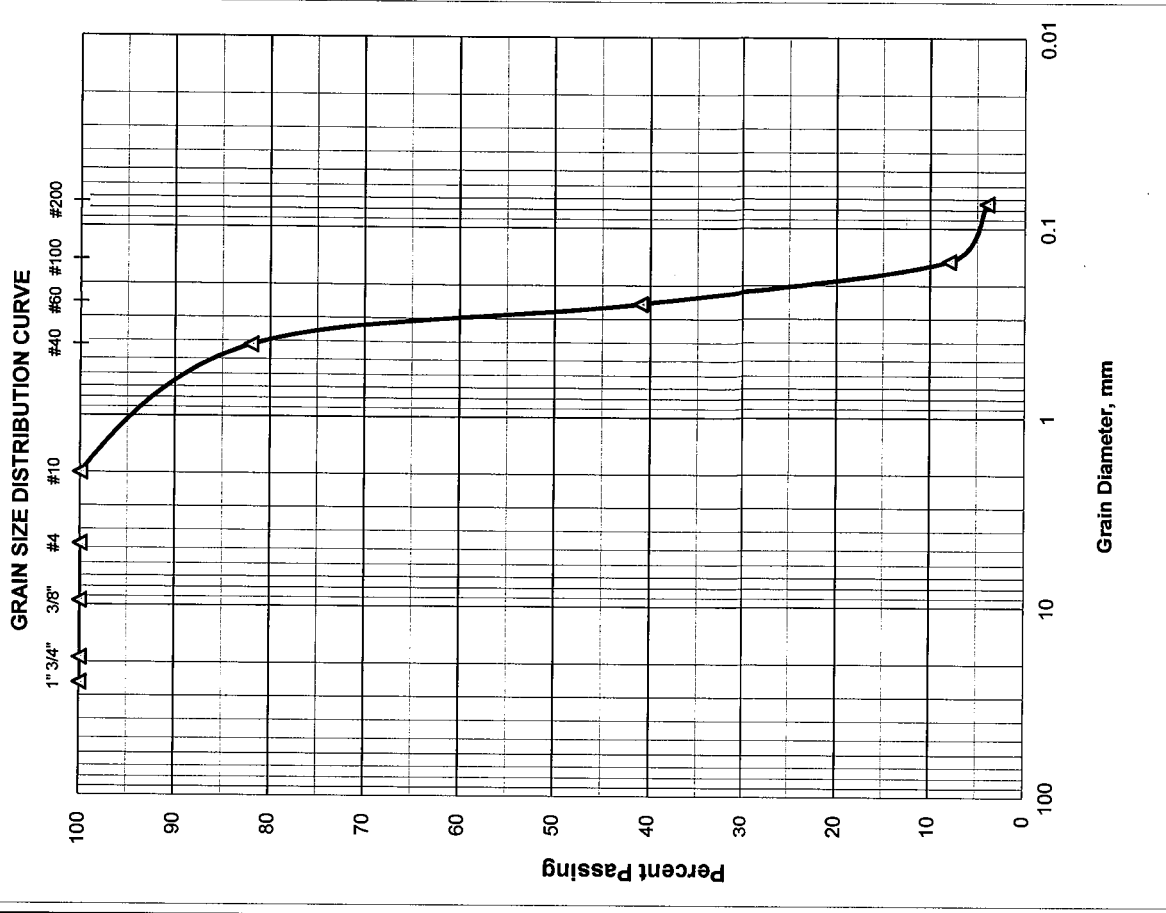
Total Dry Weight Before Wash, (gr) =	414.30
Percent Finer than No. 200 Sieve by Wash Method=	4%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	18
Fine Sand	No. 40-≤ No. 200	78
Silt and Clays	>No. 200	4
Water Content		9%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2284L Sample No.: 7A Depth: 13.0'-14.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:00 PM TO 11/10/14 2:00 PM
Wt. of Wet Soil + Can, grams	263.10
Wt. of Dry Soil + Can, grams	219.00
Wt. of Can, grams No. 711	8.90
Wt. of Dry Soil, grams	210.10
Wt. of Moisture, grams	44.10
Water Content, w%	21%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 1:00 PM TO 11/10/14 7:00 PM
Weight of Crucible & Oven-Dried Sample:	27.30
Weight of Crucible and Sample After Ignition:	27.10
Weight of Crucible: No. 13	15.60
Weight of Oven-Dried Soil:	11.70
Weight Loss due to Ignition:	0.20
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2284L		Depth: 13.0'-14.0'	
Date: 11/10/2014		Sample No.: 7A	
Tested By: H.C.			

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	0.00	0.00	0	100	
10	2.00	0.00	0.00	0	100	
40	0.420	47.10	47.10	23	77	
60	0.250	93.00	140.10	70	30	
100	0.149	51.70	191.80	96	4	
200	0.074	5.10	196.90	99	1	
PAN						

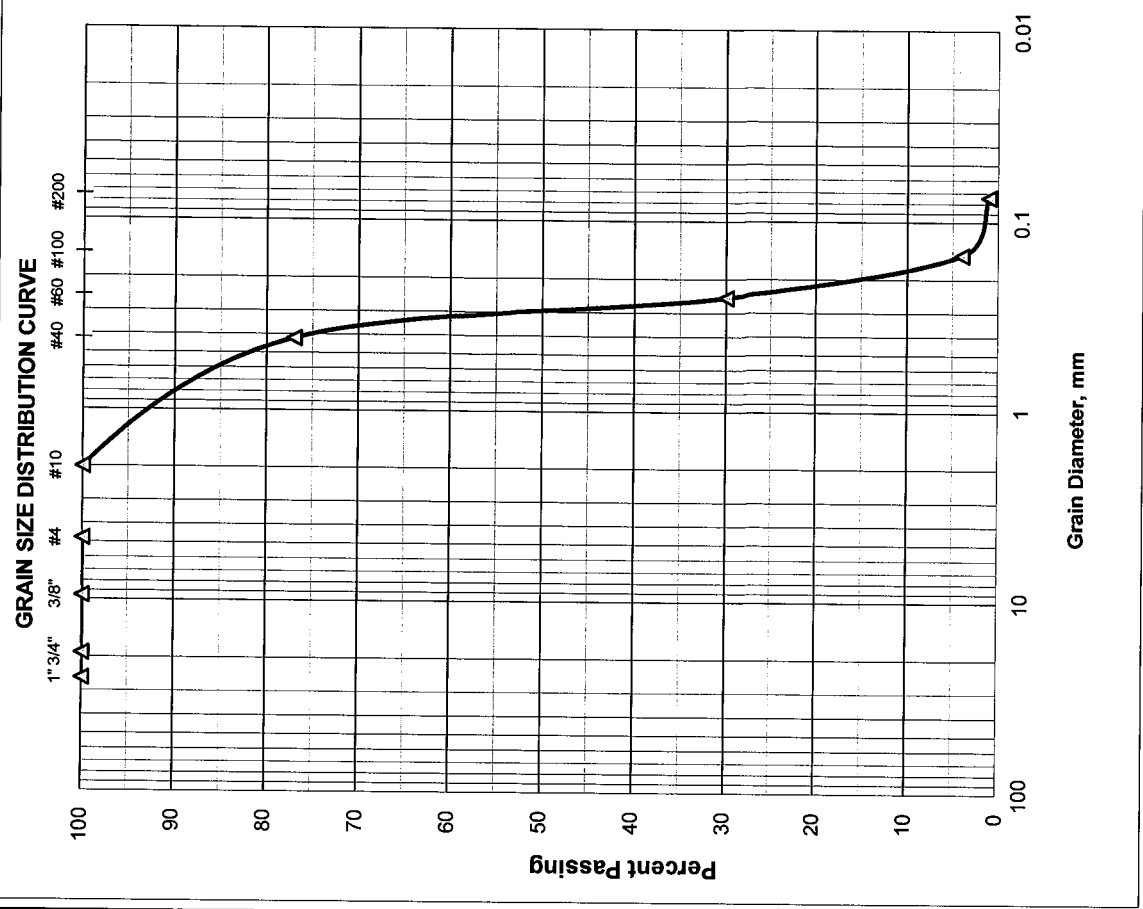
Total Dry Weight Before Wash, (gr) = **198.60**
 Percent Finer than No. 200 Sieve by Wash Method= **1%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	0
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	76
Silt and Clays	>No. 200	1
Water Content		21%

Respectfully Submitted,
 HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2284R Sample No.: 4B Depth: 7.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/09/2014
Time in / Out of Oven :	11/09/14 2:00 PM TO 11/10/14 2:00 PM
Wt. of Wet Soil + Can, grams	339.60
Wt. of Dry Soil + Can, grams	292.90
Wt. of Can, grams No. 712	8.20
Wt. of Dry Soil, grams	284.70
Wt. of Moisture, grams	46.70
Water Content, w%	16%
Date Sample Placed in Furnace:	11/10/14
Time in / out of furnace (minimum 6 hrs):	11/10/14 1:00 PM TO 11/10/14 7:00 PM
Weight of Crucible & Oven-Dried Sample:	23.40
Weight of Crucible and Sample After Ignition:	23.00
Weight of Crucible: No. LC-6	11.50
Weight of Oven-Dried Soil:	11.90
Weight Loss due to Ignition:	0.40
Percent Organics:	3%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R	
Boring No.: RB-2284R		Sample No.: 4B	
Date: 11/10/2014		Depth: 7.0'-8.0'	
		Tested By: H.C.	

Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	0.00	0.00	0	100	
4	4.76	1.90	1.90	0	100	AASHTO Classification:
10	2.00	6.70	8.60	3	97	
40	0.420	89.80	98.40	36	64	A-3
60	0.250	114.20	212.60	77	23	
100	0.149	50.90	263.50	96	4	
200	0.074	8.30	271.80	99	1	
PAN						

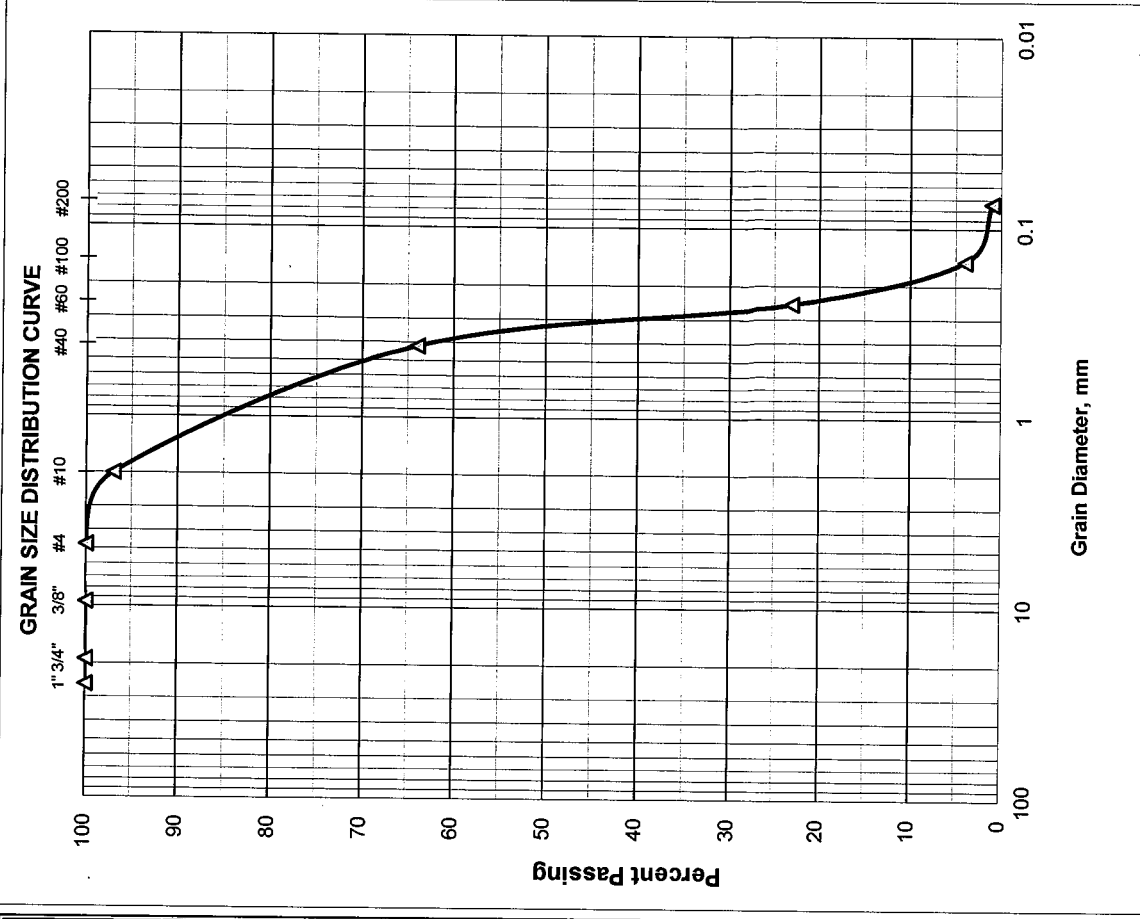
Total Dry Weight Before Wash, (gr) =	272.70
Percent Finer than No. 200 Sieve by Wash Method=	1%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 0
Coarse Sand	>No. 4-≤ No. 40 36
Fine Sand	>No. 40-≤ No. 200 63
Silt and Clays	>No. 200 1
Water Content	16%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2289L Sample No.: 1B Depth: 0.5'-1.5'
Date: 11/03/14

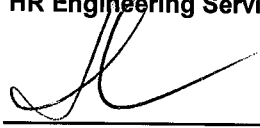
Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	489.80
Wt. of Dry Soil + Can, grams	455.50
Wt. of Can, grams No. 408	8.80
Wt. of Dry Soil, grams	446.70
Wt. of Moisture, grams	34.30
Water Content, w%	8%
Date Sample Placed in Furnace:	11/07/14
Time in / out of furnace (minimum 6 hrs):	11/07/14 4:00 AM TO 11/07/14 10:00 AM
Weight of Crucible & Oven-Dried Sample:	27.40
Weight of Crucible and Sample After Ignition:	27.30
Weight of Crucible: No. 227	16.00
Weight of Oven-Dried Soil:	11.40
Weight Loss due to Ignition:	0.10
Percent Organics:	1%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

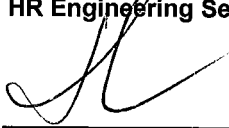
Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: RB-2289L Sample No.: 1B Depth: 0.5'-1.5'
Date: 11/03/14

Technician:	H.C.
Date Sample Placed in Oven:	11/05/2014
Time in / Out of Oven :	11/05/14 3:00 PM TO 11/06/14 3:00 PM
Wt. of Wet Soil + Can, grams	489.80
Wt. of Dry Soil + Can, grams	455.50
Wt. of Can, grams No. 408	8.80
Wt. of Dry Soil, grams	446.70
Wt. of Moisture, grams	34.30
Water Content, w%	8%
Wt. of Dry Soil + Can Before Wash, grams	431.20
Wt. of Can, grams No. 408	8.80
Wt. of Dry Soil Before Wash, grams	422.40
Time in / Out of Oven :	11/06/14 5:00 PM TO 11/07/14 5:00 PM
Wt. of Dry Soil + Can After Wash, grams	404.70
Wt. of Dry Soil After Wash, grams	395.90
Total Loss, grams	26.50
Percent Finer Than No. 200 Sieve	6%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
Florida Registration No. 42045

AASHTO Classification:

A-3

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: RB-2289R		Sample No.: 2				
Date: 11/7/2014		Depth: 2.0'-4.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	16.30	16.30	3	97	
4	4.76	4.20	20.50	4	96	AASHTO Classification:
10	2.00	3.40	23.90	5	95	
40	0.420	54.20	78.10	18	82	A-3
60	0.250	156.80	234.90	56	44	
100	0.149	111.00	345.90	83	17	
200	0.074	27.10	373.00	90	10	
PAN						

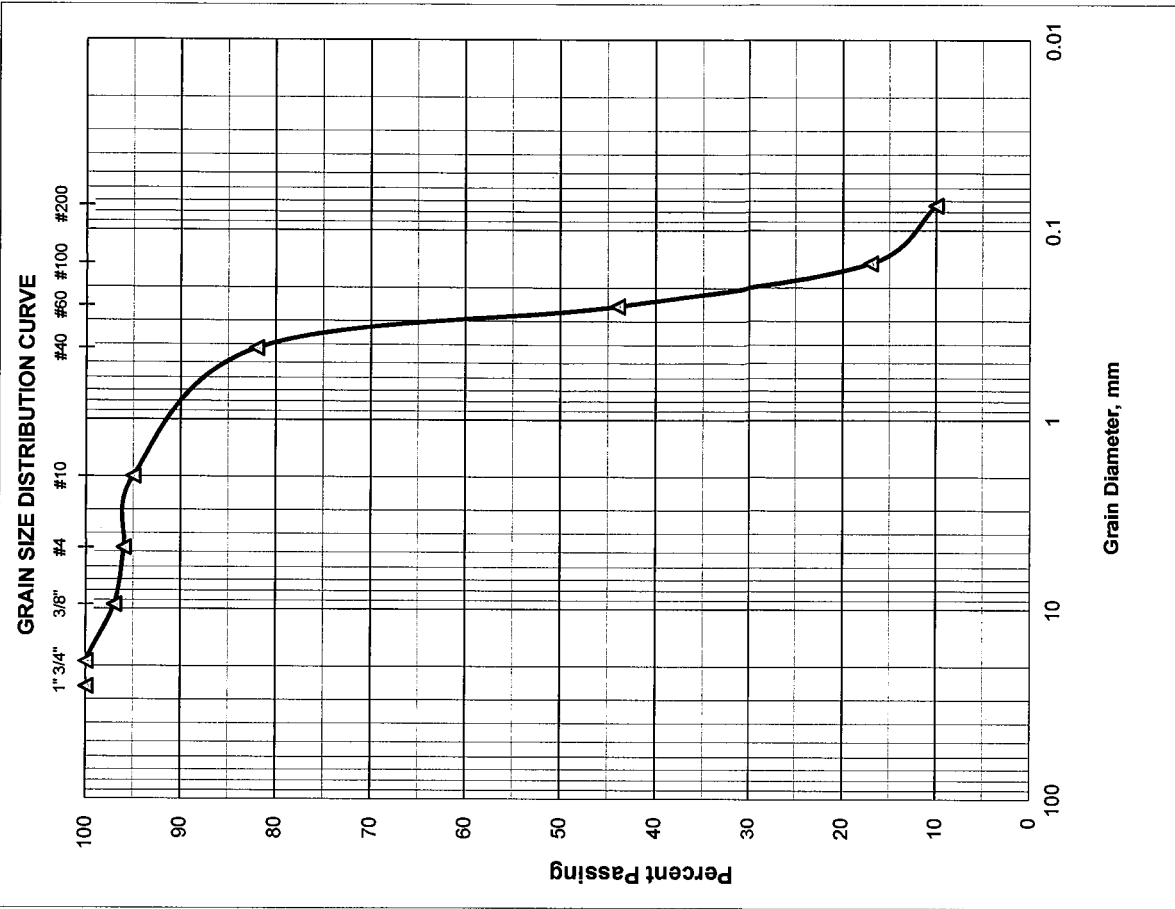
Total Dry Weight Before Wash, (gr) = **414.30**
 Percent Finer than No. 200 Sieve by Wash Method = **10%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	4
Coarse Sand	>No. 4-≤ No. 40	14
Fine Sand	No. 40-≤ No. 200	72
Silt and Clays	>No. 200	10
Water Content		5%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2210 Sample No.: 4 Depth: 6.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	423.50
Wt. of Dry Soil + Can, grams	375.20
Wt. of Can, grams No. 800	8.40
Wt. of Dry Soil, grams	366.80
Wt. of Moisture, grams	48.30
Water Content, w%	13%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	30.90
Weight of Crucible and Sample After Ignition:	30.60
Weight of Crucible: No. 115	18.30
Weight of Oven-Dried Soil:	12.60
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,

HR Engineering Services, Inc.



Hernando R. Ramos, P.E.

Florida Registration No. 42045

AASHTO Classification:

A-3

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2210 Sample No.: 4 Depth: 6.0'-8.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	423.50
Wt. of Dry Soil + Can, grams	375.20
Wt. of Can, grams No. 800	8.40
Wt. of Dry Soil, grams	366.80
Wt. of Moisture, grams	48.30
Water Content, w%	13%
Wt. of Dry Soil + Can Before Wash, grams	358.20
Wt. of Can, grams No. 800	8.40
Wt. of Dry Soil Before Wash, grams	349.80
Time in / Out of Oven :	11/08/14 11:00 AM TO 11/09/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	331.70
Wt. of Dry Soil After Wash, grams	323.30
Total Loss, grams	26.50
Percent Finer Than No. 200 Sieve	8%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2210 Sample No.: 5 Depth: 8.0'-11.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	508.70
Wt. of Dry Soil + Can, grams	425.50
Wt. of Can, grams No. 801	8.90
Wt. of Dry Soil, grams	416.60
Wt. of Moisture, grams	83.20
Water Content, w%	20%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	30.40
Weight of Crucible and Sample After Ignition:	30.10
Weight of Crucible: No. 11	18.30
Weight of Oven-Dried Soil:	12.10
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2210 Sample No.: 5 Depth: 8.0'-11.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	508.70
Wt. of Dry Soil + Can, grams	425.50
Wt. of Can, grams No. 801	8.90
Wt. of Dry Soil, grams	416.60
Wt. of Moisture, grams	83.20
Water Content, w%	20%
Wt. of Dry Soil + Can Before Wash, grams	402.80
Wt. of Can, grams No. 801	8.90
Wt. of Dry Soil Before Wash, grams	393.90
Time in / Out of Oven :	11/08/14 11:00 AM TO 11/09/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	378.90
Wt. of Dry Soil After Wash, grams	370.00
Total Loss, grams	23.90
Percent Finer Than No. 200 Sieve	6%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2216 Sample No.: 2B Depth: 3.0'-4.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	471.60
Wt. of Dry Soil + Can, grams	394.50
Wt. of Can, grams No. 802	9.00
Wt. of Dry Soil, grams	385.50
Wt. of Moisture, grams	77.10
Water Content, w%	20%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	30.80
Weight of Crucible and Sample After Ignition:	30.00
Weight of Crucible: No. 23	18.50
Weight of Oven-Dried Soil:	12.30
Weight Loss due to Ignition:	0.80
Percent Organics:	7%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2216 Sample No.: 2B Depth: 3.0'-4.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	471.60
Wt. of Dry Soil + Can, grams	394.50
Wt. of Can, grams No. 802	9.00
Wt. of Dry Soil, grams	385.50
Wt. of Moisture, grams	77.10
Water Content, w%	20%
Wt. of Dry Soil + Can Before Wash, grams	378.10
Wt. of Can, grams No. 802	9.00
Wt. of Dry Soil Before Wash, grams	369.10
Time in / Out of Oven :	11/08/14 11:00 AM TO 11/09/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	361.20
Wt. of Dry Soil After Wash, grams	352.20
Total Loss, grams	16.90
Percent Finer Than No. 200 Sieve	5%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND ORGANIC CONTENT BY LOSS ON IGNITION

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2222 Sample No.: 1B Depth: 0.3'-2.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	360.90
Wt. of Dry Soil + Can, grams	330.40
Wt. of Can, grams No. 803	8.90
Wt. of Dry Soil, grams	321.50
Wt. of Moisture, grams	30.50
Water Content, w%	9%
Date Sample Placed in Furnace:	11/08/14
Time in / out of furnace (minimum 6 hrs):	11/08/14 5:00 AM TO 11/08/14 11:00 AM
Weight of Crucible & Oven-Dried Sample:	30.80
Weight of Crucible and Sample After Ignition:	30.50
Weight of Crucible: No. 93	18.50
Weight of Oven-Dried Soil:	12.30
Weight Loss due to Ignition:	0.30
Percent Organics:	2%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Organic Content Test performed in general accordance with ASTM D 2974 (AASHTO T 267)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3


Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

7815 N.W. 72nd Avenue - Medley, Florida 33166

Phone (305) 888-8880, Fax (305) 888-8770

REPORT OF MOISTURE AND PERCENT PASSING THE No. 200 SIEVE

Project Name: I-95 CDC Phase 3A-1 Project No.: HR12-891R
Boring No.: P-2222 Sample No.: 1B Depth: 0.3'-2.0'
Date: 11/07/14

Technician:	H.C.
Date Sample Placed in Oven:	11/07/2014
Time in / Out of Oven :	11/07/14 5:00 AM TO 11/08/14 5:00 AM
Wt. of Wet Soil + Can, grams	360.90
Wt. of Dry Soil + Can, grams	330.40
Wt. of Can, grams No. 803	8.90
Wt. of Dry Soil, grams	321.50
Wt. of Moisture, grams	30.50
Water Content, w%	9%
Wt. of Dry Soil + Can Before Wash, grams	318.70
Wt. of Can, grams No. 803	8.90
Wt. of Dry Soil Before Wash, grams	309.80
Time in / Out of Oven :	11/08/14 11:00 AM TO 11/09/14 11:00 AM
Wt. of Dry Soil + Can After Wash, grams	301.40
Wt. of Dry Soil After Wash, grams	292.50
Total Loss, grams	17.30
Percent Finer Than No. 200 Sieve	6%

Moisture Content Test performed in general accordance with ASTM D 2216 (AASHTO T 265)

Fines Content Test performed in general accordance with ASTM C 136 (AASHTO T 27)

Respectfully Submitted,
HR Engineering Services, Inc.

AASHTO Classification:

A-3

Hernando R. Ramos, P.E.
Florida Registration No. 42045

HR ENGINEERING SERVICES, INC.

Corrosion Series

Project Name: I-95 CDC PHASE 3A-1

Project Number: HR12-891R Date: 11/10/14 Tested by: H.C.

Sample No.	Sampling Date	Resistivity, ohm-cm.	Chlorides, ppm	Sulfates, ppm	pH	Testing Date	Sub-Structure Environmental Classification	
							Steel	Concrete
B-2	09/02/14	1856	58	30	7.4	09/05/14	MA	MA
B-3	09/18/14	2220	35	26	7.6	09/19/14	MA	MA
B-7	09/17/14	2417	23	38	7.3	10/13/14	MA	MA
B-8	09/24/14	1927	33	33	7.6	10/13/14	MA	MA
B-11	09/11/14	985	180	40	7.2	09/19/14	EA	MA
B-12	09/02/14	970	191	34	7.3	09/19/14	EA	MA
NE Pond	10/10/14	1952	55	30	7.5	10/13/14	MA	MA
C-13 Canal	10/10/14	2427	15	77	7.3	10/13/14	MA	MA

MA: Moderately Aggressive

EA: Extremely Aggressive

Tests performed by HRES in accordance with Florida Method of Test Corrosion Series in Soil and Water, Designation FM 5-550 through FM 5-553

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-1		Sample No.: 1				
Date: 11/3/2014		Depth: 0.0'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	11.30	11.30	2	98	
3/8"	9.51	27.00	38.30	7	93	
4	4.76	14.20	52.50	10	90	AASHTO Classification:
10	2.00	17.90	70.40	13	87	A-3
40	0.420	61.00	131.40	25	75	
60	0.250	129.20	260.60	50	50	
100	0.149	189.60	450.20	86	14	
200	0.074	49.70	499.90	96	4	
PAN						

Total Dry Weight Before Wash, (gr) = **520.70**
 Percent Finer than No. 200 Sieve by Wash Method = **4%**

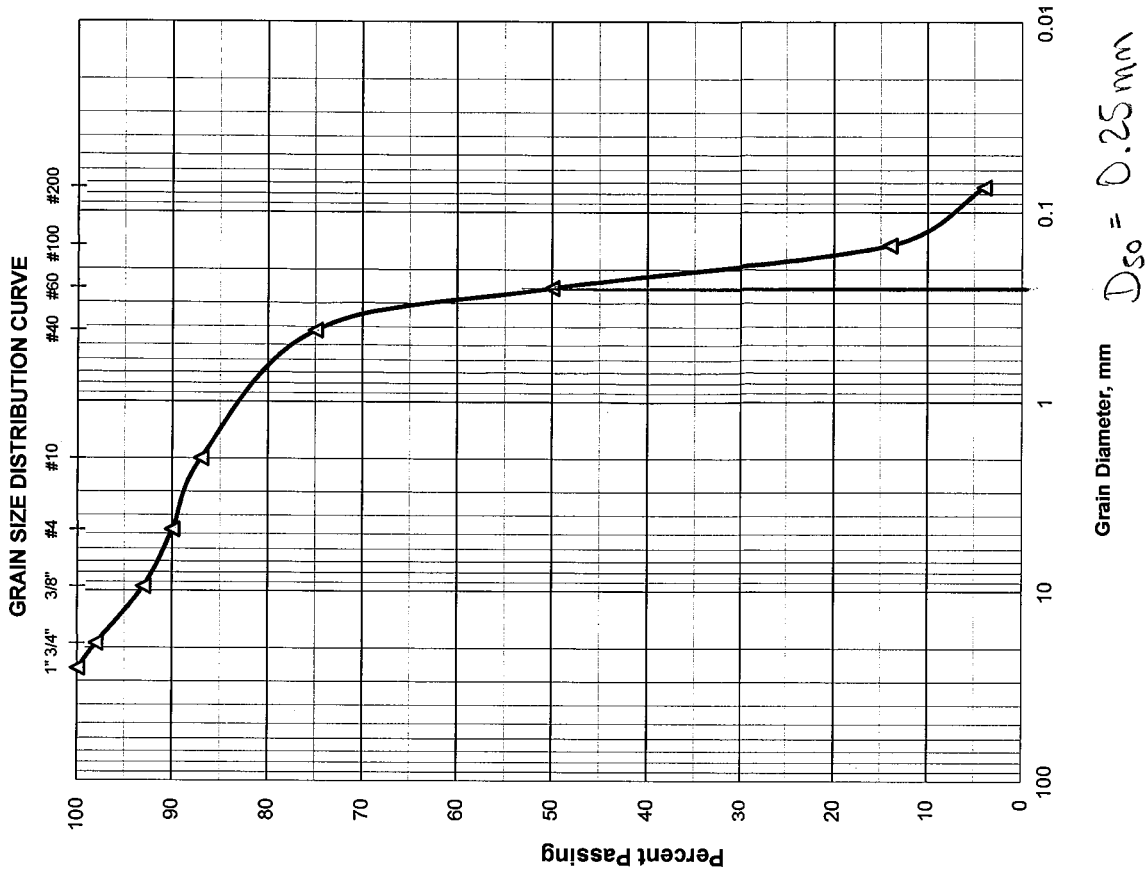
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	10
Coarse Sand	>No. 4-≤ No. 40	15
Fine Sand	>No. 40-≤ No. 200	71
Silt and Clays	>No. 200	4
Water Content		47%

Respectfully Submitted,
HR Engineering Services, Inc.



Herlando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: <u>I-95 CDC Phase 3A-1</u>		Project No.: <u>HR12-891R</u>				
Boring No.: <u>CB-1</u>	Sample No.: <u>2</u>	Depth: <u>2.0'-3.0'</u>				
Date: <u>11/3/2014</u>	Tested By: <u>H.C.</u>					
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	34.40	34.40	6	94	
3/8"	9.51	2.50	36.90	6	94	
4	4.76	6.80	43.70	7	93	
10	2.00	6.20	49.90	9	91	
40	0.420	34.90	84.80	15	85	
60	0.250	135.40	220.20	39	61	
100	0.149	251.20	471.40	85	15	
200	0.074	57.10	528.50	95	5	
PAN						

Total Dry Weight Before Wash, (gr) =	553.70
Percent Finer than No. 200 Sieve by Wash Method=	5%

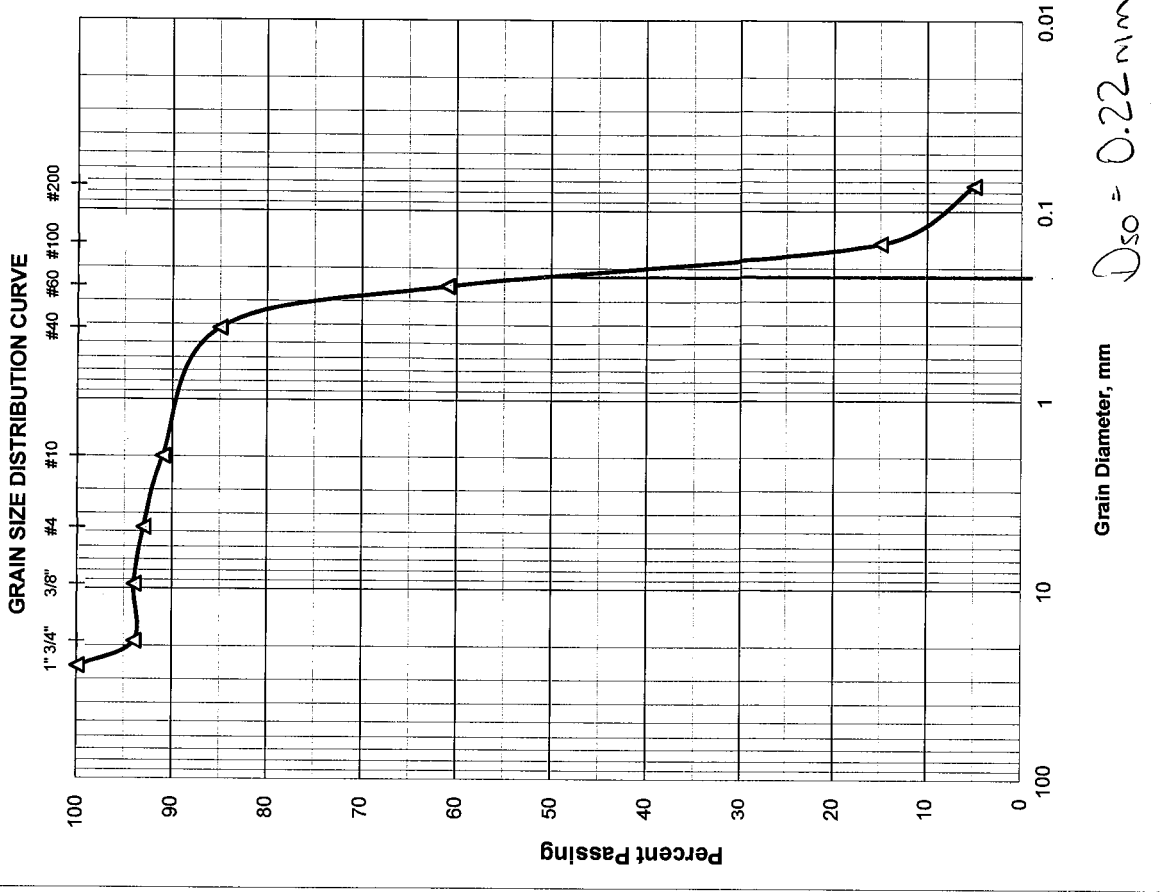
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	7
Coarse Sand	>No. 4-≤ No. 40	8
Fine Sand	>No. 40-≤ No. 200	80
Silt and Clays	>No. 200	5
Water Content		34%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-2		Depth: 0.0'-1.3'				
Sample No.: 1		Tested By: H.C.				
Date: 11/3/2014						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	AASHTO Classification: A-3
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	21.10	21.10	3	97	
4	4.76	27.50	48.60	8	92	
10	2.00	35.50	84.10	14	86	
40	0.420	94.70	178.80	31	69	
60	0.250	175.40	354.20	63	37	
100	0.149	150.60	504.80	89	11	
200	0.074	33.60	538.40	95	5	
PAN						

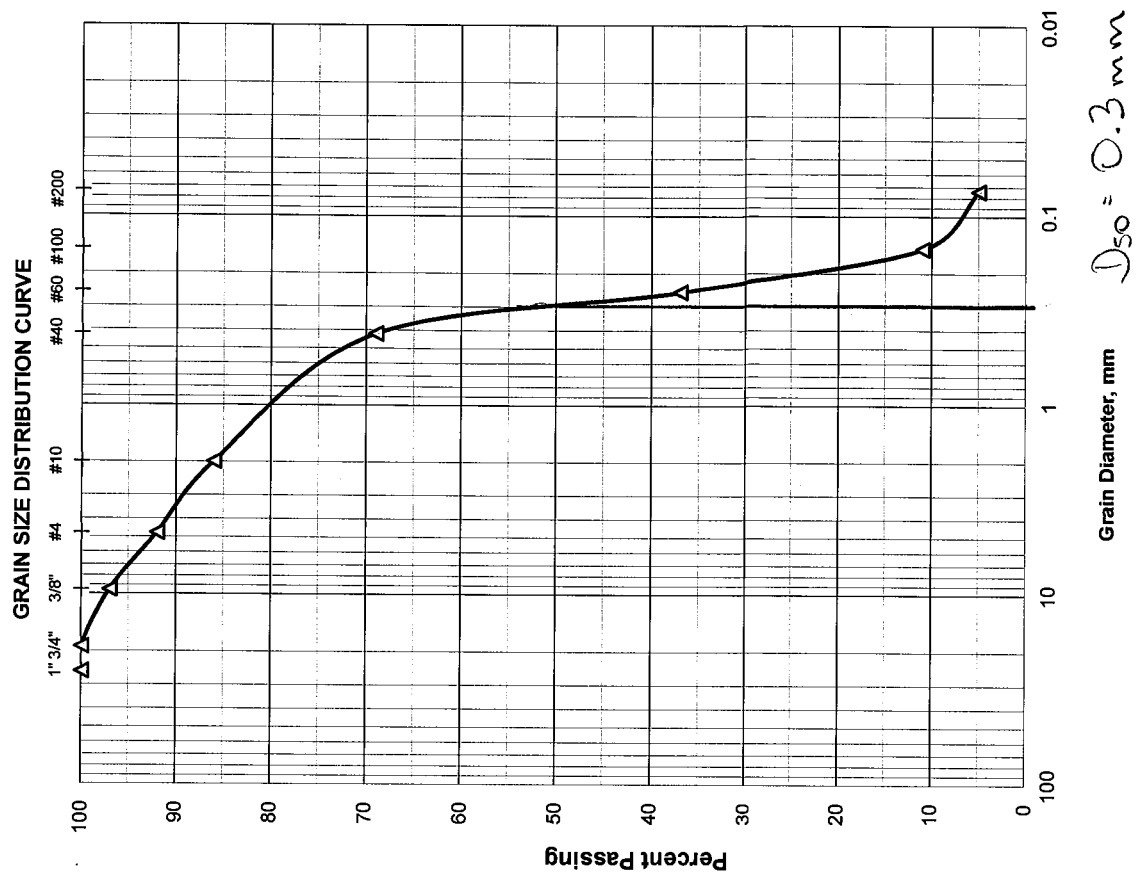
Total Dry Weight Before Wash, (gr) =	561.20
Percent Finer than No. 200 Sieve by Wash Method=	5%

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)	
Gravel	≤ No. 4 8
Coarse Sand	>No. 4-≤ No. 40 23
Fine Sand	>No. 40-≤ No. 200 64
Silt and Clays	>No. 200 5
Water Content	
38%	

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-2		Sample No.: 2				
Date: 11/3/2014		Depth: 1.3'-2.0'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	8.90	8.90	1	99	
3/8"	9.51	10.20	19.10	3	97	
4	4.76	9.30	28.40	5	95	AASHTO Classification:
10	2.00	22.70	51.10	9	91	A-3
40	0.420	108.30	159.40	28	72	
60	0.250	182.90	342.30	61	39	
100	0.149	159.80	502.10	90	10	
200	0.074	35.80	537.90	96	4	
PAN						

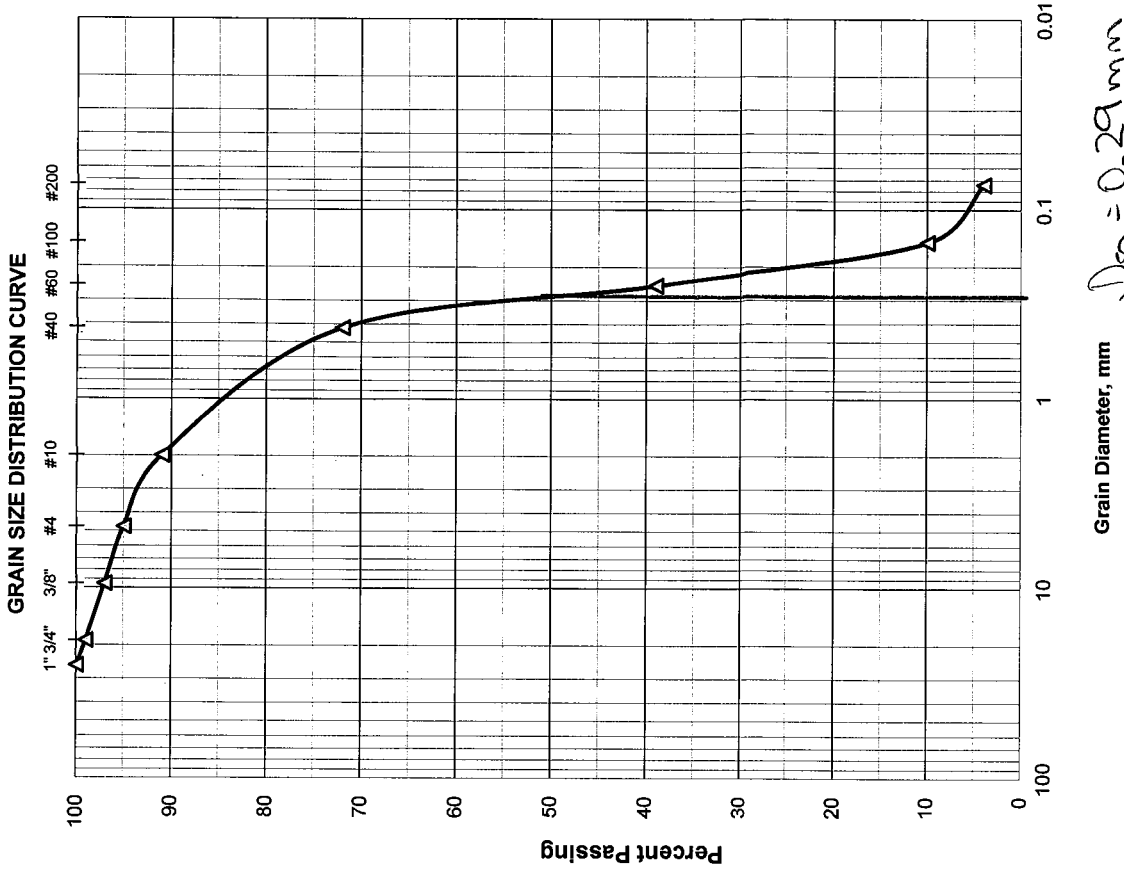
Total Dry Weight Before Wash, (gr) = **557.50**
 Percent Finer than No. 200 Sieve by Wash Method = **4%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	5
Coarse Sand	>No. 4-≤ No. 40	23
Fine Sand	>No. 40-≤ No. 200	68
Silt and Clays	>No. 200	4
Water Content		25%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-3		Sample No.: 1				
Date: 11/3/2014		Depth: 0.0'-1.1'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	9.60	9.60	3	97	
3/8"	9.51	22.70	32.30	11	89	
4	4.76	28.80	61.10	21	79	AASHTO Classification:
10	2.00	49.80	110.90	39	61	
40	0.420	47.90	158.80	56	44	
60	0.250	51.30	210.10	74	26	A-1-b
100	0.149	53.20	263.30	93	7	
200	0.074	15.90	279.20	99	1	
PAN						

Total Dry Weight Before Wash, (gr) = **282.00**
 Percent Finer than No. 200 Sieve by Wash Method = **1%**

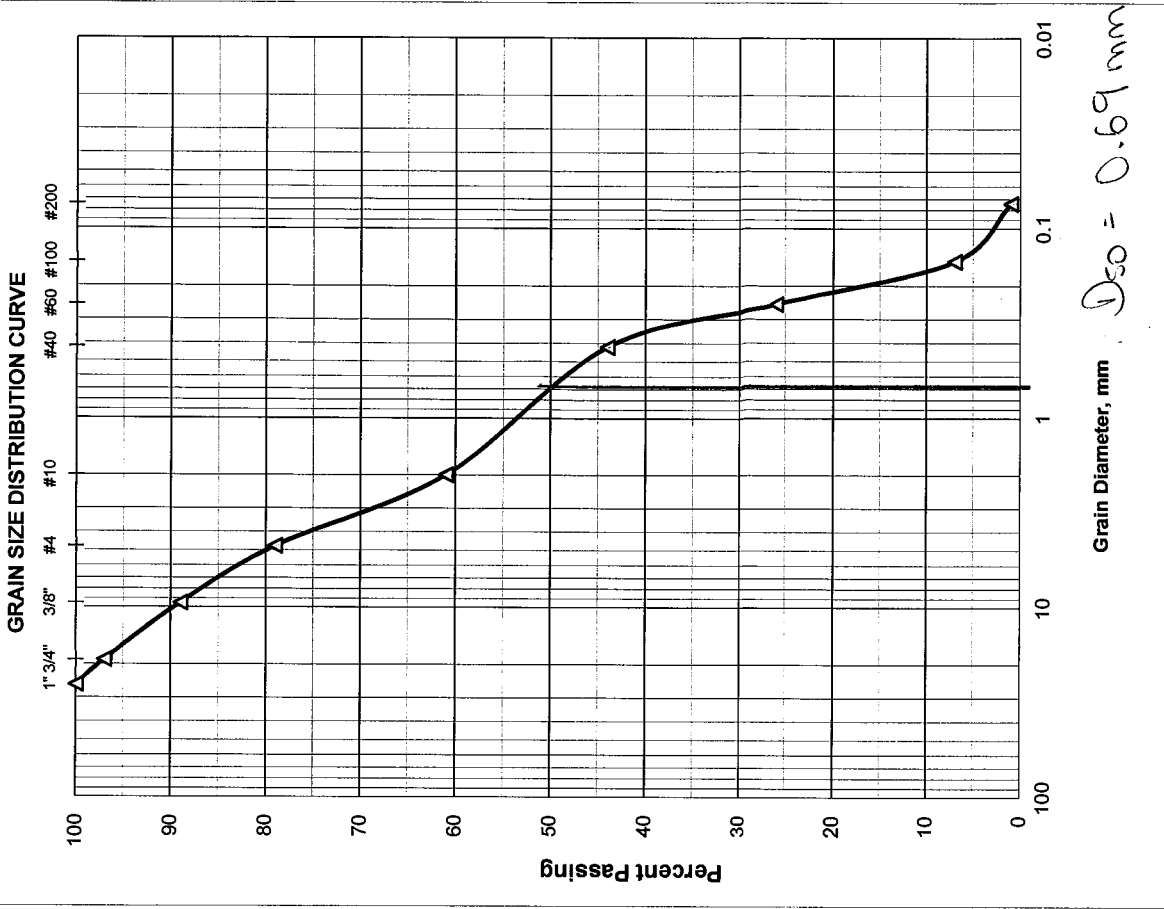
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	21
Coarse Sand	>No. 4-≤ No. 40	35
Fine Sand	>No. 40-≤ No. 200	43
Silt and Clays	>No. 200	1
Water Content		37%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-3		Sample No.: 2				
Date: 11/3/2014		Depth: 1.1'-2.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	56.30	56.30	8	92	
4	4.76	69.20	125.50	19	81	AASHTO Classification:
10	2.00	52.20	177.70	27	73	
40	0.420	72.00	249.70	39	61	A-3
60	0.250	114.40	364.10	57	43	
100	0.149	187.80	551.90	86	14	
200	0.074	62.90	614.80	96	4	
PAN						

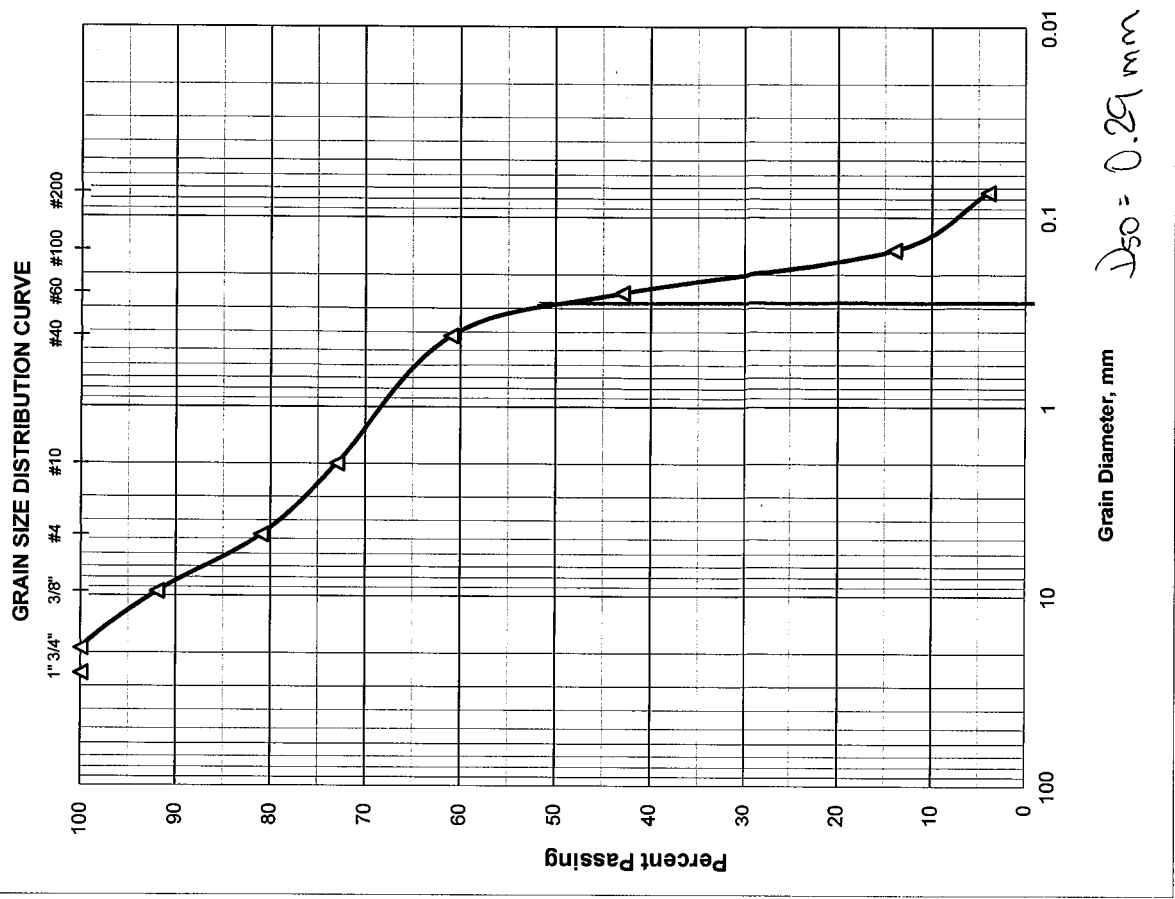
Total Dry Weight Before Wash, (gr) = **634.70**
 Percent Finer than No. 200 Sieve by Wash Method = **4%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	19
Coarse Sand	>No. 4-≤ No. 40	20
Fine Sand	>No. 40-≤ No. 200	57
Silt and Clays	>No. 200	4
Water Content		21%

Respectfully Submitted,
HR Engineering Services, Inc.

Hermando R. Ramos, P.E.
 Florida Registration No. 42045



GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-4		Sample No.: 1				
Date: 11/3/2014		Depth: 0.0'-1.8'				
		Tested By: H.C.				
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	0.00	0.00	0	100	
3/8"	9.51	10.40	10.40	3	97	
4	4.76	12.50	22.90	8	92	AASHTO Classification:
10	2.00	18.90	41.80	16	84	A-3
40	0.420	44.50	86.30	33	67	
60	0.250	67.30	153.60	58	42	
100	0.149	81.90	235.50	90	10	
200	0.074	15.60	251.10	96	4	
PAN						

Total Dry Weight Before Wash, (gr) = **260.50**
 Percent Finer than No. 200 Sieve by Wash Method = **4%**

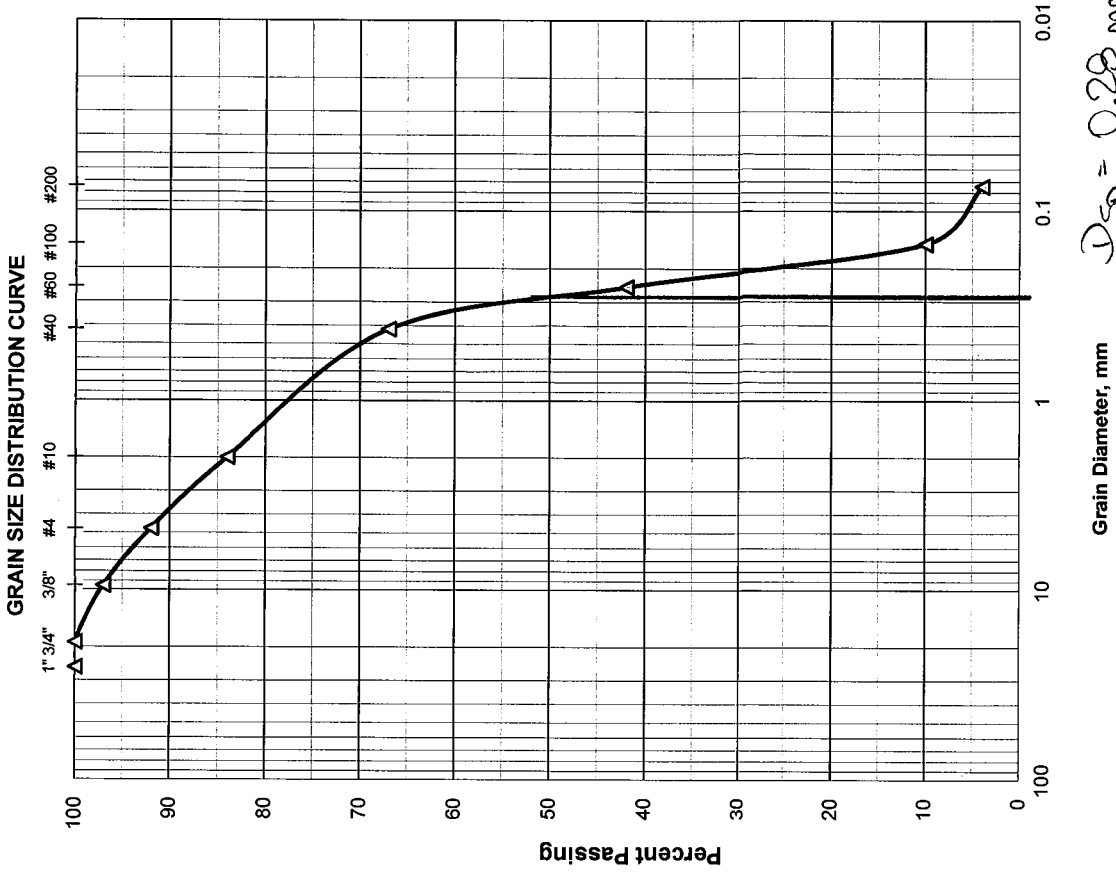
Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	8
Coarse Sand	>No. 4-≤ No. 40	25
Fine Sand	>No. 40-≤ No. 200	63
Silt and Clays	>No. 200	4
Water Content		35%

Respectfully Submitted,
HR Engineering Services, Inc.



Hernando R. Ramos, P.E.
 Florida Registration No. 42045



HR ENGINEERING SERVICES, INC.
 7815 N.W. 72nd Avenue - Medley, Florida 33166
 Phone (305) 888-8880, Fax (305) 888-8770

GRAIN SIZE DATA SHEET

Project Name: I-95 CDC Phase 3A-1		Project No.: HR12-891R				
Boring No.: CB-4		Sample No.: 2				
Date: 11/3/2014		Depth: 1.8'-3.0'				
Tested By: H.C.						
Sieve Size	Particle Size, mm.	Weight on Sieve, gr.	Accumulated Weight, gr.	Percent Retained	Percent Passing	REMARKS
1	25.70	0.00	0.00	0	100	
3/4"	19.00	35.20	35.20	5	95	
3/8"	9.51	19.40	54.60	9	91	
4	4.76	8.10	62.70	10	90	AASHTO Classification:
10	2.00	13.40	76.10	12	88	
40	0.420	88.30	164.40	27	73	A-3
60	0.250	163.30	327.70	55	45	
100	0.149	202.90	530.60	89	11	
200	0.074	45.80	576.40	97	3	
PAN						

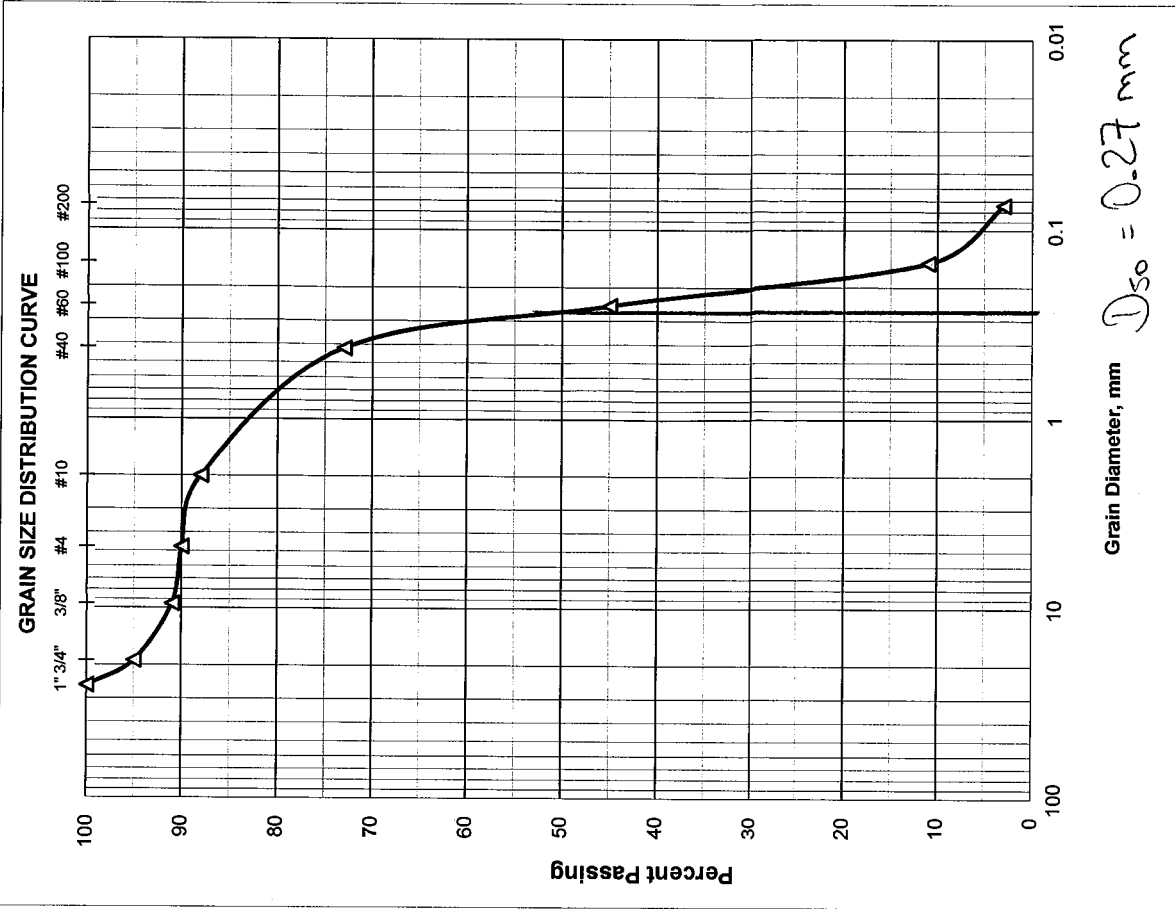
Total Dry Weight Before Wash, (gr) = **592.30**
 Percent Finer than No. 200 Sieve by Wash Method = **3%**

Sieve Analysis Test performed in general accordance with ASTM C 136 (AASHTO T 27 or T 311)
 Moisture Content Test performed in general accordance with ASTM D 2216 (ASSHTO T 265)

Material in Sample (%)		
Gravel	≤ No. 4	10
Coarse Sand	>No. 4-≤ No. 40	17
Fine Sand	>No. 40-≤ No. 200	70
Silt and Clays	>No. 200	3
Water Content		30%

Respectfully Submitted,
HR Engineering Services, Inc.

Hernando R. Ramos, P.E.
 Florida Registration No. 42045





Appendix J
Pond Siting Technical Memorandum



Date: January 10, 2019

To: Anson Sonnett, P.E., Project Manager, FDOT - District Four

From: Aylin Costa, P.E., Senior Drainage Engineer

Company: RS&H, Inc.

Subject: SR-9/I-95 at @ SR 842/Broward Boulevard Interchange PD&E Pond Siting
Technical Memo

1.0 Background

The Florida Department of Transportation (FDOT), District Four, is conducting a Project Development and Environment (PD&E) Study involving potential improvements to the SR 9/I-95 and SR 842/Broward Boulevard Interchange in the City of Fort Lauderdale, Broward County, Florida. The major improvements being considered under the PD&E study will improve traffic flow to and from I-95 and along Broward Boulevard, increase connectivity between the I-95 Express Lanes and Broward Boulevard, and expand intermodal connectivity. The improved connectivity and traffic flow will be achieved via widening along Broward Boulevard and I-95, new ramps to connect to the I-95 Express Lanes, and re-alignment of existing ramps.

The PD&E study limits extend along I-95 from just south of Davie Boulevard to just south of Sunrise Boulevard, a distance of approximately two miles, and along Broward Boulevard from NW 24th Avenue to SW 18th Avenue, a distance of approximately one half mile. The study area includes the median ramp connections to the Park & Ride lots from I-95 north and south of Broward Boulevard. These study limits are shown in Drainage Report [Appendix A - Figure 1](#).

2.0 Purpose

The purpose of this Technical Memorandum is to evaluate the need for acquisition of additional right-of-way to accommodate stormwater management facilities to meet FDOT drainage criteria and environmental permitting agency requirements that govern the final design, to identify alternative pond sites outside the existing I-95 limited access roadway right-of-way, and to justify the selection of a specific pond site if required for the construction of stormwater management facilities in support of the PD&E study.

3.0 Existing Drainage Systems

The existing drainage within the project limits can be divided into four distinct systems based on existing collection and conveyance systems, interconnected stormwater management facilities, and outfalls. Refer to [Appendix B](#) of the Drainage Report for pre-development drainage maps.

System 16A is defined as the segment of the I-95 corridor from the South Fork of the New River to south of Broward Boulevard, including the Davie Boulevard interchange.





System 16B is defined as the segment of the I-95 corridor from south of Broward Boulevard to the North Fork of the New River, and includes the Broward Boulevard interchange.

System 17 is defined as the segment of the I-95 corridor from the North Fork of the New River to just south of the Sunrise Boulevard interchange.

The Broward Boulevard (SR 824) and Park & Ride system is defined as the segment of Broward Boulevard, between the NW 22nd Avenue and South Florida Rail Corridor (SFRC), and the Park & Ride which is comprised of three parking lots on the north and south sides of Broward Boulevard, just west of the SFRC and I-95 corridors.

4.0 Stormwater Management Permitting Criteria

The agencies having stormwater permitting jurisdiction over the proposed improvements include:

- South Florida Water Management District (SFWMD)
- Broward County Environmental Protection and Growth Management Division (BCEPGMD)

SFWMD is the state permitting authority and has jurisdiction over the water bodies receiving stormwater runoff from the project area.

Stormwater Quality Criteria

The SFWMD has the lead jurisdiction over the stormwater quality criteria for the project and generally requires that all projects meet state water quality standards, as set forth in Chapter 17-302, Florida Administrative Code (FAC). According to the SFWMD Permit Volume IV, all projects must meet the following volumetric retention/detention requirements:

- For wet detention systems, the first inch of runoff from the project or the total runoff from 2.5 inches times the percent of imperviousness, whichever is greater, must be detained on site. A wet detention system is a system that maintains the control elevation at the seasonal high groundwater elevation and does not bleed down more than one-half inch of detention volume in 24 hours;
- Dry detention systems must provide 75 percent (75%) of the required wet detention volume. Dry detention systems must maintain the control elevation at or above one foot above the seasonal high groundwater elevation;
- Retention systems must provide 50 percent (50%) of the wet detention volume; and
- For projects with more than 50 percent (50%) of imperviousness, discharge to the receiving water bodies must be made through baffles, skimmers, or other mechanisms suitable from preventing oil and grease from discharging to or from the retention/detention areas.

Stormwater Quantity Criteria

SFWMD criteria govern peak discharge rate attenuation. SFWMD criteria govern attenuation volume by limiting the post-development peak discharge rate to the pre-development peak discharge rate for the 25-year, 72-hour design rainfall event using SFWMD 72-hour rainfall distribution. SFWMD requires that offsite discharge rates be limited to rates not causing adverse impacts to existing off-site properties, and:



- Historic discharge rates,
- Rates determined in previous SFWMD permit action, or
- Basin allowable discharge rates.

5.0 Proposed Drainage Systems

The proposed drainage systems boundaries remained unchanged from the existing condition. The existing collection and conveyance systems, interconnected stormwater management facilities, and outfalls currently in place were utilized to the largest extent possible, if unaffected by the proposed project changes.

The proposed stormwater management facilities and the interconnections within the drainage systems will be similar to the pre-development (existing) conditions. These will consist of closed collection and conveyance drainage systems interconnected by pipes to the existing and/or modified stormwater treatment facilities (wet ponds, dry ponds, swales) and French drains to collect, convey, treat, and attenuate stormwater runoff for the controlling design and permitting criteria outlined in this Technical Memorandum and Conceptual Drainage Report.

Retaining walls extending below the stormwater management facilities finished grade elevation are proposed throughout the project instead of roadway embankments, thereby maximizing the footprint of the dry ponds and dry swales within the existing roadway right-of-way while minimizing and/or eliminating the need for offsite right-of-way acquisition and impacts to the public. Additionally, French Drain has been proposed where feasible to further minimize offsite stormwater management facility needs.

Refer to [Appendix C](#) of the Drainage Report for post-development drainage maps showing all proposed drainage systems boundaries and stormwater management facilities including wet ponds, dry ponds, swales, and French Drains.

For System 16A, System 17, and the Broward Boulevard and Park & Ride systems, offsite right-of-way acquisition will not be necessary for stormwater management purposes. Refer to [Appendix D](#) through [Appendix G](#) of the Drainage Report for Pre-Development and Post-Development Land Use Tables, Water Quality Calculations and Discharge/System Summary Table for each system, respectively.

For System 16B, when Broward Boulevard was originally constructed under less stringent permitting requirements, some drainage systems serving the eastern portion of Broward Boulevard were allowed to directly discharge to the North Fork of the New River without water quality treatment. Ten of the 28 onsite sub-basins (11.34 acres) are currently located downstream of the existing control structures, and do not receive water quality treatment or attenuation in the pre-development conditions. Since its original construction, Broward Boulevard has not been reconstructed, and thusly, previous projects did not trigger the requirement for full water quality treatment and discharge attenuation in order to receive an Environmental Resource Permit from SFWMD.

Due to the widening and reconstruction of Broward Boulevard associated with this project, full water quality treatment volume and discharge attenuation for Broward Boulevard drainage basins will be required in order to obtain a permit. The proposed widening, reconstruction, and shift in roadway alignment along Broward Boulevard will require right-of-way takes of three parcels at the



southwest quadrant of the intersection with SW 18th Avenue. Since roadway reconstruction, widening, and re-alignment, involve right-of-way takes where only a portion of the affected parcels will be utilized for the roadway, there is opportunity to extend Pond 16B-1 parallel to the eastbound travel lanes, contingent with the proposed shift in the alignment of Broward Boulevard. This will allow for re-routing and modification of the collection/conveyance system of three of the ten sub-basins downstream of the control structures so that they can be routed through stormwater management facilities, upstream of the control structures. The remaining eight onsite sub-basins (3.92 acres) would continue directly discharging to the North Fork of the New River without treatment or attenuation in the post-development condition.

6.0 Conclusion and Recommendations

As demonstrated by the Drainage Report calculations the project stormwater management needs can be accommodated within existing Right-of-Way for Systems 16a and 17. Within system 16B the basins with proposed roadway reconstruction which do not meet minimum water quality treatment and discharge attenuation standards, require offsite right-of-way to satisfy regulatory agency criteria. As part of the pond siting selection process procedures require identification of three possible pond site locations.

On the east side of the interchange additional right-of way is already required for the roadway improvements, therefore the **first potential pond site** has been identified within the remainder of parcels already impacted by roadway and owned by Max, LLC, containing existing structures and active businesses. These parcels are directly adjacent to Broward Boulevard, and would allow for the contiguous expansion of Pond 16B-1.

Based on review of current aerial images, two additional sites within the vicinity were identified as potential pond sites including:

Second potential pond site is within parcels owned by Softscapes LLC, which has an active landscaping business. This site is also adjacent to FDOT right-of-way, and would allow for contiguous expansion of Pond 16B-1 while requiring reconstruction of existing noise walls.

Third potential pond site is within parcels owned by Riverside Park, LLC, currently vacant. This site is the most remote, not adjacent to the Department's right-of-way, and thusly would require additional piping in order to route stormwater to and from the site.

Please refer to **Attachment C** for proposed alternative pond sites, **Attachment D** for a pond siting evaluation matrix and **Attachment E** for parcel property information from the Broward County Property Appraiser. During the Final Design process, a formal Pond Siting Analysis will need to take place.

The existing SFWMD permit which covers System 16B was previously approved, in light of the noted treatment and attenuation deficiencies, since the project improved the overall water quality discharge into the North Fork of the New River.

While it is anticipated that SFWMD will be consistent in future permit actions and continue to approve the direct discharge of such basins contingent to overall project water quality improvements, there is always the possibility that future regulations or agency positions may require full water quality treatment of these basins. In this event, the Department will need additional right-of-way to meet the more stringent permit criteria. The Department owns 1.22





acres of a roadway right-of-way (NW 2nd Street) which dissects two Salvation Army parcels immediately adjacent to the northeast quadrant of the interchange between Broward Boulevard and the I-95 limited access right-of-way line. The City of Fort Lauderdale owns 0.56 acres of roadway right-of-way (NW 20th Avenue) which also lies between the two Salvation Army parcels as shown in [Attachment A](#).

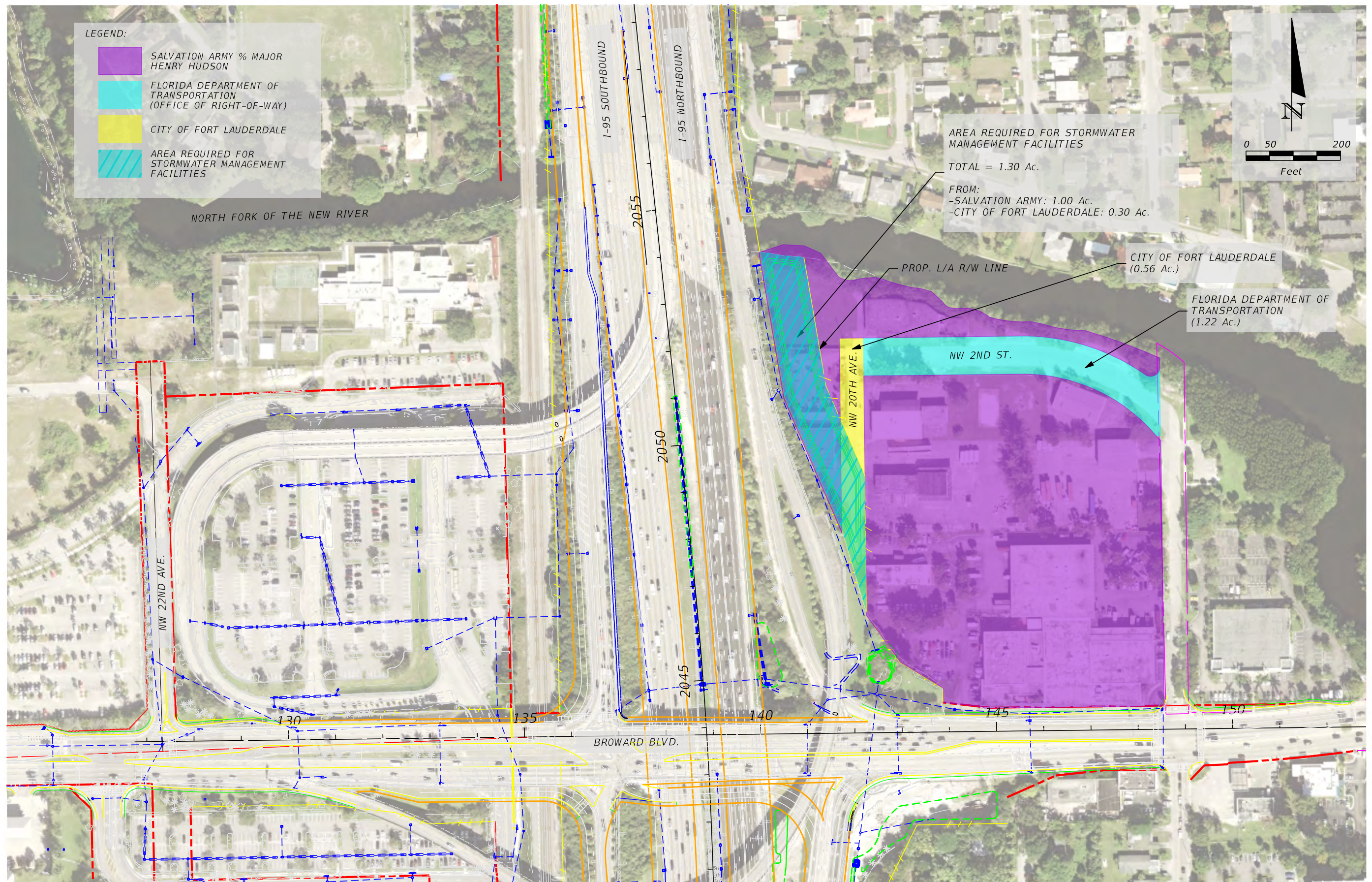
The Salvation Army has plans to re-develop their parcels in the near future and has recently approached the Department and the City of Fort Lauderdale with a proposal to acquire or land swap the road right of way in order to consolidate their parcels into a single site that maximizes available space for future development.

Preliminary drainage analysis indicates that 0.65 acres will be required parallel to the existing limited access right-of-way to accommodate a dry detention treatment swale with a 0.43 ac-ft treatment volume capacity, as necessary to provide water quality treatment volume for the additional basins within System 16B. Please refer to [Attachment A](#) for proposed conceptual swale area layout and [Attachment B](#) for Water Quality Calculations.

The proposed dry detention swale layout as shown will require a land swap agreement between the Salvation Army, City of Fort Lauderdale, and the Department since the swale footprint lies within parcels owned by both entities.

*ATTACHMENT A:
POND SITING EXHIBIT*





LEGEND:

- SALVATION ARMY % MAJOR HENRY HUDSON
- FLORIDA DEPARTMENT OF TRANSPORTATION (OFFICE OF RIGHT-OF-WAY)
- CITY OF FORT LAUDERDALE
- AREA REQUIRED FOR STORMWATER MANAGEMENT FACILITIES

AREA REQUIRED FOR STORMWATER MANAGEMENT FACILITIES
 TOTAL = 1.30 Ac.
 FROM:
 -SALVATION ARMY: 1.00 Ac.
 -CITY OF FORT LAUDERDALE: 0.30 Ac.

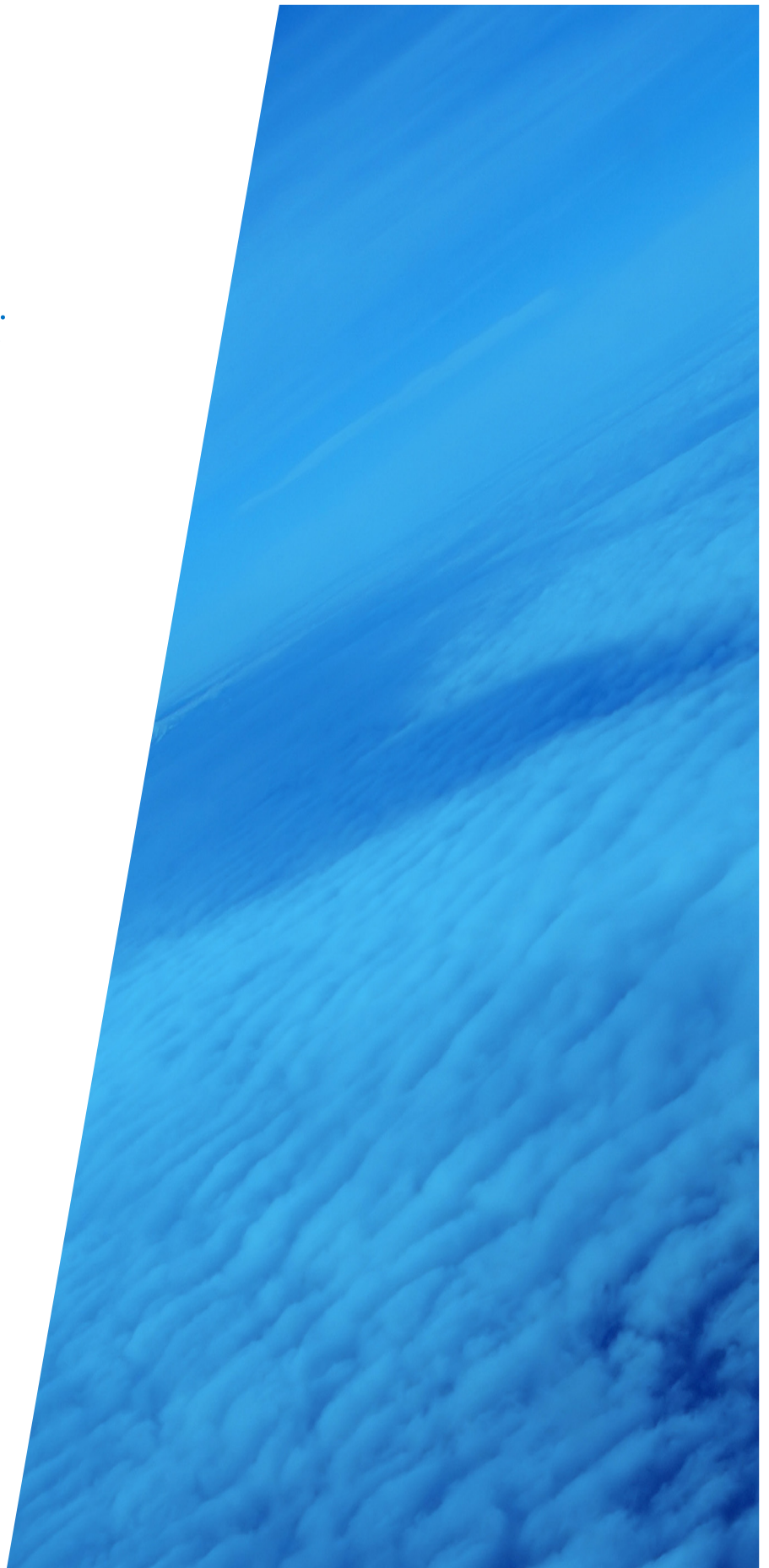
CITY OF FORT LAUDERDALE (0.56 Ac.)

FLORIDA DEPARTMENT OF TRANSPORTATION (1.22 Ac.)



REVISIONS				RS&H, Inc. 3125 W. Commercial Blvd. - Suite 130 Fort Lauderdale, Florida 33309-3446 954-474-3005 FL Cert. No. EB0005620 Aylin Costa, P.E. No. 69865		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			POND SITING BCPA PARCELS		SHEET NO. E-1
DATE	DESCRIPTION	DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID			
					9	BROWARD	435513-1-22-02				

*ATTACHMENT B:
SYSTEM 16B
CALCULATIONS*



I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
POST-DEVELOPMENT LAND-USE

DRAINAGE SYSTEM: **16B**

SHGWT EL. (ft-NAVD): **0.42**

BASIN	Time of Conc. t _c (min.)	TOTAL AREA (Ac.)	TOTAL ONSITE AREA (Ac.)	ONSITE IMPERVIOUS AREA (Ac.)	ONSITE WATER SURFACE AREA (Ac.)	ONSITE PERVIOUS AREA (Ac.)	TOTAL OFFSITE AREA (Ac.)	OFFSITE IMPERVIOUS AREA (Ac.)	OFFSITE WATER SURFACE AREA (Ac.)	OFFSITE PERVIOUS AREA (Ac.)	AVERAGE GROUND ELEV. (ft-NAVD)	AVERAGE DEPTH TO SHGWT (ft)	COMPACTED SOIL STORAGE (in)	CURVE NUMBER
B16B-12B Offs2	10	0.91	0.00	0.00	0.00	0.00	0.91	0.75	0.00	0.16	5.00	4.58	8.18	87.43
B16B-13B	10	1.31	1.31	0.93	0.00	0.38	0.00	0.00	0.00	0.00	7.00	6.58	8.18	80.82
B16B-17	10	1.43	1.43	0.50	0.04	0.89	0.00	0.00	0.00	0.00	10.00	9.58	8.18	66.26
B16B-18	10	0.32	0.32	0.14	0.00	0.18	0.00	0.00	0.00	0.00	6.00	5.58	8.18	68.49
B16B-18 Offs	10	0.13	0.00	0.00	0.00	0.00	0.13	0.03	0.00	0.10	5.00	4.58	8.18	61.38
B16B-19	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	23.00	22.58	8.18	100.00
B16B-20	10	0.21	0.21	0.00	0.00	0.21	0.00	0.00	0.00	0.00	9.00	8.58	8.18	55.01
B16B-20 Offs	10	0.74	0.00	0.00	0.00	0.00	0.74	0.43	0.00	0.31	5.00	4.58	8.18	74.48
B16B-21	10	0.24	0.24	0.24	0.00	0.00	0.00	0.00	0.00	0.00	14.00	13.58	8.18	100.00
B16B-22	10	0.17	0.17	0.01	0.00	0.16	0.00	0.00	0.00	0.00	10.00	9.58	8.18	56.50
DS of Control Structures		5.70	3.92	2.06	0.04	1.82	1.78	1.21	0.00	0.57	--	--	--	--

Water quality treatment not provided for basins downstream of existing/proposed control structures (8.21 acres).

**I-95 at Broward Boulevard Interchange PD&E Study DRAINAGE CALCULATIONS
WATER QUALITY**

Drainage System: **16B**

SYSTEM	SHGWT EL. (ft-NAVD)	TOTAL ONSITE AREA (Ac.) <i>[POST-DEV.]</i>	ONSITE IMPERVIOUS AREA (Ac.) <i>[POST-DEV.]</i>	ONSITE PERVIOUS AREA (Ac.) <i>[POST-DEV.]</i>	1" OVER TOTAL ONSITE AREA (Ac-ft)	2.5" OVER IMPERVIOUS AREA (Ac-ft)	¹ WATER QUALITY TREATMENT REQUIRED (Ac-ft)	DRY- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	WET- DETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	DRY- / WET- RETENTION TREATMENT VOLUME PROVIDED (Ac-ft)	FRENCH DRAIN TREATMENT VOLUME PROVIDED (Ac-ft)	² TOTAL TREATMENT VOLUME PROVIDED (Ac-ft)	³ SURPLUS TREATMENT VOLUME PROVIDED (Ac-ft)
16B DS of Control Structures	0.42	3.92	2.06	1.82	0.33	0.43	0.43	0.37	0.00	0.00	0.00	0.49	0.06

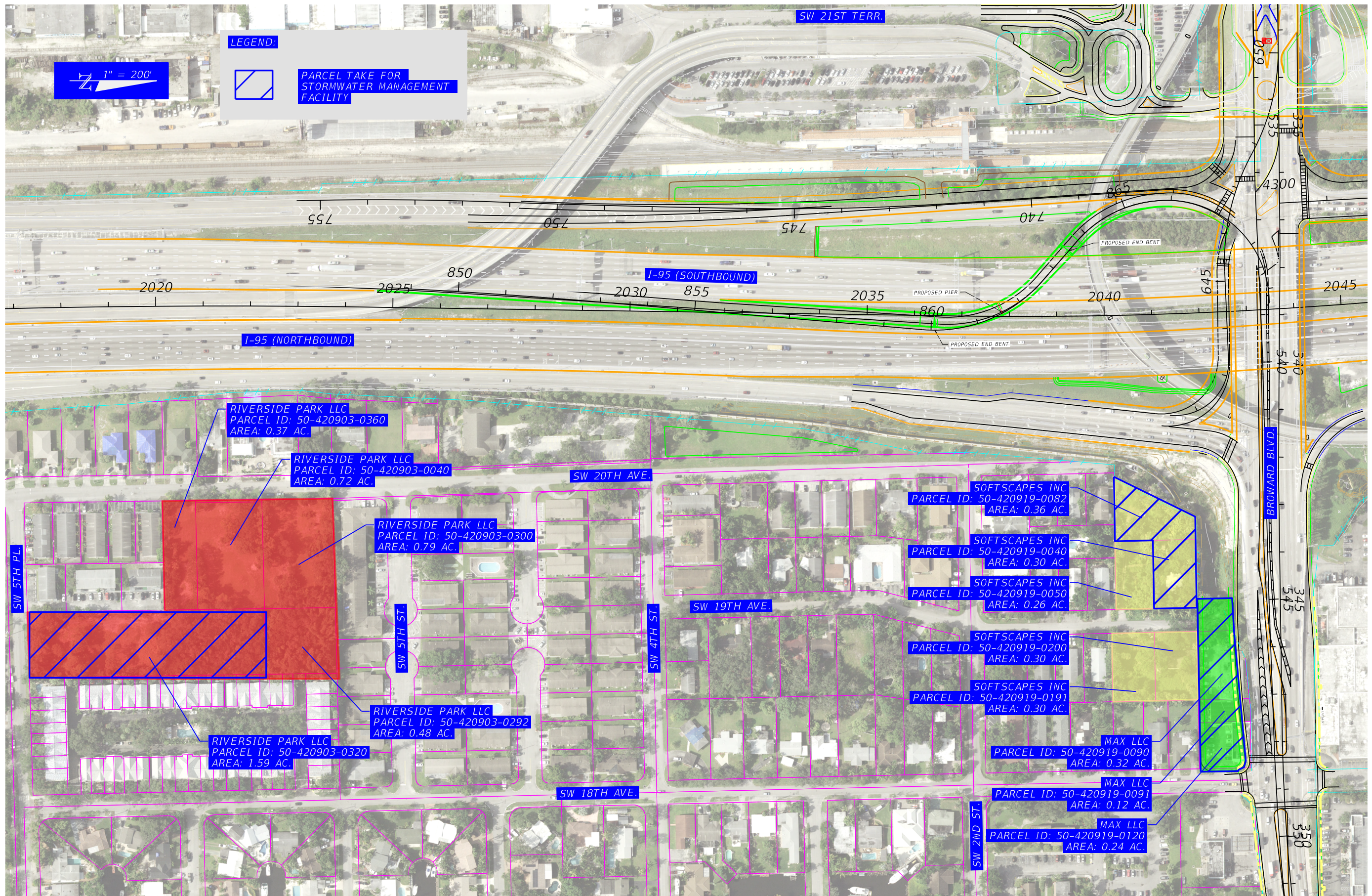
¹Greater of 1" over Total Onsite Area and 2.5" over Onsite Impervious Area; Volume based on wet detention requirements.

²Sum of all treatment provided; Retention and Dry Detention volumes divided by 0.50 and 0.75, respectively to account for 50% and 25% credits.


Swale 16B-SA		
TYPE:	Dry Detention	
STAGE (ft-NAVD)	AREA (Ac.)	VOLUME (Ac-ft)
1.42	0.31	--
2.00	0.34	0.19
2.50	0.37	0.37
3.00	0.41	0.56
4.00	0.47	1.00

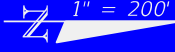
*ATTACHMENT C:
OFFSITE POND
PARCELS EXHIBIT*





LEGEND:

 PARCEL TAKE FOR STORMWATER MANAGEMENT FACILITY

 1" = 200'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RS&H, Inc.
 3125 W. Commercial Blvd. - Suite 130
 Fort Lauderdale, Florida 33309-3446
 954-474-3005
 FL Cert. No. EB0005620
 Aylin Costa, P.E. No. 69865

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	BROWARD	435513-1-22-02

**I-95 AT BROWARD BOULEVARD
 INTERCHANGE PD&E STUDY
 OFFSITE POND EXHIBIT**

SHEET NO.
1

*ATTACHMENT D:
POND SITE
EVALUATION
MATRIX*



I-95 AT BROWARD BLVD. PD&E - POND SITING MATRIX (PRELIMINARY, 12-17-2018)								
Factor No.	Weight of Factor	Factor Name	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
1-10		Pond Alternative Number	1		2		3	
		Brief Description of Alternative (Owner)	Max LLC		Riverside Park LLC		Softscapes Inc	
		Parcel Number						
					50-420903-0292		50-420919-0040	
			50-420919-0090		50-420903-0300		50-420919-0050	
			50-420919-0091		50-420903-0320		50-420919-0082	
			50-420919-0120		50-420903-0360		50-420919-0191	
					50-420940-0040		50-420919-0200	
		Parcel Size (Acres)	0.70		4.07		1.52	
1.00	5.00	Zoning (Right of Way)	3.00	15.00	6.00	30.00	3.00	15.00
2.00	5.00	Land Use	3.00	15.00	3.00	15.00	3.00	15.00
3.00	5.00	Right of Way Costs	6.00	30.00	4.00	20.00	2.00	10.00
4.00	5.00	Drainage considerations	6.00	30.00	1.00	5.00	6.00	30.00
5.00	5.00	Flood Zone FEMA	6.00	30.00	3.00	15.00	6.00	30.00
6.00	5.00	Contamination and Hazardous Materials (Confirm with Level 2 from gas stations)	4.00	20.00	6.00	30.00	3.00	15.00
7.00	5.00	Utilities	6.00	30.00	3.00	15.00	6.00	30.00
8.00	5.00	Threatened and Endangered Species and Associated Costs	9.00	45.00	6.00	30.00	9.00	45.00
9.00	5.00	Noise	6.00	30.00	6.00	30.00	3.00	15.00
10.00	5.00	Wetlands and protected Uplands and Associated Costs	9.00	45.00	6.00	30.00	9.00	45.00
11.00	5.00	Cultural Resources Involvement and Associated Costs	9.00	45.00	9.00	45.00	9.00	45.00
12.00	5.00	Section 4(f)	10.00	50.00	10.00	50.00	10.00	50.00
13.00	5.00	Public Wellfield (None identified-factor was not scored)	10.00	50.00	10.00	50.00	10.00	50.00
14.00	5.00	Construction	9.00	45.00	3.00	15.00	9.00	45.00
15.00	5.00	Maintenance/Easements	9.00	45.00	3.00	15.00	9.00	45.00
16.00	5.00	Aesthetics	9.00	45.00	6.00	30.00	7.00	35.00
17.00	5.00	Public Opinion and Adjacent Residency Concerns	9.00	45.00	6.00	30.00	9.00	45.00
18.00	5.00	Other	0.00	0.00	0.00	0.00	0.00	0.00
		Comments						
		Score	615.00		455.00		565.00	
		Ranking						
		Factor scores are 1-10. 1 is least desirable, 10 is most desirable						

Pond Siting Matrix Instructions and Assignments

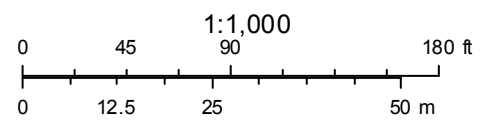
	Weight of Factor Evaluator	Factor	Factor Evaluation Considerations	Score Evaluator
1.00	5.00	Zoning (Right of Way)	Consider the Right-of-Way implications of the parcel in question. Parcels that are located on a commercial site with an active business or residential site, or currently under a proposed plan for improvement, are less desirable than vacant or undeveloped parcels.	
2.00	5.00	Land Use	Consider current and/or proposed land use which could affect the acquisition costs of the parcel.	
3.00	5.00	Right of Way	Consider time and costs for right-of-way acquisition of parcel and associated easements. Also, identify Right-of-Way Costs associated with the acquisition of the parcel.	
4.00	5.00	Drainage considerations	Consider location of pond relative to center of the basin, in the low area within the basin; proximity to outfall location, and piping needs. Also consider site elevations and the corresponding need to elevate (build-up) the perimeter berm.	
5.00	5.00	Flood Zone FEMA	Consider FEMA Flood Zone and associated impacts / benefits of constructing the pond within the respective flood zone. The perimeter berm will affect flood zone storage, while the pond will enhance said storage. If the parcel is currently outside the Flood Zone, then it is even more desirable since pond construction will help to offset (compensate) for floodplain encroachment within the roadway corridor.	
6.00	5.00	Contamination and Hazardous Materials	Consider if the parcel is contaminated and costs associated with the clean-up of the site based on contaminant type and magnitude.	
7.00	5.00	Utilities	Consider potential for existing utilities located within or adjacent to the parcel, including any required inflow/outflow easements or sidestreets, and the cost of relocating these facilities.	
8.00	5.00	Threatened and Endangered Species and Associated Costs	Consider potential for impact to Threatened, Endangered, or Significant species within the parcels and associated easements and any costs required for species relocation or mitigation.	
9.00	5.00	Noise	Consider noise impacts and corresponding noise abatement which may impact the location and placement of pond sites.	
10.00	5.00	Wetlands and protected Uplands and Associated Costs	Consider presence of jurisdictional wetlands, conservation easements, or upland preserves, and costs for mitigating impacts.	
11.00	5.00	Cultural Resources Involvement and Associated Costs	Consider the presence of cultural resources including archeological and historical resources which could affect the suitability of the site in question and associated costs.	
12.00	5.00	Section 4(f)	Consider the presence of Section 4(f) properties which could affect the suitability of the site in question and associated costs.	
13.00	5.00	Public Wellfield	Consider the proximity to a wellfield site, as additional dry pretreatment retention will be required if the stormwater management facility is within wellfield cone of influence. Additional dry pretreatment retention will increase right-of-way needs and costs.	
14.00	5.00	Construction	Consider access to the parcel for pond construction and associated impacts which may affect construction costs, such as amount of drainage piping required to reach pond.	
15.00	5.00	Maintenance / Easements	Consider access for the parcel for pond maintenance and the costs of maintaining a facility at this parcel location, including inflow/outflow pipes and easement requirements. Also, consider opportunities for handing facility over to municipality for maintenance.	
16.00	5.00	Aesthetics	Consider the need for landscape buffers or variable pond shapes in residential or commercial areas, as well as fencing adjacent to schools.	
17.00	5.00	Public Opinion and Adjacent Residency Concerns	Consider possible impacts to current or proposed land use. Example, would the pond(s) be well received by the community or adjacent residents.	
18.00	5.00	Other	Consider joint use opportunities. Can the property owner also utilize the pond(s) to their advantage?	

*ATTACHMENT E:
OFFSITE POND
PARCELS PROPERTY
INFORMATION*





December 6, 2018





Site Address	1830 W BROWARD BLVD BOULEVARD, FORT LAUDERDALE FL 33312	ID #	5042 09 19 0090
Property Owner	MAX LLC	Millage	0312
Mailing Address	1800 WEST BROWARD BLVD FORT LAUDERDALE FL 33312-1550	Use	17
Abbr Legal Description	CYPRESS GARDENS 21-12 B LOT 1 & 2 LESS E 50 OF LOT 2,AND LESS COM SW COR LOT 1,NLY 76.51 FOR POB,CONT NLY 68.45,E 192, SLY 35,SW 138.08,SWLY 59.25 TO POB BLK 2		

The just values displayed below were set in compliance with **Sec. 193.011, Fla. Stat.**, and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

Property Assessment Values					
Year	Land	Building / Improvement	Just / Market Value	Assessed / SOH Value	Tax
2019	\$169,280	\$445,510	\$614,790	\$614,790	
2018	\$169,280	\$445,510	\$614,790	\$614,790	\$13,226.21
2017	\$169,280	\$418,140	\$587,420	\$562,610	\$12,621.64

2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$614,790	\$614,790	\$614,790	\$614,790
Portability	0	0	0	0
Assessed/SOH	\$614,790	\$614,790	\$614,790	\$614,790
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$614,790	\$614,790	\$614,790	\$614,790

Sales History			
Date	Type	Price	Book/Page or CIN
6/7/2004	WD*	\$1,000,000	37697 / 977
5/3/2002	CE*	\$300	33169 / 592
11/6/1998	SW*	\$600,000	28981 / 162
9/11/1997	SW*	\$549,400	26986 / 238
7/31/1996	WD	\$206,300	25220 / 643

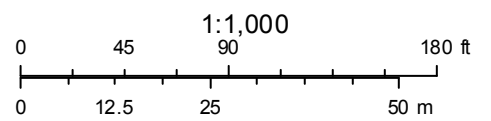
Land Calculations		
Price	Factor	Type
\$12.00	14,107	SF
Adj. Bldg. S.F. (Card, Sketch)		5000
Units		1
Eff./Act. Year Built: 1970/1963		

* Denotes Multi-Parcel Sale (See Deed)

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
C								
5000								



December 6, 2018





Site Address	1800 W BROWARD BOULEVARD, FORT LAUDERDALE FL 33312	ID #	5042 09 19 0091
Property Owner	MAX LLC	Millage	0312
Mailing Address	1800 WEST BROWARD BLVD FORT LAUDERDALE FL 33312-1550	Use	17
Abbr Legal Description	CYPRESS GARDENS 21-12 B THE E 50 LESS THE FOLLOWING DESC PAR;COM SE COR SAID LOT 2;NLY 109.08 TO POB CONT NLY 35;SW 50;SLY 36.66;NE 17.49;NE 32.59 TO POB		

The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

Property Assessment Values					
Year	Land	Building / Improvement	Just / Market Value	Assessed / SOH Value	Tax
2019	\$62,960	\$389,400	\$452,360	\$452,360	
2018	\$62,960	\$389,400	\$452,360	\$452,360	\$9,658.38
2017	\$62,960	\$367,430	\$430,390	\$411,820	\$9,175.94

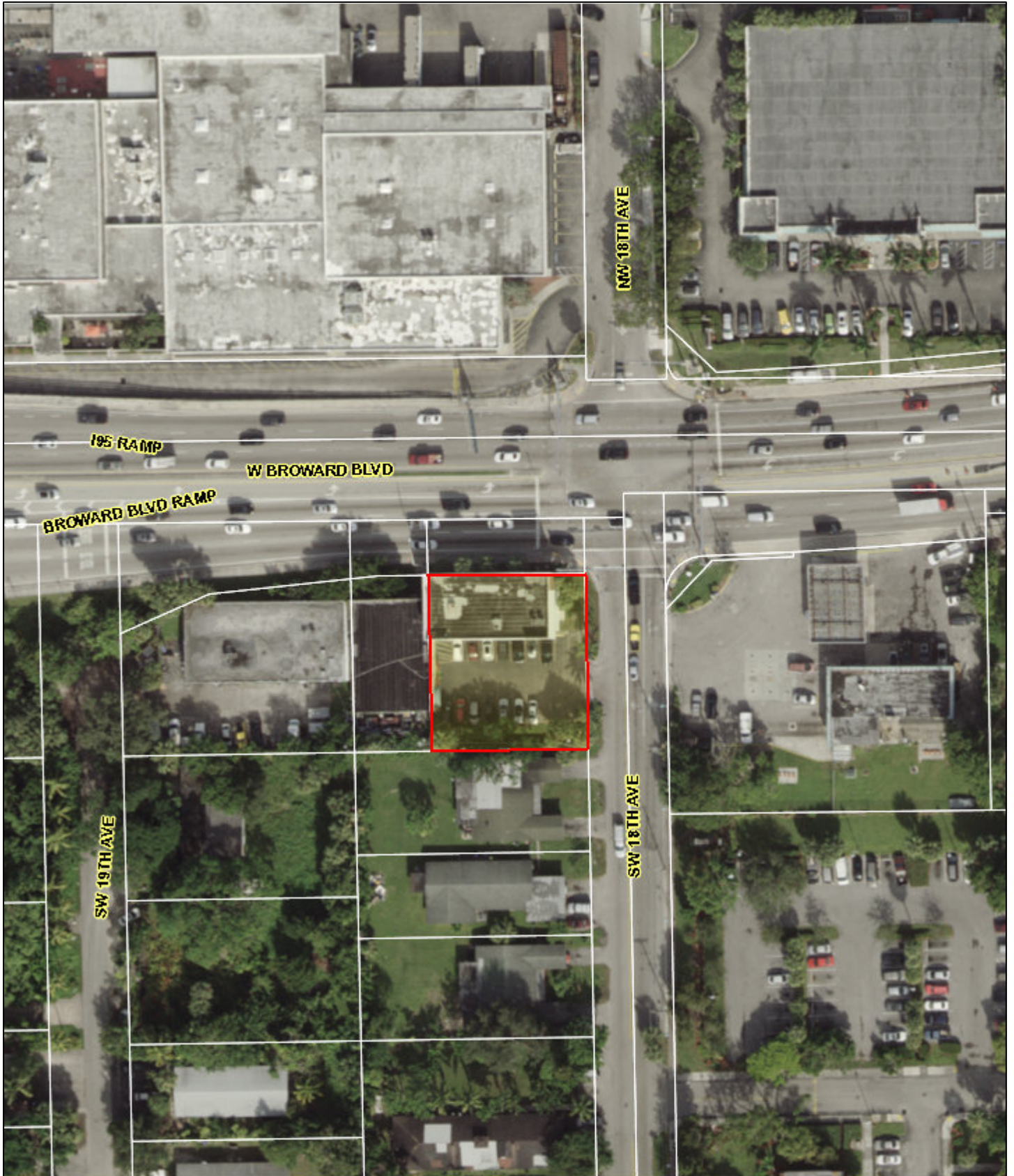
2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$452,360	\$452,360	\$452,360	\$452,360
Portability	0	0	0	0
Assessed/SOH	\$452,360	\$452,360	\$452,360	\$452,360
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$452,360	\$452,360	\$452,360	\$452,360

Sales History			
Date	Type	Price	Book/Page or CIN
6/7/2004	WD*	\$1,000,000	37697 / 977
5/3/2002	CE*	\$300	33169 / 592
11/6/1998	SW*	\$600,000	28981 / 162
9/11/1997	SW*	\$549,400	26986 / 238
7/31/1996	WD	\$68,800	25220 / 641

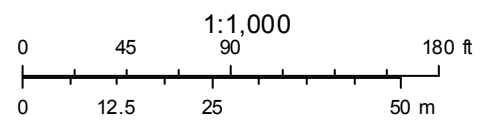
Land Calculations		
Price	Factor	Type
\$12.00	5,247	SF
Adj. Bldg. S.F. (Card, Sketch)		3500
Eff./Act. Year Built: 1964/1963		

* Denotes Multi-Parcel Sale (See Deed)

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
C								
3500								



December 6, 2018





Site Address	1800 W BROWARD BOULEVARD, FORT LAUDERDALE FL 33312-1550	ID #	5042 09 19 0120
Property Owner	MAX LLC	Millage	0312
Mailing Address	1800 WEST BROWARD BLVD FORT LAUDERDALE FL 33312-1550	Use	18
Abbr Legal Description	CYPRESS GARDENS 21-12 B LOT 3 LESS N 35 BLK 2		

The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

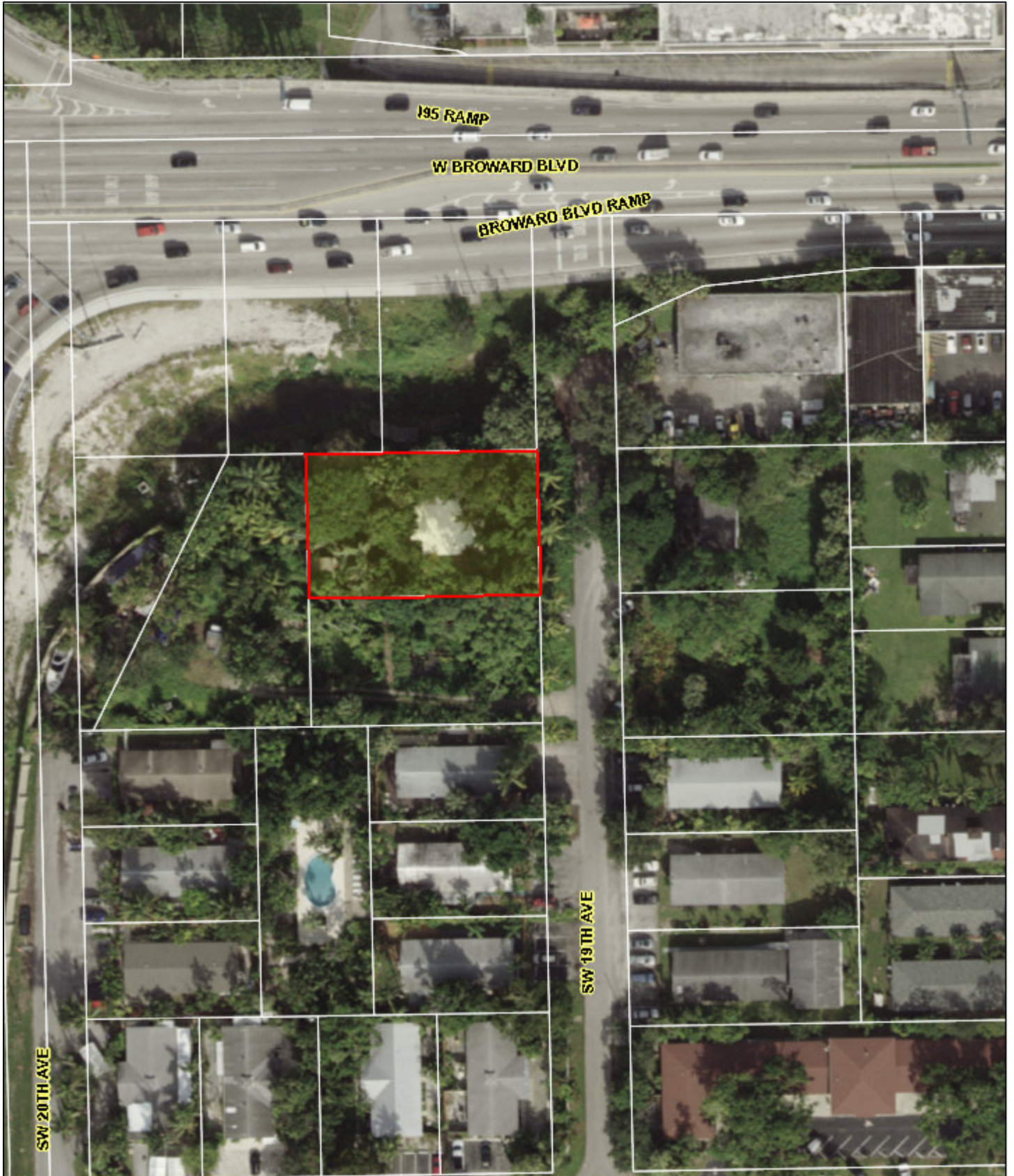
Property Assessment Values					
Year	Land	Building / Improvement	Just / Market Value	Assessed / SOH Value	Tax
2019	\$127,960	\$464,900	\$592,860	\$592,860	
2018	\$127,960	\$464,900	\$592,860	\$592,860	\$12,828.07
2017	\$127,960	\$425,710	\$553,670	\$539,920	\$12,130.10

2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$592,860	\$592,860	\$592,860	\$592,860
Portability	0	0	0	0
Assessed/SOH	\$592,860	\$592,860	\$592,860	\$592,860
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$592,860	\$592,860	\$592,860	\$592,860

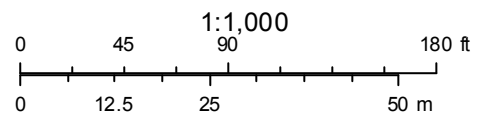
Sales History				Land Calculations		
Date	Type	Price	Book/Page or CIN	Price	Factor	Type
6/7/2004	WD*	\$1,000,000	37697 / 977	\$12.00	10,663	SF
5/3/2002	CE*	\$300	33169 / 592			
11/6/1998	SW*	\$600,000	28981 / 162			
9/11/1997	SW*	\$549,400	26986 / 238			
2/1/1993	WD	\$100,000	20603 / 650			
				Adj. Bldg. S.F. (Card, Sketch)		5850
				Eff./Act. Year Built: 1995/1994		

* Denotes Multi-Parcel Sale (See Deed)

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
C								
5850								



December 6, 2018





Site Address	15 SW 19 AVENUE, FORT LAUDERDALE FL 33312-1529	ID #	5042 09 19 0040
Property Owner	SOFTSCAPES INC	Millage	0312
Mailing Address	15 SW 19 AVE FORT LAUDERDALE FL 33312-1529	Use	69
Abbr Legal Description	CYPRESS GARDENS 21-12 B LOT 4 BLK 1		

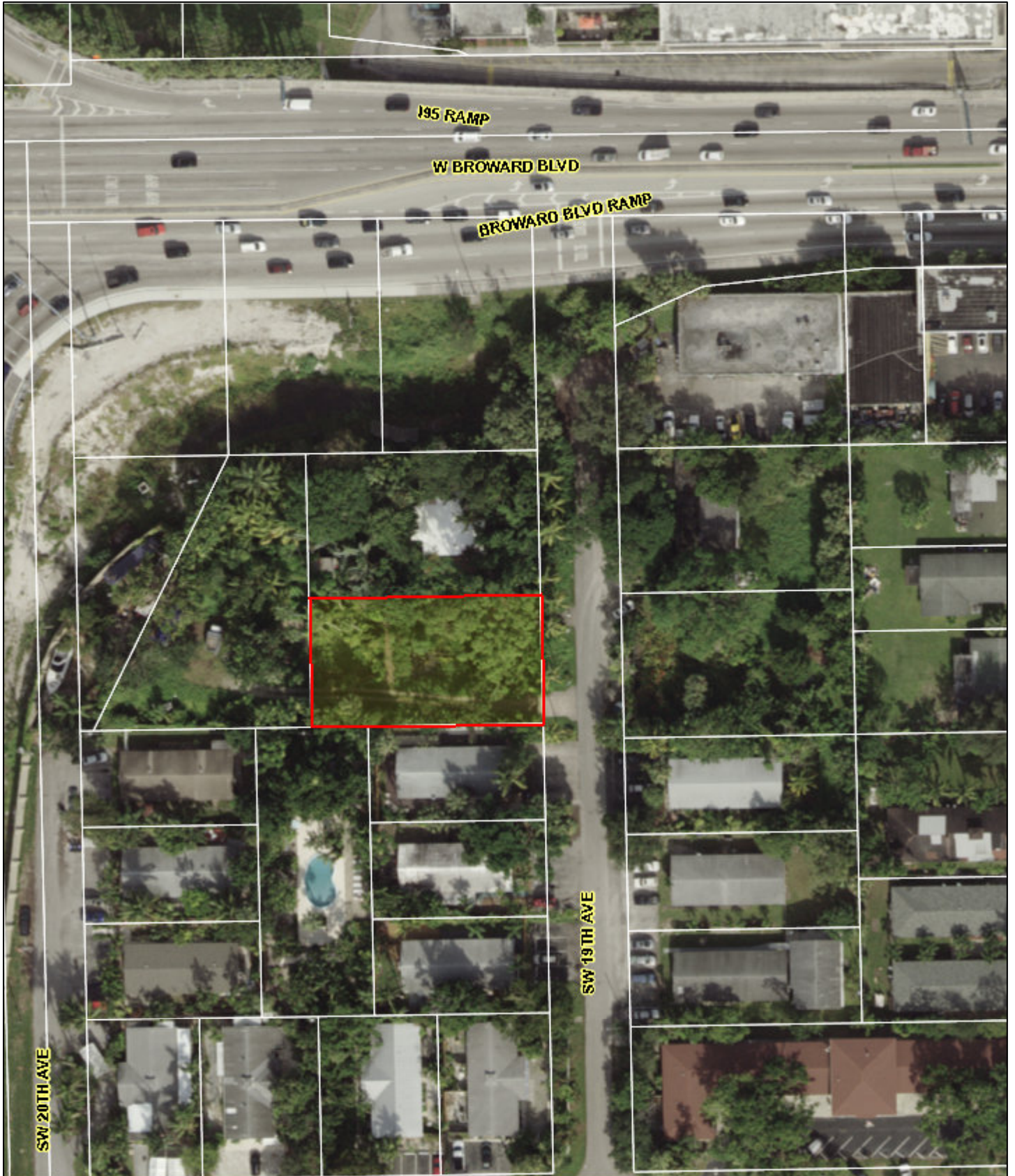
The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

Property Assessment Values						
Year	Land	Building / Improvement	Agricultural Savings	Just / Market Value	Assessed / SOH Value	Tax
2019	\$39,200	\$121,480	\$38,300	\$122,380	\$122,380	
2018	\$39,200	\$121,480	\$38,300	\$122,380	\$122,380	\$2,634.74
2017	\$39,200	\$121,480	\$38,300	\$122,380	\$112,880	\$2,560.61

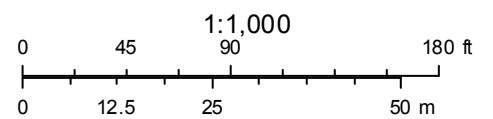
2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$122,380	\$122,380	\$122,380	\$122,380
Portability	0	0	0	0
Assessed/SOH	\$122,380	\$122,380	\$122,380	\$122,380
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$122,380	\$122,380	\$122,380	\$122,380

Sales History				Land Calculations		
Date	Type	Price	Book/Page or CIN	Price	Factor	Type
			7906 / 261	\$3,000	0.30	NU
				\$130,680	0.30	AG
				Adj. Bldg. S.F. (Card, Sketch)		1578
				Eff./Act. Year Built: 1952/1951		

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
C								
1578								



December 6, 2018





Site Address	SW 19 AVENUE, FORT LAUDERDALE FL 33312	ID #	5042 09 19 0050
Property Owner	SOFTSCAPES INC	Millage	0312
Mailing Address	15 SW 19 AVE FORT LAUDERDALE FL 33312-1529	Use	69
Abbr Legal Description	CYPRESS GARDENS 21-12 B LOT 5 N 80 BLK 1		

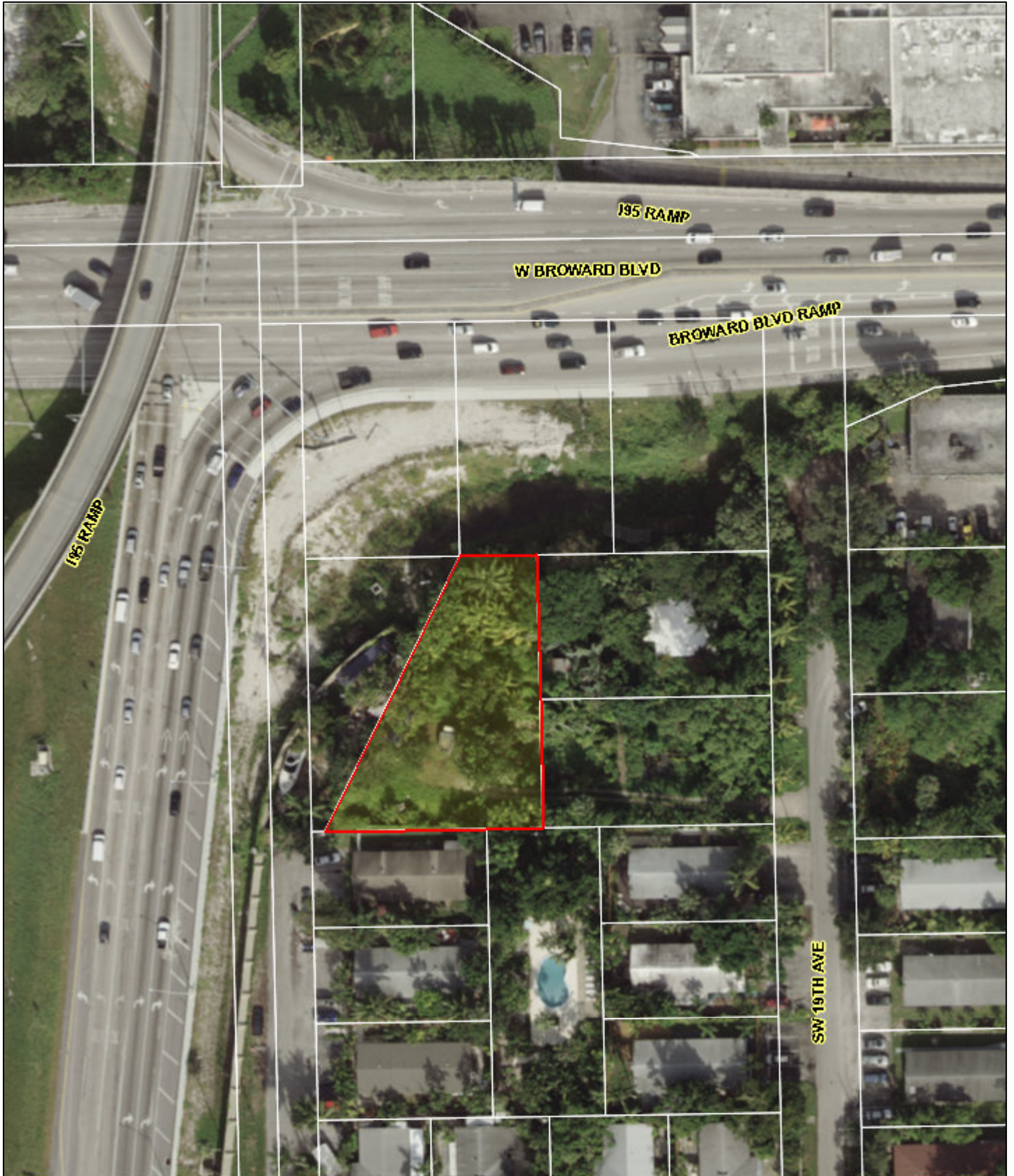
The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

Property Assessment Values						
Year	Land	Building / Improvement	Agricultural Savings	Just / Market Value	Assessed / SOH Value	Tax
2019	\$33,980		\$33,200	\$780	\$780	
2018	\$33,980		\$33,200	\$780	\$780	\$14.14
2017	\$33,980		\$33,200	\$780	\$780	\$14.39

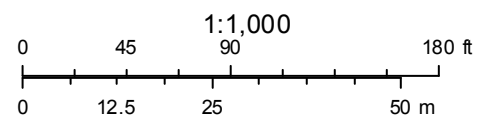
2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$780	\$780	\$780	\$780
Portability	0	0	0	0
Assessed/SOH	\$780	\$780	\$780	\$780
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$780	\$780	\$780	\$780

Sales History				Land Calculations		
Date	Type	Price	Book/Page or CIN	Price	Factor	Type
1/1/1962	WD	\$3,800	7906 / 261	\$3,000	0.26	NU
				\$130,680	0.26	AG
				Adj. Bldg. S.F.		

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
L								
1								



December 6, 2018





Site Address	BROWARD BOULEVARD, FORT LAUDERDALE FL 33312	ID #	5042 09 19 0082
Property Owner	SOFTSCAPES INC	Millage	0312
Mailing Address	15 SW 19 AVE FORT LAUDERDALE FL 33312-1529	Use	69
Abbr Legal Description	CYPRESS GARDENS 21-12 B THAT PT OF LOTS 12 & 13 DESC AS BEG AT NE COR OF LOT 13,S 170, W 135.92,NELY TO PT ON N/L OF LOT 13,E 48 TO POB BLK 1		

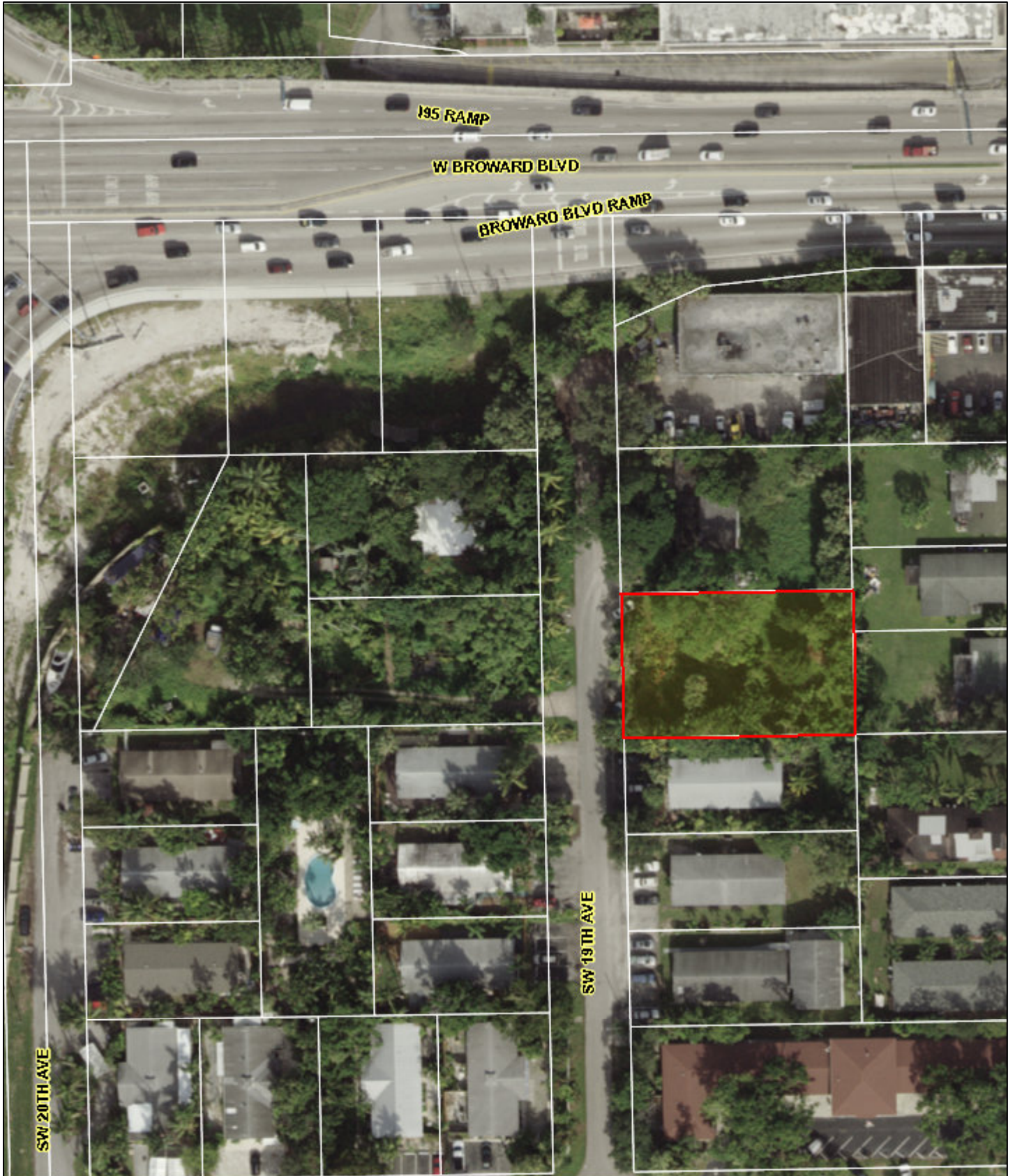
The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

Property Assessment Values						
Year	Land	Building / Improvement	Agricultural Savings	Just / Market Value	Assessed / SOH Value	Tax
2019	\$47,040		\$45,960	\$1,080	\$1,080	
2018	\$47,040		\$45,960	\$1,080	\$1,080	\$19.61
2017	\$47,040		\$45,960	\$1,080	\$1,080	\$19.95

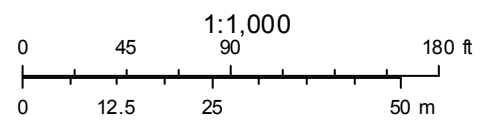
2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$1,080	\$1,080	\$1,080	\$1,080
Portability	0	0	0	0
Assessed/SOH	\$1,080	\$1,080	\$1,080	\$1,080
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$1,080	\$1,080	\$1,080	\$1,080

Sales History				Land Calculations		
Date	Type	Price	Book/Page or CIN	Price	Factor	Type
1/1/1974	WD	\$65,000	7906 / 261	\$3,000	0.36	NU
				\$130,680	0.36	AG
				Adj. Bldg. S.F.		

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
L								
1								



December 6, 2018





Site Address	SW 19 AVENUE, FORT LAUDERDALE FL 33312	ID #	5042 09 19 0191
Property Owner	SOFTSCAPES INC	Millage	0312
Mailing Address	15 SW 19 AVE FORT LAUDERDALE FL 33312-1529	Use	69
Abbr Legal Description	CYPRESS GARDENS 21-12 B LOT 12 BLK 2		

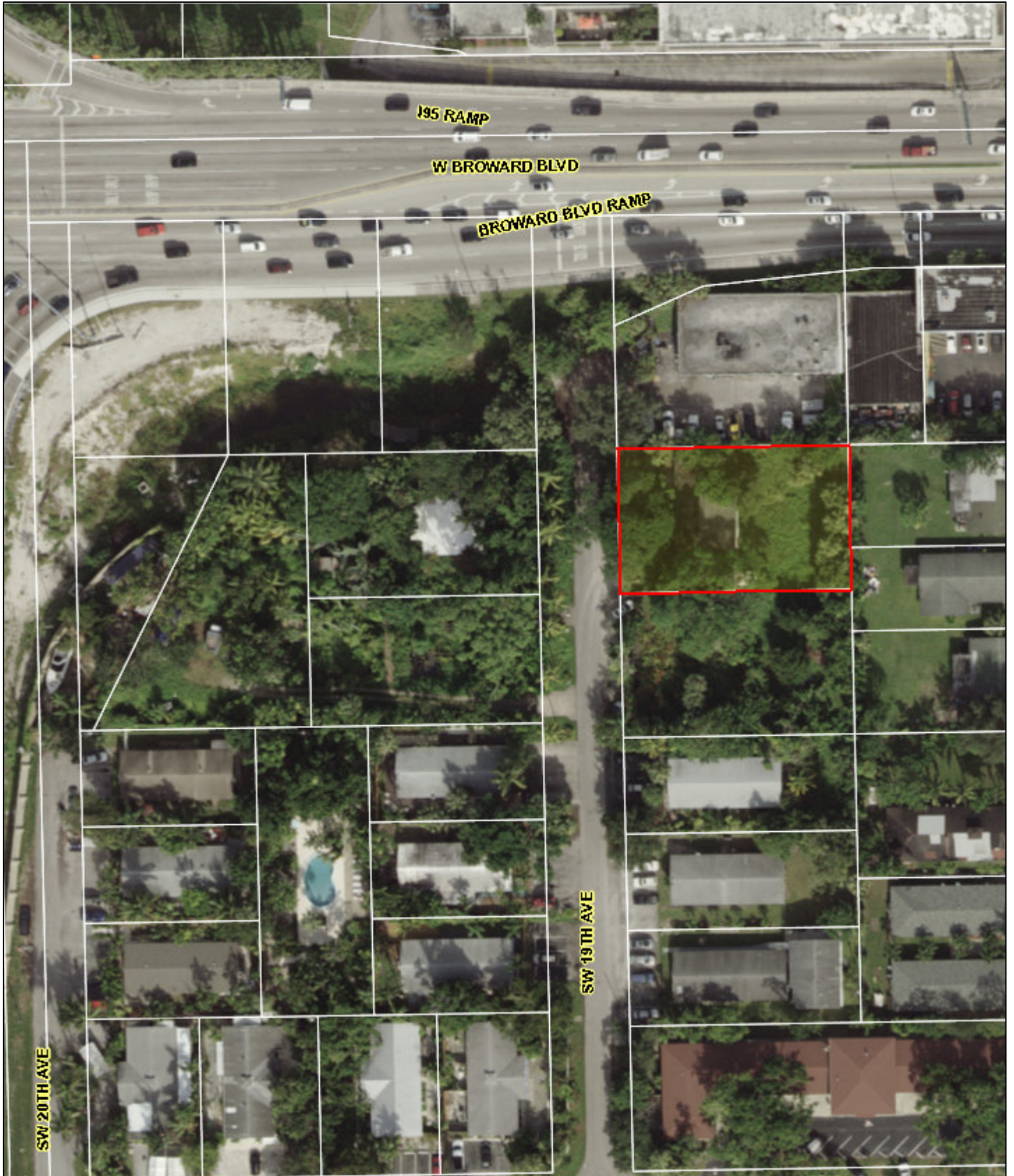
The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

Property Assessment Values						
Year	Land	Building / Improvement	Agricultural Savings	Just / Market Value	Assessed / SOH Value	Tax
2019	\$39,200		\$38,300	\$900	\$900	
2018	\$39,200		\$38,300	\$900	\$900	\$16.35
2017	\$39,200		\$38,300	\$900	\$900	\$16.62

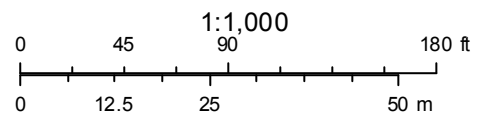
2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$900	\$900	\$900	\$900
Portability	0	0	0	0
Assessed/SOH	\$900	\$900	\$900	\$900
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$900	\$900	\$900	\$900

Sales History				Land Calculations		
Date	Type	Price	Book/Page or CIN	Price	Factor	Type
7/11/1997	WD	\$18,000	26770 / 942	\$3,000	0.30	NU
12/1/1993	QCD	\$100	21775 / 371			
10/1/1987	WD	\$18,500				
12/1/1970	WD	\$6,100		\$130,680	0.30	AG
				Adj. Bldg. S.F.		

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
L								
1								



December 6, 2018





Site Address	12 SW 19 AVENUE, FORT LAUDERDALE FL 33312	ID #	5042 09 19 0200
Property Owner	SOFTSCAPES INC	Millage	0312
Mailing Address	15 SW 19 AVE FORT LAUDERDALE FL 33312-1529	Use	01
Abbr Legal Description	CYPRESS GARDENS 21-12 B LOT 13 BLK 2		

The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

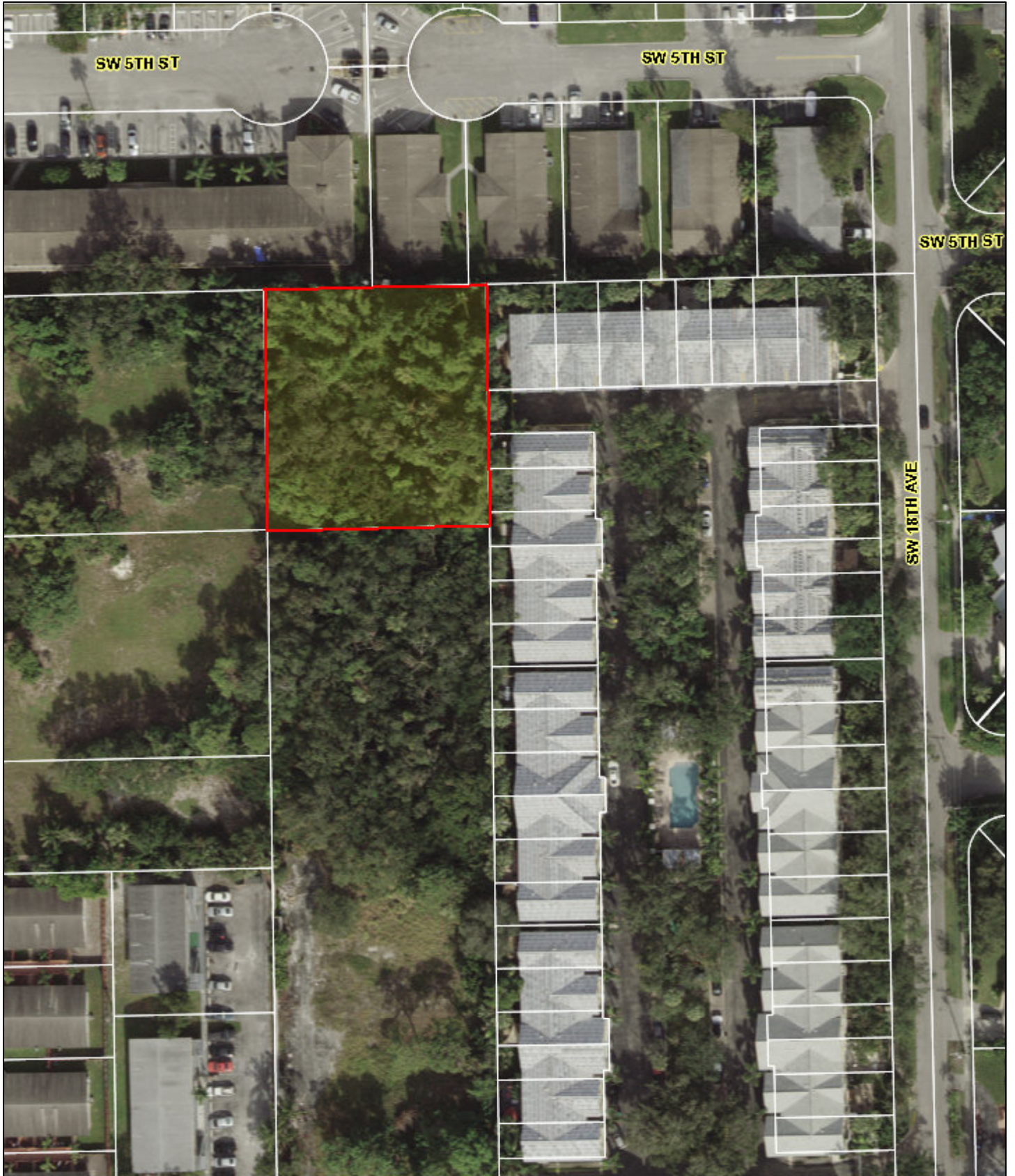
Property Assessment Values					
Year	Land	Building / Improvement	Just / Market Value	Assessed / SOH Value	Tax
2019	\$38,880	\$108,140	\$147,020	\$147,020	
2018	\$38,880	\$108,140	\$147,020	\$147,020	\$2,925.06
2017	\$38,880	\$95,780	\$134,660	\$134,660	\$2,743.89

2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$147,020	\$147,020	\$147,020	\$147,020
Portability	0	0	0	0
Assessed/SOH	\$147,020	\$147,020	\$147,020	\$147,020
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$147,020	\$147,020	\$147,020	\$147,020

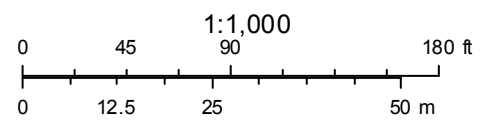
Sales History			
Date	Type	Price	Book/Page or CIN
12/8/1998	WD	\$75,000	29177 / 674
4/1/1982	WD	\$100	15547 / 321
4/1/1976	WD	\$21,000	
8/1/1975	WD	\$20,000	

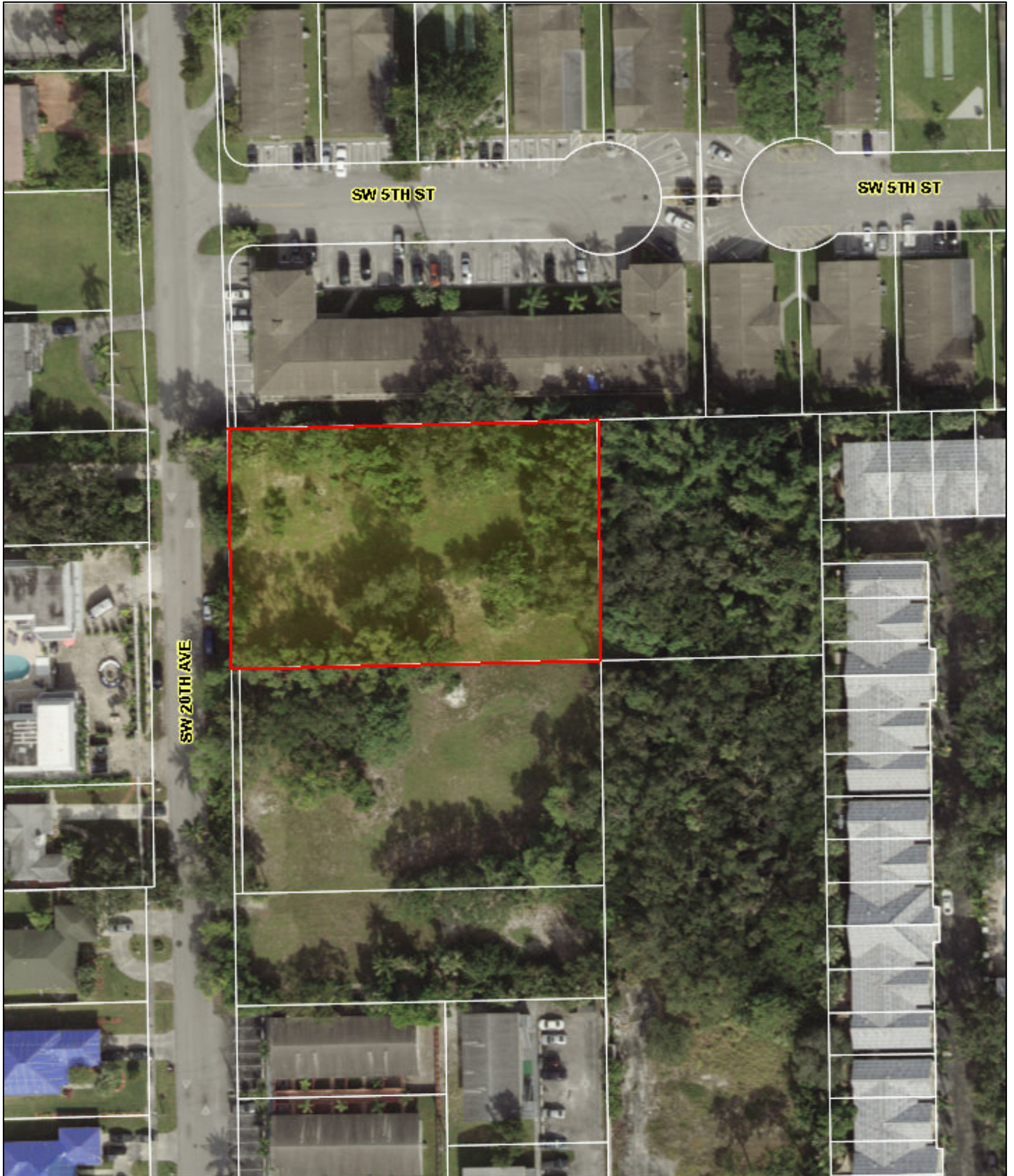
Land Calculations		
Price	Factor	Type
\$3.00	12,960	SF
Adj. Bldg. S.F. (Card, Sketch)		2180
Units		1
Eff./Act. Year Built: 1952/1947		

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
R								
1								

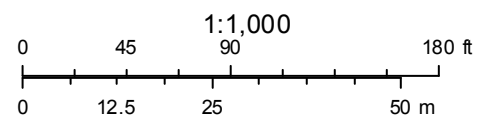


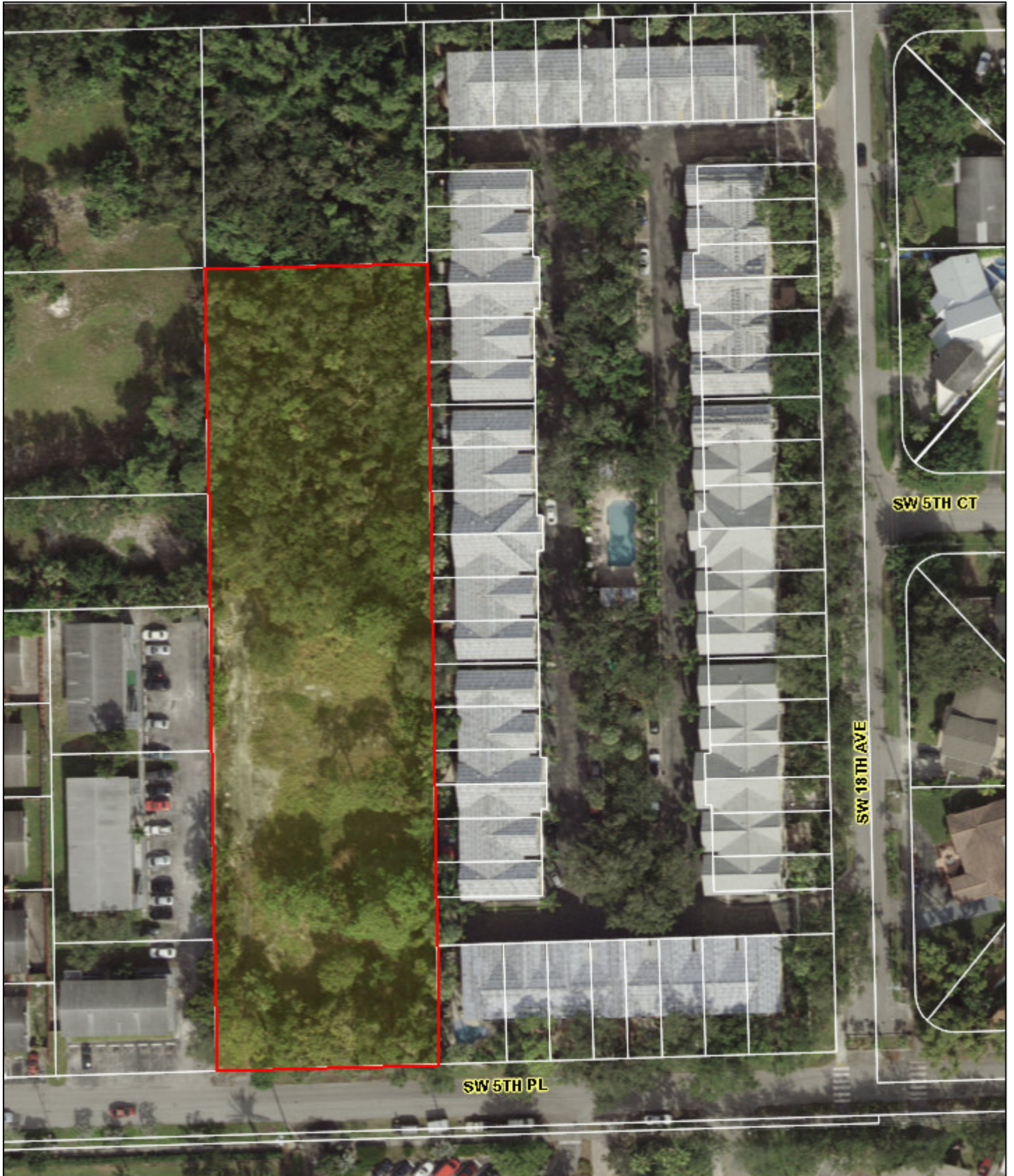
December 6, 2018



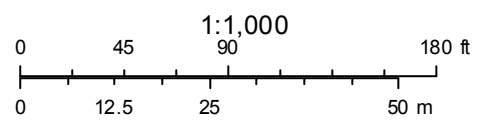


December 6, 2018





December 6, 2018





Site Address	1901 SW 5 PLACE, FORT LAUDERDALE FL 33312	ID #	5042 09 03 0320
Property Owner	RIVERSIDE PARK LLC	Millage	0312
Mailing Address	2645 NE 207 ST # 101 AVENTURA FL 33180	Use	00
Abbr Legal Description	RIVERSIDE NO 2 1-104 D LOT 4 LESS N 150,5 LESS N 150 BLK E		

The just values displayed below were set in compliance with **Sec. 193.011**, Fla. Stat., and include a reduction for costs of sale and other adjustments required by **Sec. 193.011(8)**.

Property Assessment Values					
Year	Land	Building / Improvement	Just / Market Value	Assessed / SOH Value	Tax
2019	\$950,260		\$950,260	\$950,260	
2018	\$950,260		\$950,260	\$950,260	\$17,251.51
2017	\$345,550		\$345,550	\$275,490	\$5,547.91

2019 Exemptions and Taxable Values by Taxing Authority				
	County	School Board	Municipal	Independent
Just Value	\$950,260	\$950,260	\$950,260	\$950,260
Portability	0	0	0	0
Assessed/SOH	\$950,260	\$950,260	\$950,260	\$950,260
Homestead	0	0	0	0
Add. Homestead	0	0	0	0
Wid/Vet/Dis	0	0	0	0
Senior	0	0	0	0
Exempt Type	0	0	0	0
Taxable	\$950,260	\$950,260	\$950,260	\$950,260

Sales History			
Date	Type	Price	Book/Page or CIN
1/4/2017	SW*-E	\$2,650,000	114140050
3/9/2009	CE*-T	\$100	46045 / 1441
9/15/2006	WD*	\$100	42787 / 1459
9/18/2000	WD	\$250,000	30864 / 1009

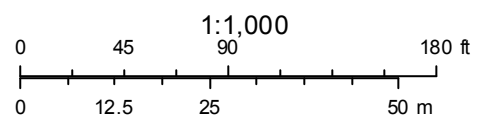
Land Calculations		
Price	Factor	Type
\$13.75	69,110	SF
Adj. Bldg. S.F.		

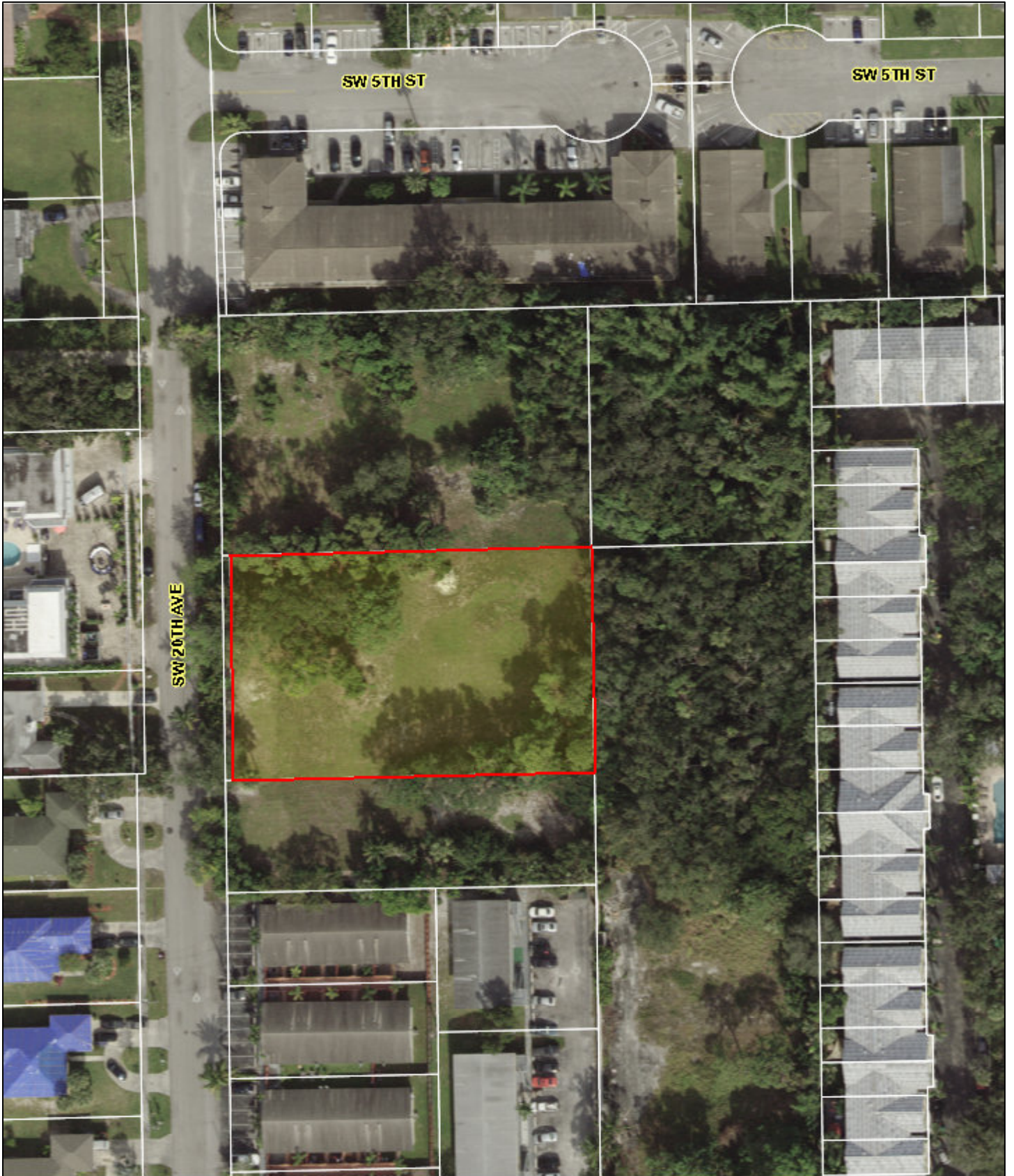
* Denotes Multi-Parcel Sale (See Deed)

Special Assessments								
Fire	Garb	Light	Drain	Impr	Safe	Storm	Clean	Misc
03								
L								
1								



December 6, 2018





December 6, 2018

