



# POND SITING REPORT

PD&E STUDY

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange (MP 57)

and

SR-9/I-95 at Gateway Boulevard Interchange (MP 58)

Palm Beach County, Florida

Prepared for

Florida Department of Transportation - District Four

3400 West Commercial Boulevard

Ft. Lauderdale, Florida 33309-3421



Financial Management Number: 435804-1-22-01

Financial Management Number: 231932-1-22-01

ETDM Numbers: 14180 and 14181

## JULY 2017

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*The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration and FDOT.*



## Professional Engineer Certificate

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Arcadis U.S., Inc., a corporation authorized to operate as an engineering business, FEID No. 0373224, by the State of Florida, Department of Professional Regulation, and Board of Professional Engineers. I have reviewed or approved the evaluation, findings, opinions, and conclusions as reported in this Pond Siting Report.

The Final Pond Siting Report includes a summary of data collection efforts and design analysis for the Project Development and Environment (PD&E) Study for interchange improvements located at SR-9/I-95 and Gateway Boulevard (Gateway Boulevard) and SR-9/I-95 and SR 804/Boynton Beach Boulevard (Boynton Beach Boulevard) in Palm Beach County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of civil engineering as applied through design standards and criteria set forth by the federal, state, and local regulatory agencies as well as professional judgement and experience.

Date    /    /

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Henry W. Deibel, Jr., PE

Seal

*The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration and FDOT.*

## Table of Contents

<b>Executive Summary</b>	<b>ES-1</b>
<b>1. Project Summary</b>	<b>1</b>
1.1 Description of Proposed Action	1
<b>2. Purpose and Need for Action</b>	<b>2</b>
2.1 Transportation Capacity	2
2.1.1 Economic Development	3
2.1.2 Secondary Criteria	5
<b>3. Alternatives Analysis</b>	<b>6</b>
3.1 No-Build Alternative	6
3.2 Transportation System Management and Operations (TSM&O) Alternative	6
3.3 Alternative Travel Modes	6
3.4 Alternatives Development	7
3.5 Build Alternatives	7
3.5.1 SR 9/I-95 at SR 804/Boynton Beach Boulevard Interchange	7
3.5.2 SR 9/I-95 at Gateway Boulevard Interchange	9
3.6 Recommended Alternatives	10
<b>4. Existing Site Information</b>	<b>10</b>
4.1 Topographic & Hydrologic Features	10
4.2 Floodplains/Floodways	13
4.3 Soils Data and Geotechnical	13
4.3.1 Soil Survey	13
4.3.2 Hydrogeology	14
4.4 Utilities	14
4.5 Environmental Characteristics	15
4.5.1 Land Use	15
4.5.2 Cultural Resources	19
4.5.3 Natural Resources	19
4.5.4 Contamination	20
4.6 Existing Drainage Basins	20

4.7	Existing Cross Drains	21
<b>5.</b>	<b>Design Criteria</b>	<b>21</b>
5.1	Seasonal High Water Determination	22
5.2	Water Quality	22
5.3	Water Quantity	23
5.4	Recovery Time	23
<b>6.</b>	<b>Drainage System</b>	<b>23</b>
6.1	Methodology of Pond Site Determination	23
6.2	Stormwater Pond Site Evaluation	23
<b>7.</b>	<b>Recommendations</b>	<b>35</b>
<b>8.</b>	<b>References</b>	<b>38</b>
<b>Tables</b>		
Table 1.	SR 804/Boynton Beach Boulevard Existing & Future AM and PM Peak Hour Conditions	2
Table 2.	Gateway Boulevard Existing and Future AM and PM Peak Hour Conditions	3
Table 3.	Palm Beach Basin Average Rainfall	10
Table 4.	Average Rainfall	10
Table 5.	Summary of Utilities	14
Table 6.	Existing Drainage Basins – Boynton Beach Boulevard	20
Table 7.	Existing Drainage Basins – Gateway Boulevard	20
Table 8.	Seasonal High Water Table Determination Data – Boynton Beach Boulevard	22
Table 9.	Seasonal High Water Table Determination Data – Gateway Boulevard	22
Table 10.	Potential Pond Site Locations – Boynton Beach Boulevard	24
Table 11.	Pond Siting Evaluation Matrix – SR 9/I-95 at Boynton Beach Boulevard, West of I-95	26
Table 12.	Pond Siting Evaluation Matrix – SR 9/I-95 at Boynton Beach Boulevard, East of I-95	27
Table 13.	Potential Pond Site Locations – Gateway Boulevard	31
Table 14.	Pond Siting Evaluation Matrix, Proposed Drainage Basins – SR 9/I-95 at Gateway Boulevard, West and East of I-95	33
Table 15.	Summary of Recommended Pond Site Alternatives – Boynton Beach Boulevard	35
Table 16.	Summary of Recommended Pond Site Alternatives – Gateway Boulevard	35
Table 17.	Pre- vs Post-Development Results for Recommended Pond Site Alternatives – Boynton Beach Boulevard	36
Table 18.	Pre- vs Post-Development Results for Recommended Pond Site Alternatives - Gateway Boulevard	37

## Figures

Figure 1. Project Location Map	4
Figure 2. USGS Quad Map	11
Figure 3. 3-Day Rainfall: 25-Year Return Period	12
Figure 4. Drainage Manual Rainfall Intensity-Duration-Frequency Curves	13
Figure 5. FEMA Map	16
Figure 6. NRCS Soils Map	17
Figure 7. Land Use Map	18
Figure 8. Preliminary Alternative Pond Sites – Boynton Beach Boulevard	28
Figure 9. Modified Pond Site #1 Boynton Beach Boulevard	29
Figure 10. Modified Pond Site #18 – Boynton Beach Boulevard	30
Figure 11. Preliminary Alternative Pond Sites – Gateway Boulevard	34
Figure 12. Recommended Pond Sites – Boynton Beach Boulevard	35
Figure 13. Recommended Pond Sites – Gateway Boulevard	36

## Appendices

- A **Build Alternatives**
- B **Typical Section Package**
- C **Geotechnical Technical Memorandum**
- D **SFWMD Stor-All, Permit Number 50-04389-P**  
**SFWMD Boynton Beach Tri-Rail Station, Permit Number 50-01503-S**
- E **Pond Design Calculations Pre- and Post-Development Basin Maps**
  - Part A, Boynton Beach Boulevard**
  - Part B, Gateway Boulevard**

## LIST OF ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AN	Advanced Notification
APE	Area of Potential Effect
CAAA	Clean Air Act Amendments
CDA	Concept Development Alternative
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CSER	Contamination Screening Evaluation Report
dba	A-Weighted Decibel
DOA	Determination of Applicability
DOS	Department of State
EA	Environmental Assessment
EFH	Essential Fish Habitat
ERM	Environmental Resource Management
ESF	Emergency Support Functions
EST	Environmental Screening Tools
ETDM	Efficient Transportation Decision Making
FDEP	Florida Department of Environmental Protection
FDHR	Florida Division of Historical Resources
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
FFWCC	Florida Fish and Wildlife Conservation Commission
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLUCFCS	Florida Land Use Cover Forms Classification System
FMSF	Florida Master Site File
FS	Florida Statute
FY	Fiscal Year
GIS	Geographic Information System
LDCA	Location and Design Concept Acceptance
LEP	Limited English Proficiency
LOS	Level of Service

L RTP	Long Range Transportation Plan
LWDD	Lake Worth Drainage District
MLOU	Methodology Letter of Understanding
MOT	Maintenance of Traffic
MPO	Palm Beach Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Study Area
PD&E	Project Development and Environment
ROW	Right-of-Way
SALR	Seaboard Air Line Railroad
SFRC	South Florida Rail Corridor
SFWMDC	South Florida Water Management District
SHPO	State Historic Preservation Officer
SHWT	Seasonal High Water Table
SIMR	System Interchange Modification Report
SPUI	Single Point Urban Interchange
SR	State Road
STIP	State Transportation Improvement Plan
TDM	Transportation Demand Model
TIP	Transportation Improvement Plan
TSM	Transportation System Management
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WER	Wetlands Evaluation Report

## Executive Summary

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for improvements located at the interchanges of SR-9/I-95 at SR-804/Boynton Beach Boulevard and SR-9/I-95 at Gateway Boulevard in Palm Beach County, Florida.

This report documents the analyses and procedures conducted for evaluating stormwater management facilities and identifying stormwater pond sites at SR 804/Boynton Beach Boulevard and Gateway Boulevard. This pond siting report is consistent with the PD&E study process utilized by FDOT to document compliance with the National Environmental Policy Act, South Florida Water Management District, and Federal Clean Water and Safe Drinking Water Acts.

Alternative pond sites for stormwater treatment were evaluated in consideration of environmental permitting requirements, existing infrastructure and potential outfalls, as well as available right-of-way. Pond site locations were analyzed for potential impacts to the environment, including: wetlands, protected species, archeological / historical resources, flood zone, noise, and contamination.

Parameters were established to develop an evaluation matrix that was utilized to evaluate pond site location alternatives. Based upon the matrix scoring, preferred pond sites were identified for each of the project area basins. The recommended pond site alternatives for each basin are identified in **Table ES-1** and shown on **Figure ES-1** and **ES-2**.

**Table ES-1. Recommended Pond Site Alternatives**

Basin	Preferred Pond Site Alternative	Location
SR-9/I-95 at SR-804/Boynton Beach Boulevard		
1	Pond Alternative 17	North side of Boynton Beach Boulevard, east of I-95
2	Pond Alternative 9	South side of Boynton Beach Boulevard, west of I-95
SR-9/I-95 at Gateway Boulevard		
4	Pond Alternative 8	North side of Gateway Boulevard, west of I-95
5	Pond Alternative 4	South side of Gateway Beach Boulevard, east of I-95





Figure ES-1. Recommended Pond Sites – Boynton Beach Boulevard

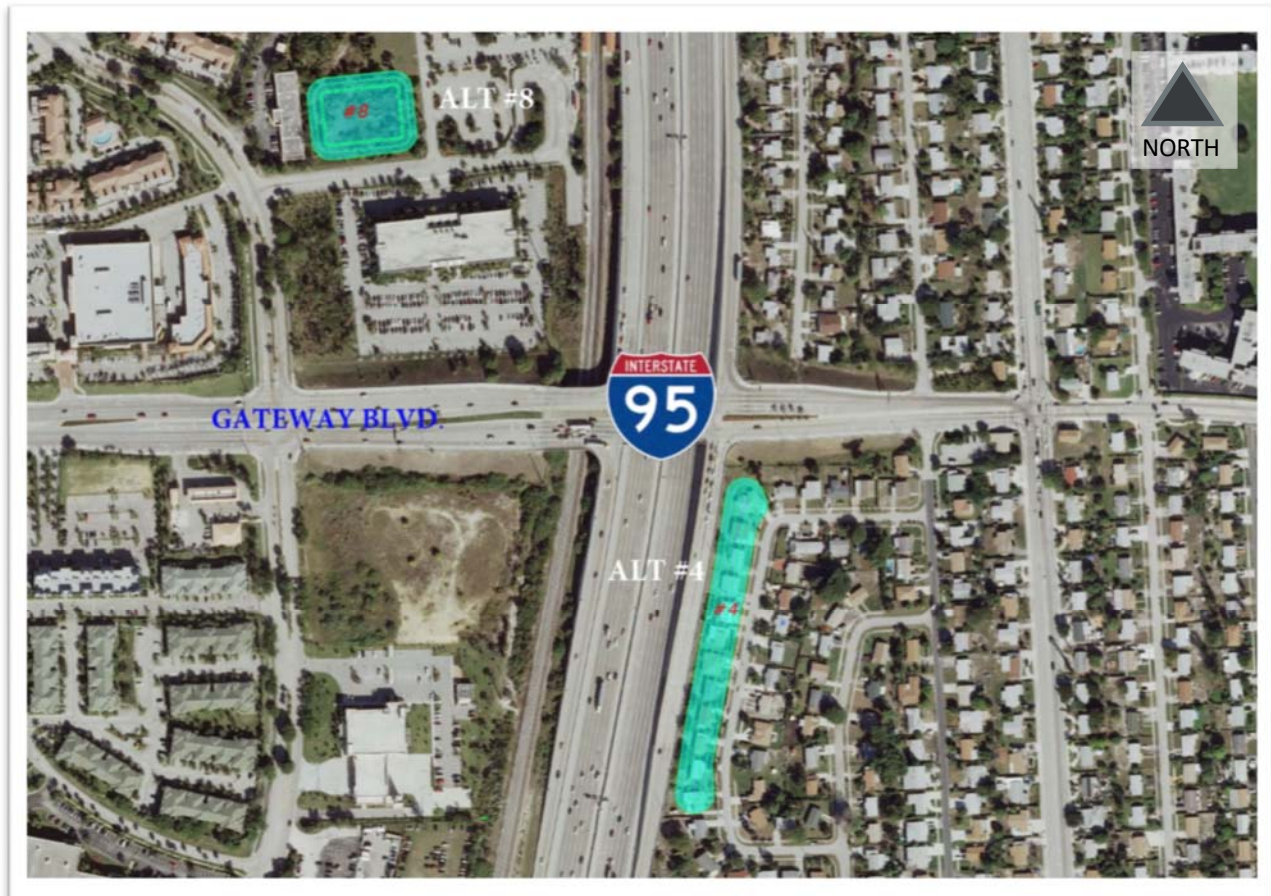


Figure ES-2. Recommended Pond Sites – Gateway Boulevard

## 1. Project Summary

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for interchange improvements located at SR-9/I-95 and Gateway Boulevard and SR-9/I-95 at SR-804/Boynton Beach Boulevard in Palm Beach County, Florida. The alternatives developed in this PD&E Study and the associated social, economic, and environmental analyses were evaluated according to the requirements of the National Environmental Policy Act (NEPA) and FDOT's PD&E Manual, Part 1, Chapter 5 to receive Location and Design Acceptance (LDCA). The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated December 14, 2016 and executed by the Federal Highway Administration (FHWA) and FDOT.

The federal Fixing America's Surface Transportation Act (FAST Act, 2015) serves as the current regulatory and funding framework for transportation planning. The Palm Beach Metropolitan Planning Organization (MPO) is the government organization that provides both long-range and short-term transportation planning for Palm Beach County. The Palm Beach MPO 2040 Long Range Transportation Plan (LRTP, October 2014), as amended, represents long-term transportation planning for Palm Beach County. Short-term planning is represented by the MPO's Transportation Improvement Program (TIP). The purpose of the LRTP is to identify the transportation needs of the community and establish priorities for funding those improvements in the TIP. The MPO priority projects are listed in the TIP Priority Projects FY 2017-2021 (June 2016).

FDOT lists planned projects with federal participation, including all MPO TIPs, in the State Transportation Improvement Program (STIP) which is submitted to and approved by the FHWA. The PD&E Study for the SR 804/Boynton Beach Boulevard Interchange and Gateway Boulevard Interchange is programmed for PD&E Study under the STIP (February 2017).

While the improvements at both interchanges are not included in the cost feasible component of the 2040 LRTP, one highway project in the vicinity of the interchanges is provided in the LRTP needs component. This project is for the Strategic Intermodal System (SIS) implementation of managed lanes on SR-9/I-95 from the Palm Beach County/Broward County Line to Indiantown Road. Projects near both interchanges are identified in the STIP and include:

- PD&E Studies for planned interchange improvements/future capacity for SR-9/I-95 at 10th Avenue (FM# 4127331), Woolbright Avenue (FM#4372791), and Hypoluxo Road (FM# 4132571)
- Preliminary engineering for planned interchange improvements at SR-9/I-95 and Northlake Boulevard (FM# 4358031) and at Southern Boulevard (FM #4355161)
- Right-of-way (ROW) acquisition is underway for SR-9/I-95 at Glades Road/SR 808 (FM#4124204), PGA Boulevard (FM#4132651), 6th Avenue South (FM#4369631), and Atlantic Avenue/SR 806 (FM# 4347221)
- Construction has begun at SR-9/I-95 at Linton Road (FM#4353841). Multiple studies to evaluate future capacity of the I-95 corridor are underway.

### 1.1 Description of Proposed Action

The project study area (study area) is in eastern Palm Beach County within the City of Boynton Beach between SR-9/I-95 Woolbright Road to the south and SR-9/I-95 at Hypoluxo Road to the north. The SR 804/Boynton Beach Boulevard interchange is located on SR-9/I-95 at milepost 57, Township 45, Range 43 and Sections 28 & 29 between the Gateway Boulevard interchange (1.5 miles to the north) and the Woolbright Road interchange (1.0 mile to the

south). At SR 804/Boynton Beach Boulevard, the project area extends from west of Industrial Avenue to east of Seacrest Boulevard. The SR 804/Boynton Beach Boulevard project length is 2.52 miles.

The Gateway Boulevard interchange is located on SR-9/I-95 at milepost 58, Township 45, Range 43 and Section 16, between the Hypoluxo Road interchange (1.5 miles to the north) and the SR 804/Boynton Beach Boulevard interchange (1.5 miles to the south). At Gateway Boulevard, the project area extends from west of High Ridge Road to east of Seacrest Boulevard. The Gateway Boulevard project length is 2.95 miles. A project location map is provided in **Figure 1**.

Elevation data presented in this report are based on the North American Vertical Datum of 1988 (NAVD 88) except as otherwise noted.

## 2. Purpose and Need for Action

The primary purpose of the proposed action is to enhance overall traffic operations at the existing interchanges of SR-9/I-95 at SR 804/Boynton Beach Boulevard and at Gateway Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) in the future condition (2045 Design Year). The proposed action will support redevelopment efforts in the vicinity of the interchange, meeting the overall vision of the City of Boynton Beach. In addition, goals of the project include improving safety conditions and enhancing emergency evacuation and response times. The proposed action is anticipated to improve traffic operations at the study interchanges through implementation of operational and capacity improvements that will maintain and improve mobility, improve safety, and support existing and future development at the study interchanges.

### 2.1 Transportation Capacity

The study area was initially evaluated in the *I-95 (SR-9) Interchange at Boynton Beach Boulevard (SR-804) in Palm Beach County, Interchange Concept Development Report* (June 2014) and the *I-95 (SR-9) Interchange at Gateway Boulevard in Palm Beach County, Interchange Concept Development Report* (June 2014) [CD Reports].

Based upon the traffic operations analysis conducted for the study area interchanges and adjacent signalized intersections and documented in the CD Reports, the existing operational capacity and overall traffic operations (Level of Service) are deficient. These deficiencies are based on existing and future AM and PM peak hour traffic conditions for intersection delay and safety performance. LOS is a quality measure describing operational conditions of these facilities. LOS classifications are designated from LOS A to LOS F, with LOS A representing the best operating conditions and LOS F representing the worst. Operational conditions considered in an LOS classification include speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Existing and future AM and PM peak hour conditions for Boynton Beach and Gateway Boulevards are shown in **Tables 2** and **3**.

**Table 1. SR 804/Boynton Beach Boulevard Existing & Future AM and PM Peak Hour Conditions**

SR 804/Boynton Beach Boulevard with	Existing AM Conditions		Existing PM Conditions		Future AM Conditions		Future PM Conditions	
	Level of Service (LOS)	Delay (sec)1	Level of Service (LOS)	Delay (sec)1	Level of Service (LOS)	Delay (sec)1	Level of Service (LOS)	Delay (sec)1
Industrial Avenue	B	12.5	C	24.9	C	26.7	E	58.4
SR-9/I-95 Southbound Ramps	E	68.4	B	19.5	F	138.2	D	43.1
SR-9/I-95 Northbound Ramps	C	31.9	D	44.4	F	130.0	F	144.5



SR 804/Boynton Beach Boulevard with	Existing AM Conditions		Existing PM Conditions		Future AM Conditions		Future PM Conditions	
	Level of Service (LOS)	Delay (sec) <sup>1</sup>	Level of Service (LOS)	Delay (sec) <sup>1</sup>	Level of Service (LOS)	Delay (sec) <sup>1</sup>	Level of Service (LOS)	Delay (sec) <sup>1</sup>
Seacrest Boulevard	D	45.0	D	35.6	F	158.7	F	178.6

1. sec: Delay in seconds per vehicle

Source: I-95 (SR-9) Interchange at Boynton Beach Boulevard in Palm Beach County, Interchange Concept Development Report (June 2014)

**Table 2. Gateway Boulevard Existing and Future AM and PM Peak Hour Conditions**

Gateway Boulevard with	Existing AM Conditions		Existing PM Conditions		Future AM Conditions		Future PM Conditions	
	Level of Service (LOS)	Delay (sec) <sup>1</sup>	Level of Service (LOS)	Delay (sec) <sup>1</sup>	Level of Service (LOS)	Delay (sec) <sup>1</sup>	Level of Service (LOS)	Delay (sec) <sup>1</sup>
High Ridge Road	F	111.4	D	40.9	F	275.2	F	84.7
SR-9/I-95 Southbound Ramps	F	255.7	F	158.0	F	146.8	F	251.1
SR-9/I-95 Northbound Ramps	D	37.5	E	60.4	F	102.2	F	166.9
Seacrest Boulevard	D	43.6	D	38.4	F	195.2	F	204.9

1. sec: Delay in seconds per vehicle

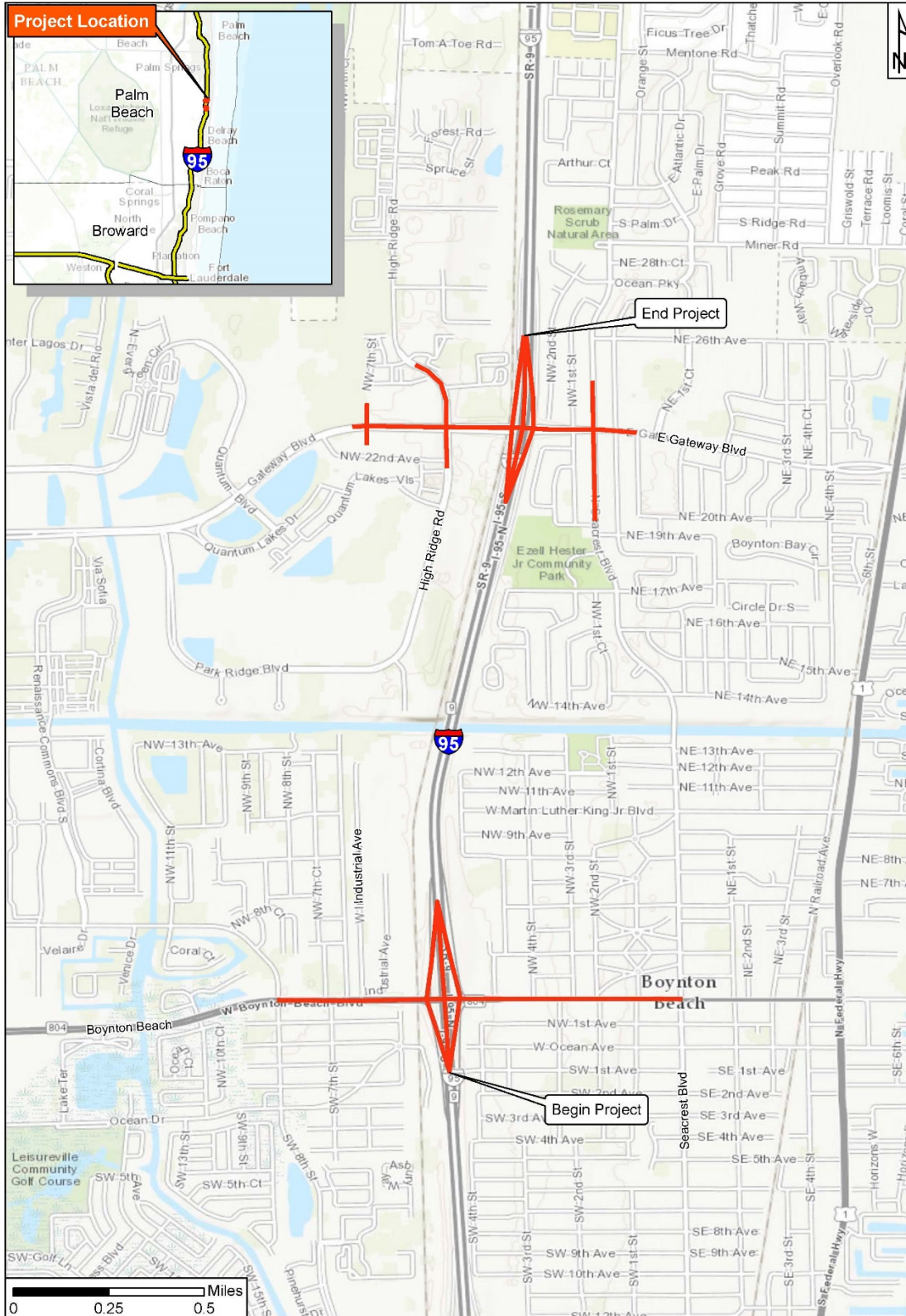
Source: I-95 (SR-9) Interchange at Gateway Boulevard in Palm Beach County, Interchange Concept Development Report (June 2014)

Although the intersections operate at LOS E or better under existing conditions scenarios at SR 804/Boynton Beach Boulevard many of the individual through and turning movements at the intersections (which include approaches to SR-9/I-95) operate at LOS F during future AM and PM peak periods. Under the existing conditions scenarios at Gateway Boulevard, all intersections operate at LOS E or better except at the Gateway Boulevard - High Ridge Road and SR-9/I-95 southbound ramp intersections. Without improvements, the intersections will continue to experience excessive delays and queue lengths, and will continue to operate below acceptable LOS standards and the interchange will have insufficient capacity to accommodate the projected travel demand.

### 2.1.1 Economic Development

The area surrounding the SR-9/I-95 at SR 804/Boynton Beach Boulevard interchange is urbanized containing a mixture of commercial, industrial, and residential land uses. According to the City of Boynton Beach Future Land Use Map, the SR 804/Boynton Beach Boulevard interchange falls within the designated Community Redevelopment Area (CRA). The residential neighborhoods and business districts of this area are intended to be redeveloped by implementing compact, more intensive urban growth patterns that provide opportunities for more efficient use and development of infrastructure, land, and other resources and services. The area surrounding the Gateway Boulevard interchange is urbanized containing a mixture of residential and recreational land uses to the east and commercial, office, industrial, and residential activities to the west as part of the Quantum Park Development of Regional Impact (DRI). According to the City of Boynton Beach Future Land Use Map, the area will continue to support the noted land uses.

Population within the vicinity of the SR 804/Boynton Beach Boulevard interchange is anticipated to grow by approximately 10% from 2005 to 2035 primarily in the areas northeast and southwest of the interchange. Anticipated



PD&E Study  
 SR-9/I-95 at SR-804/Boynton Beach Blvd Interchange  
 SR-9/I-95 at Gateway Blvd Interchange  
 FM Nos. 435804-1-22-01; 231932-1-22-01  
 ETDM Nos. 14180 and 14181



**PROJECT  
 LOCATION MAP**

**FIGURE  
 1**

population growth within the vicinity of the Gateway Boulevard interchange is 46 percent with expected growth primarily east of Seacrest Boulevard and within the Quantum Park DRI. Employment in the vicinity of SR 804/Boynton Beach Boulevard is projected to increase approximately 147 percent from 2005 to 2035 primarily in the areas northeast, east, and southwest of the interchange. In the vicinity of Gateway Boulevard, employment is expected to increase by approximately 173 percent primarily in the areas west and southeast of the interchange. These projections are based on data derived from the enhanced Southeast Regional Planning Model (SERPM) version 6.5 Managed Lanes Model (upgraded to include specific subarea improvements for the I-95 Interchange Master Plan). Improving the transportation infrastructure at the study area interchanges and adjacent intersections will support the redevelopment efforts in the vicinity of these interchanges and the overall vision of the City of Boynton Beach growth and economic development as identified in the Heart of Boynton Community Redevelopment Plan Update (April 2014).

## 2.1.2 Secondary Criteria

### 2.1.2.1 Safety

The 2040 LRTP continues the requirement that the MPO carry out a planning process that increases the safety and security of the transportation system for motorized and non-motorized users. MAP-21 also establishes national performance goals for federal highway programs including:

#

- Safety - to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- System Reliability – to improve the efficiency of the surface transportation system.

MAP-21 continued the Highway Safety Improvement Program (HSIP) as a core federal program. To receive funding under this Program, states were required to develop Strategic Highway Safety Plans (SHSP). The SHSP is a data-driven, four to five-year comprehensive plan that establishes statewide goals and objectives to reduce fatalities and serious injuries. In 2006, Florida completed development of a comprehensive SHSP. The overall goal of the SHSP is to reduce the number of fatalities in Florida to zero. Use of a systems approach in engineering is one of the objectives to be used in accomplishing this overall goal; to strike a balance between single unique locations and addressing the safety of the road network.

The CD Reports included a safety analysis of the study area. For the SR 804/Boynton Beach Boulevard interchange, crash data analyzed from 2010 – 2012 indicated 214 crashes occurred with 69 percent being rear-end type crashes. Predominant crash locations were along SR 804/Boynton Beach Boulevard at the SR-9/I-95 northbound on- and off-ramps and the southbound off-ramp. For the Gateway Boulevard interchange, crash data indicated 117 crashes occurred with 48 percent being rear-end type crashes. The segment of SR-9/I-95 in the vicinity of Gateway Boulevard is identified as a high crash segment having a higher crash rate compared with similar state roadways for the time period analyzed.

### 2.1.2.2 Emergency Evacuation and Response Times

SR-9/I-95 and SR 804/Boynton Beach Boulevard serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management and Palm Beach County. As designated evacuation facilities, these roadways are critical in facilitating traffic flows during emergency evacuation periods. SR-804/SR 804/Boynton Beach Boulevard is a major east-west corridor in eastern Palm Beach County providing linkage between SR-9/I-95 and

Florida's Turnpike. Both Boynton Beach and Gateway Boulevards connect to other major arterials and highways of the state evacuation route network.

### **3. Alternatives Analysis**

NEPA project development must consider a range of alternatives that meet the purpose and need of the project while balancing engineering requirements, impacts, and benefits. Project alternatives include the No-Build, Transportation Systems Management & Operations, and Build Alternatives.

FDOT is committed to the practicable avoidance and minimization of potential impacts to the social and natural environment when considering approval of proposed transportation projects. The study of alternatives and the associated environmental consequences were evaluated according to NEPA and FDOT's PD&E process. This study process allows for coordination during the alternatives development process and thorough consideration of alternatives developed.

#### **3.1 No-Build Alternative**

NEPA requires that doing nothing to existing conditions be considered during the environmental review process. This alternative is designated as the No-Build Alternative, signifying that no new improvements or construction would take place. Although this alternative does not meet the purpose and need for the project, it will be considered serving as a baseline for comparison against other alternatives. The No-Build Alternative retains the existing roadway and interchange improvements and would not have any direct impacts to the physical, natural, and social environments, ROW, structures, or utilities.

#### **3.2 Transportation System Management and Operations (TSM&O) Alternative**

The TSM&O Alternative includes implementation of non-capacity improvements to the existing transportation network that improve traffic flow, manage congestion, and maximize highway operations. Intelligent transportation systems (ITS), multimodal applications, adjusting signal phasing and timing, auxiliary lane additions, and higher land-use density strategies are TSM&O instruments used to maximize transportation infrastructure utilization. Such improvements are often less costly and require little to no ROW compared to physical expansion of the transportation network.

TSM&O improvements alone would not adequately accommodate the future year traffic volumes within the project's area of influence. The TSM&O Alternative alone is not considered a viable alternative, however, the build alternatives developed will incorporate viable TSM&O improvements.

#### **3.3 Alternative Travel Modes**

Multimodal facilities such as transit routes currently exist within the proposed project limits. The existing modes are incorporated into the build alternatives with current design standards. The Build Alternative for this project will include bicycle lanes and sidewalks that will connect to existing facilities to the east and west of the project limits. The transit routes within the study area will not be affected by the Build Alternative. Alternative travel modes are not anticipated to reduce the future demand near this interchange.



### 3.4 Alternatives Development

As part of the PD&E Study, several roadway improvement alternatives were considered for improving traffic operations and safety near the SR 804/Boynton Beach Boulevard and Gateway Boulevard interchanges. The interchanges were initially evaluated in Concept Development Reports completed by the FDOT through the I-95 Master Plan Project. The SR 9/I-95 Interchange at SR 804/Boynton Beach Boulevard, Palm Beach County, Interchange Concept Development Report (2014) and SR 9/I-95 Interchange at Gateway Boulevard, Palm Beach County, Interchange Concept Development Report (2014) developed and evaluated conceptual design alternatives for geometric criteria, impacts on structures, drainage, signing, and utilities, adjoining side street connections, signalized intersections, and constructability.

The recommended improvements contained in the interchange Concept Development Reports resulted in development of a Conceptual Design Alternative (CDA). The CDA has been retained and will be evaluated as a build alternative in this PD&E Study. A Tier 1 Alternatives Evaluation Technical Memorandum (March 2016) was prepared that identified preliminary alternatives that improved traffic operations and safety. In addition to the CDA, eight (8) conceptual alternatives were developed for SR 804/Boynton Beach Boulevard and three (3) for Gateway Boulevard interchanges. A preliminary screening of each alternative was completed with respect to the purpose and need for the project, traffic operations, traffic safety, constructability, cost, right of way, environmental, and socio-economic impacts.

Of the preliminary alternatives developed, the following build alternatives were retained for full evaluation for each interchange. All Build Alternatives will incorporate TSM&O improvements and will be developed further as the project progresses.

- Alternative 1 - Conceptual Design Alternative (CDA)
- Alternative 2 - Streamlined CDA
- Alternative 3 - Single-point Urban Interchange (SPUI)

### 3.5 Build Alternatives

#### 3.5.1 SR 9/I-95 at SR 804/Boynton Beach Boulevard Interchange

**Alternative 1 – CDA.** This build alternative was retained from the Concept Development Reports previously prepared and discussed in Section 3.4. The development of this alternative considered practical design and evaluated traditional turn lane improvements for the existing Tight Urban Diamond Interchange configuration to optimize the benefit to cost (B/C) ratio without imperiling traffic operations and safety.

For this alternative, proposed improvements are described below and shown in **Appendix A**.

1. A new westbound right turn lane to Industrial Avenue
2. Dual left and triple right turn lanes in the southbound direction at the I-95 southbound ramp terminal intersection
3. Continuously flowing channelized eastbound single right turn lane and dual westbound left turn lanes that create three SR 9/I-95 southbound on-ramp lanes. The third lane on the SR 9/I-95 southbound on-ramp is merged south of the ramp terminal intersection from the right side to tie into the existing dual lane on-ramp

4. Dual left turn lanes in the eastbound and westbound along SR 804/Boynton Beach Boulevard
5. Triple left turn lanes and single channelized right turn lane in the northbound direction at the northbound I-95 ramp terminal intersection
6. Dual left turn lanes with extended queue lengths, single channelized right turn lane and additional through lane in the westbound direction along SR 804/Boynton Beach Boulevard east of the SR 9/I-95 bridge
7. Continuously flowing channelized westbound right turn lane and dual eastbound left turn lanes that create three SR 9/I-95 northbound on-ramp lanes. Two of the three lanes on this SR 9/I-95 northbound on-ramp are merged north of the ramp terminal intersection from the right to tie into the existing axillary lane between SR 804/Boynton Beach Boulevard and Gateway Boulevard
8. Increase right turn storage lane along eastbound SR 804/Boynton Beach Boulevard at the northbound SR 9/I-95 ramp terminal intersection.
9. New right turn storage lane in the eastbound direction at the SR 804/Boynton Beach Boulevard and Seacrest Boulevard intersection.

Alternative 1 also adds an additional westbound through lane between SR 9/I-95 southbound ramp terminal and Old Boynton Road/SW 8th Street. This additional westbound through lane is dropped near the intersection of SR 804/Boynton Beach Boulevard and Old Boynton Road/SR 8th Street as a westbound right turn lane.

**Alternative 2 – Streamlined CDA.** This build alternative enhances Alternative 1 and avoids reconstruction of the SR 804/Boynton Beach Boulevard bridges over the South Florida Rail Corridor (SFRC) railroad (Bridge Number 930289) and SR 9/I-95 (Bridge Number 930285). This alternative retains most of Alternative 1 proposed improvements, but proposes the below described enhancements and are shown in **Appendix A**.

1. A closed median opening between 7th Street and Old Boynton Road
2. Dual right turn lanes, a single left turn lane and a shared left/right lane in the southbound direction at the SR 9/I-95 southbound exit ramp terminal intersection
3. Continuously flowing channelized eastbound right turn lane and dual westbound left turn lanes that create three SR 9/I-95 southbound on-ramp lanes. The third lane on the SR 9/I-95 southbound on-ramp is merged south of the ramp terminal intersection from the left side to tie into the existing dual lane on-ramp
4. Triple left and dual channelized right turn lanes in the northbound direction at the I-95 northbound ramp terminal intersection
5. Eliminates the eastbound right turn lane at the SR 804/Boynton Beach Boulevard and Seacrest Boulevard intersection.

Alternative 2 eliminates the additional westbound through lane between SR 9/I-95 southbound ramp terminal and Old Boynton Road/SW 8th Street added by the Alternative 1.

**Alternative 3 – Single-point Urban Interchange (SPUI).** This build alternative proposes the construction of a new SPUI at the SR 9/I-95 and SR 804/Boynton Beach Boulevard Interchange. A SPUI configuration combines turning movements at the SR 9/I-95 northbound and southbound exit ramps to operate under a single traffic control device, resulting in a high capacity interchange. The following improvements are proposed for this alternative and are shown in **Appendix A**.

1. Convert existing dual ramp terminal signalized intersections into a single signalized intersection to serve both southbound and northbound ramp terminals. This Alternative will include:
  - All improvements considered along SR 804/Boynton Beach Boulevard and the SR 9/I-95 northbound and southbound ramps considered under Alternative 2 as described above

### 3.5.2 SR 9/I-95 at Gateway Boulevard Interchange

**Alternative 1 – CDA.** This Build Alternative was retained from the Concept Development Reports previously prepared and discussed in Section 3.4. The development of this alternative considered practical design and evaluated traditional turn lane improvements for the existing Tight Urban Diamond Interchange configuration to optimize the benefit to cost (B/C) ratio without imperiling traffic operations and safety.

For this alternative, proposed improvements are described below and shown in **Appendix A**.

1. Dual left turn lanes, a single thru lane, and a single right turn lane in the northbound direction at the Gateway Boulevard and High Ridge Road intersection
2. Triple left turn lanes from southbound High Ridge Road to eastbound Gateway Boulevard
3. Dual left and right turn lanes in the southbound direction at the SR 9/I-95 southbound exit ramp terminal intersection
4. Dual right turn lanes from eastbound Gateway Boulevard to southbound SR 9/I-95
5. Triple left and single right turn lanes in the northbound direction at the SR 9/I-95 northbound exit ramp terminal intersection
6. Dual left turn lanes from northbound Seacrest Boulevard to westbound Gateway Boulevard
7. Single right turn lane from southbound Seacrest Boulevard to westbound Gateway Boulevard

Alternative 1 adds an additional through lane in the eastbound and westbound direction to create an eight-lane typical section along Gateway Boulevard within the project limits between Quantum Boulevard and NE 1<sup>st</sup> Way.

**Alternative 2 – Streamlined CDA.** This build alternative enhances Alternative 1 along with retaining most of Alternative 1 proposed improvements including the additional through lane in the eastbound and westbound direction along Gateway Boulevard between Quantum Boulevard and NE 1<sup>st</sup> Way. Most of the SR 9/I-95 northbound and southbound ramp termini turn lane improvements are retained from Alternative 1 with adjustments to the intersection turn lane improvements at High Ridge Road.

For this alternative, proposed modifications are described below and shown in **Appendix A**.

1. Dual left turn lanes from southbound High Ridge Road to eastbound Gateway Boulevard as opposed to triple left turn lanes in Alternative 1
2. A single right turn lane and shared thru/right turn lane from eastbound Gateway Boulevard to southbound SR 9/I-95
3. Triple left and dual right turn lanes in the northbound direction at the SR 9/I-95 northbound ramp terminal intersection

**Alternative 3 – Single-point Urban Interchange (SPUI).** This build alternative proposes the construction of a new SPUI at the SR 9/I-95 at Gateway Boulevard Interchange. A SPUI configuration combines turning movements at the

SR 9/I-95 northbound and southbound exit ramps to operate under a single traffic control device, resulting in a high capacity interchange. The following improvements are proposed for this alternative and are shown in **Appendix A**.

1. Convert existing dual ramp terminal signalized intersections into a single signalized intersection to serve both southbound and northbound ramp terminals. This Alternative will include:
  - All improvements considered along Gateway Boulevard and SR 9/I-95 northbound and southbound ramps considered under Alternative 2 as described above

### 3.6 Recommended Alternatives

Following the July 28, 2016 alternatives public workshop, a meeting was held with FDOT to discuss the comprehensive resources evaluation, transportation and traffic studies, costs, and involvement of the public, local and state officials, and select a recommended alternative for each interchange. The recommended preferred alternative for the project areas was chosen by FDOT on January 26, 2017. Alternative 2, the Streamlined Concept Development Alternative, was chosen for the SR 804/Boynton Beach Boulevard Interchange and Alternative 3, Single Point Urban Interchange, was chosen for the Gateway Boulevard Interchange. The typical section package for the recommended alternatives is included in **Appendix B**. These two options require the least amount of ROW acquisitions in comparison to other alternatives proposed, except for the No-Build Alternative.

## 4. Existing Site Information

### 4.1 Topographic & Hydrologic Features

The project and surrounding area existing topography is generally level with elevations varying from 16 to approximately 21 feet (**Figure 2**). Surface water flows from a west to east and drainage is conveyed to either the C-16 Canal or Intracoastal Waterway. Historical rainfall data was obtained for Palm Beach County from the South Florida Water Management District (SFWMD). According to this information, average annual precipitation throughout the county varies from under 50 inches along the western border to 60 inches along the eastern seaboard.

**Table 3** presents the average monthly rainfall based on 30 years of data for the Palm Beach Basin (SFWMD). **Table 4** presents the average rainfall in inches for the 3-Year, 10-Year, and 25-Year 24-hour storm events and the 25-Year, 72-hour storm event (SFWMD). **Table 4** presents the average monthly rainfall based on 30 years of data for the Palm Beach Basin (SFWMD). **Figure 3** shows 3-Day Rainfall: 25-Year Return Period for Florida and **Figure 4** presents the Rainfall Intensity-Duration-Frequency Curves.

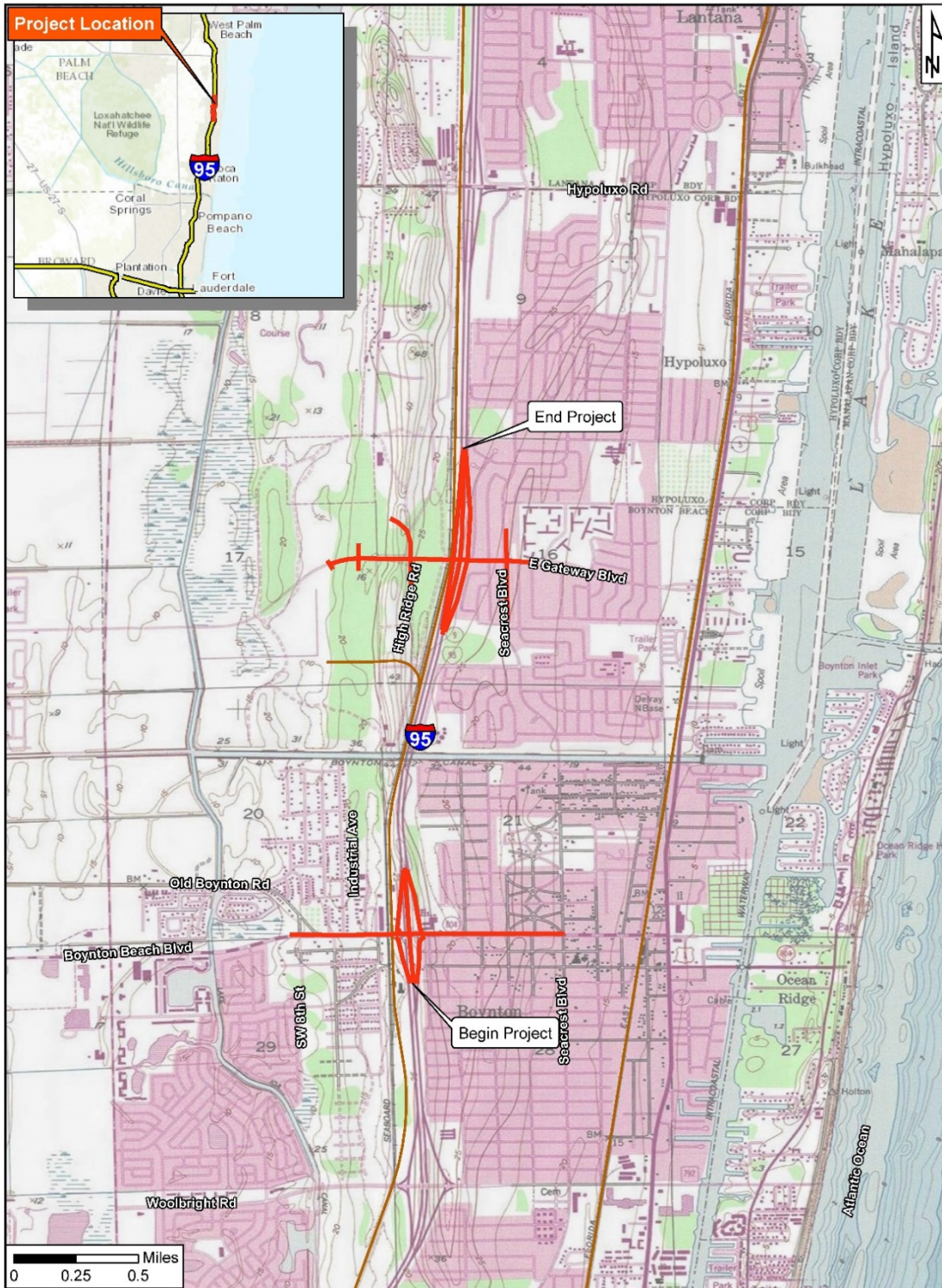
**Table 3. Palm Beach Basin Average Rainfall  
(30 Year Average: 1986 – 2015)**

Month	Jan	Feb	Mar	Apr	May	June
Average (Inches)	2.94"	2.64"	3.56"	3.16"	4.47"	8.08"
Month	July	Aug	Sept	Oct	Nov	Dec
Average (Inches)	6.63"	8.29"	8.07"	5.39"	3.50"	2.79"

**Table 4. Average Rainfall**

Rainfall Event	Rainfall (inches)
3-Year, 24-hour	6.36
10-Year, 24-hour	9.00
25-Year, 24-hour	10.60
25-Year, 72-hour	14.00





		<b>PD&amp;E Study -</b> <b>SR 9/I-95 at SR 804/Boynton Beach Blvd interchange</b> <b>SR 9/I-95 at Gateway Blvd interchange</b>	<b>USGS QUAD MAP</b>
PROJECT MANAGER: ERIK VAN ZANDEN	CHECKED BY: HOA NGUYEN	Palm Beach County, FL	<b>Legend</b> Study Area Railroads
DRAWING BY: ARCADIS	DATE: 03.17.2017	FPID: 435804-1-22-01 231932-1-22-01	
PROJECT NUMBER: WF900273	FIGURE NUMBER: 2		

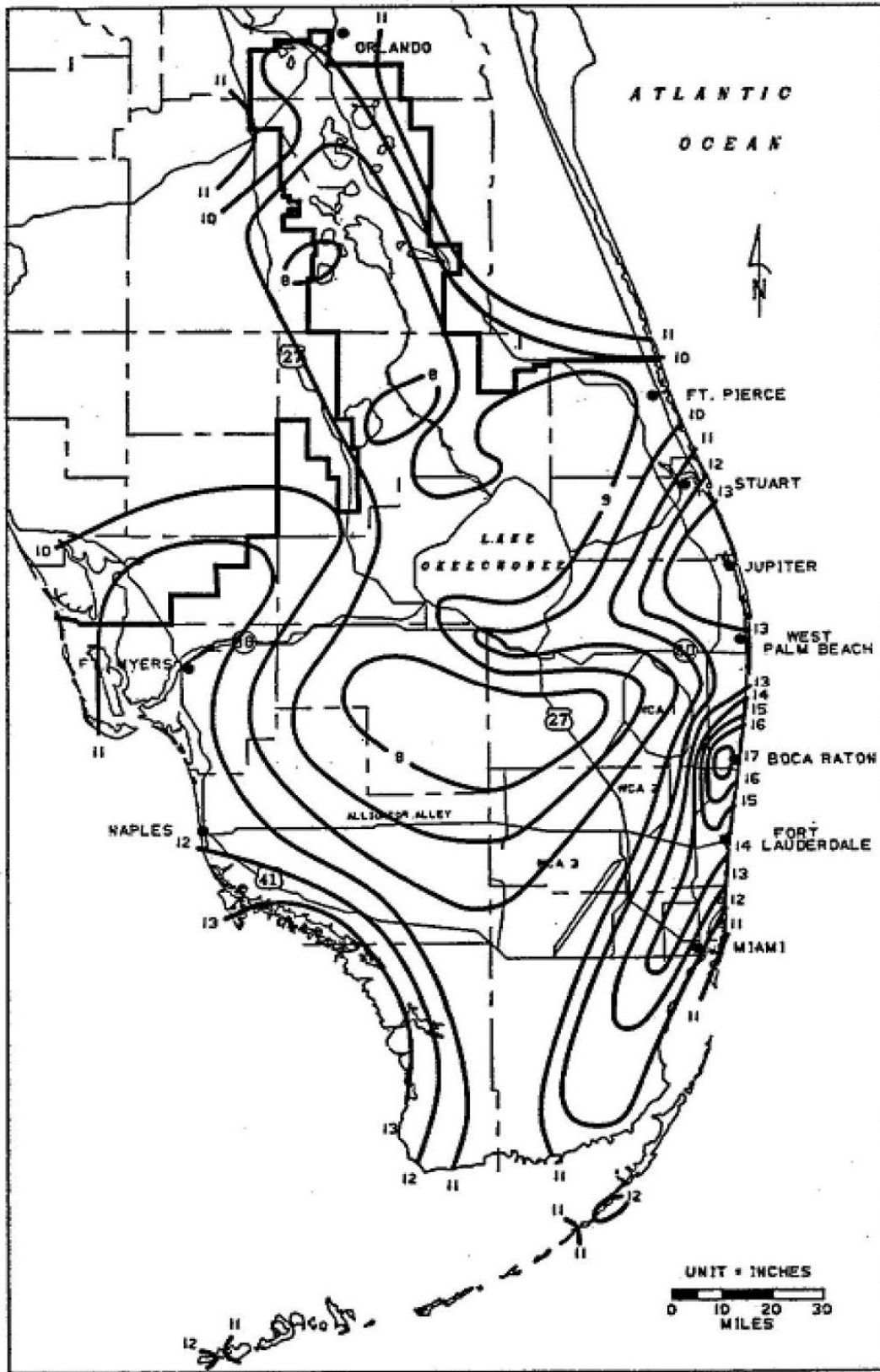
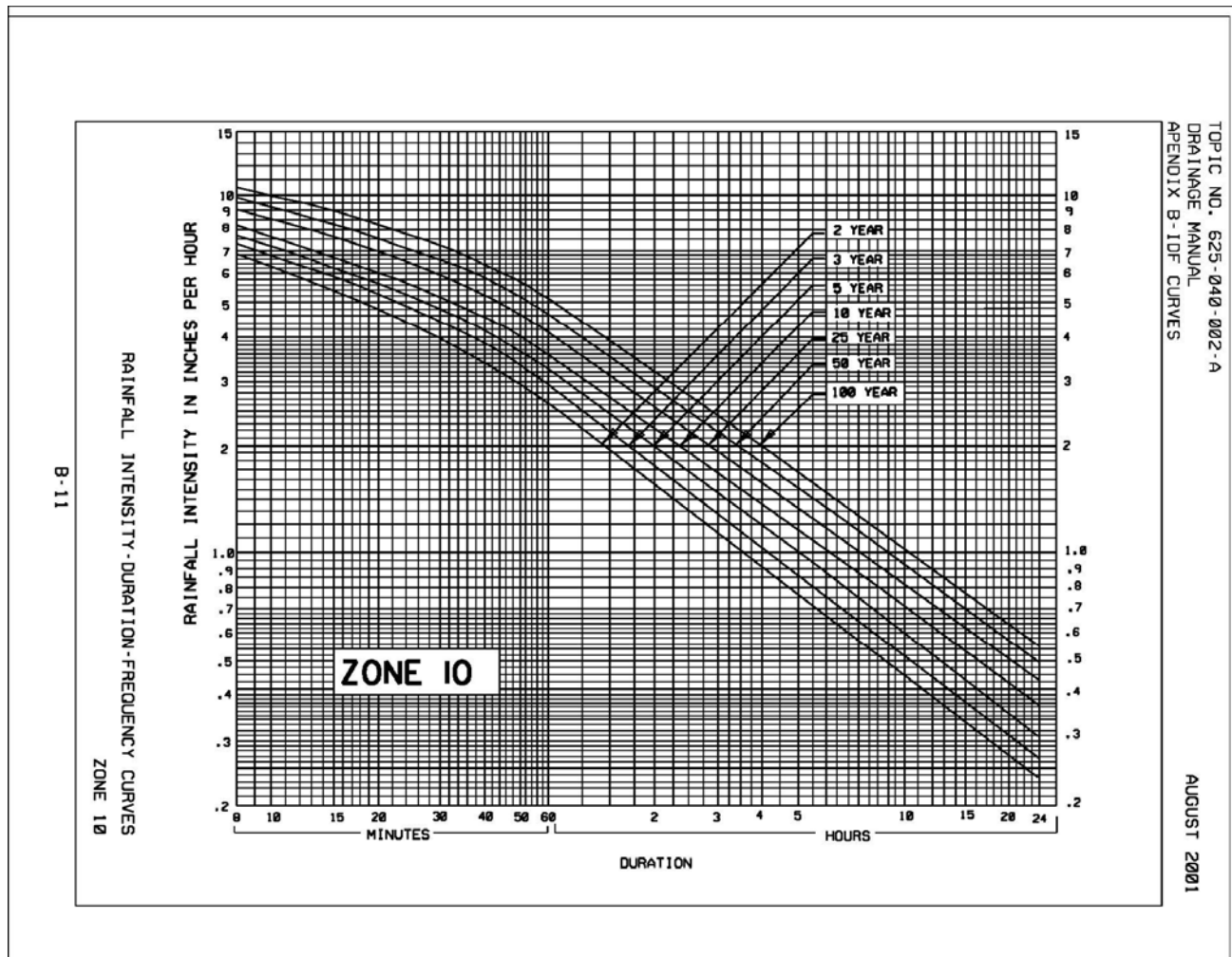


Figure 3. 3-Day Rainfall: 25-Year Return Period





**Figure 4. Drainage Manual Rainfall Intensity-Duration-Frequency Curves**

**4.2 Floodplains/Floodways**

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map Numbers 1201960004C and 1201960003C show the existing SR 9/I-95 at SR 804/Boynton Beach Boulevard and SR 9/I-95 at Gateway Boulevard interchanges passing through Zone X and X500. Zone X encompasses areas of minimal flooding, but there is no floodplain encroachment.

The floodplain boundaries and associated information are shown on the FEMA flood map provided in **Figure 5**.

**4.3 Soils Data and Geotechnical**

**4.3.1 Soil Survey**

An inventory of the existing soils near the SR 9/I-95 at SR 804/Boynton Beach Boulevard and SR 9/I-95 at Gateway Boulevard interchanges was obtained from the U.S. Department of Agriculture (USDA), National Resources Conservation Survey (NRCS) Soil Survey of Palm Beach County Area, Florida (1978). The primary soil types within the project area include St. Lucie-Paola-Urban land (No. 41), Basinger fine sand (No. 6), Immokalee fine sand (No. 18) and Pomello fine sand (No. 33) and are shown on **Figure 6**.



Additional soil information and a preliminary geotechnical engineering review is included a Geotechnical Technical Memorandum (2015, Tierra South Florida) included in **Appendix C**.

#### 4.3.2 Hydrogeology

The hydrologic soil groups were determined from NRCS water feature database for each of the primary soil types. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long- duration storms. The four hydrologic soil groups are:

**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 hardpan 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.

#### 4.4 Utilities

**Table 5** lists the utility companies that have facilities located within the project area.

**Table 5. Summary of Utilities**

UTILITY DESCRIPTION	
Interchange Location	
SR 9/I-95 at SR 804/Boynton Beach Boulevard	SR 9/I-95 at Gateway Boulevard
American Traffic Solutions	American Traffic Solutions
MCI	MCI
FLA Public Utilities	FLA Public Utilities
FPL Fibernet, LLC	FPL Fibernet, LLC
Florida Power & Light	Florida Power & Light
AT&T	AT&T
Comcast Boca Delray	Comcast Boca Delray

UTILITY DESCRIPTION	
Interchange Location	
SR 9/I-95 at SR 804/Boynton Beach Boulevard	SR 9/I-95 at Gateway Boulevard
Hotwire Communications	Hotwire Communications
City of Boynton Beach	City of Boynton Beach
Palm Beach County Traffic Operations	Palm Beach County Traffic Operations
Florida Department of Transportation	Florida Department of Transportation
	Quantum Park Property Owner’s Association

#### 4.5 Environmental Characteristics

##### 4.5.1 Land Use

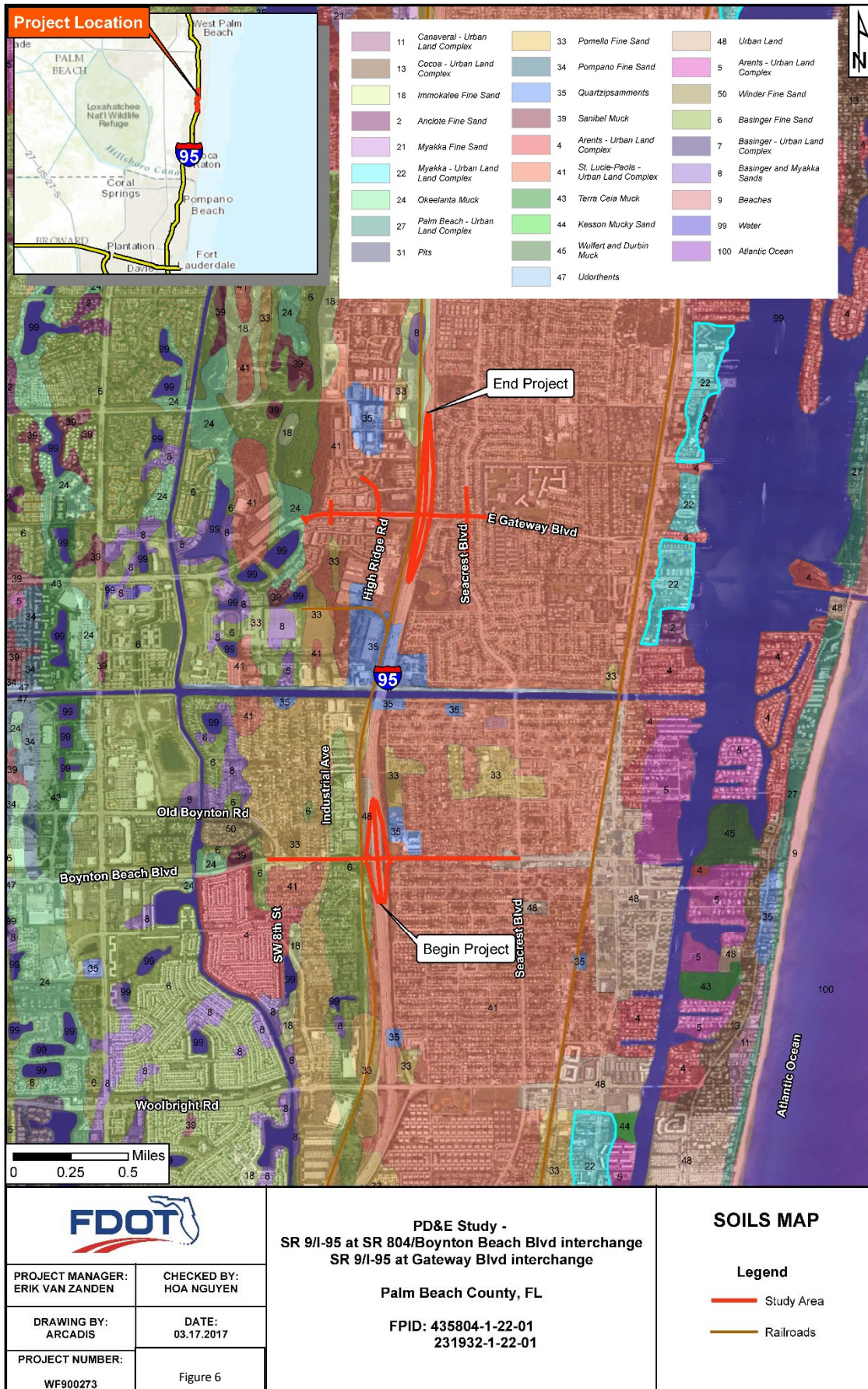
The SR-9/I-95 at SR 804/Boynton Beach Boulevard interchange is located within the City of Boynton Beach. The project area is partially located within the City’s Community Redevelopment Area and is comprised primarily of transportation land use. The interchange and surrounding area is urbanized consisting of a mix of single and multifamily residential, commercial, office, light industrial, and public school land uses. According to the Future Land Use Map (**Figure 7**), the project area remains urbanized with a mix of low and high density residential and local commercial uses.

The SR-9/I-95 at Gateway Boulevard interchange is located within the City of Boynton Beach. The project area is partially located within the City’s Community Redevelopment Area and the Quantum DRI. The project area is comprised primarily of transportation land use. The interchange and surrounding area is urbanized consisting of a mix of single and multifamily residential, commercial, light industrial, and transit land uses. According to the Future Land Use Map (**Figure 7**), the project area remains urbanized with a mix of low and high density residential and local commercial uses.

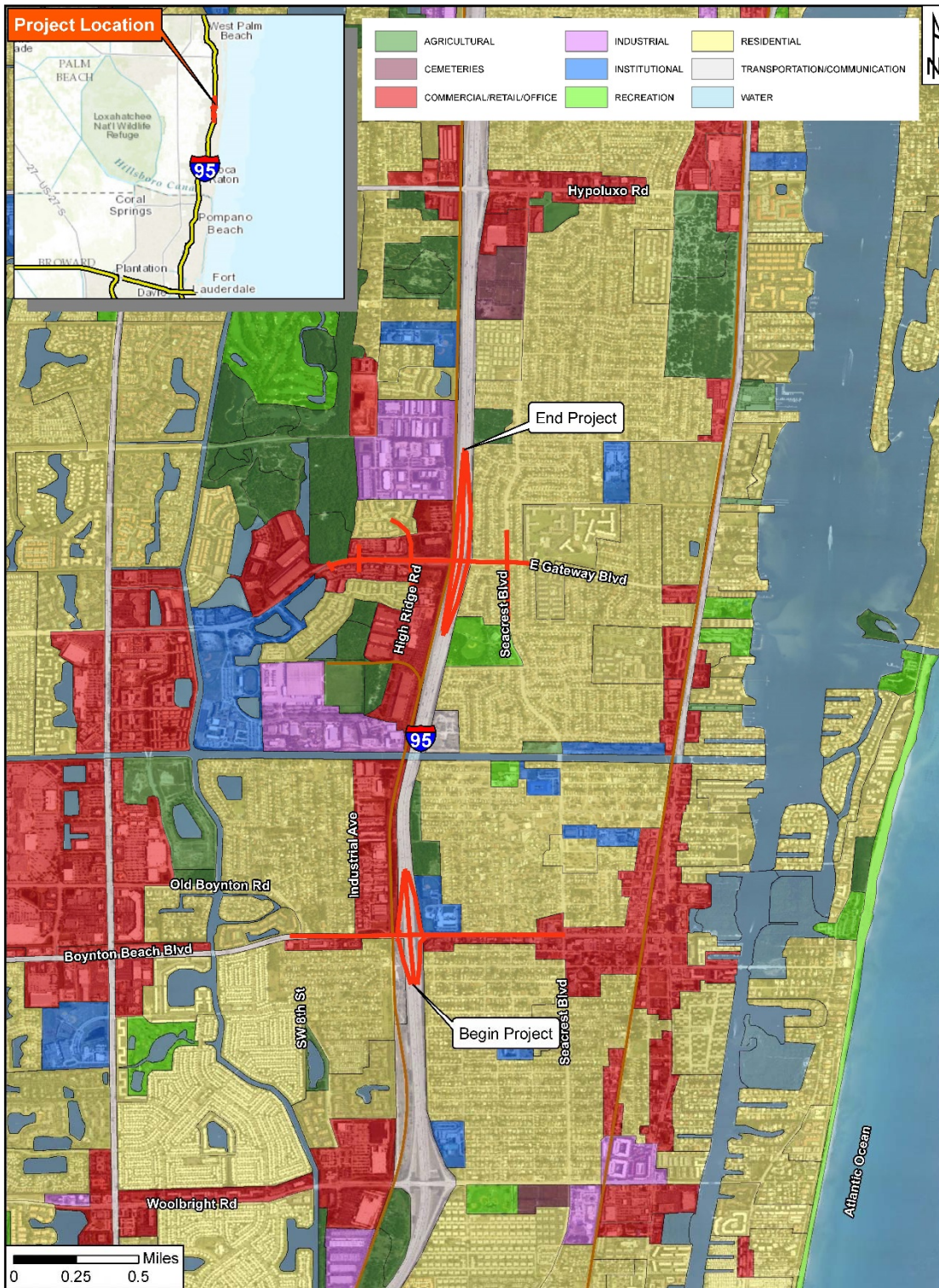
The proposed improvements associated with the Recommended Alternative will require a minimal amount of additional ROW and are not anticipated to significantly affect the land use in the area. The character of the study area remains unchanged and will continue to support the existing and future land uses within the project and surrounding area maintaining the goals of the City of Boynton Beach Future Land Use Map, the Community Redevelopment Area and Quantum DRI goals.











		<b>PD&amp;E Study -</b> SR 9/I-95 at SR 804/Boynton Beach Blvd interchange SR 9/I-95 at Gateway Blvd interchange		<b>LAND USE MAP</b>  <b>Legend</b>  — Study Area — Railroads
PROJECT MANAGER: ERIK VAN ZANDEN	CHECKED BY: HOA NGUYEN	Palm Beach County, FL		
DRAWING BY: ARCADIS	DATE: 03.17.2017	FPID: 435804-1-22-01 231932-1-22-01		
PROJECT NUMBER: WF900273	Figure 7			

Due to additional ROW required for roadway improvements and pond sites, business properties and occupied residential properties will be impacted. Roadway alignments and pond sites were designed to minimize these impacts.

#### 4.5.2 Cultural Resources

A Phase I Cultural Resource Assessment Survey (CRAS) was conducted in support of the proposed improvements at SR 804/Boynton Beach Boulevard and Gateway Boulevard (2017, SEARCH). The purpose of the survey was to locate, identify, and bound any historic structures and potential districts within the project's Area of Potential Effect (APE) and assess their potential for listing in the National Register of Historic Places (NRHP). The State Historic Preservation Office (SHPO) reviewed the CRAS and provided concurrence with the findings of the CRAS (February 2017) and specifically, the eligibility of the SALR and the Robert E. & Margaret Stogdill House, on March 31, 2017. The SHPO also stated the following: *SHPO/DHR wishes to postpone an effect finding until a case study can be completed. SHPO/DHR concurs with the eligibility determinations in this letter & document.* A request for concurrence with the finding of no adverse effect was submitted to the SHPO July 14, 2017. The CRAS is on file with the FDOT District Four PLEM office.

A Section 4(f) Determination of Applicability (DOA) for the project area was completed and is on file with the FDOT District Four PLEM office. Seven resources have been identified in proximity to the SR 804/Boynton Beach Boulevard and Gateway Boulevard Interchange project areas. The FDOT concluded that Section 4(f) would not apply to the resources identified.

#### 4.5.3 Natural Resources

The project areas were evaluated for the presence of wetlands and other surface waters. Study methodology included reviews of the Environmental Technical Advisory Team (ETAT) comments, literature reviews, agency database searches, agency coordination, GIS analyses, and field reviews. The GIS analysis utilized the 500-foot buffer of the proposed interchange improvements for review of natural resources. Field reviews were conducted in August 2015, April 2016, and January 2017. Potential impacts associated with each of the alternatives were evaluated and quantified. Wetlands and other surface waters that are impacted are named and mapped. Standard federal and state definitions were utilized for the identification of wetlands in the project areas per FDOT and FHWA guidance. Characteristics of hydric soils, hydrophytic vegetation, and wetland hydrology are pertinent factors in these definitions.

No natural wetland habitat exists within 500 feet of the Gateway Boulevard Interchange or Boynton Beach Boulevard Interchange project areas. The Efficient Transportation Decision Making (ETDM) tool, the 2014 National Wetland Inventory, and three field reviews, conducted in August 2015, April 2016, and January 2017, confirmed these findings and are discussed further in the Wetland Evaluation Report (WER). The WER is on file with the FDOT District Four PLEM office.

The project area was reviewed to identify, map, and assess the presence of critical habitat; the presence of protected species habitat; the level of impact, if any, to critical habitat and/or protected species by the project; and whether any protected species present would be adversely impacted by the proposed project. There are no U.S. Fish and Wildlife Service designated critical habitats or National Marine Fisheries (NMFS) Essential Fish Habitat (EFH) within the project areas. An Endangered Species Biological Assessment (ESBA) was prepared in compliance with Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.), 50 CFR Part 202, and in accordance with Part 2, Chapter 27 of the PD&E Manual (dated August 26, 2016). The ESBA is on file with the FDOT District Four PLEM office.



#### 4.5.4 Contamination

A Contamination Screening Evaluation Report (CSER) was prepared in accordance with Part 2, Chapter 22 of the FDOT Project Development & Environment Manual (2016). The objectives of this contamination screening evaluation (Level I Assessment) are to identify and evaluate potential contamination sources that can impact proposed project. The pond sites were evaluated based on the data reported in the CSER and the results are included in the pond siting evaluation matrix (Section 6.2). The CSER is on file with the FDOT District Four PLEM office.

#### 4.6 Existing Drainage Basins

Generally, stormwater runoff from SR 804/Boynton Beach Boulevard and Gateway Boulevard flows from the crown of the roadway north or south to curb and gutter. Stormwater then discharges to a closed system via storm pipe ultimately routing to their respective outfall locations described in **Tables 6** and **7**. The receiving waters are not classified as Outstanding Florida Waters (OFW) in Rule 62-302.700 F.A.C or impaired water bodies. There are no offsite drainage areas that discharge to the project area.

**Table 6. Existing Drainage Basins – Boynton Beach Boulevard**

Basin	From Station	To Station	Length (Feet)	Outfall Location
1	421+50.00	11+50.00	1,800	Basin 1 extends from Old Boynton Road approximately 1,800 feet to the high point of the existing I-95 bridge at station 11+50.00. Runoff is currently collected via pipes on the north of westbound lane and routed to canal E-4 (Lake Ida Canal) untreated.
2	11+50.00	43+00.00	3,150	Basin 2 extends from the high point of the existing I-95 bridge at station 11+50.00 approximately 3,150 feet to Seacrest Boulevard at station 43+00.00. Runoff is currently collected via pipes on the south side of the eastbound lane and routed to the Intracoastal Waterway untreated.
3 (I-95 Ramps)	776+50.00	811+20.00	3,470	<ul style="list-style-type: none"> <li>I-95 Southbound On-ramp: Runoff on this ramp is currently treated in roadside swales and outfalls to the west of I-95 via a 48" diameter pipe at station 772+70.00 Left and ultimately discharges to canal E-4 (Lake Ida Canal).</li> <li>I-95 Southbound Off-ramp: Runoff on this ramp is currently treated in roadside swales and ultimately outfalls to canal C-16.</li> <li>I-95 Northbound On-ramp: Runoff on this ramp is currently treated in roadside swales and ultimately outfalls to canal C-16.</li> <li>I-95 Northbound Off-ramp: Runoff on this ramp is currently treated in French drains. Discharge from the French drains is collected via a 30" diameter pipe located at sta. 773+70.00 and outfalls to the west via a 48" diameter pipe at sta. 772+70.00 Lt and ultimately discharges to canal E-4 (Lake Ida Canal).</li> </ul>

**Table 7. Existing Drainage Basins – Gateway Boulevard**

Basin	Begin Station	End Station	Length (Feet)	Outfall Location
4	90+00.00	114+00.00	2,400	Basin 4 extends from approximately 2,400 feet west of High Ridge Road to the high point of the existing I-95 bridge located at station 114+00.00. Runoff is currently collected via pipes located on the south side of the westbound lane and routed to ponds at Quantum Boulevard.



Basin	Begin Station	End Station	Length (Feet)	Outfall Location
5	114+00.00	135+50.00	2,150	Basin 5 extends from the high point of the existing I-95 bridge at station 114+00.00 to approximately 2,150 east of the bridge to NE 1st Court at station 135+50.00. Runoff is currently collected via pipes on the south side of the eastbound lanes and routed to Intracoastal waterway untreated.
6 (I-95 Ramps)	857+50.00	866+20.00	1,700	<ul style="list-style-type: none"> <li>• I-95 Southbound On-ramp: Runoff on this ramp is currently collected via pipes and ultimately outfalls to canal C-16 to the south untreated.</li> <li>• I-95 Southbound Off-ramp: Runoff on this ramp is currently collected via pipes and ultimately outfalls to canal C-16 to the south untreated.</li> <li>• I-95 Northbound On-ramp: Runoff on this ramp is currently collected via pipes and ultimately outfalls to canal C-16 to the south untreated.</li> <li>• I-95 Northbound Off-ramp: Runoff on this ramp is currently collected via pipes and ultimately outfalls to canal C-16 to the south untreated.</li> </ul>

#### 4.7 Existing Cross Drains

Preliminary surveys and field reviews show that there are no existing cross drains in the project corridor.

### 5. Design Criteria

This project is located within the jurisdiction of the SFWMD and Lake Worth Drainage District (LWDD). However, the LWDD has determined that the I-95 interchanges are exempt from permitting. Since this is an interchange improvement project, only runoff from the increase in additional impervious areas due to the proposed widening must be treated. The total required treatment volume for the project will be obtained through the combined pond locations. The project has been divided into six drainage basins, numbered 1 through 6. Runoff from basins 1, 2, 4, and 5 will be collected and treated in new stormwater drainage ponds. Compensating treatment storage will be provided in the ponds for runoff from basins 5 and 6. Since there are no wetland impacts anticipated for this project, a USACE Dredge and Fill permit is not required.

All basins have been evaluated in this report and at least three different pond alternates for each basin have been analyzed where a pond is required. The proposed locations were selected based on the existing drainage patterns, aerial photos, topographic survey, NRCS soil maps of Palm Beach County, United States Geological Survey (USGS), tax maps, FDOT ROW maps, site contamination reports, and Federal Emergency Management Agency (FEMA) flood insurance rate maps. ROW costs, environmental impacts, and social impacts were also factored into the locations of the ponds. In addition, the proposed pond sites were evaluated by FDOT District 4 staff to review and recommend preferred alternative pond sites.

A computer-generated stormwater model was compiled for each proposed pond location. The proposed wet and dry detention ponds were modeled using Interconnected Channel and Pond Routing (ICPR, v3.10) software for the 25-year, 72-hour storm event. This program models the runoff, storage, staging, and discharge for each drainage basin and pond alternative. Each pond alternate was sized to provide adequate treatment and attenuation for its drainage basin and meets the requirements of the FDOT, SFWMD and LWDD. This program also models stormwater infiltration dynamically for dry detention ponds in lieu of simple calculations based on soil permeability.

### 5.1 Seasonal High Water Determination

The Seasonal High Water Table (SHWT) is the highest average depth of soil saturation during the wet season in a normal year. The SHWT is used to design wet and dry detention and retention areas, predict soil storage and set project control elevations. Therefore, any assumptions made regarding the SHWT are critical to the stormwater management design.

The SHWT for the various drainage basins and pond sites was determined based on information provided in the NRCS soil survey maps. The soil survey maps were reviewed to determine the depth to water table since soil borings were not available. For basin 17, data on the existing depth to water table was obtained from the SFWMD for a permitted facility (Stor-All located on the north side of Boynton Beach Boulevard, **Appendix D**). The SHWT is determined based on preliminary data collection, reasonable engineering judgement, and assumptions and is presented in **Tables 8** and **9**. Final design may change as more detailed information becomes available.

**Table 8. Seasonal High Water Table Determination Data – Boynton Beach Boulevard**

Pond Alt #	Pond Type	Soil Number	Soil Name	Soil Group	Depth to Water Table (inches)	Existing Ground Elevation (Feet)	Estimated Seasonal High Water Table Elevation (Feet, NAVD88)
9	DRY	41	St Lucie-Paola	A	>80"	17.00	10.50
17 *	WET/DRY	6	Basinger Sand	A/D	>80"	17.00	10.00 *

\* Normal Water Elevation (NWL) is based on the following permitted project: Stor-All, Permit Number 50-04389-P

**Table 9. Seasonal High Water Table Determination Data – Gateway Boulevard**

Pond Alternative Number	Pond Type	Soil Number	Soil Name	Soil Group	Depth to Water Table (inches)	Existing Ground Elevation (Feet)	Estimated Seasonal High Water Table Elevation (Feet, NAVD88)
4	DRY	41	St Lucie-Paola	A	>80"	19.00	12.00
8	DRY	41	St Lucie-Paola	A	>80"	22.00	14.50

### 5.2 Water Quality

The SFWMD & LWDD regulate stormwater discharge and will require an individual Environmental Resource Permit (ERP) for this project. The SFWMD has also been delegated the authority to regulate impacts to isolated wetlands and wetlands connected to waters of the State. LWDD has determined that the project improvements will be exempt from permitting.

The SFWMD requires that all projects meet State water quality standards, as set forth in Chapter 62-40, Florida Administrative Code (FAC) and the Basis of Review for Environmental Resource Permit Applications within the SFWMD. To meet SFWMD water quality criteria:

- Wet detention volume shall be provided for the first inch of runoff from the developed project, or the total runoff of 2.5-inches times the percentage of imperviousness, whichever is greater.
- Dry detention volumes shall be provided equal to 75% of the above amounts computed for wet detention.
- Dry retention volumes shall be provided equal to 50% of the above amounts computed for wet detention.

### 5.3 Water Quantity

- For Canal C-16, SFWMD requires that the allowable maximum discharge rate is 62.6 CSM (cfs per square mile). However, the pre-post approach is acceptable for this project. Post-development discharge must be less than pre-development discharge for 25 year-72hr design frequency.

### 5.4 Recovery Time

For dry detention, the system must provide the capacity for the appropriate treatment volume of stormwater within 72-hours following a storm event assuming average antecedent moisture conditions.

## 6. Drainage System

### 6.1 Methodology of Pond Site Determination

The pond siting process for the proposed project followed the guidelines and procedures outlined in the District Four Pond Siting Procedures (2010) manual. In addition, design criteria and data used to develop and evaluate potential stormwater management facilities include:

- FDOT Drainage Manual
- FDOT Drainage Design Guide Handbook
- FDOT District IV Pond Siting Procedures
- NRCS Soil Survey of Palm Beach County, Florida
- Field Reviews

To meet the drainage requirements for the project, proposed off-site ponds will include a minimum 20-foot wide perimeter berm for maintenance activities. To allow for grading irregularities, 1 foot of freeboard above the maximum stage will be maintained in the design. Maximum side slope criteria are 4:1 or 6:1 within a littoral shelf area (if provided).

### 6.2 Stormwater Pond Site Evaluation

The proposed drainage basin divides will generally follow the existing drainage basin divides and the proposed drainage system will mimic the existing drainage pattern. The stormwater runoff flows will be captured in the proposed curb and gutter inlets which will convey the captured stormwater runoff into wet or dry retention or detention ponds. Since the proposed roadway improvements mainly consist of widening existing pavements, the existing profile grade will be generally maintained.

The evaluation of potential pond site locations was completed following the District Four Pond Siting Procedures. This included identification of pond site locations and screening through an evaluation matrix of 18 criteria. The potential pond sites for SR 9/I-95 at Boynton Beach Boulevard are presented in **Table 10** and the results of the pond siting screening process are presented in **Tables 11** and **12**. The location of the alternative pond sites are shown in **Figures 8 - 10**. The potential pond sites for SR 9/I-95 at Gateway Boulevard are presented in **Table 13** and the results of the pond siting screening process are presented in **Table 14**. The location of the alternative pond sites is shown in **Figure 11**. All the ICPR Input and Output reports and Drainage Maps (pre-post) are attached in **Appendix E, Parts A and B**.

**Table 10. Potential Pond Site Locations – Boynton Beach Boulevard**

Basin	From Station	To Station	Length (Feet)	Alternatives
1	424+00.00	11+50.00	1,800	<p>Basin 1 extends from Old Boynton Road approximately 1,800 feet to the high point of the existing I-95 bridge at station 11+50.00. The additional impervious area that will be treated in the proposed alternatives is computed to be 0.93 acres.</p> <p>Three alternatives have been evaluated for Basin 1. All alternatives provide sufficient required treatment volumes, discharge rates (pre- vs post) and 1 foot of free board above the maximum stage as required.</p> <p><u>Alternative 1</u>: This alternative will attenuate runoff from the westbound lanes from station 424+00 to station 11+50.00 into a wet detention pond located at approximate station 424+00.00. The outfall pipe from this pond will be tied into the existing drainage system running west to canal E-4 (Lake Ida Canal).</p> <p><u>Alternatives 18 (Modified Alternative 1)</u>: This alternative has the same runoff collection area as Alternative 1, however, the pond is located on two separate parcels.</p> <p><u>Alternative 17</u>: This alternative is proposed to be a shared use dry/wet detention pond with the Public Storage site located at approximate station 436+00.00. Since the pond site elevation is much lower than the roadway elevation, a separate outfall system (about 1000') is required for the outfall to tie into existing drainage system and function properly.</p>
2	11+50.00	43+00.00	3,150	<p>Basin 2 extends from the high point of the existing I-95 bridge at station 11+50.00 to approximately 3,150 feet east to Seacrest Boulevard at station 43+00.00. The additional impervious area that will be treated in the proposed alternatives is computed to be 0.53 acres.</p> <p>Three alternatives have been evaluated for Basin 2.</p> <p><u>Alternative 9</u>: This alternative will attenuate runoff from the westbound and eastbound travel lanes from station 15+50 to station 23+00 in a dry detention pond located on the south side of Boynton Beach Boulevard at approximate station 23+00.00. This alternative provides sufficient required treatment volume, discharge rates (pre- vs post) and 1 foot of free board above the maximum stage as required. The outfall pipe from this pond will be tied into the existing drainage system running east to the Intracoastal Waterway.</p> <p><u>Alternative 14</u>: This Alternative is located at approximate station 781+00.00 to the east of the I-95 northbound off-ramp. Because the ground elevation of this alternative is higher than the roadway elevation on Boynton Beach Boulevard, roadway runoff from Boynton Beach Boulevard will not be conveyed to this pond site. Only runoff from the northbound off-ramp would be conveyed to this pond site. Therefore, this alternative is not feasible to attenuate runoff from Boynton Beach Boulevard.</p> <p><u>Alternative 15</u>: This alternative is located just south of alternative 14 at approximate station 778+00.00 to the east of northbound off-ramp. Like Alternative 14, the existing ground elevation at this pond location is higher than the roadway elevation on Boynton Beach Boulevard, roadway runoff from Boynton Beach Boulevard would not be conveyed to this pond site. Runoff from the northbound off-ramp would be directed to this pond site, therefore, this alternative is not feasible to attenuate runoff from Boynton Beach Boulevard.</p>

<p>3 (I-95 Ramp s)</p>	<p>776+30.00</p>	<p>811+30</p>	<p>3,500</p>	<p>Basin 3 extends from station 776+30.00 to station 811+30.00 on Interstate I-95 which includes all four interchange ramps. The proposed drainage systems will mimic the existing drainage patterns in which the storm flows will be captured in proposed roadside swales or French drains and outfall to the same locations as explained in the existing conditions section of this report. The proposed alternatives provide sufficient discharge rate (pre- vs post) and 0.5 feet of free board above the maximum stage in the swales as required.</p> <ul style="list-style-type: none"> <li>• I-95 southbound on-ramp: The additional impervious area is computed to be 0.20 acres and will be attenuated in the proposed swale.</li> <li>• I-95 southbound off-ramp: The additional impervious area is computed to be 0.39 acres and will be attenuated in the proposed swale.</li> <li>• I-95 northbound on-ramp: The additional impervious area is computed to be 1.02 acres and will be attenuated in the proposed swale.</li> <li>• I-95 northbound off-ramp: The additional impervious area is computed to be 0.80 acres and will be treated within the proposed French drain design.</li> </ul>
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**Table 11. Pond Siting Evaluation Matrix – SR 9/I-95 at Boynton Beach Boulevard, West of I-95**

Weight of Factor	Factor	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score		
		1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	
	Alternative Number	1		2		3		4		5		6		7		8		16		17		18			
	Brief Description of Alternative	Vacant Parcel east of Old Boynton Road		Wendy's Restaurant and adjacent single family home		Chevron Gas Station and adjacent single family home		Vacant industrial parcel between I-95 and railroad, north side of Boynton Beach Blvd.		Laurel Hills Park - City of Boynton Beach		3 single family homes and American Legion lot		Stor All Luxury RV & Boat Storage		Comcast		Vacant Residential		Warehouse / Distribution facility		Two vacant parcels east of Old Boynton Road			
	Parcel Number	8434520000005010		8434520070000010 8434520070000042		8434520070000021 8434520070000032		8434521000007050		8434520080000160		8434529010010010 8434529010510060 8434529010510050 8434529010510040		8434528000003100 8434528000003040 8434528000003050 8434528000003070		84345200020020		8434520000000080		8434520000000080		8434520000005010 8434520000000080			
	Parcel Size (Acres)	3.14 (total) 1.40 (pond)		0.962		0.982		1.81		1.31		0.97		6.68 (total) 2.20 (pond)		2.41		0.8		4.66 (total) 1.20 (pond)		3.94 (total) 1.78 (pond)			
1	5	Zoning (Right of Way)	8	40	2	10	2	10	9	45	6	30	3	15	1	5	5	25	6	30	9	45	8	40	
2	5	Land Use	9	45	3	15	3	15	9	45	6	30	3	15	1	5	5	25	6	30	9	45	9	45	
3	10	Right of Way Costs	3	30	2	20	1	10	9	90	9	90	3	30	1	10	5	50	1	10	8	80	4	40	
4	10	Drainage Considerations	7	70	8	80	8	80	5	50	5	50	8	80	9	90	5	50	7	70	8	80	7	70	
5	2	Flood Zone FEMA	7	14	7	14	7	14	7	14	8	16	8	16	10	20	8	16	7	14	8	16	7	14	
6	6	Contamination and Hazardous Materials	10	60	4	24	1	6	1	6	10	60	10	60	4	24	7	42	10	60	4	24	10	60	
7	6	Utilities	10	60	10	60	10	60	4	24	5	30	10	60	4	24	6	36	8	48	10	60	9	54	
8	6	Threatened and Endangered Species and Associated Costs	5	30	9	54	9	54	6	36	7	42	6	36	8	48	6	36	5	30	10	60	5	30	
9	1	Noise	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
10	3	Wetlands and Protected Uplands and Associated Costs	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	30	10	6	10	30	10	30	
11	6	Cultural Resources Involvement and Associated Costs	10	60	10	60	10	60	3	18	10	60	1	6	10	60	10	60	10	60	4	24	10	60	
12	9	Section 4(f)	10	90	10	90	10	90	10	90	1	9	10	90	10	90	10	90	10	90	10	90	10	90	
13	1	Public Wellfield (None identified - factor was not scored)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
14	8	Construction	6	48	4	32	3	24	2	16	1	8	5	40	5	40	2	16	2	16	8	64	4	32	
15	9	Maintenance	8	72	4	36	4	36	2	18	4	36	7	63	6	54	5	45	2	18	7	63	5	45	
16	6	Aesthetics	10	60	10	60	10	60	10	60	10	60	10	60	10	60	10	60	10	60	10	60	10	60	
17	10	Public Opinion and Adjacent Residency Concerns	10	100	10	100	10	100	10	100	7	70	3	30	10	100	10	100	10	100	10	100	10	100	
18	0	Other		0		0		0		0		0		0		0		0		0		0		0	
		Comments																							
		Score	829		705		669		662		641		651		680		701		Fatal Flaw		662		861		790
		Ranking																							

Factor scores are 1-10. 1 is least desirable, 10 is most desirable.





**Table 12. Pond Siting Evaluation Matrix – SR 9/I-95 at Boynton Beach Boulevard, East of I-95**

Weight of Factor		Factor	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
1-10			1-10		1-10		1-10		1-10		1-10		1-10		1-10	
		Alternative Number	9		10		11		12		13		14		15	
		Brief Description of Alternative	Office and 4 vacant residential lots		Office, Multifamily home, buffer, and 3 single family homes		2 Office buildings and 4 Single family homes		Vacant commercial lot, office building, and stores		Inn at Boynton Beach		3 single family homes and one vacant lot		3 single family homes and roadway R.O.W.	
		Parcel Number	8434528270000051 8434528110000071 8434528110000072 8434528110000081 8434528270000052		8434528110000110 8434528110000121 8434528100010062 8434528100010071 8434528100010031 8434528100010010 8434528110000100		88434528100020012 08434528100020050 08434528100020011 08434528100020190 08434528100020210 08434528100020230		8434520050000830 8434521150000871 8434521160001270		8434528150710010		8434528150720050 8434528150720011 8434528150720301 8434528150720012		8434528140630120 8434528140630150 8434528140630190	
		Parcel Size (Acres)	1.27		1.25		1.066		1.174		2.216		1.048		1.04	
1	5	Zoning (Right of Way)	7	35	4	20	4	20	3	15	2	10	6	30	6	30
2	5	Land Use	7	35	4	20	4	20	3	15	2	10	6	30	6	30
3	10	Right of Way Costs	7	70	3	30	2	20	2	20	1	10	6	60	7	70
4	10	Drainage Considerations	8	80	8	80	8	80	8	80	8	80	7	70	7	70
5	2	Flood Zone FEMA	8	16	8	16	10	20	8	16	8	16	10	20	10	20
6	6	Contamination and Hazardous Materials	7	42	7	42	7	42	1	6	10	60	10	60	10	60
7	6	Utilities	10	60	10	60	10	60	10	60	10	60	10	60	10	60
8	6	Threatened and Endangered Species and Associated Costs	8	48	9	54	9	54	8	48	8	48	8	48	9	54
9	1	Noise	10	10	10	10	10	10	10	10	10	10	10	10	10	10
10	3	Wetlands and Protected Uplands and Associated Costs	10	30	10	30	10	30	10	30	10	30	10	30	10	30
11	6	Cultural Resources Involvement and Associated Costs	10	60	10	60	10	60	10	60	10	60	10	60	10	60
12	9	Section 4(f)	10	90	10	90	10	90	10	90	20	180	10	90	10	90
13	1	Public Wellfield (None identified - factor was not scored)	10	10	10	10	10	10	10	10	10	10	10	10	10	10
14	8	Construction	7	56	7	56	6	48	9	72	3	24	5	40	5	40
15	9	Maintenence	6	54	7	63	7	63	8	72	5	45		0	9	81
16	6	Aesthetics	10	60	10	60	10	60	10	60	10	60	10	60	10	60
17	10	Public Opinion and Adjacent Residency Concerns	10	100	3	30	3	30	10	100	10	100	3	30	3	30
18	0	Other		0		0		0		0		0		0		0
		Comments														
		Score	856		731		717		764		813		708		805	
		Ranking														
Factor scores are 1-10. 1 is least desirable, 10 is most desirable.																



Figure 8. Preliminary Alternative Pond Sites – Boynton Beach Boulevard



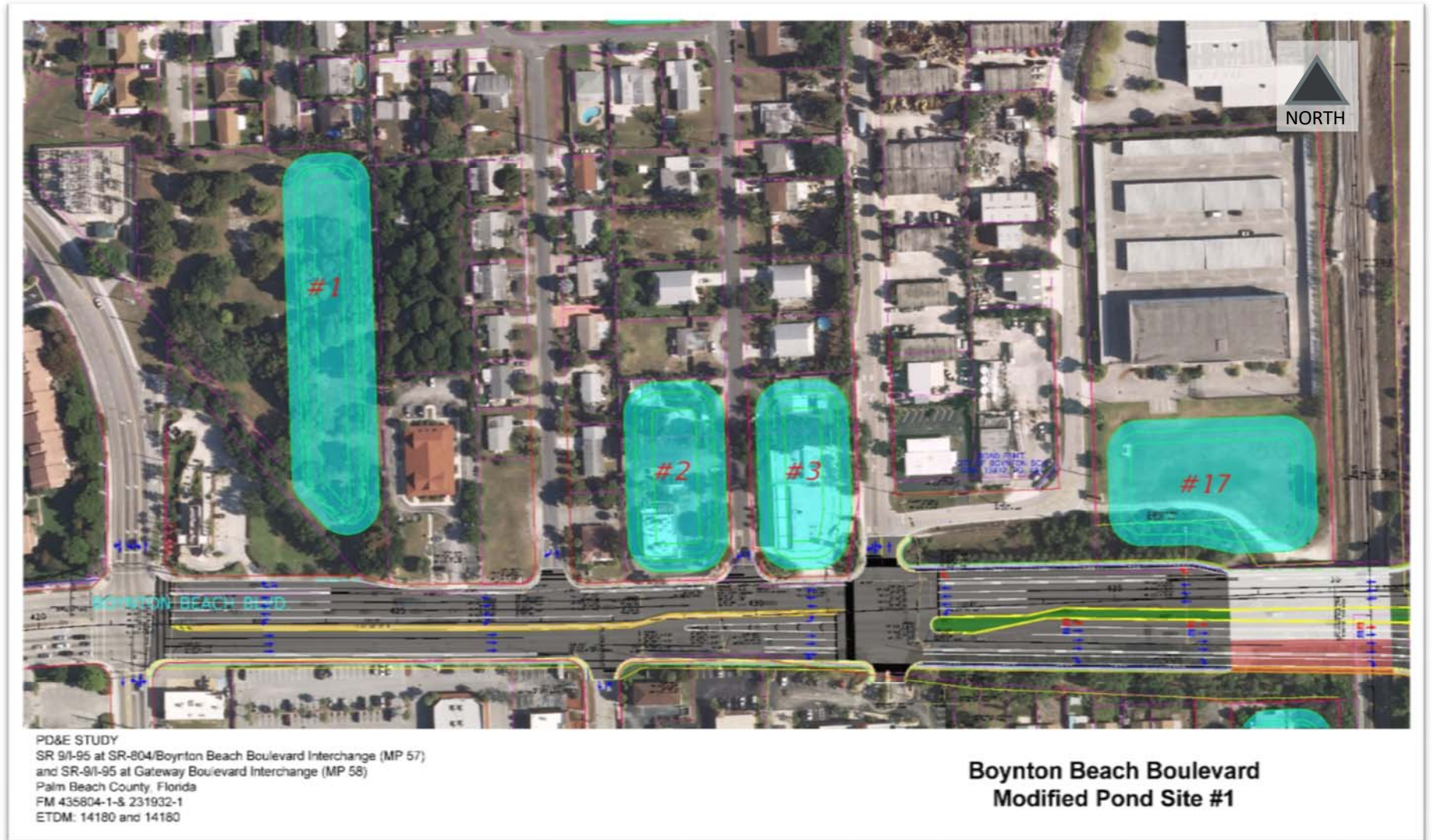


Figure 9. Modified Pond Site #1 Boynton Beach Boulevard





Figure 10. Modified Pond Site #18 – Boynton Beach Boulevard



**Table 13. Potential Pond Site Locations – Gateway Boulevard**

Basin	From Station	To Station	Length (Feet)	Alternatives
4	90+00.00	114+00.00	2,400	<p>Basin 4 extends from west of High Ridge Road approximately 2,400 feet to the high point of the existing I-95 bridge at station 114+00.00. The additional impervious area that will be treated in the proposed alternatives is computed to be 1.32 acres.</p> <p>Three alternatives have been evaluated for Basin 4. All alternatives provide sufficient required treatment volumes, discharge rates (pre vs post) and 1 foot of free board above the maximum stage as required.</p> <p><u>Alternative 1:</u> This alternative will attenuate runoff from the westbound travel lanes from station 93+00 to station 113+80.00 in a wet detention pond located on the north side of Gateway Boulevard at approximate station 88+00.00. The outfall pipe from this pond will be tied into the existing drainage system running west to the existing drainage ponds located at Quantum Boulevard.</p> <p><u>Alternative 3:</u> This alternative will attenuate runoff from the westbound and eastbound travel lanes from station 104+50.00 to station 114+00.00 in a dry detention pond located on the south side of Gateway Boulevard at approximate station 110+00.00. The outfall pipe from this pond will be tied into the existing drainage system running west to existing ponds located at Quantum Boulevard.</p> <p><u>Alternative 8:</u> This alternative will attenuate runoff from the westbound and eastbound travel lanes from station 104+50.00 to station 114+00.00 in a dry detention pond located on the north side of Gateway Boulevard (700 feet LT) at approximate station 108+00.00. The outfall from this pond will flow over a berm weir into an existing ditch and ultimately reach canal E-4 (Lake Ida Canal). Since the pond is located 700' from roadway, a separated pipe system is needed to convey runoff from the road to this pond.</p>
5	114+00.00	135+50.00	2,150	<p>Basin 5 extends from the high point of the existing I-95 bridge at station 114+00.00 approximately 2,150 feet to the NE 1st Court at station 135+50.00. The additional impervious area that will be treated in the proposed alternatives is computed to be 1.32 acres.</p> <p>Three alternatives have been evaluated for Basin 5. All alternatives provide sufficient required treatment volumes, discharge rates (pre vs post) and 1 foot of free board above the maximum stage as required.</p> <p><u>Alternative 4:</u> This alternative will attenuate runoff from the westbound and eastbound travel lanes from station 116+60 to station 124+00.00 in a dry detention pond located on the south side of Gateway Boulevard at approximate station 118+00.00. The outfall pipe from this pond will be tied into the existing drainage system running south on I-95 to canal C-16.</p> <p><u>Alternative 5:</u> This alternative will attenuate Northbound Off-Ramp runoff and a portion of Gateway Boulevard westbound and eastbound roadway runoff from station 116+60.00 to station 119+00.00 in a dry detention pond located at approximate station 853+00.00 on I-95 on the east side of the Northbound Off-Ramp. The outfall pipe from this pond will be tied into the existing drainage system running south on I-95 to canal C-16. In addition, this alternative will require a very deep structure system to convey the Gateway Boulevard roadway runoff to the pond.</p> <p><u>Alternative 6:</u> This alternative will attenuate Gateway Boulevard eastbound roadway runoff from station 122+00.00 to station 130+00.00 in a dry detention pond located at approximate station</p>

Basin	From Station	To Station	Length (Feet)	Alternatives
				123+50.00 on south side of the Gateway Boulevard. The outfall pipe from this pond will be tied into the existing drainage system running west of Gateway Boulevard and south on I-95 to canal C-16.
6 (I-95 Ramps)	857+50.00	866+20.00	1,700	<p>Basin 6 extends from station 857+50.00 to station 866+20.00 on Interstate I-95 which include all four ramps at the interchange. The proposed drainage system will mimic the existing drainage patterns in which the storm flows will be captured in proposed French drains and outfall to the same locations as explained in existing conditions section of this report.</p> <ul style="list-style-type: none"> <li>I-95 southbound on-ramp: The additional impervious area is computed to be 0.27 acres and will be treated in the proposed French drain system.</li> <li>I-95 southbound off-ramp: The additional impervious area is computed to be 0.32 acres and will be treated in the proposed French drain system.</li> <li>I-95 northbound on-ramp: The additional impervious area is computed to be 0.15 acres and will be treated in the proposed French drain system.</li> <li>I-95 northbound off-ramp: the additional impervious area is computed to be 0.52 acres and will be treated in the proposed French drain system.</li> </ul>



**Table 14. Pond Siting Evaluation Matrix, Proposed Drainage Basins – SR 9/I-95 at Gateway Boulevard, West and East of I-95**

Weight of Factor	Factor	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	
		1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10
	Alternative Number	1		2		3		4		5		6		7		8		
	Brief Description of Alternative	Vacant wooded land west of Quantum Village		Mobil gas station & 7-11		Vacant city owned property		Various residential properties adjacent to NB exit ramp		Ezell Hester Park		Various residential parcels on south side of Gateway Blvd between NW 1st St. and Seacrest Blvd.		Village Royale on the Green		Tri-Rail Station		
	Parcel Number	8434517000001010		843451630000653		8343516340000820		08434516010210590 thru 084345160102110700		8434516010130010		08434516010270010 08434516010270020 08434516010270360 08434516010270040 08434516010270350 08434516010270050 08434516010270340 08434516010270060		8434515070260110		8434516320000900		
	Parcel Size (Acres)	23.268 (total) 1.00 (pond)		1.155		5.46 (total) 1.20 (pond)		2.19		23.818 (total) 1.80 (pond)		1.326		5.54 (total) 1.00 (pond)		9.09 (total) 1.30 (pond)		
1	5	Zoning (Right of Way)	7	35	1	5	9	45	9	45	10	50	2	10	1	5	10	50
2	5	Land Use	1	5	1	5	9	45	9	45	10	50	2	10	1	5	10	50
3	10	Right of Way Costs	7	70	1	10	6	60	8	80	10	100	2	20	1	10	10	100
4	10	Drainage Considerations	7	70	8	80	8	80	8	80	5	50	8	80	7	70	6	60
5	2	Flood Zone FEMA	10	20	8	16	10	20	10	20	10	20	10	20	10	20	10	20
6	6	Contamination and Hazardous Materials	10	60	4	24	8	48	10	60	10	60	10	60	10	60	10	60
7	6	Utilities	9	54	10	60	10	60	10	60	10	60	10	60	5	30	6	36
8	6	Threatened and Endangered Species and Associated Costs	5	30	9	54	5	30	9	54	7	42	9	54	9	54	6	36
9	1	Noise	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
10	3	Wetlands and Protected Uplands and Associated Costs	8	24	10	30	10	30	10	30	10	30	10	30	10	30	10	30
11	6	Cultural Resources Involvement and Associated Costs	10	60	10	60	3	18	10	60	10	60	10	60	10	60	10	60
12	9	Section 4(f)	10	90	10	90	10	90	10	90	1	9	10	90	10	90	10	90
13	1	Public Wellfield (None identified - factor was not scored)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
14	8	Construction	6	48	6	48	8	64	7	56	4	32	6	48	5	40	6	48
15	9	Maintenance	5	45	6	54	8	72	10	90	3	27	5	45	5	45	7	63
16	6	Aesthetics	10	60	10	60	10	60	9	54	10	60	9	54	10	60	10	60
17	10	Public Opinion and Adjacent Residency Concerns	10	100	10	100	10	100	1	10	8	80	1	10	6	60	10	100
18	0	Other		0		0		0		0		0		0		0		0
		Comments																
		Score	791		716		842		854		750		671		659		883	
		Ranking																
		Factor scores are 1-10. 1 is least desirable, 10 is most desirable.																

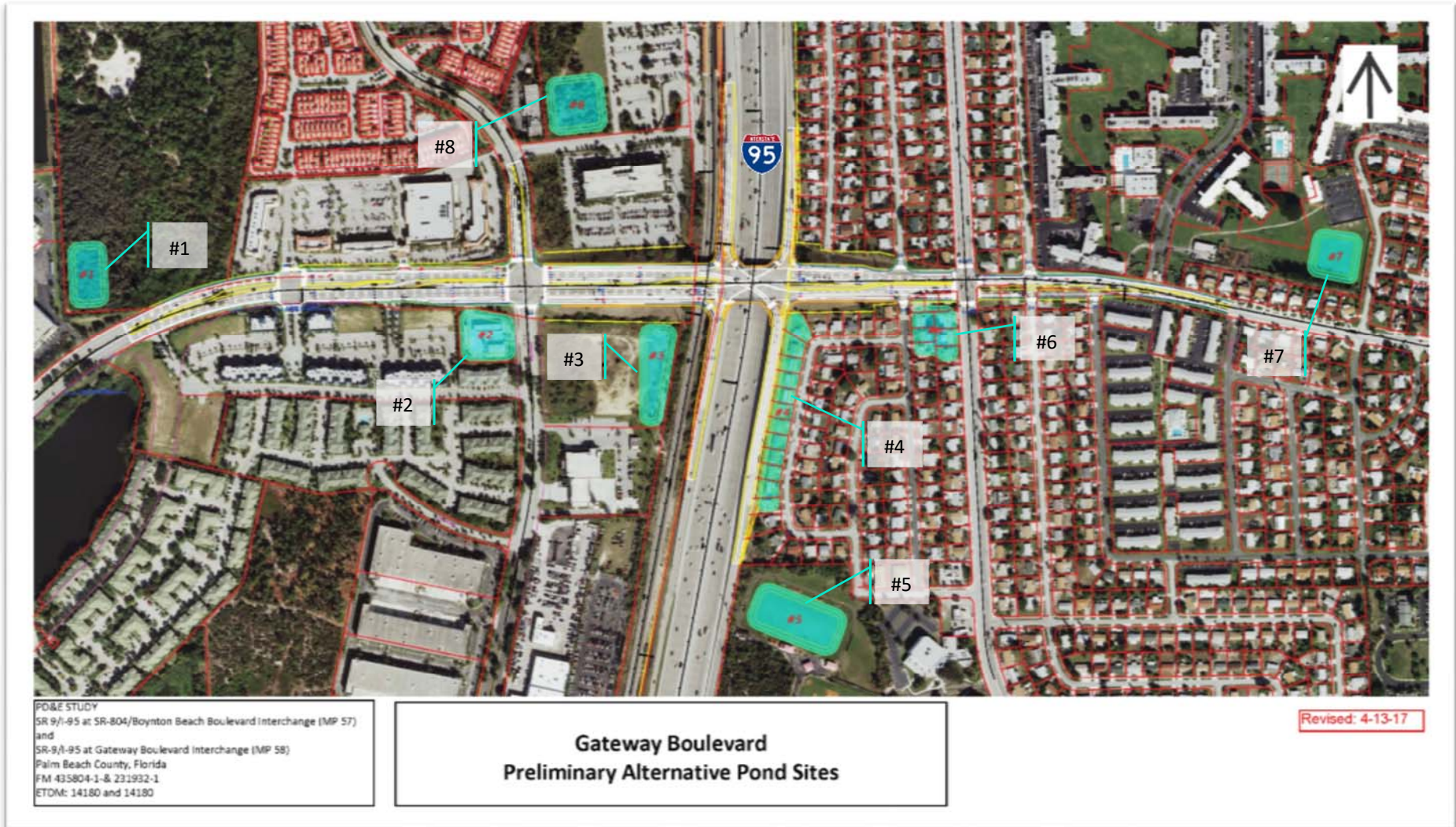


Figure 11. Preliminary Alternative Pond Sites – Gateway Boulevard



## 7. Recommendations

Pond site location recommendations are based on preliminary data calculations, reasonable engineering judgment, and assumptions along with the results of the pond screening analysis. Stormwater management sizing calculations are included in **Appendix E**. Pond sizes and locations may change during final design as more detailed information becomes available. The recommended pond site alternatives for SR 9/I-95 at Boynton Beach Boulevard are presented in **Table 15** and shown in **Figure 12**. The recommended pond site alternatives for SR 9/I-95 at Gateway Boulevard are presented in **Table 16** and shown in **Figure 15**. Pre- versus post-development calculation results are presented in **Tables 17** and **18**.

**Table 15. Summary of Recommended Pond Site Alternatives – Boynton Beach Boulevard**

Basin	Pond Site Number	Pond Area (Acres)	Basin Area (Acres)	Required Dry Pre-Treatment (Acre-Feet)	Required Wet Detention (Acre-Feet)	Total Required PAV (Acre-Feet)	Provided Dry Pre-Treatment (Acre-Feet)	Provided Wet Detention (Acre-Feet)	Total Provided PAV (Acre-Feet)
1	17	1.44	7.94	0.75	0.00	0.75	0.79	0.00	0.79
2	9	1.00	3.37	0.37	0.00	0.37	0.69	0.00	0.69

**Table 16. Summary of Recommended Pond Site Alternatives – Gateway Boulevard**

Basin	Pond Site Number	Pond Area (Acres)	Basin Area (Acres)	Required Dry Pre-Treatment (Acre-Feet)	Required Wet Detention (Acre-Feet)	Total Required PAV (Acre-Feet)	Provided Dry Pre-Treatment (Acre-Feet)	Provided Wet Detention (Acre-Feet)	Total Provided PAV (Acre-Feet)
4	8	1.11	4.89	0.00	0.79	0.79	0.00	0.81	0.81
5	4	1.51	5.78	0.67	0.00	0.67	0.67	0.00	0.67



**Figure 12. Recommended Pond Sites – Boynton Beach Boulevard**

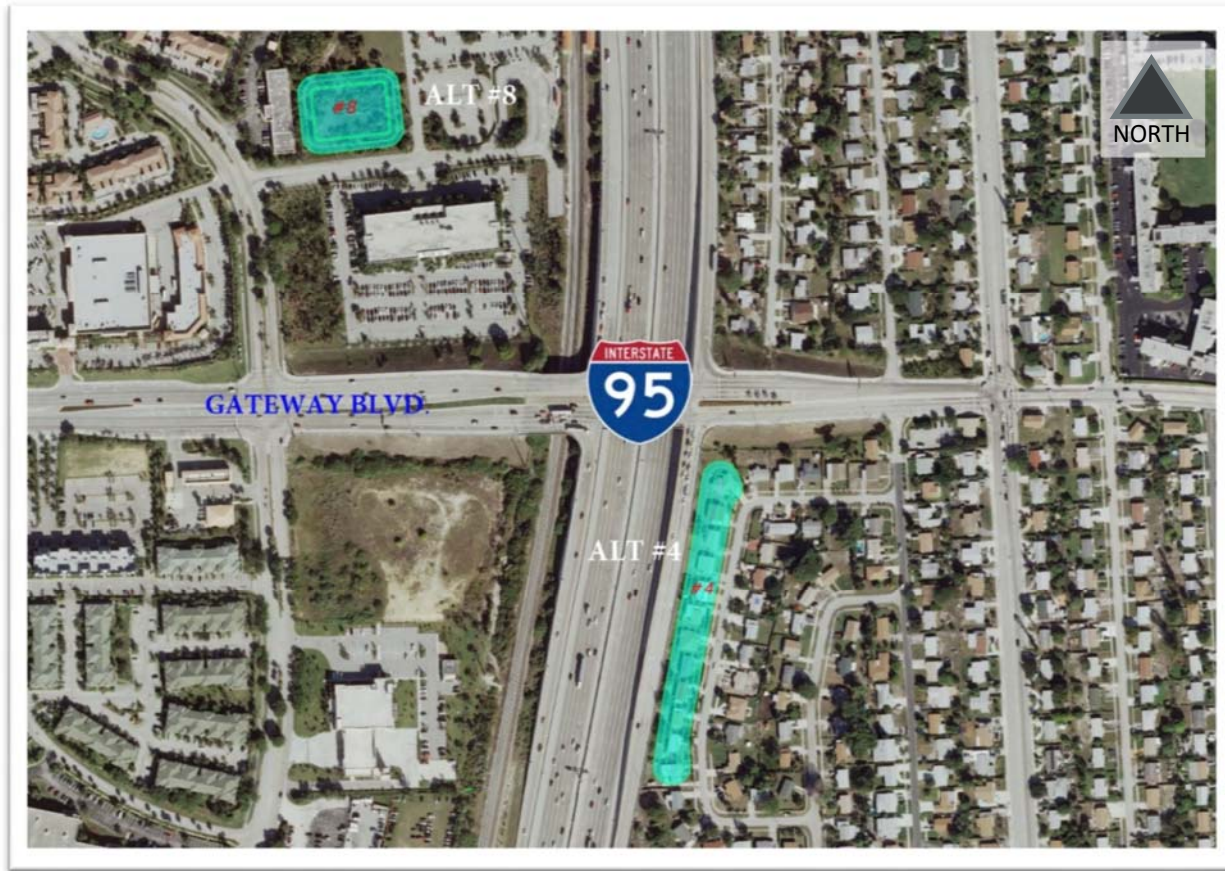


Figure 13. Recommended Pond Sites – Gateway Boulevard

Table 17. Pre- vs Post-Development Results for Recommended Pond Site Alternatives – Boynton Beach Boulevard

PRE-DEVELOPMENT				
Location/Description	3yr-24hr (cfs)	10yr-24hr (cfs)	25yr-24hr (cfs)	25yr-72hr (cfs)
Alternative 17	9.35	13.65	16.23	16.28
Alternative 9	7.21	10.22	12.05	12.01
SB I-95 On-ramp	4.09	5.80	6.83	6.80
SB I-95 Off-Ramp	4.87	6.90	8.14	8.12
NB I-95 On-Ramp	6.98	9.90	1.67	11.63
NB I-95 Off-Ramp	5.20	7.37	8.69	8.65
<b>TOTAL PRE-</b>	<b>37.70</b>	<b>53.84</b>	<b>53.61</b>	<b>63.49</b>
POST-DEVELOPMENT				
Location/Description	3yr-24hr (cfs)	10yr-24hr (cfs)	25yr-24hr (cfs)	25yr-72hr (cfs)
Alternative 17	7.44	12.54	15.14	15.03
Alternative 9	1.30	6.18	8.45	9.95
SB I-95 On-ramp	0.11	0.90	2.40	6.45
SB I-95 Off-Ramp	0.38	2.54	4.49	7.60
NB I-95 On-Ramp	0.00	0.52	1.06	4.46
NB I-95 Off-Ramp	8.17	11.58	13.65	13.59
<b>TOTAL POST-</b>	<b>17.40</b>	<b>34.26</b>	<b>45.19</b>	<b>57.08</b>
<b>Pre-Post (cfs)</b>	<b>20.30</b>	<b>19.58</b>	<b>8.42</b>	<b>6.41</b>

cfs – cubic feet per second      NB – northbound      SB - southbound

**Table 18. Pre- vs Post-Development Results for Recommended Pond Site Alternatives - Gateway Boulevard**

PRE-DEVELOPMENT				
Location/Description	3yr-24hr (cfs)	10yr-24hr (cfs)	25yr-24hr (cfs)	25yr-72hr (cfs)
Alternative 8	12.63	17.91	21.11	21.05
Alternative 4	12.64	17.92	21.13	20.80
SB I-95 On-ramp	3.45	4.90	5.77	5.74
SB I-95 Off-Ramp	4.20	5.95	7.01	6.98
NB I-95 On-Ramp	2.71	3.84	4.53	4.51
NB I-95 Off-Ramp	5.50	7.79	9.18	9.14
<b>TOTAL PRE-</b>	<b>41.13</b>	<b>58.31</b>	<b>68.73</b>	<b>68.22</b>
POST-DEVELOPMENT				
Location/Description	3yr-24hr (cfs)	10yr-24hr (cfs)	25yr-24hr (cfs)	25yr-72hr (cfs)
Alternative 1	5.81	9.64	11.20	11.51
Alternative 4	5.98	12.80	16.88	18.25
SB I-95 On-ramp	4.46	6.32	7.45	7.41
SB I-95 Off-Ramp	5.38	7.64	9.00	8.95
NB I-95 On-Ramp	3.27	4.63	5.46	5.43
NB I-95 Off-Ramp	7.43	10.53	12.41	12.35
<b>TOTAL POST-</b>	<b>32.33</b>	<b>51.56</b>	<b>62.40</b>	<b>63.90</b>
<b>Pre-Post (cfs)</b>	<b>8.80</b>	<b>6.75</b>	<b>6.33</b>	<b>4.32</b>

cfs – cubic feet per second      NB – northbound      SB - southbound

## 8. References

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U.S. Department of Agriculture, Natural Resources Conservation Service. 2016. Soil Survey of Palm Beach County Area Florida. December 1978.



**Appendix A**  
**Build Alternatives**

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**PD&E Study**

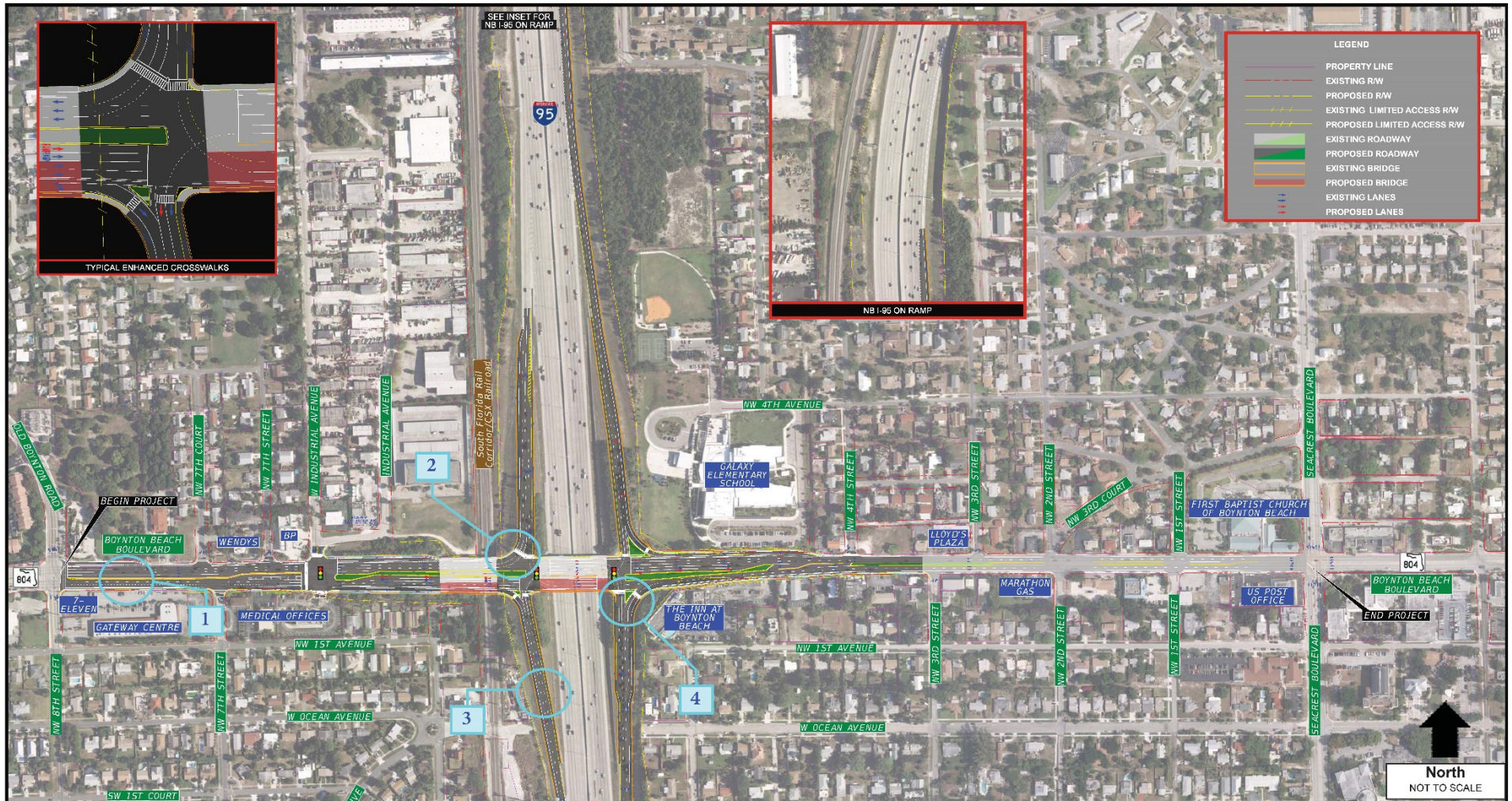
SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and  
SR-9/I-95 at Gateway Boulevard Interchange





**PD&E Study**

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and  
SR-9/I-95 at Gateway Boulevard Interchange



**SR 9/I-95 at  
SR 804/Boynton Beach Boulevard Interchange  
Alternative 2 - Streamlined CDA**



**PD&E Study**

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and  
SR-9/I-95 at Gateway Boulevard Interchange



PD&E Study  
SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange  
SR 9/I-95 at Gateway Boulevard Interchange  
FPID Nos.: 435804-1-22-01; 231932-1-22-01  
ETDM Nos.: 14180 and 14181



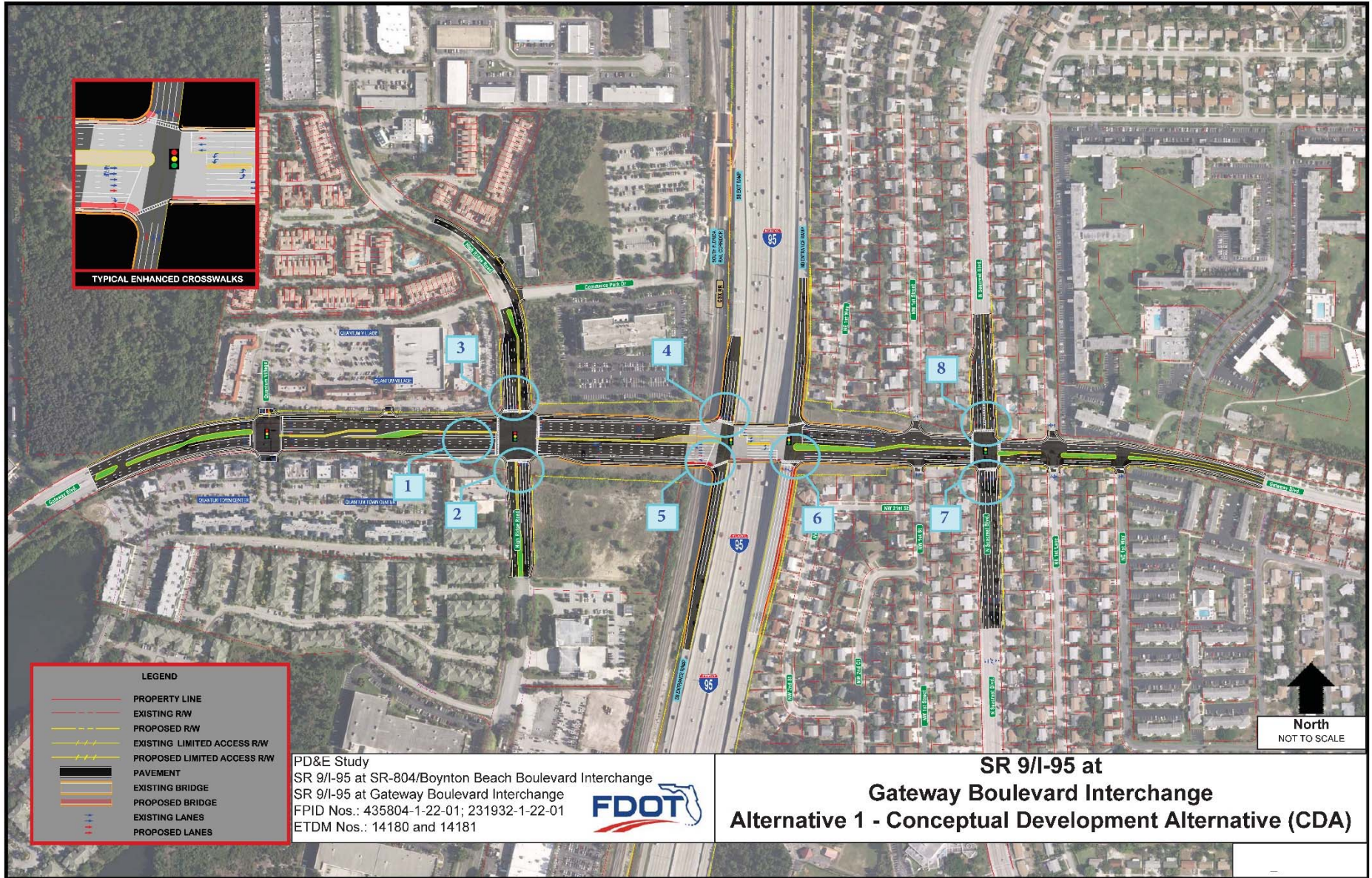
**SR 9/I-95 at  
SR 804/Boynton Beach Boulevard Interchange  
Alternative 3 - Single Point Urban Interchange (SPUI)**

North  
NOT TO SCALE



# PD&E Study

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and  
SR-9/I-95 at Gateway Boulevard Interchange





**PD&E Study**

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and  
SR-9/I-95 at Gateway Boulevard Interchange





**PD&E Study**

SR 9/I-95 at SR-804/Boynton Beach Boulevard Interchange and  
SR-9/I-95 at Gateway Boulevard Interchange





## **Appendix B**

### **Typical Section Package**

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STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION



*TYPICAL SECTION PACKAGE*

*SR 804 (BOYNTON BEACH BLVD)*

*FROM OLD BOYNTON ROAD (MP 7.822)  
TO SEACREST BLVD. (MP 8.769)*

*PALM BEACH COUNTY  
(93200000)  
FINANCIAL PROJECT ID: 435804-1-22-01*

*PREPARED BY:*

*ARCADIS  
1500 GATEWAY BOULEVARD, SUITE 200  
BOYNTON BEACH, FL 33426  
T: 1-561-697-7075  
CERTIFICATE OF AUTHORIZATION: LB 7917 LB 7062*

*DATED: APRIL 2017*



# SR 804 (BOYNTON BEACH BLVD)

FROM OLD BOYNTON ROAD (MP 7.822)  
TO SEACREST BLVD. (MP 8.769)

FINANCIAL PROJECT ID: 435804-1-22-01  
PALM BEACH COUNTY (93200000)



N.T.S.

END SFRC/CSX BRIDGE  
STA. 10+79.34

END I-95 BRIDGE  
STA. 15+16.33

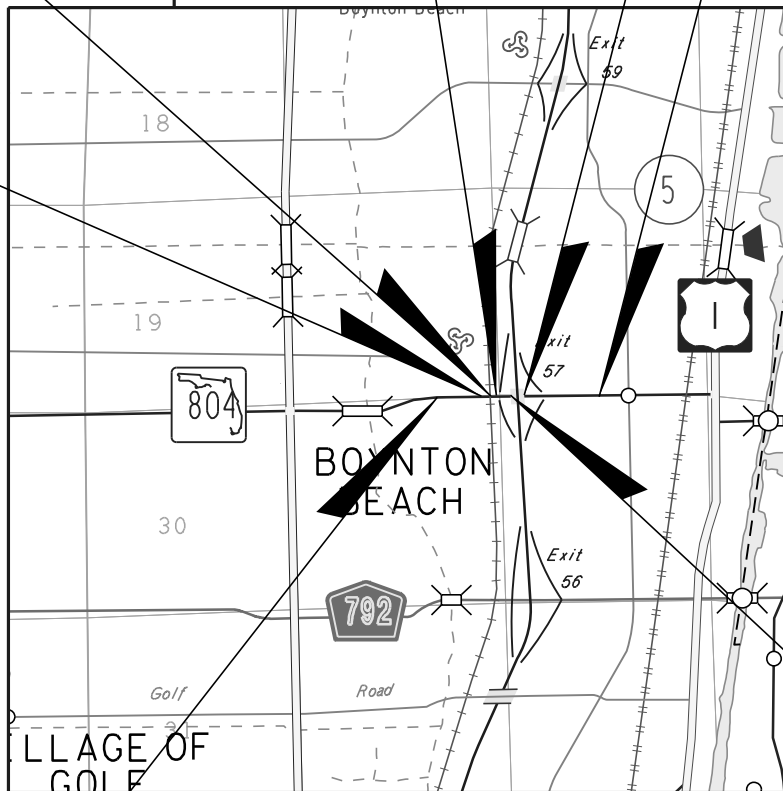
STATION EQ.  
438+07.25 (BK) =  
10+00.00 (AH)

END PROJECT  
MP 8.709  
STA. 42+90.10

BEGIN SFRC/CSX BRIDGE  
STA. 436+59.63

T 45 S

T 45 S



BEGIN PROJECT  
MP 7.822  
STA. 421+56.37

BEGIN I-95 BRIDGE  
STA. 12+44.59

## PROJECT LOCATION MAP

# PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 435804-1-22-01 COUNTY (SECTION) 93200000  
PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROJECT CONTROLS

### FUNCTIONAL CLASSIFICATION

- RURAL  
 URBAN
- FREEWAY/EXPWY.       MAJOR COLL.  
 PRINCIPAL ART. (W. OF I-95)       MINOR COLL.  
 MINOR ART. (E. OF I-95)       LOCAL

### HIGHWAY SYSTEM

- Yes No
- NATIONAL HIGHWAY SYSTEM  
  STRATEGIC INTERMODAL SYSTEM  
  STATE HIGHWAY SYSTEM  
  OFF STATE HIGHWAY SYSTEM

### ACCESS CLASSIFICATION

- 1 - FREEWAY  
 2 - RESTRICTIVE w/Service Roads  
 3 - RESTRICTIVE w/660 ft. Connection Spacing  
 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing  
 5 - RESTRICTIVE w/440 ft. Connection Spacing  
 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing  
 7 - BOTH MEDIAN TYPES

SEE ADDITIONAL SHEETS

### CRITERIA

- NEW CONSTRUCTION / RECONSTRUCTION  
 RRR INTERSTATE / FREEWAY  
 RRR NON-INTERSTATE / FREEWAY  
 TDLC / NEW CONSTRUCTION / RECONSTRUCTION  
 TDLC / RRR  
 MANUAL OF UNIFORM MINIMUM STANDARDS  
(FLORIDA GREENBOOK) (OFF-STATE HIGHWAY SYSTEM ONLY)

### DESIGN SPEED APPROVALS

\_\_\_\_\_  
DISTRICT DESIGN ENGINEER      DATE

\_\_\_\_\_  
DISTRICT TRAFFIC OPERATIONS ENGINEER      DATE

LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:  
BORDER WIDTH

LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:  
930285 - SR 804 (BOYNTON BEACH BLVD.) OVER SR 9 (I-95)  
930289 - SR 804 (BOYNTON BEACH BLVD.) OVER CSX RR  
MAST ARM TRAFFIC SIGNALS AT EXIT AND ENTRANCE RAMP, W. INDUSTRIAL AVE. & OLD BOYNTON RD.

LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

AMERICAN TRAFFIC SOLUTIONS	PALM BEACH COUNTY TRAFFIC OPERATIONS
CITY OF BOYNTON BEACH WATER & SEWER	AT&T DISTRIBUTION
FPC FIBERNET	COMCAST
FLORIDA POWER & LIGHT (FPL)	
FLORIDA PUBLIC UTILITIES	
MCI	

LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:  
UPCOMING PROJECT ON SR 9 (I-95) - ADDITION OF EXPRESS LANES

## PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 435804-1-22-01 COUNTY (SECTION) 93200000

PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

### TRAFFIC TYPICAL SECTION 1

	YEAR	AADT
CURRENT	<u>2015</u>	<u>52,000</u>
OPENING	<u>2020</u>	<u>53,000</u>
DESIGN	<u>2040</u>	<u>59,000</u>

#### DISTRIBUTION

DESIGN SPEED	<u>45</u>	K	9.0%
POSTED SPEED	<u>40</u>	D	58.0%
		T 24	3.6%

### TRAFFIC TYPICAL SECTION 2, 3, & 4

	YEAR	AADT
CURRENT	<u>2015</u>	<u>52,000</u>
OPENING	<u>2020</u>	<u>53,000</u>
DESIGN	<u>2040</u>	<u>59,000</u>

#### DISTRIBUTION

DESIGN SPEED	<u>45</u>	K	9.0%
POSTED SPEED	<u>35</u>	D	58.0%
		T 24	3.6%

### TRAFFIC TYPICAL SECTION 5 & 6

	YEAR	AADT
CURRENT	<u>2015</u>	<u>34,000</u>
OPENING	<u>2020</u>	<u>36,000</u>
DESIGN	<u>2040</u>	<u>46,000</u>

#### DISTRIBUTION

DESIGN SPEED	<u>45</u>	K	9.0%
POSTED SPEED	<u>35</u>	D	53.6%
		T 24	3.9%

### TRAFFIC I-95 SOUTHBOUND OFF RAMP

	YEAR	AADT
CURRENT	<u>2015</u>	<u>12,000</u>
OPENING	<u>2020</u>	<u>12,000</u>
DESIGN	<u>2040</u>	<u>14,000</u>

#### DISTRIBUTION

DESIGN SPEED	<u>30/50</u>	K	8.0%
POSTED SPEED	<u>30/50</u>	D	59.0%
		T 24	7.0%

### TRAFFIC I-95 SOUTHBOUND ON RAMP

	YEAR	AADT
CURRENT	<u>2015</u>	<u>12,000</u>
OPENING	<u>2020</u>	<u>12,000</u>
DESIGN	<u>2040</u>	<u>14,000</u>

#### DISTRIBUTION

DESIGN SPEED	<u>30/50</u>	K	8.0%
POSTED SPEED	<u>30/50</u>	D	59.0%
		T 24	7.0%

### TRAFFIC I-95 NORTHBOUND OFF RAMP

	YEAR	AADT
CURRENT	<u>2015</u>	<u>13,000</u>
OPENING	<u>2020</u>	<u>13,000</u>
DESIGN	<u>2040</u>	<u>15,000</u>

#### DISTRIBUTION

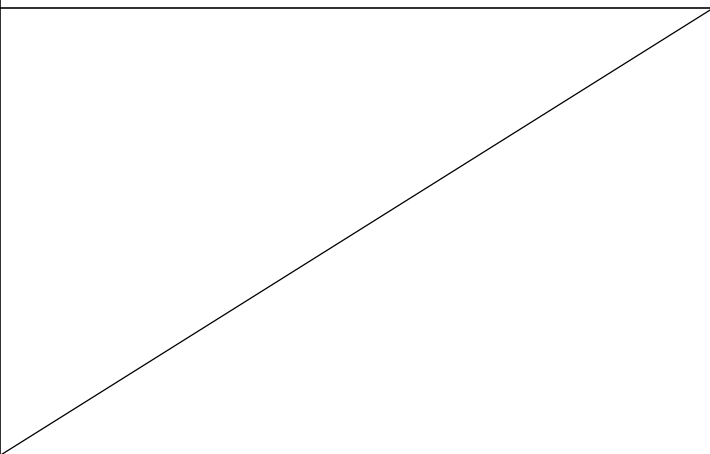
DESIGN SPEED	<u>30/50</u>	K	8.0%
POSTED SPEED	<u>30/50</u>	D	59.0%
		T 24	7.0%

### TRAFFIC I-95 NORTHBOUND ON RAMP

	YEAR	AADT
CURRENT	<u>2015</u>	<u>14,000</u>
OPENING	<u>2020</u>	<u>15,000</u>
DESIGN	<u>2040</u>	<u>17,000</u>

#### DISTRIBUTION

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POSTED SPEED	<u>30/50</u>	D	59.0%
		T 24	7.0%

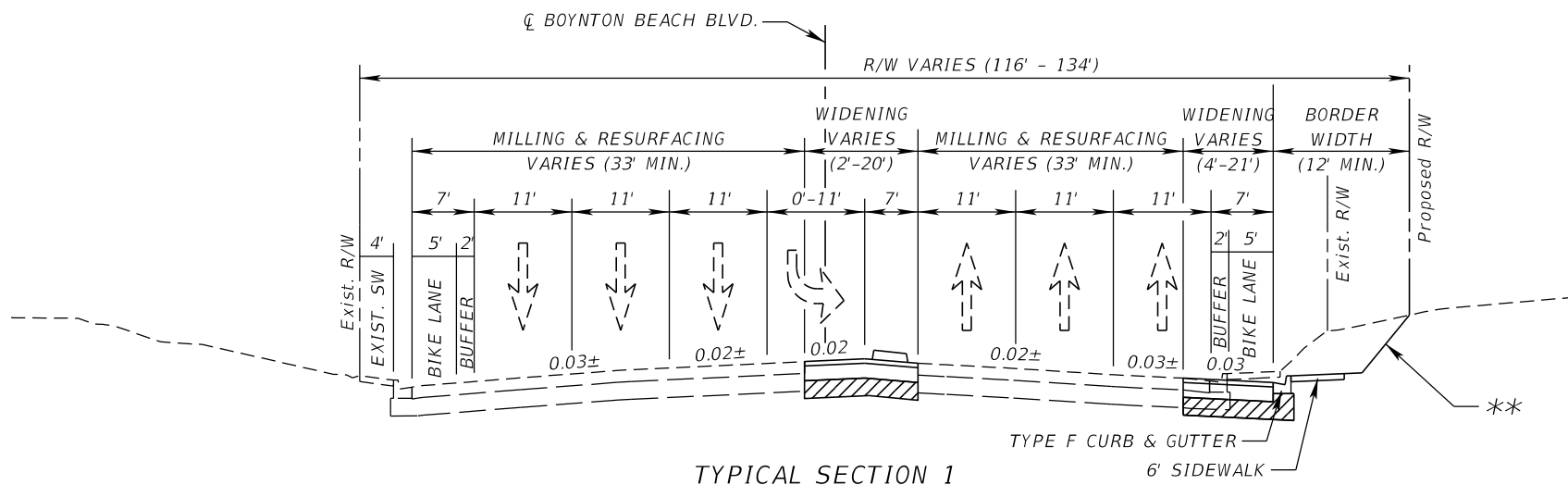




# PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 435804-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
 SECTION NO. 93200000 ROAD DESIGNATION SR 804 LIMITS/MILEPOST FROM MP 7.822 TO MP 8.769  
 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



**TYPICAL SECTION 1**  
**BOYNTON BEACH BLVD**  
**FROM MP 7.822 (OLD BOYNTON ROAD)**  
**TO MP 7.915**

DESIGN SPEED: 45 MPH

\*\* 1:6 FOR FILLS TO 5'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:4 FOR FILLS 5' TO 10'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:3 FOR FILLS 10' TO 20'  
 1:2 (WITH GUARDRAIL) FOR FILLS OVER 20'

APPROVED BY:

FDOT CONCURRENCE

RECOMMENDED BY

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

Steve Braun, P.E.  
FDOT District Design Engineer

Date

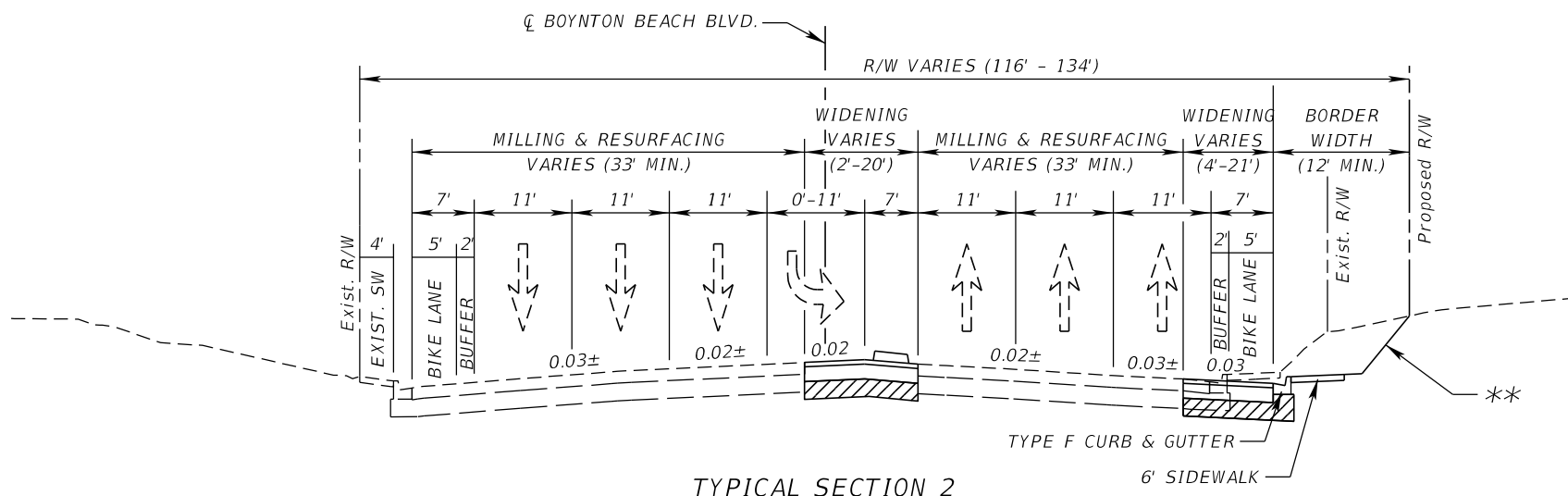
Scott Peterson, P.E.  
FDOT District Project Development Manager

Date

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 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



BOYNTON BEACH BLVD FROM MP 7.915  
 TO MP 8.022 (W. INDUSTRIAL AVENUE)

DESIGN SPEED: 45 MPH

\*\* 1:6 FOR FILLS TO 5'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:4 FOR FILLS 5' TO 10'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:3 FOR FILLS 10' TO 20'  
 1:2 (WITH GUARDRAIL) FOR FILLS OVER 20'

APPROVED BY:

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

FDOT CONCURRENCE

Steve Braun, P.E.  
FDOT District Design Engineer

Date

RECOMMENDED BY

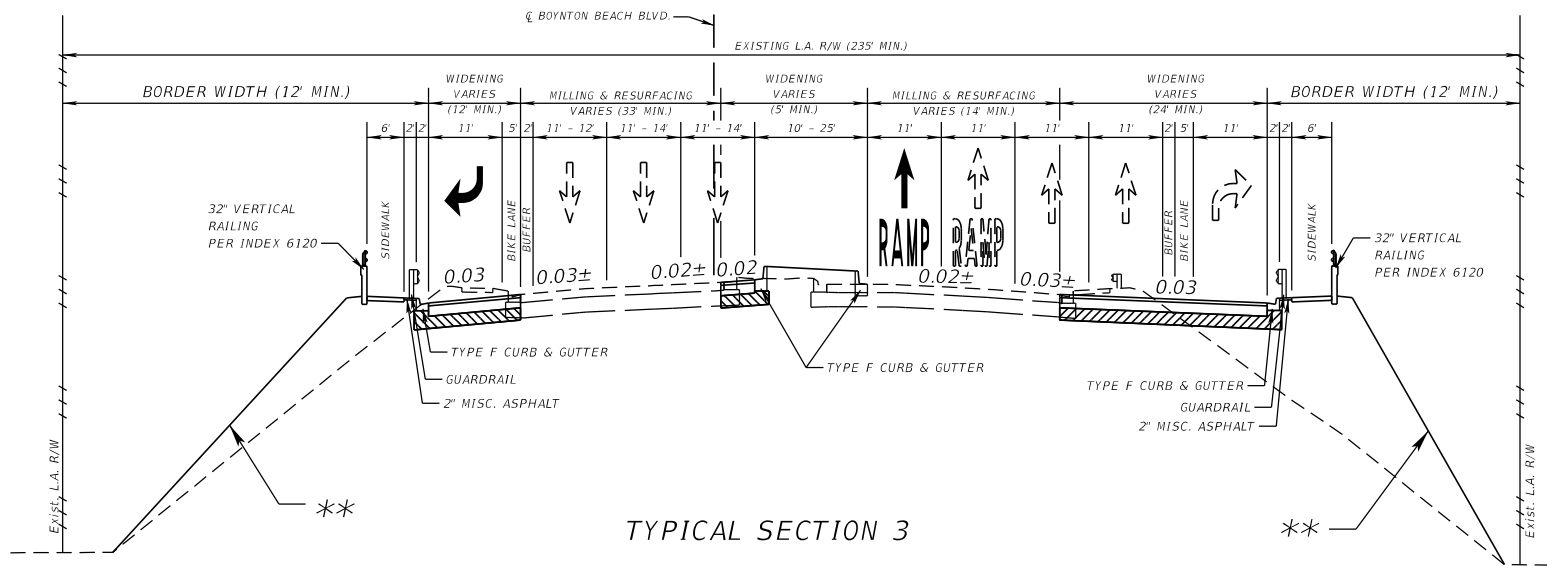
Scott Peterson, P.E.  
FDOT District Project Development Manager

Date

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 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



TYPICAL SECTION 3

BOYNTON BEACH BLVD  
 FROM MP 8.022 (W. INDUSTRIAL AVENUE)  
 TO MP 8.211 SR 9 (I-95)

DESIGN SPEED: 45 MPH

- \*\* 1:6 FOR FILLS TO 5'
- 1:6 TO EDGE OF CLEAR ZONE &
- 1:4 FOR FILLS 5' TO 10'
- 1:6 TO EDGE OF CLEAR ZONE &
- 1:3 FOR FILLS 10' TO 20'
- 1:2 (WITH GUARDRAIL) FOR FILLS OVER 20'

APPROVED BY:

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

FDOT CONCURRENCE

Steve Braun, P.E.  
FDOT District Design Engineer

Date

RECOMMENDED BY

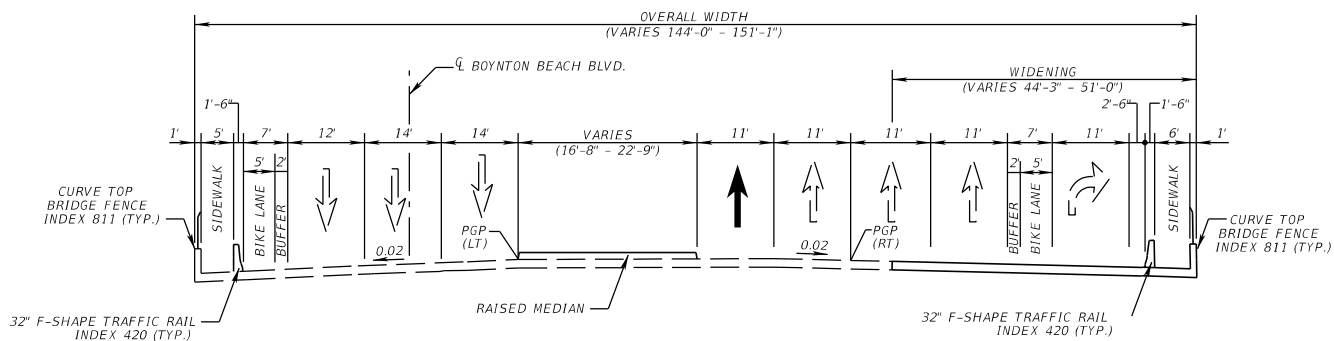
Scott Peterson, P.E.  
FDOT District Project Development Manager

Date

## PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 435804-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
 SECTION NO. 932200000 ROAD DESIGNATION SR 9/I-95 LIMITS/MILEPOST FROM MP 7.822 TO MP 8.769  
 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED STRUCTURE TYPICAL SECTION



**TYPICAL SECTION 4**  
**BOYNTON BEACH BRIDGE OVER CSX**  
**BRIDGE NO. 930289**

FDOT CONCURRENCE

\_\_\_\_\_  
 RAMON A. OTERO, P.E. Date  
 FDOT District Structures Design Engineer

APPROVED BY: ANTONIO M. GARCIA, P.E.

FDOT CONCURRENCE

RECOMMENDED BY

ANTONIO M. GARCIA, P.E.  
 Signature and Date

\_\_\_\_\_  
 STEVE BRAUN, P.E. Date  
 FDOT District Design Engineer

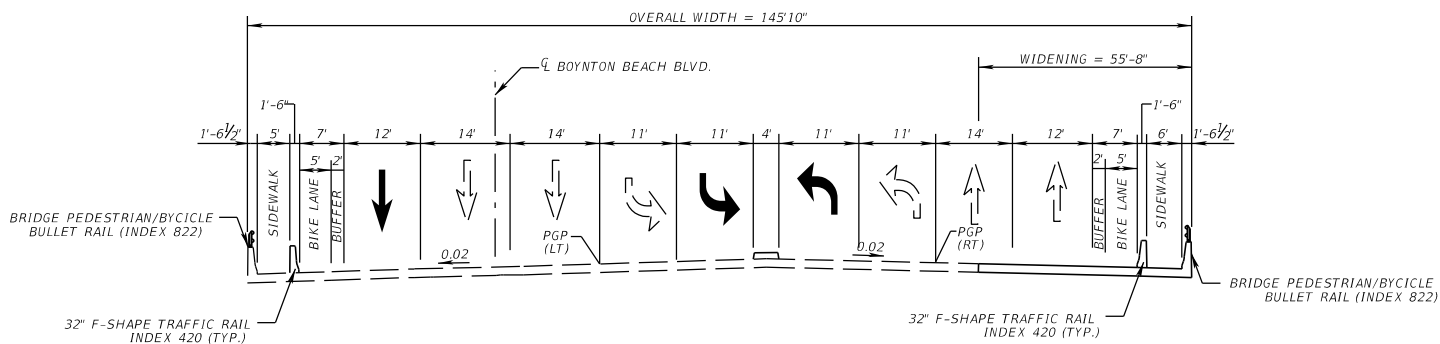
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 SCOTT PETERSON, P.E. Date  
 FDOT District Project Development Manager



## PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 435804-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
 SECTION NO. 932200000 ROAD DESIGNATION SR 9/I-95 LIMITS/MILEPOST FROM MP 7.822 TO MP 8.769  
 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED STRUCTURE TYPICAL SECTION



**TYPICAL SECTION 5**  
**BOYNTON BEACH BRIDGE OVER I-95**  
**BRIDGE NO. 930285**

FDOT CONCURRENCE

\_\_\_\_\_ Date  
 RAMON A. OTERO, P.E.  
 FDOT District Structures Design Engineer

APPROVED BY: ANTONIO M. GARCIA, P.E.

FDOT CONCURRENCE

RECOMMENDED BY

ANTONIO M. GARCIA, P.E.  
 Signature and Date

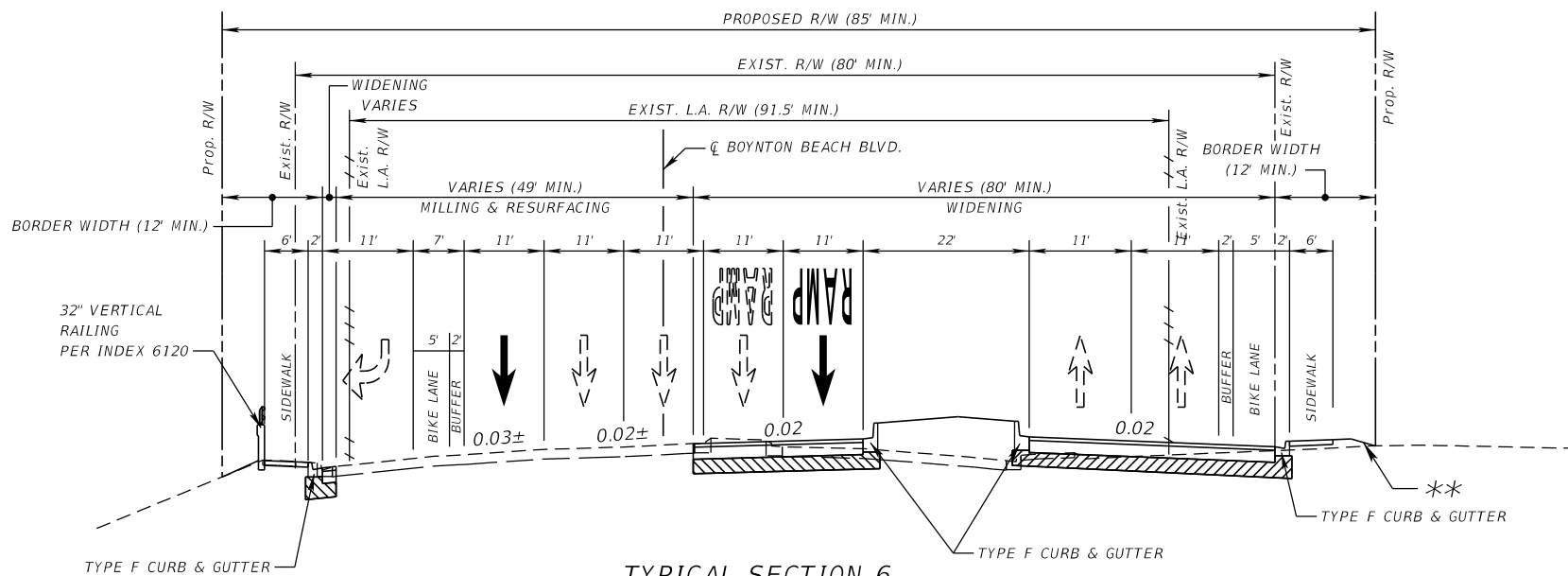
\_\_\_\_\_ Date  
 STEVE BRAUN, P.E.  
 FDOT District Design Engineer

\_\_\_\_\_ Date  
 SCOTT PETERSON, P.E.  
 FDOT District Project Development Manager

# PROJECT IDENTIFICATION

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 SECTION NO. 93200000 ROAD DESIGNATION SR 804 LIMITS/MILEPOST FROM MP 7.822 TO MP 8.769  
 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



**TYPICAL SECTION 6**

**BOYNTON BEACH BLVD.**  
**FROM MP 8.211 SR 9 (I-95)**  
**TO MP 8.769 (SEACREST BLVD.)**

**DESIGN SPEED: 45 MPH**

\*\* 1:6 FOR FILLS TO 5'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:4 FOR FILLS 5' TO 10'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:3 FOR FILLS 10' TO 20'  
 1:2 (WITH GUARDRAIL) FOR FILLS OVER 20'

APPROVED BY:

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

FDOT CONCURRENCE

Steve Braun, P.E.  
FDOT District Design Engineer

Date

RECOMMENDED BY

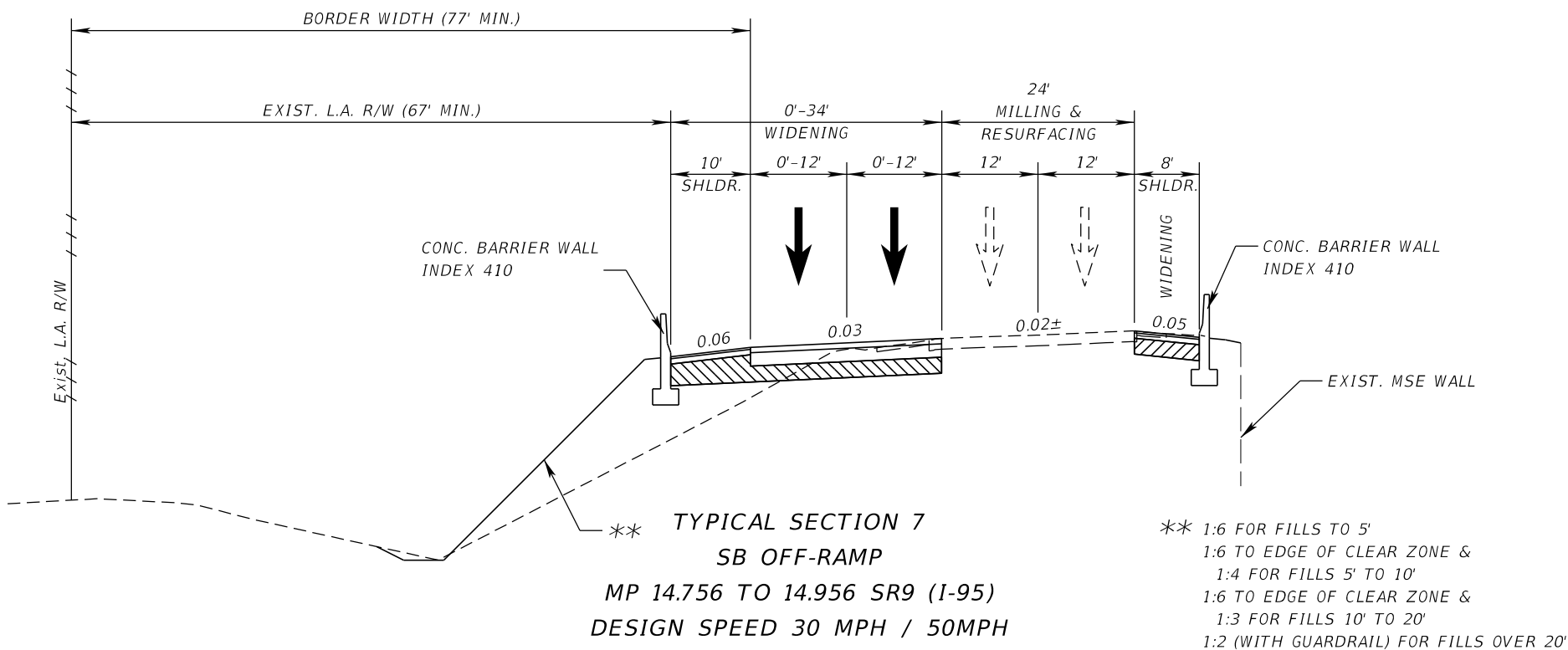
Scott Peterson, P.E.  
FDOT District Project Development Manager

Date

## PROJECT IDENTIFICATION

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 SECTION NO. 93200000 ROAD DESIGNATION SR 804 LIMITS/MILEPOST FROM MP 7.822 TO MP 8.769  
 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



APPROVED BY:

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

FDOT CONCURRENCE

Steve Braun, P.E.  
FDOT District Design Engineer

Date

RECOMMENDED BY

Scott Peterson, P.E.  
FDOT District Project Development Manager

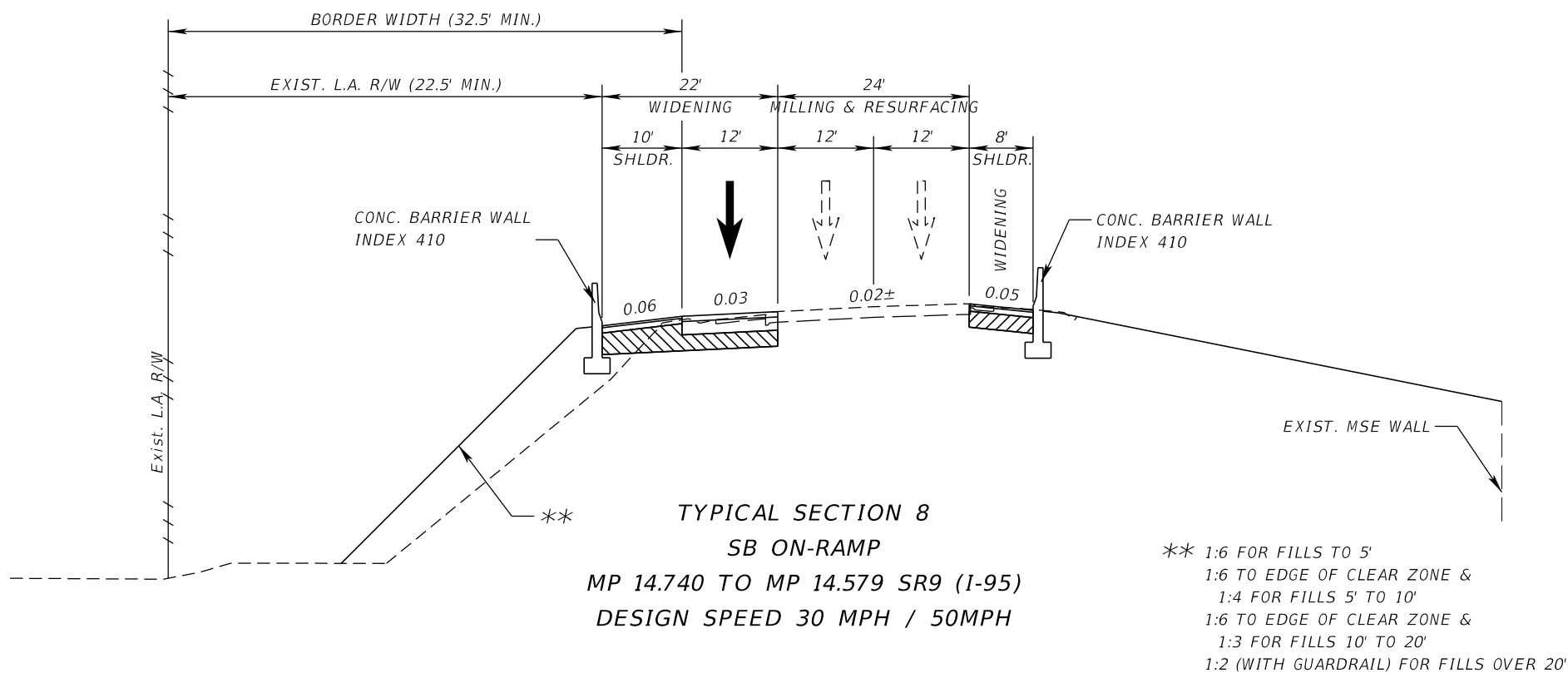
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## PROJECT IDENTIFICATION

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 SECTION NO. 93200000 ROAD DESIGNATION SR 804 LIMITS/MILEPOST FROM MP 7.822 TO MP 8.769  
 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



APPROVED BY:

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

FDOT CONCURRENCE

Steve Braun, P.E.  
FDOT District Design Engineer

Date

RECOMMENDED BY

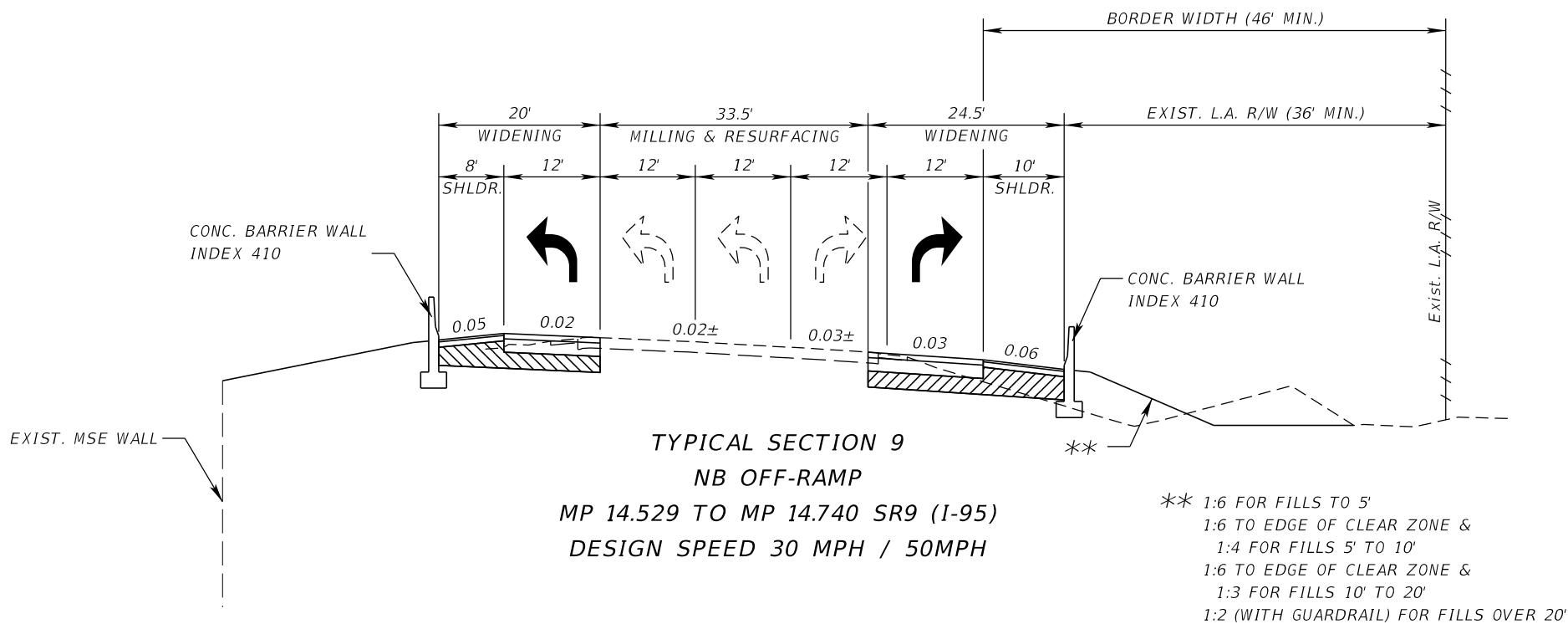
Scott Peterson, P.E.  
FDOT District Project Development Manager

Date

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 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



APPROVED BY:

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

FDOT CONCURRENCE

Steve Braun, P.E.  
FDOT District Design Engineer

Date

RECOMMENDED BY

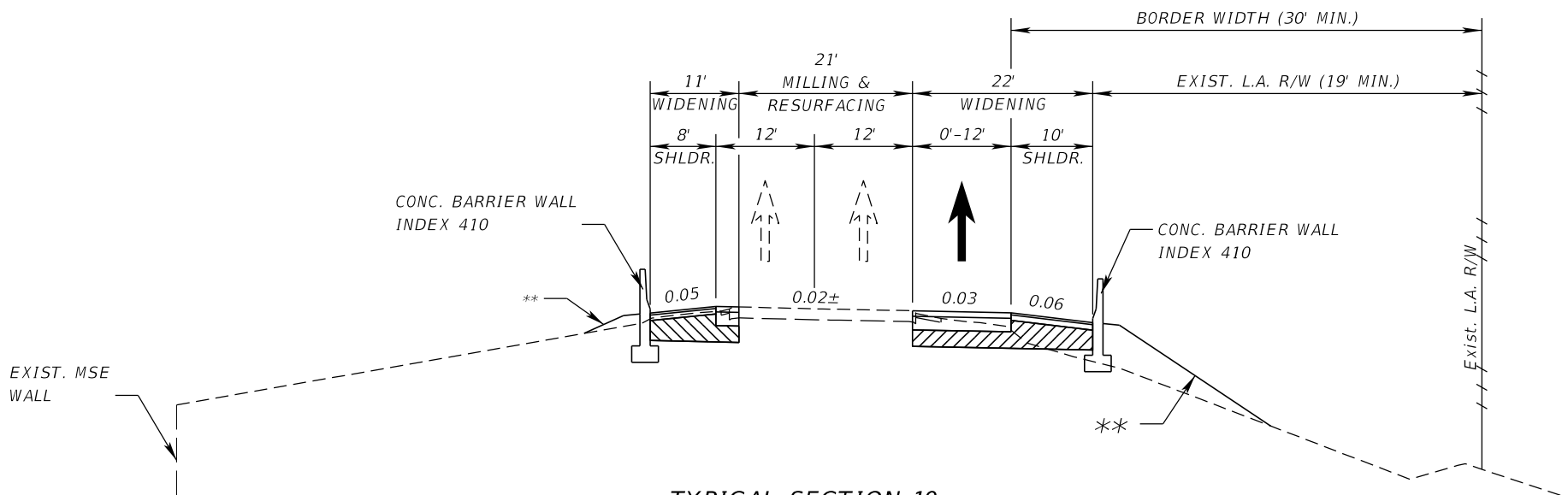
Scott Peterson, P.E.  
FDOT District Project Development Manager

Date

## PROJECT IDENTIFICATION

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 PROJECT DESCRIPTION SR 9 (I-95) AT SR 804 (BOYNTON BEACH BLVD) INTERCHANGE

## PROPOSED ROADWAY TYPICAL SECTION



**TYPICAL SECTION 10**  
**NB ON-RAMP**  
**MP 14.756 TO MP 15.023 SR9 (I-95)**  
**DESIGN SPEED 30 MPH / 50MPH**

\*\* 1:6 FOR FILLS TO 5'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:4 FOR FILLS 5' TO 10'  
 1:6 TO EDGE OF CLEAR ZONE &  
 1:3 FOR FILLS 10' TO 20'  
 1:2 (WITH GUARDRAIL) FOR FILLS OVER 20'

APPROVED BY:

Henry W. Deibel, P.E.  
ENGINEER OF RECORD

Date

FDOT CONCURRENCE

Steve Braun, P.E.  
FDOT District Design Engineer

Date

RECOMMENDED BY

Scott Peterson, P.E.  
FDOT District Project Development Manager

Date

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION



TYPICAL SECTION PACKAGE

GATEWAY BOULEVARD

FROM QUANTUM TOWN CENTER  
TO SEACREST BLVD.

PALM BEACH COUNTY  
(93220000)

FINANCIAL PROJECT ID: 231932-1-22-01

PREPARED BY:

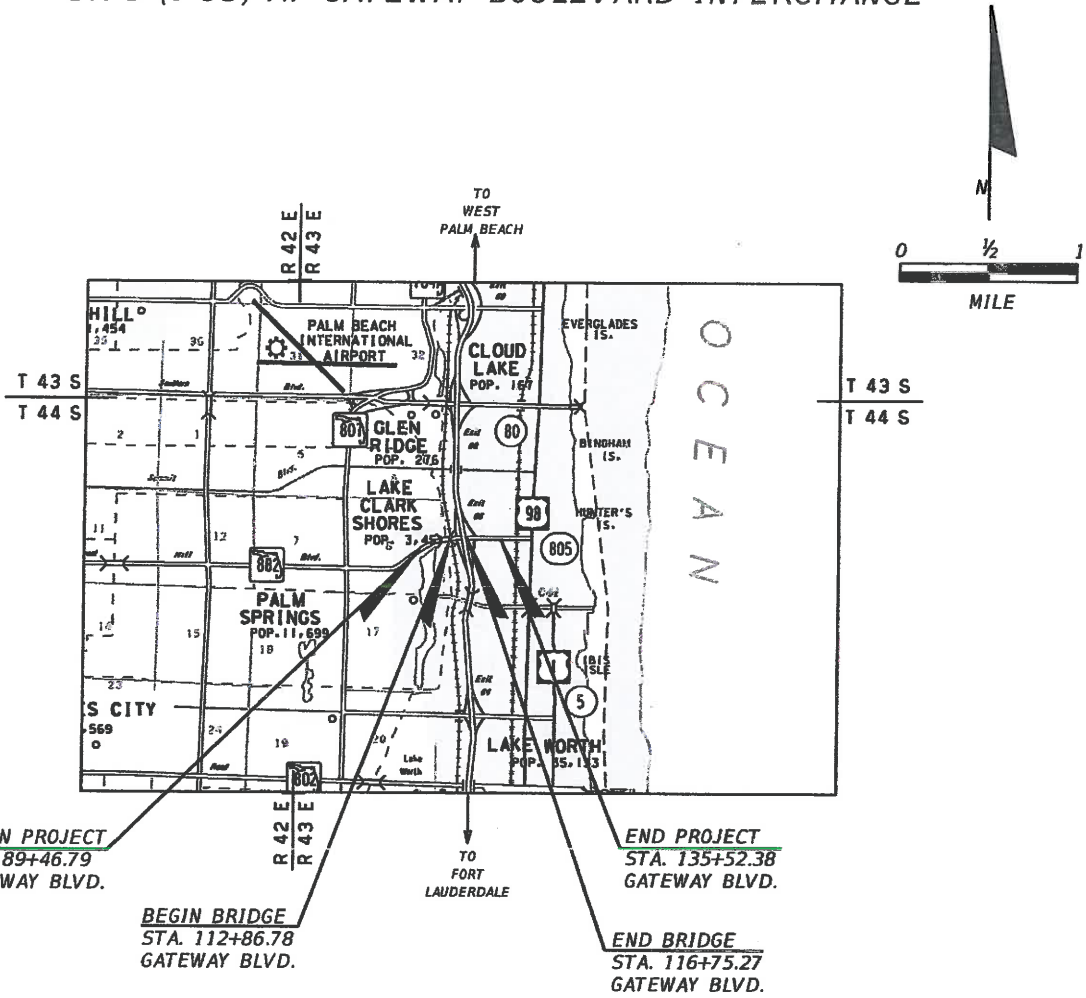
RS&H, Inc.  
3125 W. Commercial Blvd. - Suite 130  
Fort Lauderdale, Florida 33309-3446  
PHONE: 954-474-3005  
FAX: 954-474-3006  
FL Cert. No. EB0005620

DATED: MARCH 2017



**TYPICAL SECTION PACKAGE**

FINANCIAL PROJECT IDS 231932-1-22-01  
 PALM BEACH COUNTY (93220000)  
 SR 9 (I-95) AT GATEWAY BOULEVARD INTERCHANGE



PREPARED FOR:

FLORIDA DEPARTMENT OF TRANSPORTATION DISTRICT 4  
 3400 WEST COMMERCIAL BLVD  
 FORT LAUDERDALE, FL 33309

PREPARED BY:

RS&H, inc.  
 3125 W. Commercial Blvd. - Suite 130  
 Fort Lauderdale, Florida 33309-3446  
 PHONE: 954-474-3005  
 FAX: 954-474-3006  
 EMAIL: Cassie.Piche@rsandh.com  
 FL Cert. No. EB0005620

FEBRUARY 2017

## PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 231932-1-22-01 COUNTY (SECTION) 93220000  
 PROJECT DESCRIPTION \_\_\_\_\_

## PROJECT CONTROLS

### FUNCTIONAL CLASSIFICATION

- RURAL  
 URBAN  
 FREEWAY/EXPWY.     MAJOR COLL.  
 PRINCIPAL ART.     MINOR COLL.  
 MINOR ART.     LOCAL

### HIGHWAY SYSTEM

- |                                     |                                     |                             |
|-------------------------------------|-------------------------------------|-----------------------------|
| Yes                                 | No                                  |                             |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | NATIONAL HIGHWAY SYSTEM     |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | STRATEGIC INTERMODAL SYSTEM |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | STATE HIGHWAY SYSTEM        |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | OFF STATE HIGHWAY SYSTEM    |

### ACCESS CLASSIFICATION

- 1 - FREEWAY  
 2 - RESTRICTIVE w/Service Roads  
 3 - RESTRICTIVE w/660 ft. Connection Spacing  
 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing  
 5 - RESTRICTIVE w/440 ft. Connection Spacing  
 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing  
 7 - BOTH MEDIAN TYPES

### TRAFFIC

	YEAR	AADT
CURRENT	<u>2015</u>	<u>49,000</u>
OPENING	<u>2020</u>	<u>50,000</u>
DESIGN	<u>2040</u>	<u>56,000</u>

#### DISTRIBUTION

DESIGN SPEED 50 MPH    K 9.0 %  
 POSTED SPEED 45 MPH    D 56.5 %  
T 24 5.1 %

#### DESIGN SPEED APPROVALS

_____ DISTRICT DESIGN ENGINEER	_____ DATE
-----------------------------------	---------------

N/A

_____ DISTRICT TRAFFIC OPERATIONS ENGINEER	_____ DATE
---	---------------

### CRITERIA

- NEW CONSTRUCTION / RECONSTRUCTION  
 RRR INTERSTATE / FREEWAY  
 RRR NON-INTERSTATE / FREEWAY  
 TDLC / NEW CONSTRUCTION / RECONSTRUCTION  
 TDLC / RRR  
 MANUAL OF UNIFORM MINIMUM STANDARDS  
 (FLORIDA GREENBOOK) (OFF-STATE HIGHWAY SYSTEM ONLY)

#### LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:

- DESIGN VARIATIONS:  
 1. BORDER WIDTH

#### LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:

WIDENING OF BRIDGE 930433 - GATEWAY BLVD. OVER SR 9 (I-95)  
 WIDENING OF BRIDGE 930434 - GATEWAY BLVD. OVER CSX RR  
 MAJOR ARM TRAFFIC SIGNALS AT EXIT AND ENTRANCE RAMP, HIGH RIDGE ROAD, QUANTUM CENTER, SEACREST BLVD.

#### LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

- |                                       |  |
|---------------------------------------|--|
| • CITY OF BOYNTON BEACH WATER & SEWER | • PALM BEACH COUNTY TRAFFIC OPERATIONS |
| • FLORIDA POWER & LIGHT (FPL)         | • AT&T DISTRIBUTION                    |
| • FLORIDA PUBLIC UTILITIES            | • COMCAST                              |
| • HOTWIRE COMMUNICATIONS              | • FPL DISTRIBUTION                     |
| • FPU GAS                             | • FPL PBC                              |

#### LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:

UPCOMING PROJECT ON SR 9 (I-95) - POTENTIAL ADDITION OF EXPRESS LANES  
 UPCOMING PROJECT ON HIGH RIDGE ROAD - WIDENING / RESURFACING  
 EXISTING SFRC ADJACENT TO SB I-95 MAINLINE

## PROJECT IDENTIFICATION

**FINANCIAL PROJECT ID** 231932-1-22-01      **COUNTY (SECTION)** 93220000  
**PROJECT DESCRIPTION** SR 9 (I-95) AT GATEWAY BOULEVARD INTERCHANGE

TRAFFIC I-95 NORTHBOUND ON RAMP	TRAFFIC I-95 SOUTHBOUND ON RAMP																								
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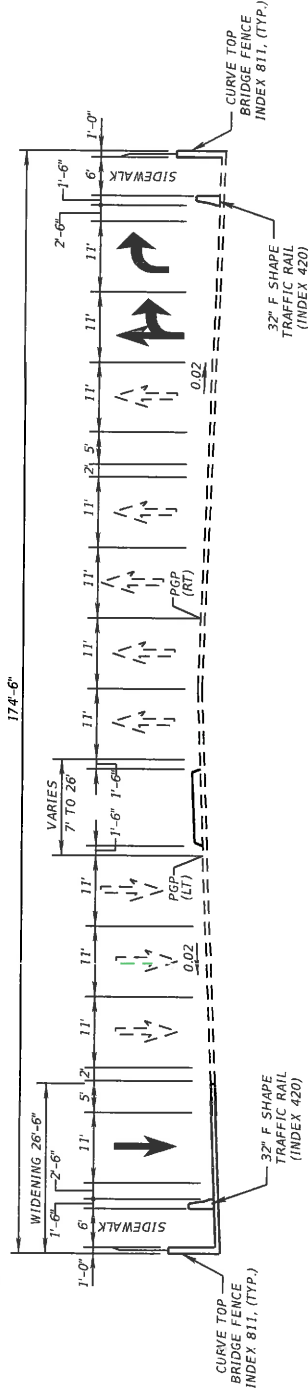




# PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 231932-1-22-01 COUNTY NAME PALM BEACH  
 SECTION NO. 93220 FEDERAL AID PROJECT NO. N/A  
 ROAD DESIGNATION SR 9/1-95 LIMITS/MILEPOST SR 9 MP 16.289 TO MP 16.330  
 PROJECT DESCRIPTION SR 9/1-95 @ GATEWAY BOULEVARD INTERCHANGE

## PROPOSED STRUCTURE TYPICAL SECTION

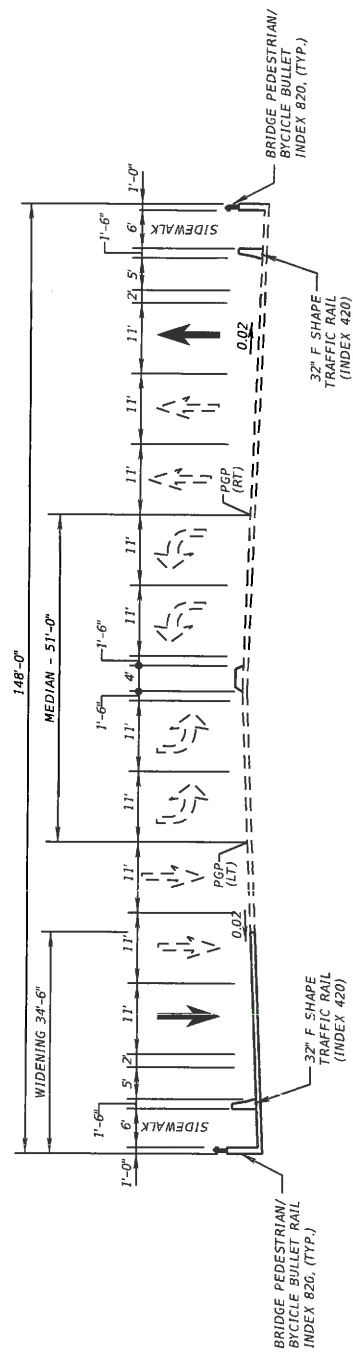


FDOT CONCURRENCE	
TYPICAL SECTION C-C GATEWAY BLVD. OVER CSX RR	FDOT CONCURRENCE
APPROVED BY: ANTONIO M. GARCIA, P.E.	FDOT CONCURRENCE
ANTONIO M. GARCIA, P.E. Signature	DATE
STEVE BRAUN, P.E. FDOT District Design Engineer	DATE
APPROVED BY: RAMON A. OTERO, P.E. FDOT District Structures Design Engineer	DATE
MARK E. CLASGENS, P.E. FHWA Transportation Engineer	DATE

# PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 231932-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
 SECTION NO. 93220 ROAD DESIGNATION SR 9/I-95 LIMITS/MILEPOST SR 9 MP 16.289 TO MP 16.330  
 PROJECT DESCRIPTION SR 9/I-95 @ GATEWAY BOULEVARD INTERCHANGE

## PROPOSED STRUCTURE TYPICAL SECTION



FDOT CONCURRENCE

TYPICAL SECTION D-D  
GATEWAY BLVD.  
OVER I-95

RAMON A. OTERO, P.E.  
 FDOT District Structures Design Engineer

FHWA CONCURRENCE

FDOT CONCURRENCE

APPROVED BY: ANTONIO M. GARCIA, P.E.

MARK E. CLASCENS, P.E.  
 FHWA Transportation Engineer

STEVE BRAUN, P.E.  
 FDOT District Design Engineer

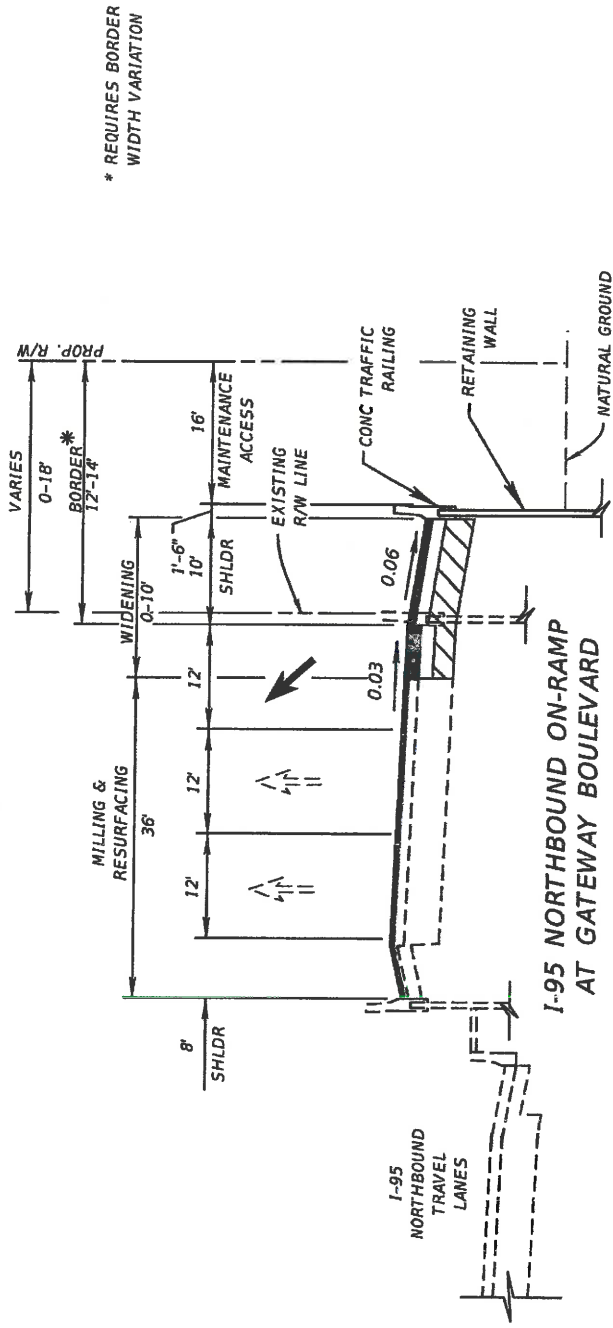
ANTONIO M. GARCIA, P.E.  
 Signature

\$USERS\$      \$DATE\$      \$TIME\$      \$FILES\$

# PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 231932-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
 SECTION NO. 93220000 ROAD DESIGNATION SR 9 (I-95) LIMITS/MILEPOST SR9 MP 16.289 TO MP 16.330  
 PROJECT DESCRIPTION I-95 AT GATEWAY BOULEVARD INTERCHANGE PD&E STUDY

## PROPOSED ROADWAY TYPICAL SECTION



I-95 NORTHBOUND ON-RAMP  
 AT GATEWAY BOULEVARD  
 DESIGN SPEED = 30-50 MPH

APPROVED BY: <i>Cassandra Piché</i> Cassandra Piché, P.E. License No: 71405 Engineer Of Record	DATE 3-17	FDOT CONCURRENCE	FHWA CONCURRENCE
Steve C. Braun, P.E. FDOT District Design Engineer	DATE		Mark E. Claspens, P.E. FHWA Transportation Engineer
DATE	DATE		DATE

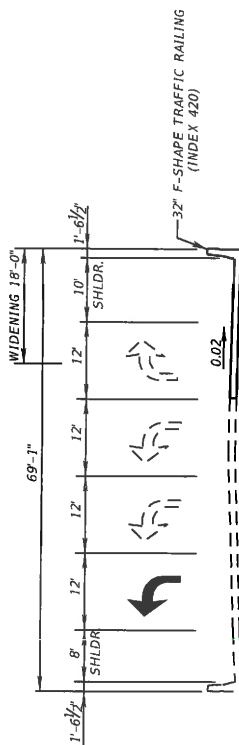
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FINANCIAL PROJECT ID 231932-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
 SECTION NO. 93220 ROAD DESIGNATION SR 9/I-95 LIMITS/MILEPOST SR 9 MP 16.289 TO MP 16.330  
 PROJECT DESCRIPTION SR 9/I-95 @ GATEWAY BOULEVARD INTERCHANGE

## PROPOSED STRUCTURE TYPICAL SECTION



TYPICAL SECTION G-G  
 I-95 NB OFF RAMP AT  
 GATEWAY BLVD.

FDOT CONCURRENCE

RAMON A. OTERO, P.E. \_\_\_\_\_ Date \_\_\_\_\_  
 FDOT District Structures Design Engineer

FHWA CONCURRENCE

MARK E. CLASCENS, P.E. \_\_\_\_\_ Date \_\_\_\_\_  
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FDOT CONCURRENCE

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APPROVED BY: ANTONIO M. GARCIA, P.E.

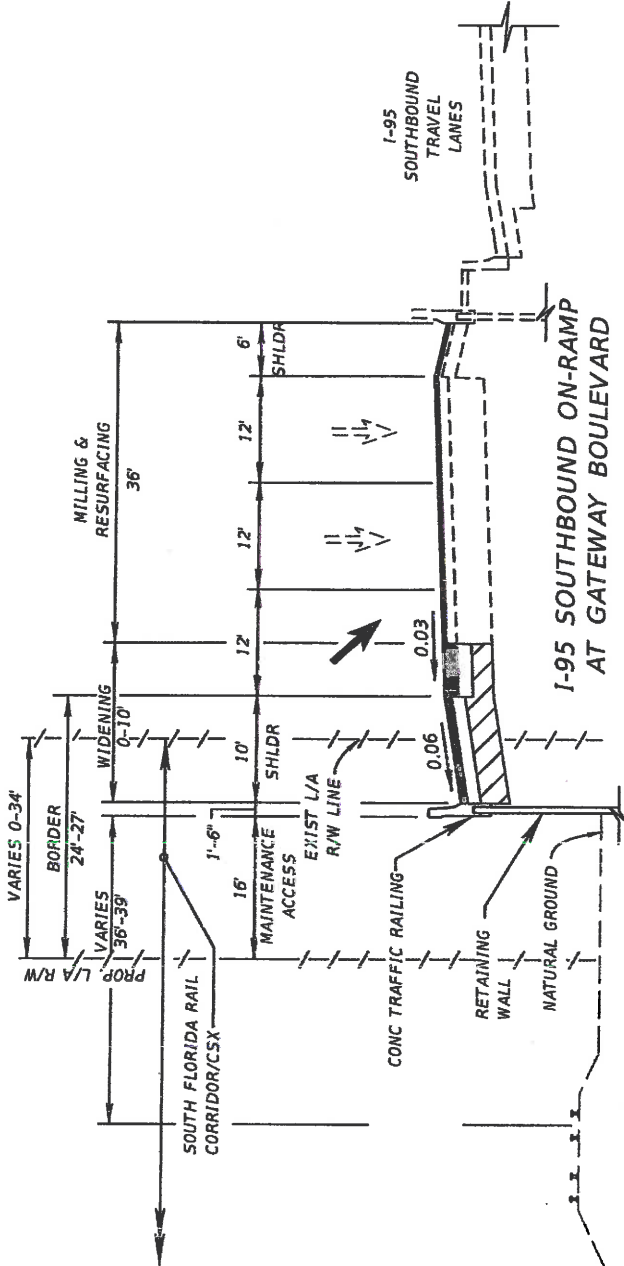
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\$USERS\$ \$DATE\$ \$TIMES\$ \$FILE\$

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 PROJECT DESCRIPTION I-95 AT GATEWAY BOULEVARD INTERCHANGE PD&E STUDY

## PROPOSED ROADWAY TYPICAL SECTION



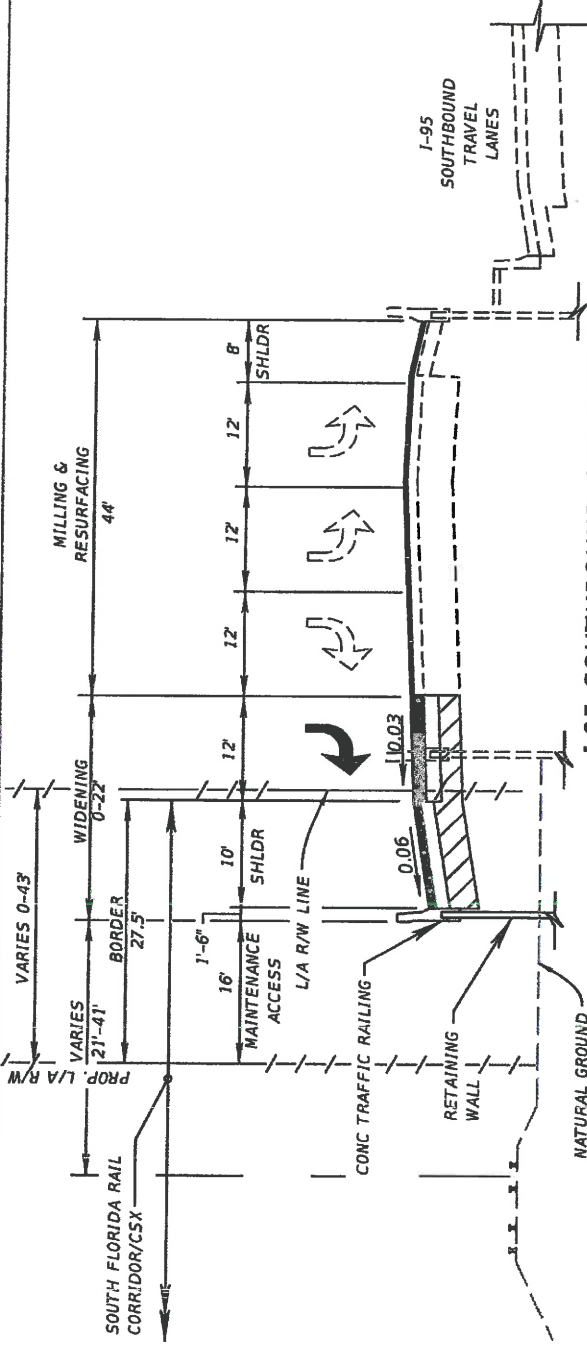
DESIGN SPEED = 30-50 MPH

APPROVED BY: <i>Cassandra Piche</i> Cassandra Piche, P.E. License No.: 71405 Engineer of Record	DATE: 3-1-17	FDOT CONCURRENCE	FHWA CONCURRENCE
Steve C. Braun, P.E. FDOT District Design Engineer	DATE	Mark E. Clasgens, P.E. FHWA Transportation Engineer	DATE

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 PROJECT DESCRIPTION I-95 AT GATEWAY BOULEVARD INTERCHANGE PD&E STUDY

## PROPOSED ROADWAY TYPICAL SECTION



**I-95 SOUTHBOUND OFF-RAMP  
 AT GATEWAY BOULEVARD**  
**DESIGN SPEED = 30-50 MPH**

APPROVED BY: <i>Cassandra Piché</i> Cassandra Piché, P.E. License No.: 71405 Engineer of Record	DATE: 3.1.17	DATE: _____ Mark E. Clasgens, P.E. FHWA Transportation Engineer
SUSER\$      SDATES      \$FILES\$      \$TIMES\$	FDOT CONCURRENCE	FHWA CONCURRENCE

## PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 231932-1-22-01 COUNTY (SECTION) 93220000  
 PROJECT DESCRIPTION \_\_\_\_\_

## PROJECT CONTROLS

### FUNCTIONAL CLASSIFICATION

- ( ) RURAL  
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 ( ) PRINCIPAL ART. ( ) MINOR COLL.  
 ( ) LOCAL

### HIGHWAY SYSTEM

- Yes No  
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 ( ) (X) STRATEGIC INTERMODAL SYSTEM  
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- ( ) 1 - FREEWAY  
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 (X) 3 - RESTRICTIVE w/660 ft. Connection Spacing  
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#### DISTRIBUTION

DESIGN SPEED	<u>40 MPH</u>	K 9.0 %
POSTED SPEED	<u>30 MPH</u>	D 60.3 %
		T 24.4 %

#### DESIGN SPEED APPROVALS

\_\_\_\_\_  
 DISTRICT DESIGN ENGINEER DATE

N/A

\_\_\_\_\_  
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 ( ) TDLC / NEW CONSTRUCTION / RECONSTRUCTION  
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 (FLORIDA GREENBOOK) (OFF-STATE HIGHWAY SYSTEM ONLY)

LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:

- DESIGN VARIATIONS:  
 1. BORDER WIDTH

LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:

N/A

LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

- CITY OF BOYNTON BEACH WATER & SEWER
- FLORIDA POWER & LIGHT (FPL)
- FLORIDA PUBLIC UTILITIES
- HOTWIRE COMMUNICATIONS
- FPU GAS
- PALM BEACH COUNTY TRAFFIC OPERATIONS
- AT&T DISTRIBUTION
- COMCAST
- FPL DISTRIBUTION
- FPL PBC

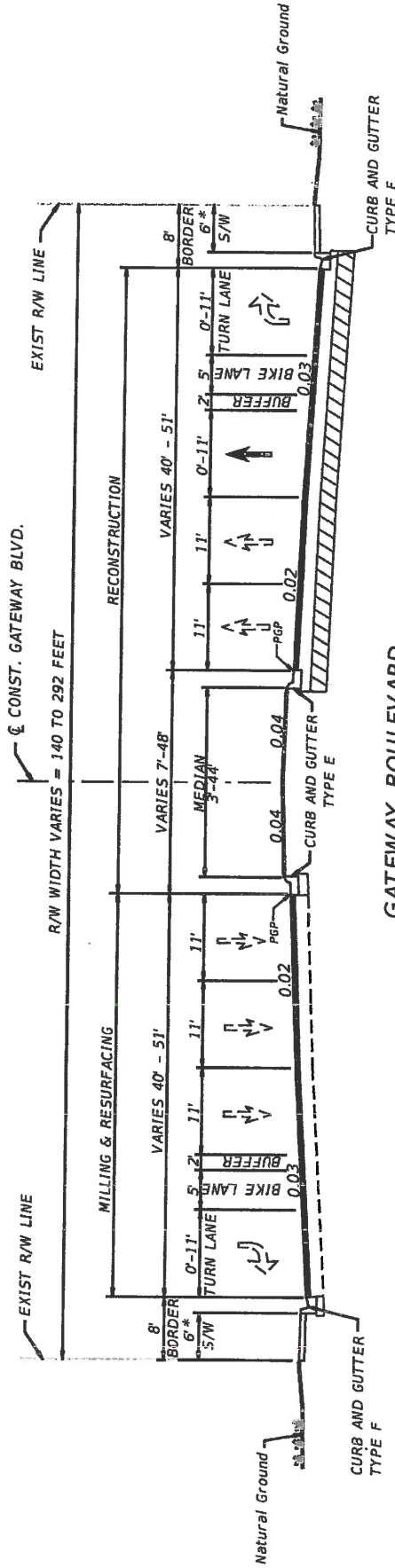
LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:



# PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 231932-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
 SECTION NO. 93220000 ROAD DESIGNATION SR 9 (I-95) LIMITS/MILEPOST SR9 MP 16.289 TO MP 16.330  
 PROJECT DESCRIPTION I-95 AT GATEWAY BOULEVARD INTERCHANGE PD&E STUDY

## PROPOSED ROADWAY TYPICAL SECTION



GATEWAY BOULEVARD  
 (EAST OF I-95)  
 FROM STA. 116+75.27 TO STA. 124+51.92

DESIGN SPEED = 40 MPH

\*Barrier wall will be required at the back of sidewalk from Sta. 116+62.42 to Sta. 121+20 LT and from Sta. 116+62.42 to Sta. 121+50 RT.

APPROVED BY:

*Cassandra Piché* 3-1-17  
 Cassandra Piché, P.E.  
 License No: 71405  
 Engineer Of Record

Date

FDOT CONCURRENCE

Steve C. Braun, P.E.  
 FDOT District Design Engineer

Date

CITY OF BOYNTON BEACH

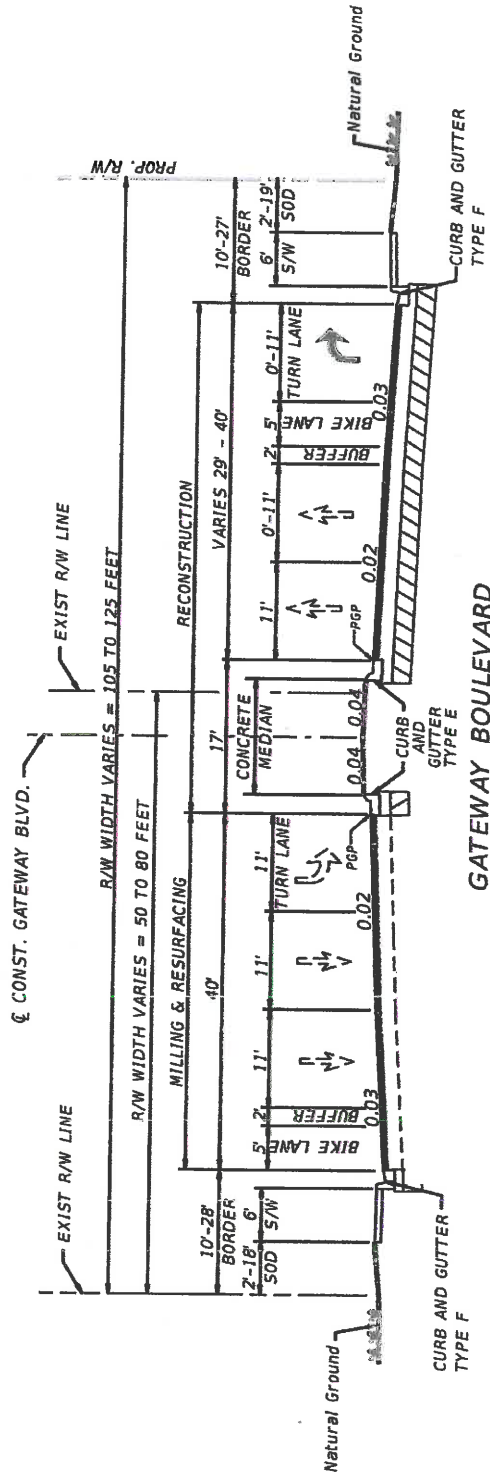
Jeff R. Livergood, P.E.  
 Director Of Public Works and Engineering

Date

# PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 231932-1-22-01 FEDERAL AID PROJECT NO. N/A COUNTY NAME PALM BEACH  
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 PROJECT DESCRIPTION I-95 AT GATEWAY BOULEVARD INTERCHANGE PD&E STUDY

## PROPOSED ROADWAY TYPICAL SECTION



**GATEWAY BOULEVARD  
 (EAST OF I-95)  
 FROM STA. 124+51.92 TO STA. 135+52.38**

**DESIGN SPEED = 40 MPH**

APPROVED BY: <i>Cassandra Piché</i> Cassandra Piché, P.E. License No.: 71405 Engineer Of Record	DATE: <u>3-1-17</u>	FDOT CONCURRENCE	CITY OF BOYNTON BEACH
Steve C. Braun, P.E. FDOT District Design Engineer	DATE		Jeff R. Livergood, P.E. Director Of Public Works and Engineering
\$USERS	\$DATES	\$TIMES	\$FILES

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## **Appendix C**

### **Geotechnical Technical Memorandum**



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**TIERRA SOUTH FLORIDA, INC.**  
Geotechnical Engineering / Material Testing / Inspection Services

November 20, 2015

ARCADIS  
2081 Vista Parkway, Suite 305  
West Palm Beach, FL 33411

Attn: Mr. Hank Deibel, Jr. P.E.

RE: **Geotechnical Technical Memorandum**  
**SR 9/I-95 @ SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 @ Gateway**  
**Bld. Interchange – PD&E Study**  
**Palm Beach County**  
**FPID Nos.: 435804-1-22-01 & 231932-1-22-01**  
**TSF Project No.: 7111-15-219**

Dear Hank:

Tierra South Florida, Inc. (TSF) has completed a preliminary geotechnical engineering data review for the SR 9/I-95 at SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 at Gateway Blvd. Interchange PD&E Study in Palm Beach County, Florida. The results of our data review are presented in this technical memorandum.

TSF appreciates the opportunity to be of service to ARCADIS on this project and looks forward to working with you on future projects. If you have any questions or comments regarding this memorandum, please contact our office at your earliest convenience.

Sincerely,

***TIERRA SOUTH FLORIDA, INC.***

Raj Krishnasamy, P.E.  
Principal Geotechnical Engineer  
FL Registration No. 53567

Wenbin Zhao, Ph.D., P.E.  
Project Engineer  
FL Registration No. 78558

N. Manoharan, Ph.D.  
Senior Specialist

Attachments

## Table of Contents

1.0	PROJECT DESCRIPTION AND SCOPE OF SERVICES.....	1
2.0	REVIEW OF EXISTING SUBSURFACE INFORMATION.....	1
2.1	Review of USDA Soil Survey .....	1
2.2	Review of USGS Maps for Seasonal High Groundwater Estimates .....	2
2.3	Review of Subsurface Information from Previous Projects .....	2
3.0	ENGINEERING EVALUATION AND PRELIMINARY RECOMMENDATIONS.....	3
3.1	General.....	3
3.2	Embankment Construction.....	3
3.3	Excavations.....	3
3.4	Groundwater Control .....	3
3.5	General Guideline for Design Stage Geotechnical Study.....	3
3.6	Bridges .....	4
4.0	LIMITATIONS.....	4

**APPENDIX:**           Project Location Map  
                          USDA Soil Survey Information

## **1.0 PROJECT DESCRIPTION AND SCOPE OF SERVICES**

We understand the purpose of this PD&E Study is to evaluate alternatives for the interchange improvements of SR 9/I-95 at SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 at Gateway Blvd. Interchange in Palm Beach County.

Scope of geotechnical services for the PD&E Study was to perform a desk top review of available subsurface information and provide a technical memorandum. For this, the following services were provided:

1. Reviewed readily available published topographic and soils information. This information was obtained from the "Soil Survey of Palm Beach County Area, Florida" published by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS), and USGS Maps.
2. Reviewed existing subsurface information from previous projects in the project area.
3. Prepared this Geotechnical Memorandum.

## **2.0 REVIEW OF EXISTING SUBSURFACE INFORMATION**

### **2.1 Review of USDA Soil Survey**

Based on a review of the Palm Beach County Area Soil Maps published by USDA-NRCS, the soil-mapping units noted in the vicinity are predominantly as follows:

- Arents-Urban land complex, 0 to 5 percent slopes
- Basinger fine sand, 0 to 2 percent slopes
- Basinger and Myakka sands, Depressional
- Immokalee fine sand, 0 to 2 percent slopes
- Okeelanta muck, drained, 0 to 1 percent slopes
- Pomello fine sand, 0 to 5 percent slopes
- Quartzipsamments, shaped, 0 to 5 percent slopes
- Sanibel muck
- St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes
- Udorthents, 2 to 35 percent slopes
- Urban land

Project Location Map and USDA soil survey information are presented in the Appendix.



## **2.2 Review of USGS Maps for Seasonal High Groundwater Estimates**

Seasonal high groundwater levels are expected to be controlled by existing drainage features present at the project vicinity. Estimated seasonal high groundwater table levels are expected to be at about elevation 2.5 to 3.5 NAVD, 1988 (about 4 to 5 NGVD, 1929). This estimate is based on the Altitude of Water Table in the Biscayne Aquifer in Palm Beach County published by United States Geological Survey (between 1984 and 1987).

## **2.3 Review of Subsurface Information from Previous Projects**

Subsurface information obtained in the project vicinity from previous projects was reviewed. The subsurface conditions from the following projects were reviewed. Some of the data were collected by Professional Service Industries, Inc. (PSI) while data for some of the projects were made available to us.

- I-95 HOV Lanes Report of Core Boring Sheets, FPID No. 231917-1-52-01, Dated December 18, 1998.
- I-95 HOV Lanes Plans, FPID No. 231916-1-52-01.
- I-95 HOV Lanes, Phase II, Boynton Beach, Florida, FPID No. 231937-1-52-01 (from North of Gateway Boulevard to South of 6<sup>th</sup> Avenue).
- I-95 Widening Final Plan, F.A Proj. No. 1-IR-95-1(387)46.
- I-95 Intelligent Transportation System (ITS) Deployment (Phase B), Palm Beach County, Florida, FPID No. 404827-1-52-01.

Review of soil information for previous projects indicates that the subsoils in the project vicinity are typically sandy soils (sand, sand/shell, and silty sand) sometimes with limerock fragments. ASSHTO classifications of the soils are predominantly A-3, A-2-4, and A-1-b. Sand with organics (A-8) and sandy silt (A-4) materials were encountered in isolated areas. Review of USDA soil survey information indicates that pockets of Sanibel muck (A-8 material) are located on the Boynton Beach Boulevard, about 2500 feet west of I-95.

### **3.0 ENGINEERING EVALUATION AND PRELIMINARY RECOMMENDATIONS**

#### **3.1 General**

In general, based on the review of the existing subsurface information, we do not anticipate any major constraint to the proposed improvements that is currently under consideration. Based on existing soil information, organic soils (muck) will be encountered at isolated locations and should be anticipated at some pocketed locations.

Removal of organic soils and plastic soils (if any) should be performed in accordance with the Standard Index 500. Backfill should consist of materials conforming to FDOT Standard Index 505 and compacted in accordance with Section 120-9 of the Standard Specification for Road and Bridge Construction, latest edition.

#### **3.2 Embankment Construction**

We anticipate that fills will be required for the proposed roadway improvements. Assuming proper subgrade preparation and adequate fill materials are utilized, we recommend that all proposed permanent side slopes be constructed on 2.0 horizontal to 1.0 vertical (2H:1V) or flatter. To prevent minor sloughing at the surface, we recommend that the slopes be seeded, mulched and maintained to enhance slope stability soon after being completed.

#### **3.3 Excavations**

All excavations should be performed in accordance with FDOT Standard Index 500, the latest Standard Specifications for Road and Bridge Construction, and in accordance with OSHA Standards. We recommend that sides of temporary excavations be sloped to 2H:1V or flatter or supported by temporary shoring.

#### **3.4 Groundwater Control**

In our opinion, groundwater may not have impact on the proposed roadway widening provided the proposed finish level is at the existing roadway level. However, depending upon groundwater levels at the time of construction, some form of dewatering may be required for utility excavations.

#### **3.5 General Guideline for Design Phase Geotechnical Study**

A design phase geotechnical study will be required for this project during design phase of the project and should be performed in accordance with FDOT Soils and Foundations Handbook.

### **3.6 Bridges**

Based on the available project plans that are available to us, Gateway Boulevard and Boynton Beach Boulevard Bridges over I-95 are not included in any of the plans. However, a review of the Plans showed that all the bridges in the vicinity of this project are supported on 18-inch precast prestressed concrete square piles. It is our opinion that the bridge widening, if any in the proposed project, can be founded on similar concrete piles.

## **4.0 LIMITATIONS**

Our Geotechnical engineering evaluation of the site and subsurface conditions with respect to the planned improvements are based upon the following: (1) site observations, (2) review of existing subsurface information and (3) our understanding of the project information as presented in this report.

We recommend that a detail geotechnical study should be planned and performed in accordance with FDOT "Soils and Foundations Handbook" during the design phase of this project.

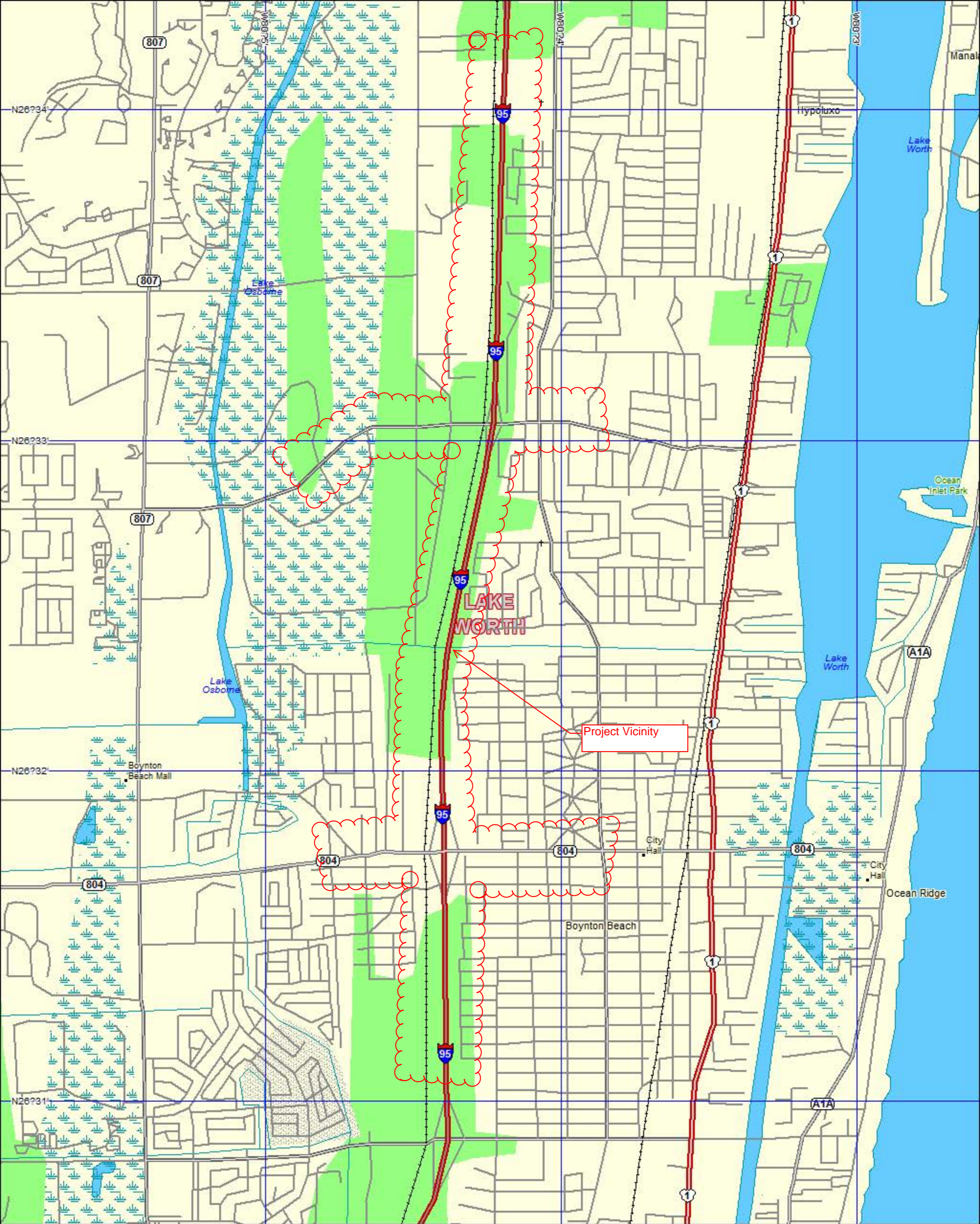
The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

This Geotechnical Technical Memorandum has been prepared for the specific application to the PD&E Study for the improvements of SR 9/I-95 at SR 804/Boynton Beach Blvd. Interchange & SR 9/I-95 at Gateway Blvd. Interchange in Palm Beach County, Florida.

## **APPENDIX**

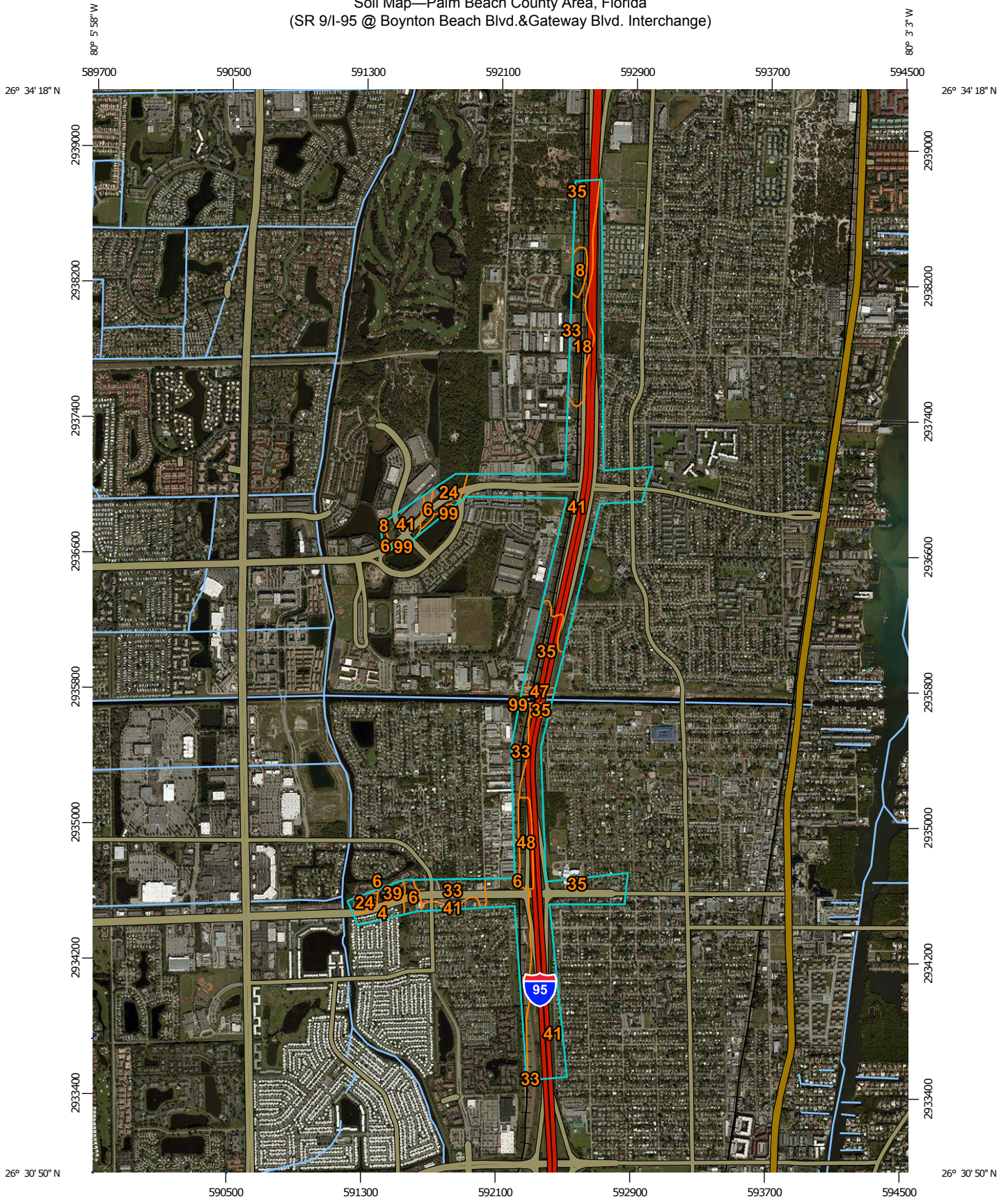
Project Location Map  
USDA Soil Survey Information



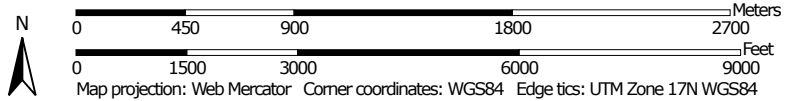




Soil Map—Palm Beach County Area, Florida  
 (SR 9/I-95 @ Boynton Beach Blvd.&Gateway Blvd. Interchange)



Map Scale: 1:31,200 if printed on A portrait (8.5" x 11") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

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## 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.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

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: Palm Beach County Area, Florida

Survey Area Data: Version 10, Sep 21, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 13, 2014—Dec 11, 2014

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.

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## Map Unit Legend

Palm Beach County Area, Florida (FL611)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4	Arents-Urban land complex, 0 to 5 percent slopes	5.9	1.5%
6	Basinger fine sand, 0 to 2 percent slopes	31.6	8.3%
8	Basinger and Myakka sands, depressional	5.3	1.4%
18	Immokalee fine sand, 0 to 2 percent slopes	31.8	8.4%
24	Okeelanta muck, drained, 0 to 1 percent slopes	11.4	3.0%
33	Pomello fine sand, 0 to 5 percent slopes	26.4	7.0%
35	Quartzipsamments, shaped, 0 to 5 percent slopes	23.0	6.1%
39	Sanibel muck	4.1	1.1%
41	St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes	223.9	58.9%
47	Udorthents, 2 to 35 percent slopes	1.9	0.5%
48	Urban land	10.4	2.7%
99	Water	4.3	1.1%
<b>Totals for Area of Interest</b>		<b>380.2</b>	<b>100.0%</b>

## Palm Beach County Area, Florida

### 4—Arents-Urban land complex, 0 to 5 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1j7cp  
*Mean annual precipitation:* 48 to 56 inches  
*Mean annual air temperature:* 70 to 77 degrees F  
*Frost-free period:* 358 to 365 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Arents and similar soils:* 60 percent  
*Urban land:* 35 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:* sand  
*C1 - 4 to 32 inches:* sand  
*C2 - 32 to 72 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:* Low  
*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 24 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 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)

#### Description of Urban Land

##### Setting

*Landform:* Marine terraces

## Custom Soil Resource Report

*Landform position (three-dimensional):* Interfluve, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* No parent material

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Other vegetative classification:* Forage suitability group not assigned  
(G156AC999FL)

### Minor Components

#### Basinger

*Percent of map unit:* 5 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)

## 6—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  
*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

## Custom Soil Resource Report

### 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:* Slough (R155XY011FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

### Minor Components

#### Eaugallie

*Percent of map unit:* 4 percent  
*Landform:* — error in exists on —  
*Landform position (three-dimensional):* Tread, talf  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Ecological site:* South Florida Flatwoods (R155XY003FL)  
*Other vegetative classification:* South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

#### Margate

*Percent of map unit:* 3 percent  
*Landform:* Drainageways on marine terraces  
*Landform position (three-dimensional):* Tread, dip  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, concave  
*Other vegetative classification:* Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

#### Placid, depressional

*Percent of map unit:* 3 percent  
*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Tread, dip  
*Down-slope shape:* Convex, concave  
*Across-slope shape:* Linear, concave  
*Other vegetative classification:* Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)



## 8—Basinger and Myakka sands, depressional

### Map Unit Setting

*National map unit symbol:* 1j7ct  
*Elevation:* 10 to 100 feet  
*Mean annual precipitation:* 48 to 56 inches  
*Mean annual air temperature:* 70 to 77 degrees F  
*Frost-free period:* 358 to 365 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Myakka, depressional, and similar soils:* 47 percent  
*Basinger, depressional, and similar soils:* 47 percent  
*Minor components:* 6 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Basinger, Depressional

#### Setting

*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Sandy marine deposits

#### Typical profile

*A - 0 to 4 inches:* sand  
*Eg - 4 to 29 inches:* sand  
*Bh/Eg - 29 to 36 inches:* sand  
*Cg - 36 to 72 inches:* sand

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Very high (19.98 to 39.96 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*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 2.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7w  
*Hydrologic Soil Group:* A/D

## Custom Soil Resource Report

*Other vegetative classification:* Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

### Description of Myakka, Depressional

#### Setting

*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Sandy marine deposits

#### Typical profile

*A - 0 to 6 inches:* sand  
*E - 6 to 26 inches:* sand  
*Bh - 26 to 47 inches:* sand  
*C - 47 to 72 inches:* sand

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Runoff class:* Negligible  
*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 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*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 4.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7w  
*Hydrologic Soil Group:* A/D  
*Other vegetative classification:* Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

### Minor Components

#### 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:* Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)

#### Anclote

*Percent of map unit:* 2 percent  
*Landform:* Drainageways on marine terraces, flats on marine terraces  
*Landform position (three-dimensional):* Dip, talff  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave

## Custom Soil Resource Report

*Other vegetative classification:* Sandy soils on flats of mesic or hydric lowlands  
(G156AC141FL)

### **Sanibel**

*Percent of map unit:* 2 percent

*Landform:* Depressions on marine terraces

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Other vegetative classification:* Organic soils in depressions and on flood plains  
(G156AC645FL)

## **18—Immokalee fine sand, 0 to 2 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2s3lk

*Elevation:* 10 to 150 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**

*Immokalee and similar soils:* 87 percent

*Minor components:* 13 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Immokalee**

#### **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 6 inches:* fine sand

*E - 6 to 35 inches:* fine sand

*Bh - 35 to 54 inches:* fine sand

*BC - 54 to 80 inches:* loamy 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

## Custom Soil Resource Report

*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:* South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

### **Minor Components**

#### **Basinger**

*Percent of map unit:* 5 percent

*Landform:* Drainageways on marine terraces

*Landform position (three-dimensional):* Tread, dip

*Down-slope shape:* Concave, convex

*Across-slope shape:* Concave, linear

*Other vegetative classification:* Slough (R155XY011FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

#### **Margate**

*Percent of map unit:* 3 percent

*Landform:* Drainageways on marine terraces

*Landform position (three-dimensional):* Dip

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, concave

*Other vegetative classification:* Sandy soils on stream terraces, flood plains, or in depressions (G156AC145FL)

#### **Pomona**

*Percent of map unit:* 3 percent

*Landform:* Flatwoods on marine terraces

*Landform position (three-dimensional):* Tread, talf

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Other vegetative classification:* South Florida Flatwoods (R155XY003FL), Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

#### **Placid, depressional**

*Percent of map unit:* 2 percent

*Landform:* Depressions on marine terraces

*Landform position (three-dimensional):* 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)



## 24—Okeelanta muck, drained, 0 to 1 percent slopes

### Map Unit Setting

*National map unit symbol:* 2tzwc  
*Elevation:* 0 to 30 feet  
*Mean annual precipitation:* 48 to 68 inches  
*Mean annual air temperature:* 70 to 77 degrees F  
*Frost-free period:* 358 to 365 days  
*Farmland classification:* Farmland of unique importance

### Map Unit Composition

*Okeelanta, drained, and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Okeelanta, Drained

#### Setting

*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Tread, dip, talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Herbaceous organic material over sandy marine deposits

#### Typical profile

*Oa - 0 to 31 inches:* muck  
*Cg - 31 to 65 inches:* fine sand

#### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Runoff class:* Negligible  
*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 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum in profile:* 2 percent  
*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:* High (about 11.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* A/D  
*Other vegetative classification:* Organic soils in depressions and on flood plains (G156AC645FL)

### Minor Components

#### Sanibel

*Percent of map unit:* 5 percent

*Landform:* Depressions on marine terraces

*Landform position (three-dimensional):* Tread, dip, talf

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Other vegetative classification:* Organic soils in depressions and on flood plains  
(G156AC645FL)

#### Tequesta

*Percent of map unit:* 3 percent

*Landform:* Depressions on marine terraces

*Landform position (three-dimensional):* Tread, dip, talf

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Other vegetative classification:* Organic soils in depressions and on flood plains  
(G156AC645FL)

#### Basinger

*Percent of map unit:* 2 percent

*Landform:* Depressions on marine terraces

*Landform position (three-dimensional):* Tread, dip, talf

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Other vegetative classification:* Sandy soils on flats of mesic or hydric lowlands  
(G156AC141FL)

## 33—Pomello fine sand, 0 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 1j7dk

*Elevation:* 10 to 20 feet

*Mean annual precipitation:* 48 to 56 inches

*Mean annual air temperature:* 70 to 77 degrees F

*Frost-free period:* 358 to 365 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Pomello and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Pomello

#### Setting

*Landform:* Ridges on marine terraces, knolls on marine terraces

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Convex

## Custom Soil Resource Report

*Across-slope shape:* Linear  
*Parent material:* Sandy marine deposits

### Typical profile

*A - 0 to 4 inches:* fine sand  
*E - 4 to 44 inches:* fine sand  
*Bh - 44 to 60 inches:* fine sand  
*Bw/C - 60 to 80 inches:* fine sand

### Properties and qualities

*Slope:* 0 to 5 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* High (1.98 to 5.95 in/hr)  
*Depth to water table:* About 24 to 42 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 3.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A  
*Other vegetative classification:* Sandy soils on rises and knolls of mesic uplands  
(G156AC131FL)

### Minor Components

#### Myakka

*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:* Sandy soils on flats of mesic or hydric lowlands  
(G156AC141FL)

#### 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:* Sandy soils on flats of mesic or hydric lowlands  
(G156AC141FL)

#### 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:* Sandy soils on flats of mesic or hydric lowlands  
(G156AC141FL)

**Palm beach**

*Percent of map unit:* 2 percent  
*Landform:* Dunes on marine terraces  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Other vegetative classification:* Sandy soils on ridges and dunes of xeric uplands (G156AC111FL)

**Paola**

*Percent of map unit:* 2 percent  
*Landform:* Ridges on marine terraces, knolls on marine terraces  
*Landform position (three-dimensional):* Interfluve, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Other vegetative classification:* Sandy soils on ridges and dunes of xeric uplands (G156AC111FL)

**St. lucie**

*Percent of map unit:* 2 percent  
*Landform:* Knolls on marine terraces, ridges on marine terraces  
*Landform position (three-dimensional):* Side slope, interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Other vegetative classification:* Sandy soils on ridges and dunes of xeric uplands (G156AC111FL)

**35—Quartzipsamments, shaped, 0 to 5 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 1j7dm  
*Mean annual precipitation:* 48 to 56 inches  
*Mean annual air temperature:* 70 to 77 degrees F  
*Frost-free period:* 358 to 365 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Quartzipsamments and similar soils:* 100 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Quartzipsamments**

**Setting**

*Landform:* Rises on marine terraces  
*Landform position (three-dimensional):* Rise  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Sandy marine deposits



## Custom Soil Resource Report

### Typical profile

*A - 0 to 6 inches:* fine sand  
*C - 6 to 80 inches:* fine sand

### Properties and qualities

*Slope:* 0 to 5 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* Very high (19.98 to 39.96 in/hr)  
*Depth to water table:* More than 80 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 1.9 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)

## 39—Sanibel muck

### Map Unit Setting

*National map unit symbol:* 1j7dr  
*Elevation:* 10 to 100 feet  
*Mean annual precipitation:* 48 to 56 inches  
*Mean annual air temperature:* 70 to 77 degrees F  
*Frost-free period:* 358 to 365 days  
*Farmland classification:* Farmland of unique importance

### Map Unit Composition

*Sanibel and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Sanibel

#### Setting

*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Thin organic material over sandy marine deposits

#### Typical profile

*Oa - 0 to 12 inches:* muck  
*A - 12 to 18 inches:* sand

## Custom Soil Resource Report

*Cg - 18 to 72 inches: sand*

### **Properties and qualities**

*Slope: 0 to 1 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Very poorly drained*

*Runoff class: Negligible*

*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 0 inches*

*Frequency of flooding: None*

*Frequency of ponding: Frequent*

*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: Moderate (about 6.5 inches)*

### **Interpretive groups**

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 7w*

*Hydrologic Soil Group: A/D*

*Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)*

### **Minor Components**

#### **Holopaw**

*Percent of map unit: 4 percent*

*Landform: Drainageways on marine terraces*

*Landform position (three-dimensional): Dip*

*Down-slope shape: Linear*

*Across-slope shape: Concave*

*Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)*

#### **Anclote**

*Percent of map unit: 4 percent*

*Landform: Drainageways on marine terraces, flats on marine terraces*

*Landform position (three-dimensional): Dip, talf*

*Down-slope shape: Linear*

*Across-slope shape: Concave*

*Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G156AC141FL)*

#### **Okeelanta, drained**

*Percent of map unit: 4 percent*

*Landform: Depressions on marine terraces*

*Landform position (three-dimensional): Dip*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL)*

#### **Tequesta**

*Percent of map unit: 3 percent*

*Landform: Depressions on marine terraces*

*Landform position (three-dimensional): Dip*

*Down-slope shape: Concave*

## Custom Soil Resource Report

*Across-slope shape:* Concave

*Other vegetative classification:* Organic soils in depressions and on flood plains  
(G156AC645FL)

### 41—St. Lucie-Paola-Urban land complex, 0 to 8 percent slopes

#### Map Unit Setting

*National map unit symbol:* 1j7ds

*Elevation:* 10 to 20 feet

*Mean annual precipitation:* 48 to 56 inches

*Mean annual air temperature:* 70 to 77 degrees F

*Frost-free period:* 358 to 365 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*St. lucie and similar soils:* 35 percent

*Paola and similar soils:* 33 percent

*Urban land:* 30 percent

*Minor components:* 2 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of St. Lucie

##### Setting

*Landform:* Ridges on marine terraces, knolls on marine terraces

*Landform position (three-dimensional):* Side slope, interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Eolian or sandy marine deposits

##### Typical profile

*A - 0 to 5 inches:* sand

*C - 5 to 80 inches:* sand

##### Properties and qualities

*Slope:* 0 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Excessively drained

*Runoff class:* Negligible

*Capacity of the most limiting layer to transmit water (Ksat):* Very high (19.98 to 39.96 in/hr)

*Depth to water table:* More than 80 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 1.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

## Custom Soil Resource Report

*Hydrologic Soil Group: A*

*Other vegetative classification: Forage suitability group not assigned  
(G156AC999FL)*

### Description of Paola

#### Setting

*Landform: Ridges on marine terraces, knolls on marine terraces*

*Landform position (three-dimensional): Interfluve, side slope*

*Down-slope shape: Convex*

*Across-slope shape: Linear*

*Parent material: Sandy marine deposits*

#### Typical profile

*A - 0 to 3 inches: sand*

*E - 3 to 20 inches: sand*

*C - 20 to 80 inches: sand*

#### Properties and qualities

*Slope: 0 to 8 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Excessively drained*

*Runoff class: Negligible*

*Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 39.96  
in/hr)*

*Depth to water table: More than 80 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 1.8 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)*

### Description of Urban Land

#### Setting

*Landform: Marine terraces*

*Landform position (three-dimensional): Interfluve, talf*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: No parent material*

#### Interpretive groups

*Land capability classification (irrigated): None specified*

*Other vegetative classification: Forage suitability group not assigned  
(G156AC999FL)*

### Minor Components

#### Pomello

*Percent of map unit: 1 percent*

*Landform: Knolls on marine terraces, ridges on marine terraces*

## Custom Soil Resource Report

*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Other vegetative classification:* Forage suitability group not assigned  
(G156AC999FL)

### **Palm beach**

*Percent of map unit:* 1 percent  
*Landform:* Dunes 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)

## **47—Udorthents, 2 to 35 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 1j7dz  
*Mean annual precipitation:* 48 to 56 inches  
*Mean annual air temperature:* 70 to 77 degrees F  
*Frost-free period:* 358 to 365 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Udorthents and similar soils:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Udorthents**

#### **Setting**

*Landform:* Marine terraces  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Altered marine deposits

#### **Typical profile**

*A - 0 to 7 inches:* gravelly sand  
*C1 - 7 to 57 inches:* gravelly sand  
*C2 - 57 to 80 inches:* gravelly sand

#### **Properties and qualities**

*Slope:* 2 to 65 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Negligible



## Custom Soil Resource Report

*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:* More than 80 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):* 7s

*Hydrologic Soil Group:* A

*Other vegetative classification:* Forage suitability group not assigned (G156AC999FL)

### Minor Components

#### Riviera

*Percent of map unit:* 5 percent

*Landform:* Drainageways on marine terraces, flats on marine terraces

*Landform position (three-dimensional):* Dip, talf

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Other vegetative classification:* Sandy over loamy soils on flats of hydric or mesic lowlands (G156AC241FL)

## 48—Urban land

### Map Unit Composition

*Urban land:* 100 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

*Parent material:* No parent material

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Other vegetative classification:* Forage suitability group not assigned (G156AC999FL)

## 99—Water

### Map Unit Composition

*Water:* 100 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Water

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Other vegetative classification:* Forage suitability group not assigned  
(G156AC999FL)

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## **Appendix D**

**SFWMD Stor-All, Permit Number 50-04389-P**

**SFWMD Boynton Beach Tri-Rail Station, Permit Number 50-01503-S**

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South Florida Water Management District

**BEG. PERMIT  
NUMBER** 50-04389-P

**APPLICATION NO.**  
990517-2

50-04389-P

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
ENVIRONMENTAL RESOURCE  
STANDARD GENERAL PERMIT NO. 50-04389-P**

Form #0941  
08/95

DATE ISSUED: August 24, 1999

PERMITTEE: ANDERSON STOR ALL INC  
1375 WEST HILLSBORO BOULEVARD  
DEERFIELD BEACH, FL 33442

PROJECT DESCRIPTION: A SURFACE WATER MANAGEMENT SYSTEM SERVING 4.35 ACRE(S) OF  
COMMERCIAL DEVELOPMENT KNOWN AS STOR ALL INDUSTRIAL AVENUE.

PROJECT LOCATION: PALM BEACH COUNTY, SECTION 20 TWP 45S RGE 43E

PERMIT DURATION: Five years from the date issued to complete construction of the  
surface water management system as authorized herein. See attached  
Rule 40E-4.321, Florida Administrative Code.

This is to notify you of the District's agency action concerning Notice of Intent for  
Permit Application No. 990517-2, dated May 17, 1999. This action is taken pursuant to  
Rule 40E-1.603 and Chapter 40E-40, Florida Administrative Code (F.A.C.).

Based on the information provided, District rules have been adhered to and an  
Environmental Resource General Permit 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 General Conditions.
3. the attached 7 Special Conditions, and
4. the attached 7 Exhibit(s).

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 in accordance with the "Notice of Rights," we will assume that you concur with the District's action.

**CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the Permittee (and the persons listed in the attached distribution list) no later than 5:00 p.m. on this 24th day of August, 1999, in accordance with Section 120.60(3), Florida Statutes.

BY:   
Anthony M. Waterhouse, P.E.  
Director - Surface Water Management  
West Palm Beach Service Center

Certified Mail No. Z 380 379 240

Enclosures

AS  
MB  
9/1/99

## ENVIRONMENTAL RESOURCE PERMIT

## CHAPTER 40E-4 (10/95)

## 40E-4.321 Duration of Permits

(1) Unless revoked or otherwise modified the duration of an environmental resource permit issued under this chapter or Chapter 40E-40, F.A.C. is as follows:

(a) For a conceptual approval, two years from the date of issuance or the date specified as a condition of the permit, unless within that period an application for an individual or standard general permit is filed for any portion of the project. If an application for an environmental resource permit is filed, then the conceptual approval remains valid until final action is taken on the environmental resource permit application. If the application is granted, then the conceptual approval is valid for an additional two years from the date of issuance of the permit. Conceptual approvals which have no individual or standard general environmental resource permit applications filed for a period of two years shall expire automatically at the end of the two year period.

(b) For a conceptual approval filed concurrently with a development of regional impact (DRI) application for development approval (ADA) and a local government comprehensive plan amendment, the duration of the conceptual approval shall be two years from whichever one of the following occurs at the latest date:

1. the effective date of the local government's comprehensive plan amendment.
2. the effective date of the local government development order.
3. the date on which the District issues the conceptual approval, or
4. the latest date of the resolution of any Chapter 120.57, F.A.C., administrative proceeding

or other legal appeals.

(c) For an individual or standard general environmental resource permit, five years from the date of issuance or such amount of time as made a condition of the permit.

(d) For a noticed general permit issued pursuant to Chapter 40-E-400, F.A.C., five years from the date the notice of intent to use the permit is provided to the District.

(2)(a) Unless prescribed by special permit condition, permits expire automatically according to the timeframes indicated in this rule. If application for extension is made in writing pursuant to subsection (3), the permit shall remain in full force and effect until:

1. the Governing Board takes action on an application for extension of an individual permit,

or

2. staff takes action on an application for extension of a standard general permit.

(b) Installation of the project outfall structure shall not constitute a vesting of the permit.

(3) The permit extension shall be issued provided that a permittee files a written request with the District showing good cause prior to the expiration of the permit. For the purpose of this rule, good cause shall mean a set of extenuating circumstances outside of the control of the permittee. Requests for extensions, which shall include documentation of the extenuating circumstances and how they have delayed this project, will not be accepted more than 180 days prior to the expiration date.

(4) Substantial modifications to Conceptual Approvals will extend the duration of the Conceptual Approval for two years from the date of issuance of the modification. For the purposes of this section, the term "substantial modification" shall mean a modification which is reasonably expected to lead to substantially different water resource or environmental impacts which require a detailed review.

(5) Substantial modifications to individual or standard general environmental resource permits issued pursuant to a permit application extend the duration of the permit for three years from the date of issuance of the modification. Individual or standard general environmental resource permit modifications do not extend the duration of a conceptual approval.

(6) Permit modifications issued pursuant to subsection 40E-4.331(2)(b), F.A.C. (letter modifications) do not extend the duration of a permit.

(7) Failure to complete construction or alteration of the surface water management system and obtain operation phase approval from the District within the permit duration shall require a new permit authorization in order to continue construction unless a permit extension is granted.

## NOTICE OF RIGHTS

Section 120.569(1), Fla. Stat. (1997), requires that "each notice shall inform the recipient of any administrative hearing or judicial review that is available under this section, s. 120.57, or s. 120.68; shall indicate the procedure which must be followed to obtain the hearing or judicial review, and shall state the time limits which apply." 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.

### Petition for Administrative Proceedings

1. A person whose substantial interests are affected by the South Florida Water Management District's (SFWMD) action has the right to request an administrative hearing on that action. The affected person may request either a formal or an informal hearing, as set forth below. A point of entry into administrative proceedings is governed by Rules 28-106.111 and 40E-1.511, Fla. Admin. Code, (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109), as set forth below. Petitions are deemed filed upon receipt of the original documents by the SFWMD Clerk.

a. Formal Administrative Hearing: If a genuine issue(s) of material fact is in dispute, the affected person seeking a formal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(1), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.201(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

b. Informal Administrative Hearing: If there are no issues of material fact in dispute, the affected person seeking an informal hearing on a SFWMD decision which does or may determine their substantial interests shall file a petition for hearing pursuant to Sections 120.569 and 120.57(2), Fla. Stat. or for mediation pursuant to Section 120.573, Fla. Stat. within 21 days, except as provided in subsections c. and d. below, of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-106.301(2), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

c. Administrative Complaint and Order: If a Respondent objects to a SFWMD Administrative Complaint and Order, pursuant to Section 373.119, Fla. Stat. (1997), the person named in the Administrative Complaint and Order may file a petition for a hearing no later than 14 days after the date such order is served. Petitions must substantially comply with the requirements of either subsection a. or b. above.

d. State Lands Environmental Resource Permit: Pursuant to Section 373.427, Fla. Stat., and Rule 40E-1.511(3), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), a petition objecting to the SFWMD's agency action regarding consolidated applications for Environmental Resource Permits and Use of Sovereign Submerged Lands (SLERPs), must be filed within 14 days of the notice of consolidated intent to grant or deny the SLERP. Petitions must substantially comply with the requirements of either subsection a. or b. above.

e. Emergency Authorization and Order: A person whose substantial interests are affected by a SFWMD Emergency Authorization and Order, has a right to file a petition under Sections 120.569, 120.57(1), and 120.57(2), Fla. Stat., as provided in subsections a. and b. above. However, the person, or the agent of the person responsible for causing or contributing to the emergency conditions shall take whatever action necessary to cause immediate compliance with the terms of the Emergency Authorization and Order.

f. Order for Emergency Action: A person whose substantial interests are affected by a SFWMD Order for Emergency Action has a right to file a petition pursuant to Rules 28-107.005 and 40E-1.611, Fla. Admin. Code, copies of which are attached to this Notice of Rights, and Section 373.119(3), Fla. Stat., for a hearing on the Order. Any subsequent agency action or proposed agency action to initiate a formal revocation proceeding shall be separately noticed pursuant to section g. below.

g. Permit Suspension, Revocation, Annulment, and Withdrawal: If the SFWMD issues an administrative complaint to suspend, revoke, annul, or withdraw a permit, the permittee may request a hearing to be conducted in accordance with Sections 120.569 and 120.57, Fla. Stat., within 21 days of either written notice through mail or posting or publication of notice that the SFWMD has or intends to take final agency action. Petitions must substantially comply with the requirements of Rule 28-107.004(3), Fla. Admin. Code, a copy of the which is attached to this Notice of Rights.

2. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the SFWMD's final action may be different from the position taken by it previously. Persons whose substantial interests may be affected by

any such final decision of the SFWMD shall have, pursuant to Rule 40E-1.511(2), Fla. Admin. Code (also published as an exception to the Uniform Rules of Procedure as Rule 40E-0.109(2)(c)), an additional 21 days from the date of receipt of notice of said decision to request an administrative hearing. However, the scope of the administrative hearing shall be limited to the substantial deviation.

3. Pursuant to Rule 40E-1.511(4), Fla. Admin. Code, substantially affected persons entitled to a hearing pursuant to Section 120.57(1), Fla. Stat., may waive their right to such a hearing and request an informal hearing before the Governing Board pursuant to Section 120.57(2), Fla. Stat., which may be granted at the option of the Governing Board.

4. Pursuant to Rule 28-106.111(3), Fla. Admin. Code, persons may file with the SFWMD a request for extension of time for filing a petition. The SFWMD, for good cause shown, may grant the extension. The request for extension must contain a certificate that the petitioner has consulted with all other parties, if any, concerning the extension and that the SFWMD and all other parties agree to the extension.

#### CIRCUIT COURT

5. Pursuant to Section 373.617, Fla. Stat., any substantially affected person who claims that final agency action of the SFWMD relating to permit decisions constitutes an unconstitutional taking of property without just compensation may seek judicial review of the action in circuit court by filing a civil action in the circuit court in the judicial circuit in which the affected property is located within 90 days of the rendering of the SFWMD's final agency action.

6. Pursuant to Section 403.412, Fla. Stat., any citizen of Florida may bring an action for injunctive relief against the SFWMD to compel the SFWMD to enforce the laws of Chapter 373, Fla. Stat., and Title 40E, Fla. Admin. Code. The complaining party must file with the SFWMD Clerk a verified complaint setting forth the facts upon which the complaint is based and the manner in which the complaining party is affected. If the SFWMD does not take appropriate action on the complaint within 30 days of receipt, the complaining party may then file a civil suit for injunctive relief in the 15<sup>th</sup> Judicial Circuit in and for Palm Beach County or circuit court in the county where the cause of action allegedly occurred.

7. Pursuant to Section 373.433, Fla. Stat., a private citizen of Florida may file suit in circuit court to require the abatement of any stormwater management system, dam, impoundment, reservoir, appurtenant work or works that violate the provisions of Chapter 373, Fla. Stat.

#### DISTRICT COURT OF APPEAL

8. Pursuant to Section 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 SFWMD Clerk within 30 days of rendering of the final SFWMD action.

#### LAND AND WATER ADJUDICATORY COMMISSION

9. A party to a "proceeding below" may seek review by the Land and Water Adjudicatory Commission (LAWAC) of SFWMD's final agency action to determine if such action is consistent with the provisions and purposes of Chapter 373, Fla. Stat. Pursuant to Section 373.114, Fla. Stat., and Rules 42-2.013 and 42-2.0132, Fla. Admin. Code, a request for review of (a) an order or rule of the SFWMD must be filed with LAWAC within 20 days after rendition of the order or adoption of the rule sought to be reviewed; (b) an order of the Department of Environmental Protection (DEP) requiring amendment or repeal of a SFWMD rule must be filed with LAWAC within 30 days of rendition of the DEP's order; and (c) a SFWMD order entered pursuant to a formal administrative hearing under Section 120.57(1), Fla. Stat., must be filed no later than 20 days after rendition of the SFWMD's final order. Simultaneous with filing, a copy of the request for review must be served on the DEP Secretary, any person named in the SFWMD or DEP final order, and all parties to the proceeding below. A copy of Rule 42-2.013, Fla. Admin. Code is attached to this Notice of Rights.

#### PRIVATE PROPERTY RIGHTS PROTECTION ACT

10. A property owner who alleges a specific action of the SFWMD has inordinately burdened an existing use of the real property, or a vested right to a specific use of the real property, may file a claim in the circuit court where the real property is located within 1 year of the SFWMD action pursuant to the procedures set forth in Subsection 70.001(4)(a), Fla. Stat.

#### LAND USE AND ENVIRONMENTAL DISPUTE RESOLUTION

11. A property owner who alleges that a SFWMD development order (as that term is defined in Section 70.51(2)(a), Fla. Stat. to include permits) or SFWMD enforcement action is unreasonable, or unfairly burdens the use of the real property, may file a request for relief with the SFWMD within 30 days of receipt of the SFWMD's order or notice of agency action pursuant to the procedures set forth in Subsections 70.51(4) and (6), Fla. Stat.

#### MEDIATION

12. A person whose substantial interests are, or may be, affected by the SFWMD's action may choose mediation as an alternative remedy under Section 120.573, Fla. Stat. Pursuant to Rule 28-106.111(2), Fla. Admin. Code, the petition for mediation shall be filed within 21 days of either written notice through mail or posting or



publication of notice that the SFWMD has or intends to take final agency action. Choosing mediation will not adversely affect the right to an administrative hearing if mediation does not result in settlement.

Pursuant to Rule 28-106.402, Fla. Admin. Code, the contents of the petition for mediation shall contain the following information:

(1) the name, address, and telephone number of the person requesting mediation and that person's representative, if any;

(2) a statement of the preliminary agency action;

(3) an explanation of how the person's substantial interests will be affected by the agency determination; and

(4) a statement of relief sought.

As provided in Section 120.573, Fla. Stat. (1997), the timely agreement of all the parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Fla. Stat., for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within 60 days of the execution of the agreement. If mediation results in settlement of the dispute, the SFWMD must enter a final order incorporating the agreement of the parties. Persons whose substantial interest will be affected by such a modified agency decision have a right to petition for hearing within 21 days of receipt of the final order in accordance with the requirements of Sections 120.569 and 120.57, Fla. Stat., and SFWMD Rule 28-106.201(2), Fla. Admin. Code. If mediation terminates without settlement of the dispute, the SFWMD shall notify all parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Fla. Stat., remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action.

#### VARIANCES AND WAIVERS

13. A person who is subject to regulation pursuant to a SFWMD rule and believes the application of that rule will create a substantial hardship or will violate principles of fairness (as those terms are defined in Subsection 120.542(2), Fla. Stat.) and can demonstrate that the purpose of the underlying statute will be or has been achieved by other means, may file a petition with the SFWMD Clerk requesting a variance from or waiver of the SFWMD rule. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have concerning the SFWMD's action. Pursuant to Rule 28-104.002(2), Fla. Admin. Code, the petition must include the following information:

(a) the caption shall read:

Petition for (Variance from) or (Waiver of) Rule (Citation)

(b) The name, address, telephone number and any facsimile number of the petitioner;

(c) The name, address telephone number and any facsimile number of the attorney or qualified representative of the petitioner, (if any);

(d) the applicable rule or portion of the rule;

(e) the citation to the statute the rule is implementing;

(f) the type of action requested;

(g) the specific facts that demonstrate a substantial hardship or violation of principals of fairness that would justify a waiver or variance for the petitioner;

(h) the reason why the variance or the waiver requested would serve the purposes of the underlying statute; and

(i) a statement of whether the variance or waiver is permanent or temporary, if the variance or waiver is temporary, the petition shall include the dates indicating the duration of the requested variance or waiver.

A person requesting an emergency variance from or waiver of a SFWMD rule must clearly so state in the caption of the petition. In addition to the requirements of Section 120.542(5), Fla. Stat. pursuant to Rule 28-104.004(2), Fla. Admin. Code, the petition must also include:

a) the specific facts that make the situation an emergency; and

b) the specific facts to show that the petitioner will suffer immediate adverse effect unless the variance or waiver is issued by the SFWMD more expeditiously than the applicable timeframes set forth in Section 120.542, Fla. Stat.

#### WAIVER OF RIGHTS

14. Failure to observe the relevant time frames prescribed above will constitute a waiver of such right.

#### 28-106.201 INITIATION OF PROCEEDINGS (INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

(2) All petitions filed under these rules shall contain:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding, and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and

(f) A demand for relief.

**28-106.301 INITIATION OF PROCEEDINGS**  
(NOT INVOLVING DISPUTED ISSUES OF MATERIAL FACT)

- (2) All petitions filed under these rules shall contain:
- (a) The name and address of each agency affected and each agency's file or identification number, if known;
  - (b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding, and an explanation of how the petitioner's substantial interests will be affected by the agency determination;
  - (c) A statement of when and how the petitioner received notice of the agency decision;
  - (d) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and
  - (e) A demand for relief.

**28-107.004 SUSPENSION, REVOCATION, ANNULMENT, OR WITHDRAWAL**

- (3) Requests for hearing filed in accordance with this rule shall include:
- (a) The name and address of the party making the request, for purposes of service;
  - (b) A statement that the party is requesting a hearing involving disputed issues of material fact, or a hearing not involving disputed issues of material fact; and
  - (c) A reference to the notice, order to show cause, administrative complaint, or other communication that the party has received from the agency.

**42-2.013 REQUEST FOR REVIEW PURSUANT TO SECTION 373.114 OR 373.217**

(1) In any proceeding arising under Chapter 373, F.S., review by the Florida Land and Water Adjudicatory Commission may be initiated by the Department or a party by filing a request for such review with the Secretary of the Commission and serving a copy on any person named in the rule or order, and on all parties to the proceeding which resulted in the order sought to be reviewed. A certificate of service showing completion of service as required by this subsection shall be a requirement for a determination of sufficiency under Rule 42-2.0132. Failure to file the request with the Commission within the time period provided in Rule 42-2.0132 shall result in dismissal of the request for review.

(2) The request for review shall identify the rule or order requested to be reviewed, the proceeding in which the rule or order was entered and the nature of the rule or order. A copy of the rule or order sought to be reviewed shall be attached. The request for review shall state with particularity:

- (a) How the order or rule conflicts with the requirements, provisions and purposes of Chapter 373, F.S., or rules duly adopted thereunder;

- (b) How the rule or order sought to be reviewed affects the interests of the party seeking review;

- (c) The oral or written statement, sworn or unsworn, which was submitted to the agency concerning the matter to be reviewed and the date and location of the statement, if the individual or entity requesting the review has not participated in a proceeding previously instituted pursuant to Chapter 120, F.S., on the order for which review is sought;

- (d) If review of an order is being sought, whether and how the activity authorized by the order would substantially affect natural resources of statewide or regional significance, or whether the order raises issues of policy, statutory interpretation, or rule interpretation that have regional or statewide significance from a standpoint of agency precedent, and all the factual bases in the record which the petitioner claims support such determination(s); and

- (e) The action requested to be taken by the Commission as a result of the review, whether to rescind or modify the order, or remand the proceeding to the water management district for further action, or to require the water management district to initiate rulemaking to adopt, amend or repeal a rule.

**28-107.005 EMERGENCY ACTION**

(1) If the agency finds that immediate serious danger to the public health, safety, or welfare requires emergency action, the agency shall summarily suspend, limit, or restrict a license.

(2) The 14-day notice requirement of Section 120.569(2)(b), F. S., does not apply and shall not be construed to prevent a hearing at the earliest time practicable upon request of an aggrieved party.

(3) Unless otherwise provided by law, within 20 days after emergency action taken pursuant to paragraph (1) of this rule, the agency shall initiate a formal suspension or revocation proceeding in compliance with Sections 120.569, 120.57, and 120.60, F.S.

**40E-1.611 EMERGENCY ACTION**

(1) An emergency exists when immediate action is necessary to protect public health, safety or welfare; the health of animals, fish or aquatic life; the works of the District; a public water supply, or recreational, commercial, industrial, agricultural or other reasonable uses of land and water resources.

(2) The Executive Director may employ the resources of the District to take whatever remedial action necessary to alleviate the emergency condition without the issuance of an emergency order, or in the event an emergency order has been issued, after the expiration of the requisite time for compliance with that order.

## GENERAL CONDITIONS

1. ALL ACTIVITIES AUTHORIZED BY THIS PERMIT SHALL BE IMPLEMENTED AS SET FORTH IN THE PLANS, SPECIFICATIONS AND PERFORMANCE CRITERIA AS APPROVED BY THIS PERMIT. ANY DEVIATION FROM THE PERMITTED ACTIVITY AND THE CONDITIONS FOR UNDERTAKING THAT ACTIVITY SHALL CONSTITUTE A VIOLATION OF THIS PERMIT AND PART IV, CHAPTER 373, F.S.
2. THIS PERMIT OR A COPY THEREOF, COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND MODIFICATIONS SHALL BE KEPT AT THE WORK SITE OF THE PERMITTED ACTIVITY. THE COMPLETE PERMIT SHALL BE AVAILABLE FOR REVIEW AT THE WORK SITE UPON REQUEST BY THE DISTRICT STAFF. THE PERMITTEE SHALL REQUIRE THE CONTRACTOR TO REVIEW THE COMPLETE PERMIT PRIOR TO COMMENCEMENT OF THE ACTIVITY AUTHORIZED BY THIS PERMIT.
3. ACTIVITIES APPROVED BY THIS PERMIT SHALL BE CONDUCTED IN A MANNER WHICH DOES NOT CAUSE VIOLATIONS OF STATE WATER QUALITY STANDARDS. THE PERMITTEE SHALL IMPLEMENT BEST MANAGEMENT PRACTICES FOR EROSION AND POLLUTION CONTROL TO PREVENT VIOLATION OF STATE WATER QUALITY STANDARDS. TEMPORARY EROSION CONTROL SHALL BE IMPLEMENTED PRIOR TO AND DURING CONSTRUCTION, AND PERMANENT CONTROL MEASURES SHALL BE COMPLETED WITHIN 7 DAYS OF ANY CONSTRUCTION ACTIVITY. TURBIDITY BARRIERS SHALL BE INSTALLED AND MAINTAINED AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATERBODY EXISTS DUE TO THE PERMITTED WORK. TURBIDITY BARRIERS SHALL REMAIN IN PLACE AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED. ALL PRACTICES SHALL BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS DESCRIBED IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL; A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988), INCORPORATED BY REFERENCE IN RULE 40E-4.091, F.A.C. UNLESS A PROJECT-SPECIFIC EROSION AND SEDIMENT CONTROL PLAN IS APPROVED AS PART OF THE PERMIT. THEREAFTER THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REMOVAL OF THE BARRIERS. THE PERMITTEE SHALL CORRECT ANY EROSION OR SHOALING THAT CAUSES ADVERSE IMPACTS TO THE WATER RESOURCES.
4. THE PERMITTEE SHALL NOTIFY THE DISTRICT OF THE ANTICIPATED CONSTRUCTION START DATE WITHIN 30 DAYS OF THE DATE THAT THIS PERMIT IS ISSUED. AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ACTIVITY AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL SUBMIT TO THE DISTRICT AN ENVIRONMENTAL RESOURCE PERMIT CONSTRUCTION COMMENCEMENT NOTICE FORM NO. 0960 INDICATING THE ACTUAL START DATE AND THE EXPECTED COMPLETION DATE.
5. WHEN THE DURATION OF CONSTRUCTION WILL EXCEED ONE YEAR, THE PERMITTEE SHALL SUBMIT CONSTRUCTION STATUS REPORTS TO THE DISTRICT ON AN ANNUAL BASIS UTILIZING AN ANNUAL STATUS REPORT FORM. STATUS REPORT FORMS SHALL BE SUBMITTED THE FOLLOWING JUNE OF EACH YEAR.

6. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE PERMITTED ACTIVITY, THE PERMITTEE SHALL SUBMIT A WRITTEN STATEMENT OF COMPLETION AND CERTIFICATION BY A REGISTERED PROFESSIONAL ENGINEER OR OTHER APPROPRIATE INDIVIDUAL AS AUTHORIZED BY LAW, UTILIZING THE SUPPLIED ENVIRONMENTAL RESOURCE PERMIT CONSTRUCTION COMPLETION/CONSTRUCTION CERTIFICATION FORM NO.0881. THE STATEMENT OF COMPLETION AND CERTIFICATION SHALL BE BASED ON ONSITE OBSERVATION OF CONSTRUCTION OR REVIEW OF ASBUILT DRAWINGS FOR THE PURPOSE OF DETERMINING IF THE WORK WAS COMPLETED IN COMPLIANCE WITH PERMITTED PLANS AND SPECIFICATIONS. THIS SUBMITTAL SHALL SERVE TO NOTIFY THE DISTRICT THAT THE SYSTEM IS READY FOR INSPECTION. ADDITIONALLY, IF DEVIATION FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. BOTH THE ORIGINAL AND REVISED SPECIFICATIONS MUST BE CLEARLY SHOWN. THE PLANS MUST BE CLEARLY LABELED AS "ASBUILT" OR "RECORD" DRAWING. ALL SURVEYED DIMENSIONS AND ELEVATIONS SHALL BE CERTIFIED BY A REGISTERED SURVEYOR.
7. THE OPERATION PHASE OF THIS PERMIT SHALL NOT BECOME EFFECTIVE; UNTIL THE PERMITTEE HAS COMPLIED WITH THE REQUIREMENTS OF CONDITION (6) ABOVE, HAS SUBMITTED A REQUEST FOR CONVERSION OF ENVIRONMENTAL RESOURCE PERMIT FROM CONSTRUCTION PHASE TO OPERATION PHASE, FORM NO.0920; THE DISTRICT DETERMINES THE SYSTEM TO BE IN COMPLIANCE WITH THE PERMITTED PLANS AND SPECIFICATIONS; AND THE ENTITY APPROVED BY THE DISTRICT IN ACCORDANCE WITH SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, ACCEPTS RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE SYSTEM. THE PERMIT SHALL NOT BE TRANSFERRED TO SUCH APPROVED OPERATION AND MAINTENANCE ENTITY UNTIL THE OPERATION PHASE OF THE PERMIT BECOMES EFFECTIVE. FOLLOWING INSPECTION AND APPROVAL OF THE PERMITTED SYSTEM BY THE DISTRICT, THE PERMITTEE SHALL INITIATE TRANSFER OF THE PERMIT TO THE APPROVED RESPONSIBLE OPERATING ENTITY IF DIFFERENT FROM THE PERMITTEE. UNTIL THE PERMIT IS TRANSFERRED PURSUANT TO SECTION 40E-1.6107, F.A.C., THE PERMITTEE SHALL BE LIABLE FOR COMPLIANCE WITH THE TERMS OF THE PERMIT.
8. EACH PHASE OR INDEPENDENT PORTION OF THE PERMITTED SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO THE INITIATION OF THE PERMITTED USE OF SITE INFRASTRUCTURE LOCATED WITHIN THE AREA SERVED BY THAT PORTION OR PHASE OF THE SYSTEM. EACH PHASE OR INDEPENDENT PORTION OF THE SYSTEM MUST BE COMPLETED IN ACCORDANCE WITH THE PERMITTED PLANS AND PERMIT CONDITIONS PRIOR TO TRANSFER OF RESPONSIBILITY FOR OPERATION AND MAINTENANCE OF THE PHASE OR PORTION OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.
9. FOR THOSE SYSTEMS THAT WILL BE OPERATED OR MAINTAINED BY AN ENTITY THAT WILL REQUIRE AN EASEMENT OR DEED RESTRICTION IN ORDER TO ENABLE THAT ENTITY TO OPERATE OR MAINTAIN THE SYSTEM IN CONFORMANCE WITH THIS PERMIT, SUCH EASEMENT OR DEED RESTRICTION MUST BE RECORDED IN THE PUBLIC RECORDS AND SUBMITTED TO THE DISTRICT ALONG WITH ANY OTHER FINAL OPERATION AND MAINTENANCE DOCUMENTS REQUIRED BY SECTIONS 9.0 AND 10.0 OF THE BASIS OF REVIEW FOR ENVIRONMENTAL RESOURCE PERMIT APPLICATIONS WITHIN THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT - AUGUST 1995, PRIOR TO LOT OR UNIT SALES OR PRIOR TO THE COMPLETION OF THE SYSTEM, WHICHEVER OCCURS FIRST. OTHER DOCUMENTS CONCERNING THE ESTABLISHMENT AND AUTHORITY OF THE OPERATING ENTITY MUST BE FILED WITH THE SECRETARY OF STATE WHERE APPROPRIATE. FOR THOSE SYSTEMS WHICH ARE PROPOSED TO BE MAINTAINED BY THE COUNTY OR MUNICIPAL ENTITIES, FINAL OPERATION AND MAINTENANCE DOCUMENTS MUST BE RECEIVED BY THE DISTRICT WHEN MAINTENANCE AND OPERATION OF THE SYSTEM IS ACCEPTED BY THE LOCAL GOVERNMENT ENTITY. FAILURE TO SUBMIT THE APPROPRIATE FINAL DOCUMENTS WILL RESULT IN THE PERMITTEE REMAINING LIABLE FOR CARRYING OUT MAINTENANCE AND OPERATION OF THE PERMITTED SYSTEM AND ANY OTHER PERMIT CONDITIONS.

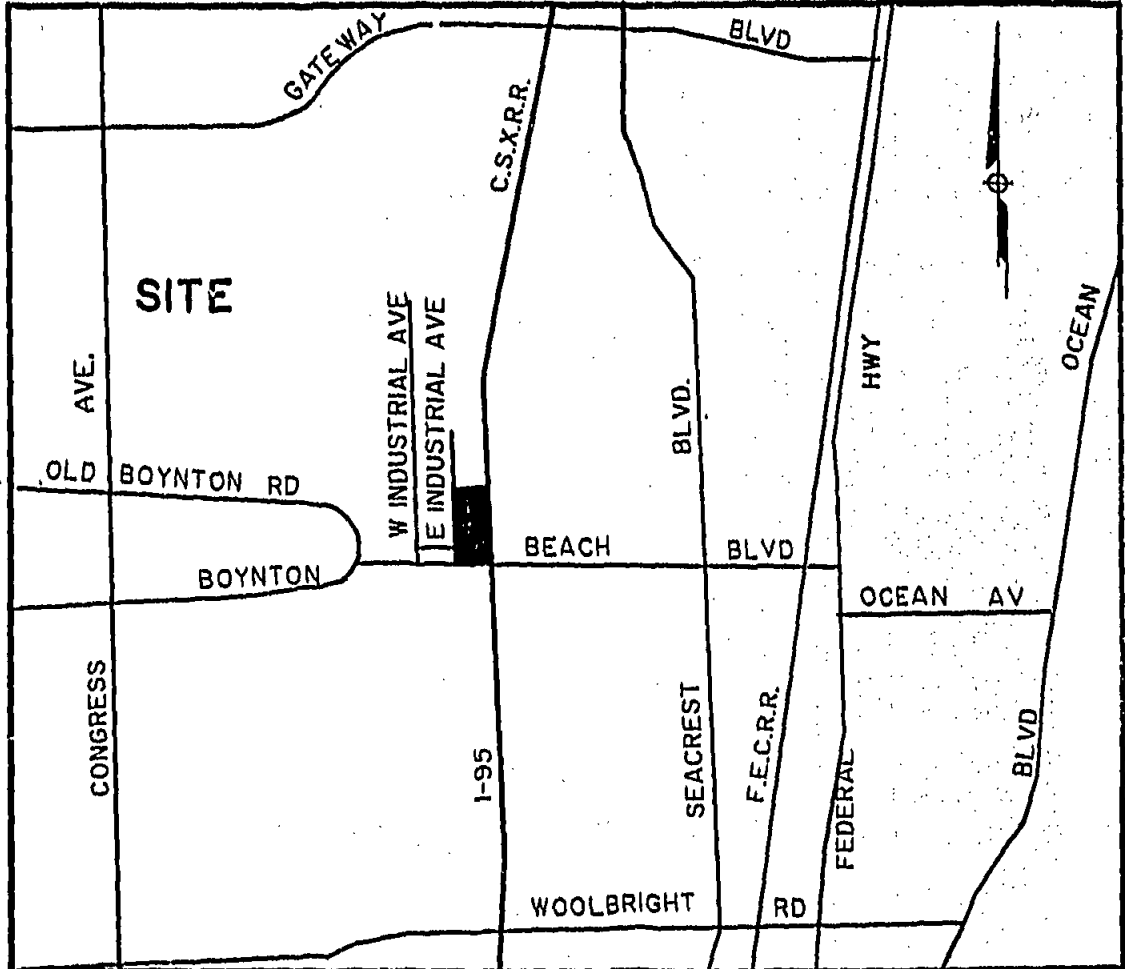
10. SHOULD ANY OTHER REGULATORY AGENCY REQUIRE CHANGES TO THE PERMITTED SYSTEM, THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING OF THE CHANGES PRIOR TO IMPLEMENTATION SO THAT A DETERMINATION CAN BE MADE WHETHER A PERMIT MODIFICATION IS REQUIRED.
11. THIS PERMIT DOES NOT ELIMINATE THE NECESSITY TO OBTAIN ANY REQUIRED FEDERAL, STATE, LOCAL AND SPECIAL DISTRICT AUTHORIZATIONS PRIOR TO THE START OF ANY ACTIVITY APPROVED BY THIS PERMIT. THIS PERMIT DOES NOT CONVEY TO THE PERMITTEE OR CREATE IN THE PERMITTEE ANY PROPERTY RIGHT, OR ANY INTEREST IN REAL PROPERTY, NOR DOES IT AUTHORIZE ANY ENTRANCE UPON OR ACTIVITIES ON PROPERTY WHICH IS NOT OWNED OR CONTROLLED BY THE PERMITTEE, OR CONVEY ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4 OR CHAPTER 40E-40, F.A.C.
12. THE PERMITTEE IS HEREBY ADVISED THAT SECTION 253.77, F.S. STATES THAT A PERSON MAY NOT COMMENCE ANY EXCAVATION, CONSTRUCTION, OR OTHER ACTIVITY INVOLVING THE USE OF SOVEREIGN OR OTHER LANDS OF THE STATE, THE TITLE TO WHICH IS VESTED IN THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND WITHOUT OBTAINING THE REQUIRED LEASE, LICENSE, EASEMENT, OR OTHER FORM OF CONSENT AUTHORIZING THE PROPOSED USE. THEREFORE, THE PERMITTEE IS RESPONSIBLE FOR OBTAINING ANY NECESSARY AUTHORIZATIONS FROM THE BOARD OF TRUSTEES PRIOR TO COMMENCING ACTIVITY ON SOVEREIGNTY LANDS OR OTHER STATE-OWNED LANDS.
13. THE PERMITTEE MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING, UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20.302(4), F.A.C., ALSO KNOWN AS THE "NO NOTICE" RULE.
14. 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, ALTERATION, OPERATION, MAINTENANCE, REMOVAL, ABANDONMENT OR USE OF ANY SYSTEM AUTHORIZED BY THE PERMIT.
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 SECTION 373.421(2), F.S., PROVIDES OTHERWISE.
16. THE PERMITTEE SHALL NOTIFY THE DISTRICT IN WRITING WITHIN 30 DAYS OF ANY SALE, CONVEYANCE, OR OTHER TRANSFER OF OWNERSHIP OR CONTROL OF A PERMITTED SYSTEM OR THE REAL PROPERTY ON WHICH THE PERMITTED SYSTEM IS LOCATED. ALL TRANSFERS OF OWNERSHIP OR TRANSFERS OF A PERMIT ARE SUBJECT TO THE REQUIREMENTS OF RULES 40E-1.6105 AND 40E-1.6107, F.A.C. THE PERMITTEE TRANSFERRING THE PERMIT SHALL REMAIN LIABLE FOR CORRECTIVE ACTIONS THAT MAY BE REQUIRED AS A RESULT OF ANY VIOLATIONS PRIOR TO THE SALE, CONVEYANCE OR OTHER TRANSFER OF THE SYSTEM.
17. UPON REASONABLE NOTICE TO THE PERMITTEE, DISTRICT AUTHORIZED STAFF WITH PROPER IDENTIFICATION SHALL HAVE PERMISSION TO ENTER, INSPECT, SAMPLE AND TEST THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.
18. IF HISTORICAL OR ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED AT ANY TIME ON THE PROJECT SITE, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE APPROPRIATE DISTRICT SERVICE CENTER.
19. THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DISTRICT IN WRITING OF ANY PREVIOUSLY SUBMITTED INFORMATION THAT IS LATER DISCOVERED TO BE INACCURATE.



SPECIAL CONDITIONS

1. MINIMUM BUILDING FLOOR ELEVATION: 19.25 FEET NGVD.
2. MINIMUM ROAD CROWN ELEVATION: 18 FEET NGVD.
3. THE PERMITTEE SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION, SHOALING OR WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION OR OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM.
4. MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO INSURE THAT SEDIMENTATION AND/OR TURBIDITY PROBLEMS ARE NOT CREATED IN THE RECEIVING WATER.
5. THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT ADDITIONAL WATER QUALITY TREATMENT METHODS BE INCORPORATED INTO THE DRAINAGE SYSTEM IF SUCH MEASURES ARE SHOWN TO BE NECESSARY.
6. FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.
7. OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF STOR-ALL LTD..

SEC. 20, TWP. 45S, RNG. 42E



LOCATION SKETCH

NO SCALE

PROJECT: STOR ALL INDUSTRIAL AVENUE

PERMIT SUMMARY SHEET

APPLICATION NUMBER: 990517-2  
LOCATION: PALM BEACH COUNTY, S20/T45S/R43E

OWNER: ANDERSON STOR ALL INC

ENGINEER: MICHAEL B SCHORAH AND ASSOCIATES INC

PROJECT AREA: 4.35 ACRES DRAINAGE AREA: 4.35 ACRES

PROJECT USE: COMMERCIAL

**FACILITIES:**

1. PROPOSED: Proposed is the construction and operation of a surface water management system to serve a 4.35 acre commercial development known as Stor All Industrial Avenue.

The proposed surface water management system will consist of inlets, culverts and swales that will direct runoff to +/- 1.07 acres of dry retention area. No positive discharge is proposed for this project (applicant's engineer indicates that none is available).

PROJECT LEVEL:

DRAINAGE BASIN: C-16

RECEIVING BODY: ON SITE RETENTION

**WATER QUALITY:**

Water quality treatment of 2.5 inches times the percent imperviousness (including 0.5 inch dry pre-treatment for commercial developments) is being provided in +/- 1.07 acres of dry retention area.

Basin	Method	Vol Req'd. (ac-ft)	Vol Prov'd (ac-ft)
SITE	1.07 acres DRY RETENTION	.38	.38

ENVIRONMENTAL ASSESSMENT:

APPLICATION NUMBER: 990517-2  
LOCATION: PALM BEACH COUNTY, S20/T45S/R43E

**ENDANGERED, THREATENED & SPECIES OF SPECIAL CONCERN SUMMARY:**

The project site does not contain preferred habitat for wetland-dependent endangered/threatened species or species of special concern. No wetland-dependent endangered/threatened species or species of special concern were observed on site, and submitted information indicates that potential use of the site by such species is minimal. This permit does not relieve the applicant from complying with all applicable rules and any other agencies' requirements if in the future, endangered/threatened species or species of special concern are discovered on the site.

**ENVIRONMENTAL SUMMARY:**

The proposed project consists of a 4.35 acre area located on the northeast corner of the intersection of Boynton Beach Boulevard and East Industrial Avenue in Boynton Beach, Palm Beach County. The applicant proposes to construct and operate a surface water management system for a commercial development.

The project area consists of upland grasses that appear to be mowed regularly and an unpaved roadway through the parcel. There are no wetlands or other surface waters at the site.

The proposed activities have been evaluated for potential secondary and cumulative impacts and to determine if the project is contrary to the public interest. Based upon the proposed project design, the District has determined that the project will not cause adverse secondary or cumulative impacts to the water resources and is not contrary to the public interest.

	TOTAL PROJECT	PREVIOUSLY PERMITTED	THIS PHASE	
TOTAL ACRES	4.35		4.35	acres
WTRM ACREAGE	1.07		1.07	acres
PAVEMENT	1.36		1.36	acres
BUILD COVERAGE	1.09		1.09	acres
PERVIOUS	.83		.83	acres

APPLICATION NUMBER: 990517-2  
LOCATION: PALM BEACH COUNTY, S20/T45S/R43E

DIVISIONAL APPROVAL:

NATURAL RESOURCE MANAGEMENT

*Antia R. Bain*  
Antia R. Bain

DATE: 8/19/99

SURFACE WATER MANAGEMENT


*Carlos A. de Rojas*  
Carlos A. de Rojas, P.E.

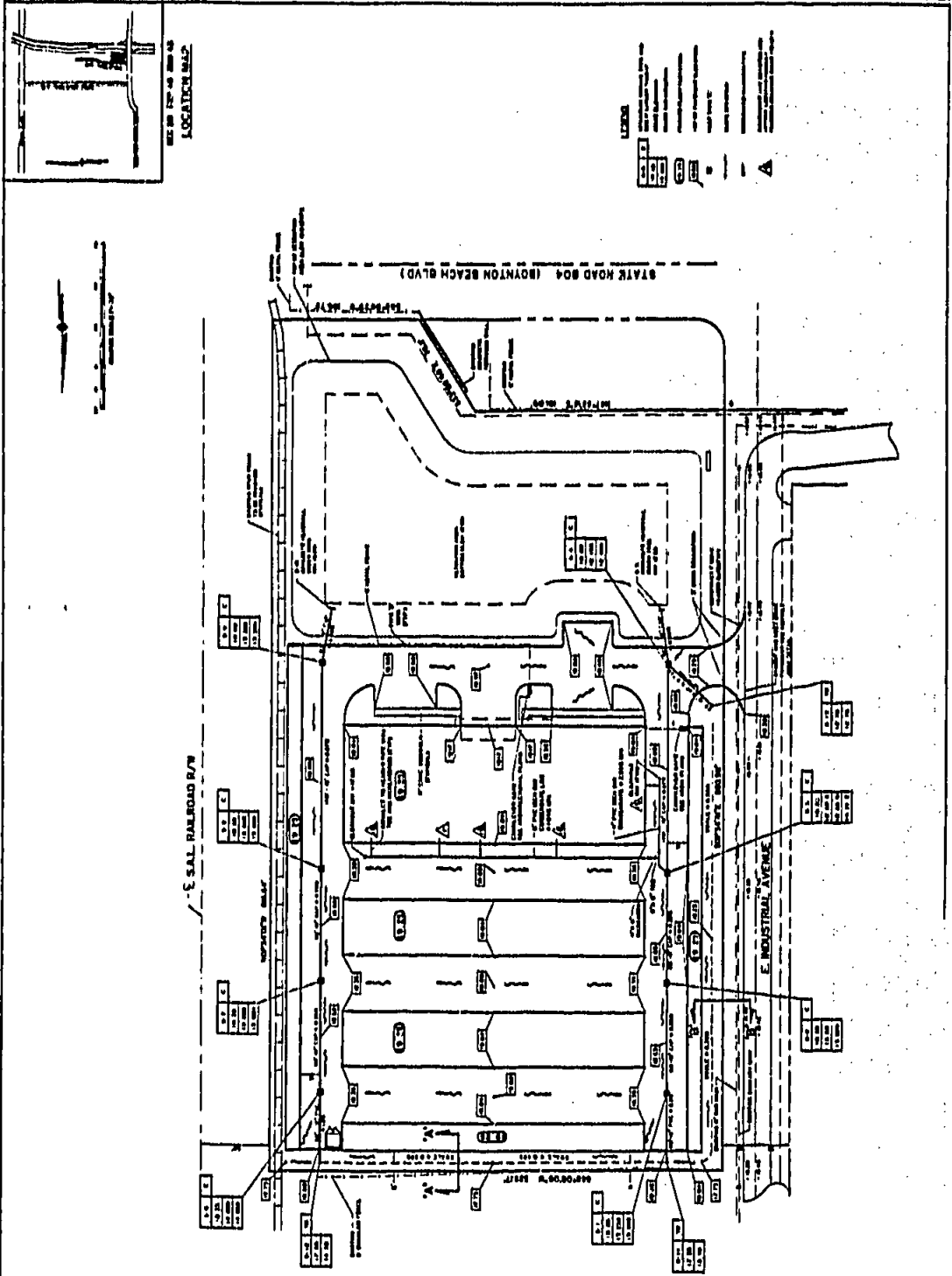
DATE: 8/19/99

Exhibit 2c





 <p><b>MICHAEL S. SCHORR &amp; ASSOCIATES, INC.</b>          1000 WEST 10TH AVENUE, SUITE 100          DENVER, COLORADO 80202          PHONE: (303) 733-1111          FAX: (303) 733-1112</p>	<p><b>PROJECT:</b>  <b>STOR - ALL INDUSTRIAL AVE.</b>  <b>JOB NO. 0304</b></p>	<p><b>DESCRIPTION:</b>  <b>PAVING, GRADING &amp; DRAINAGE PL.</b></p>	<p><b>DATE:</b> 10/15/83</p>	<p><b>SCALE:</b> 1" = 40'</p>	<p><b>SHEET NO.:</b> 3</p>	<p><b>PROJECT NO.:</b> 58-935</p>
	<p>WEST 10TH AVENUE, SUITE 100, DENVER, COLORADO 80202          PHONE: (303) 733-1111          FAX: (303) 733-1112</p>					



**EXHIBIT 4**

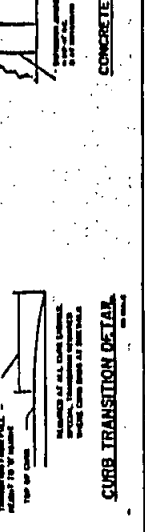
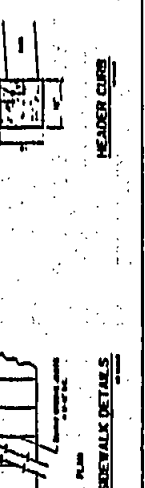
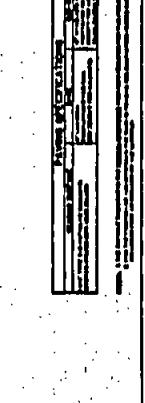
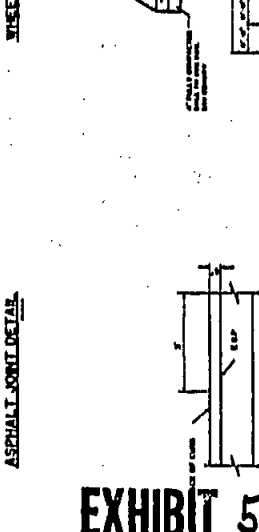
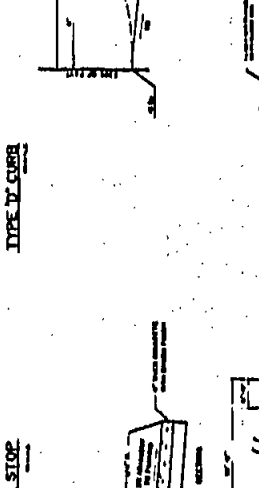
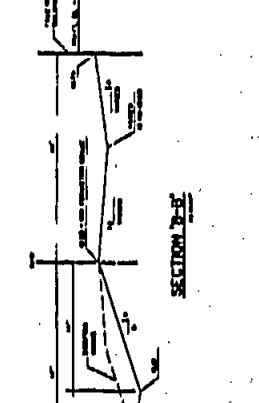
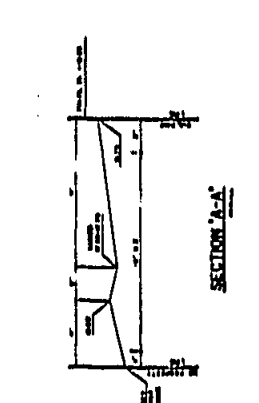
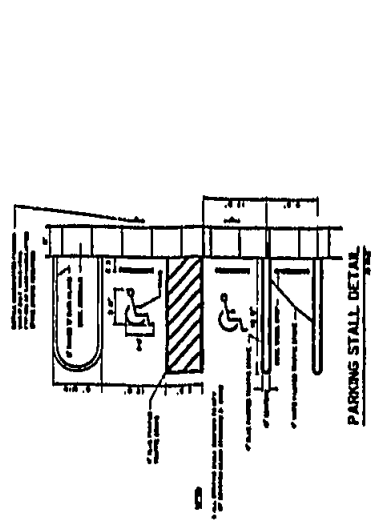
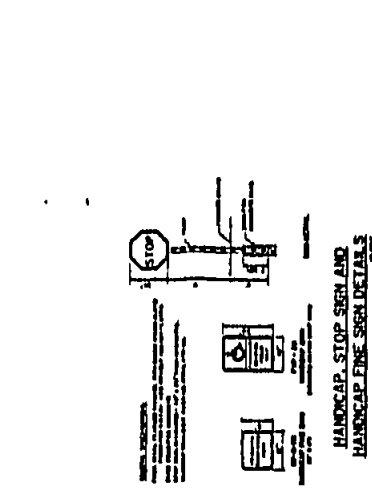
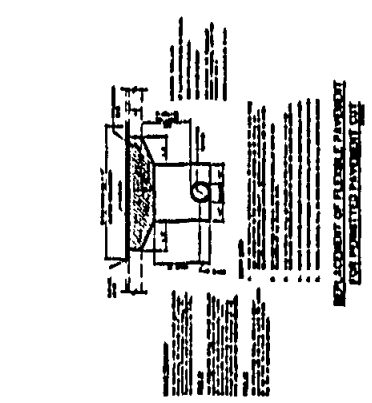


**MICHAEL B. SCHORRAI & ASSOCIATES, INC.**  
 1000 ...  
 ...  
 ...

**PROJECT**  
**STOR - ALL INDUSTRIAL AVE.**  
**JOB NO. 0304**  
**DESCRIPTION**  
**PAVING, GRADING & DRAINAGE DETAIL**

DATE	11/11/77
BY	...
CHECKED BY	...
SCALE	AS SHOWN
PROJECT NO.	...
SHEET NO.	4
TOTAL SHEETS	...

**98-939**  
**4**



**EXHIBIT 5**



STAFF REPORT DISTRIBUTION LIST

STOR ALL INDUSTRIAL AVENUE  
APPLICATION NUMBER: 990517-2  
PERMIT MODIFICATION NUMBER: 50-04389-P

INTERNAL DISTRIBUTION

Reviewer:  
X Brian Tilles, P.E.  
X Trisha Stone  
X Anita R. Bain  
X Carlos A. de Rojas, P.E.  
J. Giddings - LEC  
J. Golden - REG  
X J. Gronborg - REG  
F. Lund - LEC  
R. Robbins - NRM  
X P. Walker - GPA  
A. Waterhouse - REG  
X P. Bell - LEG  
Enforcement  
X Environmental PPC Reviewer  
X Environmental Resource Compliance  
X Permit File

DEPT. OF ENVIRONMENTAL PROTECTION

EXTERNAL DISTRIBUTION

X Applicant:  
ANDERSON STOR ALL INC  
X Applicant's Consultant  
MICHAEL B SCHORAH AND ASSOCIATES INC  
X Engineer, County of:  
PALM BEACH  
X Engineer, City of:  
Boynton Beach  
X Local Drainage District:  
L.W.D.D.

COUNTY

X Palm Beach -Building Division  
-Environmental Res Mgmt  
-Health Dept  
-Land Development Div  
-School Board Growth Mgt

BUILDING AND ZONING

OTHER

X David Sinclair  
FDEP  
Florida Audubon - Charles Lee  
Florida Fish & Wildlife Conservation Com  
Mr. Ed Dailey, President







**MICHAEL B. SCHORAH & ASSOCIATES, INC.**

**ENGINEERS • PLANNERS • DEVELOPMENT CONSULTANTS**

SUITE 206  
1850 FOREST HILL BLVD.  
WEST PALM BEACH, FL 33406  
FAX (561) 642-9726

TELEPHONE (561) 968-0080

July 20, 1999

South Florida Water Management District  
3301 Gun Club Road  
West Palm Beach, Florida 33406

**ADD/REVISED SUBMITTAL**

**JUL 22 1999**

Attn: Brian Tilles

**RE: STOR-ALL INDUSTRIAL AVENUE  
APPLICATION #990517-2**

Mr. Tilles:

The following responses correspond sequentially with the comments listed in Carlos de Rojas' letter dated June 14, 1999:

1. The Stor-All project is located within the old Boynton Beach Industrial Park. This area is being studied to develop a stormwater improvement project by the City of Boynton Beach. The proposed retention area was established at the request of the City. The City intends to use this retention area as part of their future stormwater project. That project will develop an outfall for the entire Industrial area. Currently, no positive outfall is established in this area for the Stor-All development to consider. The timing of the Stor-All development will precede the City plan. Therefore, total retention is proposed in the interim.
2. Attached find a letter from Boynton Beach Utilities Department confirming service availability.
3. Groundwater withdrawal is proposed for irrigation. A separate application has been made for a general water use permit.
4. Additional topographic information is provided on the attached topographic survey.
5. Attached find a copy of the warranty deed.
6. Water quality calculations are not required as no discharge is considered for events less than the 25-year 3-day storm event. It is intuitive that water quality is provided in this case.

Please reconsider these responses along with the attached information at your earliest convenience. Should you have any questions or require additional information, please do not hesitate to contact me.

Respectfully submitted,

Michael J. LaCoursiere, P.E.

MJL/jak/afwmd-2.doc

Attachment



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT**

Form 0970  
08/96

ADD/REVISED SUBMITTAL

JUL 22 1999

**APPLICANT TRANSMITTAL FORM FOR  
REQUESTED ADDITIONAL INFORMATION**

(One copy of this form must be included with the 5 sets of information submitted concerning a pending permit application for an Environmental Resource, Surface Water Management or Water Use Permit.)

For submittal addresses, see page 2.

Application #: 990517-2

ER

SW

WU

Project Name: Stor-All Industrial Avenue

Project Location: County Palm Beach S 20 /T 45 /R 42

Reviewer's Name: Brian Tilles

Date: July 20, 1999

Information included in response:	Additional	Revised
1. <u>Response Letter</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. <u>Topographic Survey</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. <u>Proof of Ownership</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. <u>Utility Letter</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. _____	<input type="checkbox"/>	<input type="checkbox"/>
6. _____	<input type="checkbox"/>	<input type="checkbox"/>
7. _____	<input type="checkbox"/>	<input type="checkbox"/>
8. _____	<input type="checkbox"/>	<input type="checkbox"/>
9. _____	<input type="checkbox"/>	<input type="checkbox"/>
10. _____	<input type="checkbox"/>	<input type="checkbox"/>

\_\_\_\_\_  
Respondent Signature

OPTIONAL FORM NO. 33 (REV. 11-20-83) PREVIOUS EDITIONS ARE OBSOLETE

WARRANTY DEED  
FORM NO. 88-1

UNIFORM FORM 81

Prepared by:  
Curt Moore, Lawyer  
839 N Ocean Avenue  
Boynton Beach, FL 33438

Jan-88-1999 02:26pm 99-009388  
ORB 10864 Pg 46  
Con 930,000.00 Doc 6,310.00  
\$ 936,310.00

The instrument prepared by:  
Curt Moore, Lawyer  
839 N Ocean Avenue  
Boynton Beach, FL 33438

Property Acquisition Form (A. 6) (Rev. 10-1-88)  
08 43 46 30 00 000 0082

ADD/REVISED SUBMITAL

JUL 22 1999

This Warranty Deed Made the 5th day of January A. D. 1999 by  
HERBERT L. MARCALIS, a married man,  
whose address is Marcal Paper Mills Inc., One Market St. Elmwood Park, NJ 07407  
hereinafter called the grantor, to  
STON-ALL, LTD., a Florida limited partnership

whose postoffice address is 1815 Willaboro Boulevard, Deerfield Beach, Florida 33438  
hereinafter called the grantee;

Witnesseth: That the grantor, for and in consideration of the sum of \$ 10.00 and other  
valuable considerations, receipt whereof is hereby acknowledged, hereby grants, bargains, sells, alien, re-  
leases, conveys and confirms unto the grantee, all that certain land situate in Palm Beach  
County, Florida, viz:

SEE LEGAL DESCRIPTION ATTACHED HERETO AND MADE A PART HEREOF.

SUBJECT TO: easements, reservations, restrictions common to the subdivision,  
without serving to release same, and taxes for the year 1998 and subsequent  
years.

Grantor is a married man, however, the land herein conveyed is not, nor has  
ever been the homestead of Grantor, his spouse and/or dependent(s) nor is  
same contiguous to the homestead of Grantor, his spouse and/or dependent(s).  
Grantor's homestead is located in Bergen County, Elmwood Park, New Jersey  
07407.

Together with all the tenements, hereditaments and appurtenances thereto belonging or in any-  
wise appertaining.

To Have and to Hold, the same in fee simple forever.

Had the grantor hereby covenants with said grantee that the grantor is lawfully seized of said land  
in fee simple; that the grantor has good right and lawful authority to sell and convey said land; that  
the grantor hereby fully warrants the title to said land and will defend the same against the lawful claims of  
all persons (whenever) and that said land is free of all encumbrances, except taxes accruing subsequent  
to December 31, 1998

In Witness Whereof, the said grantor has signed and sealed these presents the day and year  
first above written.

Signed, sealed and delivered in our presence:

*Herbert L. Marcalis* Robert L. Marcalis  
*Laura A. Marcalis*

STATE OF NEW JERSEY  
COUNTY OF BERGEN

I HEREBY CERTIFY that on this day, before me, an

officer duly authorized in the State aforesaid and in the County aforesaid, to take acknowledgments, personally appeared  
HERBERT L. MARCALIS, who is personally known to me (yes-no) or who provided  
satisfactory evidence as proof of identification  
to my knowledge to be the person named in and who executed the foregoing instrument and he acknowledged  
before me that he executed the same.

WITNESS my hand and official seal in the County and State last aforesaid this

January, A. D. 1999

*Nancy Kurucz*  
Notary Public  
NANCY KURUCZ  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires March 0, 1999

RECORDERS NOTICE: Legality of document  
unaffected by when received.

**SCHEDULE "A"**  
**LEGAL DESCRIPTION**

The East quarter of Lot 8, Section 20, Township 45 South, Range 43 East, according to the Map of Township 45 South and Township 46 South, Range 43 East, as recorded in Plat Book 1, Page 4, Palm Beach County Public Records,

LESS right of way of State Road 804, Section 93640-2601, that part of the East quarter of Lot 8, being more particularly described as follows;

Begin on the East boundary line of Section 20, Township 45 South, Range 43 East, at a point North  $1^{\circ} 36' 31''$  West 40.0 feet from the Southeast corner thereof;

Thence South  $88^{\circ} 06' 29''$  West 106.75 feet;

Thence continue South  $88^{\circ} 06' 29''$  West 201.48 feet to the beginning of a curve concave Northeasterly having a radius of 20 feet; thence run Southwesterly and Northwesterly, along said curve 31.42 feet through a central angle of  $90^{\circ}$  to the East boundary of Industrial Avenue;

Thence North  $1^{\circ} 53' 31''$  West, 45.82 feet;

Thence North  $87^{\circ} 52' 12''$  East, 180.63 feet;

Thence South  $33^{\circ} 25' 49''$  East 78.11;

Thence North  $88^{\circ} 06' 29''$  East 106.75 feet to the POINT OF BEGINNING.



**The City of  
Boynton Beach**

ADD/REVISED SUBMITAL

JUL 22 1999



Utilities Department  
5469 W. Boynton Beach Blvd.  
Boynton Beach, Florida 33437  
Phone (561) 373-6432  
FAX: (561) 731-0063

**OFFICE OF THE DIRECTOR OF UTILITIES**

July 21, 1999

Mr. Michael LaCoursiere, P.E.  
Schorah and Associates  
1850 Forest Hill Blvd., Suite 206  
West Palm Beach, FL 33406

FAX 642-9726


RE: Stor-All on Industrial Avenue, Boynton Beach

Dear Mr. LaCoursiere:

Please be advised that the City of Boynton Beach Utilities Department will be the water and sewer service provider for the referenced project, and that both potable water and sanitary sewer mains are available adjacent to the site. We have sufficient reserve capacity in our treatment systems to service said project, and this capacity has been formally reserved.

I trust this letter meets your needs. Any questions on this matter should be directed to Peter Mazzella of this office.

Sincerely yours,

  
for John A. Guidry  
Director of Utilities

JAG/PVM

Xc: Skip Milor  
File

DEPARTMENT OF COMMUNITY AFFAIRS  
Wendy Wood, Florida State Clearinghouse  
Intergovernmental Coordination and Review  
2555 Shumard Oak Blvd ... Tallahassee, FL 32399-2100  
(850)414-5495 ... (SC) 994-5495

MEMORANDUM

*B. Utilities*  
*T. Stone*

TO: Eric Tyska  
Regulation Department  
South Florida Water Management District

FROM: Wendy Wood, Florida State Clearinghouse *WW*

SUBJECT: File Number: 990517-2 *Stor. All Industrial Avenue*  
Applicant Name: Stor All Industrial Avenue

RECEIVED  
JUN 25 1999  
REGULATION DEPT. 40

DATE: 06/22/1999

---

We have reviewed the application, per your request, and have no objections to the proposed project.

Thank you for the opportunity to provide agency comments. If you have any questions or concerns regarding this matter, you may contact Cherie Trainor at (904) 414-5495.



## South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045  
TDD (561) 697-2574 • www.sfwmd.gov

CON 24-06

Application No. 990517-2  
Regulation Department

June 14, 1999

Michael B. Schorah, P.E.  
1850 Forest Hill Blvd., Suite 206  
West Palm Beach, FL 33406

Subject: Stor All Industrial Avenue - Palm Beach County, S20/T45/R42

Dear Mr. Schorah:

The staff has completed a preliminary review of the above referenced application. According to Rule 40E-40, Florida Administrative Code (FAC), satisfactory answers to the following 2 additional comments must be provided before our review can continue.

1. Please explain why total on-site retention is being proposed for this project. Be advised that a positive bleed-down is preferable to total on-site retention. Please indicate if there are any existing canals, storm sewer systems, etc. that this project could discharge to. Also address if any local entities such as city, county, FDOT, etc. were contacted regarding the possibility of providing an outfall for this project.
2. Please provide water and wastewater commitment letters from local suppliers which indicate adequate capacity is available for your site.
3. Please indicate whether surface water or groundwater withdrawals are proposed for irrigation or other on-site water use for this phase. If so, please be advised that it will be necessary for you to obtain a modification to the existing Water Use Permit. Because of the inseparable nature of Water Use and Surface Water Management, the application for either will not be considered complete until all information for both is complete.
4. Please provide topographic information which extends 100' beyond the project boundaries. USGS quadrangles are not acceptable for topographic information for the project. The contours depicted on them are in 5' increments which do not provide the required level of topographic data necessary for the project review. Please provide a topographic map (1' contours) of the project and adjacent hydrologically related areas which extend a minimum of 100 feet from the project boundaries.

Governing Board:  
Michael Collins, Chairman  
Michael D. Minton, Vice Chairman  
Mitchell W. Berger

Vern M. Carter  
Gerardo B. Fernandez  
Patrick J. Gleason

Nicolas J. Gutierrez, Jr.  
Hankley R. Thornton  
Trudi K. Williams

James Harvey, Interim Executive Director  
Michael Slayton, Deputy Executive Director  
Trevor Campbell, Deputy Executive Director

Michael B. Schorah, P.E.  
1850 Forest Hill Blvd., Suite 206  
Subject: Stor All Industrial Avenue  
June 14, 1999  
Page 2 of 2

5. Please provide a copy of the instrument which verifies the applicant's ownership of the project.
6. Please provide calculations verifying that water quality requirements are satisfied based on the current design.

In accordance with 40E-1.603 FAC, if the requested information is not received within 90 days of the date of this letter, this application may be processed for denial, if not withdrawn by the applicant. Please submit **FOUR** copies of the requested information to Brian Tilles at this office and include the above referenced application number. Please attach a copy of the enclosed "Transmittal Form For Requested Additional Information" to each of the required **FOUR** copies of the requested information.

Should you have any questions, please call Brian Tilles at (561) 682-2552.

Sincerely,



Carlos de Rojas, P.E.  
Senior Supervising Professional  
Surface Water Management Division

CdR/bt

c: DEP / Palm Beach County Engineer / Palm Beach County Land Dev. Div.  
Palm Beach County Environmental Resource Management  
Palm Beach County Health Department

bc: Bob Ratcliffe/T. Stone /B. Tilles/Permit File

CON 24-06

MEMORANDUM

To: Brian Tilles, E.I., SWM Division

From: *JS* Trisha Stone, NRM Division

Through: Anita R. Bain *ARB*  
Sr. Supervising Environmental Analyst, NRM  
Division

Date: June 2, 1999

Subject: STOR ALL INDUSTRIAL AVENUE  
990517-2

Palm Beach County,

S20/T45S/R43E

**Environmental Comments for Staff Report**

**ENVIRONMENTAL SUMMARY**

The proposed project consists of a 4.35 acre area located on the northeast corner of the intersection of Boynton Beach Boulevard and East Industrial Avenue in Boynton Beach, Palm Beach County. The applicant proposes to construct and operate a surface water management system for a commercial development.

The project area consists of upland grasses that appear to be mowed regularly and an unpaved roadway through the parcel. There are no wetlands or other surface waters at the site.

The proposed activities have been evaluated for potential secondary and cumulative impacts and to determine if the project is contrary to the public interest. Based upon the proposed project design, the District has determined that the project will not cause adverse secondary or cumulative impacts to the water resources and is not contrary to the public interest.

cc: Anita R. Bain  
Carlos A. de Rojas, P.E.



Initial Review

5/21/99

Star. All Industrial Avenue

- 1) Why is this <sup>project</sup> not being proposed?
- 2) Need <sup>studies</sup> to extend at least 100' outside of project boundary to determine off-site drainage patterns.
- 3) ownership docs?
- 4) Water / Wastewater letters
- 5) WA codes?

Initial Review

5/29/99

Star All Industrial Avenue

### I. Water Quality Calcs.

A) 1" over the site =  $(1 \text{ in}) \times (4.35 \text{ ac}) \times (1 \text{ ft} / 12 \text{ in}) = \underline{\underline{0.36 \text{ ac-ft}}}$

B) 2.5" x % imperviousness

1) site area for WB per/imp =  $(4.35 \text{ ac}) - 1.09 \text{ ac} = 3.26 \text{ ac}$

2) Imp. area for WB per/imp =  $3.26 \text{ ac} - (0.58 + 0.49 + 0.83) = 1.36 \text{ ac}$

3) Percent imp. fr. WB =  $\left( \frac{1.36 \text{ ac}}{3.26 \text{ ac}} \right) = 0.42$

4) 2.5 inch x % imp =  $(2.5 \text{ in}) (0.42) = 1.05 \text{ inches to be treated}$

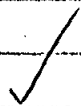
5) volume req. for WB detention =  $(1.05 \text{ in}) \times (4.35 \text{ ac}) \times (1 \text{ ft} / 12 \text{ in}) = \underline{\underline{0.38 \text{ ac-ft}}}$

c) Since  $0.38 \text{ ac-ft} > 0.36 \text{ ac-ft}$ , then  $0.38 \text{ ac-ft}$  controls

d) Pretreatment =  $(0.5 \text{ in}) \times (4.35 \text{ ac}) \times (1 \text{ ft} / 12 \text{ in}) = 0.18 \text{ ac-ft}$

e) Finally, from stage/storage,  $0.38 \text{ ac-ft}$  corresponds to a stage of 12.6 ft.

$$\frac{0.62 - 0}{13 - 12} = \frac{0.62 - 0.38}{13 - x} \quad x = 12.6 \text{ ft}$$



WB is provided

Initial Review

5/24/99

Star All Industrial Ave

Stage / Storage

Retention, V, 0.58, 12.0, 20.0

Retention Bank, L, 0.49, 12.0, 18.0

Retention Bank, V, 0.49, 18.0, 20.0

Paved, L, 1.36, 18.0, 20.0

Open, L, 0.83, 17.25, 19.05

Stage	Retention	Retention Bank	Retention Bank	Paved	Open	Total
12						Ø
13	0.58	0.04				0.62
14	1.16	0.16				1.32
15	1.74	0.37				2.11
16	2.32	0.65				2.97
17	2.90	1.02				3.92
18	3.48	1.47			0.12	5.07
19	4.06	1.96	0.49	0.34	0.64	7.49
20	4.64	2.45	0.98	1.36	1.45	10.88

SCB PROGRAM

PROJECT NAME . . . . : Stor All Industrial Avenue  
 REVIEWER . . . . . : Tilles  
 PROJECT AREA . . . . : 4.35 ACRES  
 GROUND STORAGE . . . : 2.75 INCHES  
 TERMINATION DISCHARGE : .43 CFS  
 DISTRIBUTION TYPE . . : SFWMD  
 RETURN FREQUENCY . . : 15.00 YEARS  
 RAINFALL DURATION . . : 1-DAY  
 24-HOUR RAINFALL . . : 8.00 INCHES  
 REPORTING SEQUENCE . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
13.00	.62	.00
14.00	1.32	.00
15.00	2.11	.00
16.00	2.97	.00
17.00	3.92	.00
18.00	5.07	.00
19.00	7.49	.00
20.00	10.88	.00

----- F E S E R V O I R -----									
TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	STAGE (FT)
.00	.00	.00	.0	.0	.0	.0	.0	.0	13.00
4.00	.36	.00	.0	.0	.0	.0	.0	.0	.00
8.00	1.10	.09	.3	.0	.0	.0	.0	.0	.62
10.00	1.70	.34	.8	.1	.1	.0	.0	.0	2.43
11.00	2.15	.59	1.3	.2	.2	.0	.0	.0	4.20
11.50	2.55	.84	2.3	.3	.3	.0	.0	.0	5.92
11.75	3.75	1.72	15.4	.6	.6	.0	.0	.0	9.75
12.00	5.25	2.96	21.8	1.1	1.1	.0	.0	.0	13.33
12.50	5.83	3.47	4.5	1.3	1.3	.0	.0	.0	13.85
13.00	6.14	3.74	2.4	1.4	1.4	.0	.0	.0	14.02
14.00	6.54	4.11	1.5	1.5	1.5	.0	.0	.0	14.20
16.00	7.04	4.56	1.0	1.7	1.7	.0	.0	.0	14.41
20.00	7.62	5.09	.6	1.8	1.8	.0	.0	.0	14.66
24.00	8.00	5.44	.4	2.0	2.0	.0	.0	.0	14.82

SUMMARY INFORMATION

MAXIMUM STAGE WAS 14.82 FEET AT 24.00 HOURS  
MAXIMUM DISCHARGE WAS 40 CFS AT 12.00 HOURS

$$Q = \frac{(P - 0.25)^2}{P + 0.25} = \frac{(8 - (0.2)(2.75))^2}{8 + (0.2)(2.75)} = 5.44 \text{ in}$$

$$\text{Runoff Volume} = (5.44 \text{ in}) (4.35 \text{ ac}) (1 \text{ ft} / 12 \text{ in}) = 1.97 \text{ ac-ft}$$

From stage / storage

$$\frac{2.11 - 1.32}{15 - 14} = \frac{2.11 - 1.97}{15 - x}$$

$$x = 14.82 \quad \checkmark$$



1  
1

SCS PROGRAM

PROJECT NAME . . . . . Stor All Industrial Avenue  
 REVIEWER . . . . . Tiles  
 PROJECT AREA . . . . . 4.35 ACRES  
 GROUND STORAGE . . . . . 2.75 INCHES  
 TERMINATION DISCHARGE . . . . . .43 CFS  
 DISTRIBUTION TYPE . . . . . SFWMD  
 RETURN FREQUENCY . . . . . 25.00 YEARS  
 RAINFALL DURATION . . . . . 3-DAY  
 24-HOUR RAINFALL . . . . . 11.04 INCHES  
 REPORTING SEQUENCE . . . . . STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
13.00	.62	.00
14.00	1.32	.00
15.00	2.11	.00
16.00	2.97	.00
17.00	3.92	.00
18.00	5.07	.00
19.00	7.49	.00
20.00	10.88	.00

----- RESERVOIR -----

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	STAGE (FT)
.00	.00	.00	.0	.0	.0	.0	.0	.0	13.00
4.00	.27	.00	.0	.0	.0	.0	.0	.0	.00
8.00	.54	.00	.0	.0	.0	.0	.0	.0	.00
12.00	.81	.02	.0	.0	.0	.0	.0	.0	.16
16.00	1.07	.08	.1	.0	.0	.0	.0	.0	.62
20.00	1.34	.18	.1	.1	.1	.0	.0	.0	1.32
24.00	1.61	.30	.1	.1	.1	.0	.0	.0	2.22
28.00	2.00	.50	.2	.2	.2	.0	.0	.0	3.77
32.00	2.40	.74	.3	.3	.3	.0	.0	.0	5.57
36.00	2.79	1.00	.3	.4	.4	.0	.0	.0	7.57
40.00	3.18	1.29	.3	.5	.5	.0	.0	.0	9.70
44.00	3.57	1.58	.3	.6	.6	.0	.0	.0	11.95
48.00	3.96	1.89	.3	.7	.7	.0	.0	.0	13.09
52.00	4.46	2.30	.6	.8	.8	.0	.0	.0	13.29
56.00	5.48	3.16	1.3	1.1	1.1	.0	.0	.0	13.73
58.00	6.31	3.90	1.9	1.4	1.4	.0	.0	.0	14.10

59.00	6.93	4.46	2.8	1.6	1.6	.0	.0	.0	14.34
59.50	7.49	4.97	4.4	1.8	1.8	.0	.0	.0	14.55
59.75	9.14	6.51	27.1	2.4	2.4	.0	.0	.0	14.96
60.00	11.21	8.47	34.4	3.1	3.1	.0	.0	.0	15.70

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TIME (HR)	RAIN (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	RESERVOIR			STAGE (FT)
						ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	
60.50	12.01	9.24	6.8	3.4	3.4	.0	.0	.0	16.33
61.00	12.43	9.65	3.5	3.5	3.5	.0	.0	.0	16.52
62.00	12.99	10.19	2.2	3.7	3.7	.0	.0	.0	16.74
64.00	13.68	10.85	1.4	3.9	3.9	.0	.0	.0	17.00
68.00	14.47	11.63	.8	4.2	4.2	.0	.0	.0	17.25
72.00	15.00	12.14	.6	4.4	4.4	.0	.0	.0	17.41

SUMMARY INFORMATION

MAXIMUM STAGE WAS 17.41 FEET AT 72.00 HOURS  
 MAXIMUM DISCHARGE WAS .0 CFS AT .00 HOURS

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SCB PROGRAM

PROJECT NAME . . . . . : Stor All Industrial Avenue  
 REVIEWER . . . . . : Tilles  
 PROJECT AREA . . . . . : 4.35 ACRES  
 GROUND STORAGE . . . . . : 2.75 INCHES  
 TERMINATION DISCHARGE : .43 CFS  
 DISTRIBUTION TYPE . . . : SFWMD  
 RETURN FREQUENCY . . . : 100.00 YEARS  
 RAINFALL DURATION . . . : 3-DAY  
 24-HOUR RAINFALL . . . : 13.25 INCHES  
 REPORTING SEQUENCE . . : STANDARDIZED

STAGE (FT)	STORAGE (AF)	DISCHARGE (CFS)
13.00	.62	.00
14.00	1.32	.00
15.00	2.11	.00
16.00	2.97	.00
17.00	3.92	.00
18.00	5.07	.00
19.00	7.49	.00
20.00	10.88	.00

----- R E S E R V O I R -----

TIME (HR)	RAIN FALL (IN)	ACCUM. RUNOFF (IN)	BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	VOLUME (AF)	ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)	STAGE (FT)
.00	.00	.00	.0	.0	.0	.0	.0	.0	13.00
4.00	.32	.00	.0	.0	.0	.0	.0	.0	.00
8.00	.64	.00	.0	.0	.0	.0	.0	.0	.02
12.00	.97	.05	.1	.0	.0	.0	.0	.0	.40
16.00	1.29	.16	.1	.1	.1	.0	.0	.0	1.16
20.00	1.61	.30	.2	.1	.1	.0	.0	.0	2.21
24.00	1.93	.46	.2	.2	.2	.0	.0	.0	3.48
28.00	2.40	.75	.3	.3	.3	.0	.0	.0	5.61
32.00	2.88	1.07	.4	.4	.4	.0	.0	.0	8.02
36.00	3.35	1.41	.4	.5	.5	.0	.0	.0	10.63
40.00	3.82	1.77	.4	.6	.6	.0	.0	.0	13.03
44.00	4.29	2.15	.4	.8	.8	.0	.0	.0	13.22
48.00	4.76	2.54	.4	.9	.9	.0	.0	.0	13.43
52.00	5.35	3.05	.7	1.1	1.1	.0	.0	.0	13.69
56.00	6.57	4.13	1.6	1.5	1.5	.0	.0	.0	14.21
58.00	7.58	5.05	2.4	1.8	1.8	.0	.0	.0	14.62

59.00	8.32	5.74	3.5	2.1	2.1	.0	.0	.0	14.92
59.50	8.98	6.36	5.4	2.3	2.3	.0	.0	.0	15.16
59.75	10.97	8.25	33.1	3.0	3.0	.0	.0	.0	15.62
60.00	13.45	10.63	41.9	3.9	3.9	.0	.0	.0	16.48

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TIME (HR)	RAIN ACCUM.		BASIN DISCHGE (CFS)	ACCUM. INFLOW (AF)	----- RESERVOIR -----				STAGE (FT)
	FALL (IN)	RUNOFF (IN)			ACCUM. OUTFLOW (AF)	INSTANT DISCHGE (CFS)	AVERAGE DISCHGE (CFS)		
60.50	14.42	11.57	8.2	4.2	4.2	.0	.0	.0	17.16
61.00	14.92	12.06	4.3	4.4	4.4	.0	.0	.0	17.35
62.00	15.60	12.72	2.6	4.6	4.6	.0	.0	.0	17.58
64.00	16.42	13.52	1.7	4.9	4.9	.0	.0	.0	17.84
68.00	17.37	14.46	1.0	5.2	5.2	.0	.0	.0	18.07
72.00	18.01	15.08	.7	5.5	5.5	.0	.0	.0	18.16

SUMMARY INFORMATION

MAXIMUM STAGE WAS 18.16 FEET AT 72.00 HOURS  
 MAXIMUM DISCHARGE WAS .0 CFS AT .00 HOURS

Brian

**PERMIT APPLICATION ROUTING**  
Regulation Department

Application Number: 990517-2 Permit Number:  
Related Application Number:  
Applicant: Stor All Ltd  
Project: Stor All Industrial Avenue  
County: Palm Beach Permit Type: ERP Land Use Type: COM

30 Day Deadline: 6/16/99  
No Fee Required:  
Fee Received: \$850.00 Fee Due: \$ \_\_\_\_\_ Fee Code: PS6A  
(Do Not Issue Permit)

	DATE RECEIVED	DATE OUT
PROCESSED BY: <u>Julie Maytok</u>	<u>5/17/99</u>	<u>5/17/99</u>
ROUTE TO:		
<u>Carlos DeRojas</u>	_____	_____
<u>NRM</u>	_____	_____
<u>ENV. RES. COMPL. DIV.</u>	_____	_____
<u>GIS</u>	_____	_____
<u>RIGHT-OF-WAY</u> <u>1150</u>	_____	_____
<u>WEEKLY MAIL/FAN</u>	_____	_____

Will be required  
 Will not be required  
 May be required  
[Signature] Date 5/17/99

NRM Signoff: \_\_\_\_\_ Date: \_\_\_\_\_  
COMMENTS:

**FOR RIM USE ONLY**

Application Submittal Included:  
Application Form: 5 Plans: 5 Aerials: 5 Engineer Reports: 5 Adjacent Property Owners Lists:





**MICHAEL B. SCHORAH  
& ASSOCIATES, INC.**  
Engineers • Planners • Development Consultants  
1850 Forest Hill Blvd. • Suite 206  
WEST PALM BEACH, FLORIDA 33408  
(561) 988-0080 • FAX: (561) 642-9728

**LETTER OF TRANSMITTAL**

TO SOUTH FLORIDA WATER MANAGEMENT DISTRICT

DATE May 17, 1999	JOB NO. 98-939
ATTENTION Carlos de Rojas, P.E.	
FIC Stor-All, 1850 Forest Hill Beach Blvd.	
ORIGINAL STAMP MAY 17 1999	
WRB	

- Hand Delivered     Mailed     Pick-up  
 Federal Express     Other

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following items.

COPIES	EACH	SETS	DESCRIPTION
	5		Application for Standard General Permit / Section A and C
		5	Development Plans (sheets 1-5 of 8)
		5	Surface Water Calculations
	5		Location Maps
		5	Soils Report
	5		Boundary / Topographic Survey
	5		Aerial Photograph

THESE ARE TRANSMITTED as checked below.

- For approval     For your use     For signature  
 For review and comment     As requested     Other \_\_\_\_\_

REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Received by Julie May Date 5/17/99 Signed Michael J. LaCoursiere  
Copy to \_\_\_\_\_  
If enclosures are not as noted, kindly notify us at once. **Michael J. LaCoursiere, P.E.**

**FLOOD-ROUTING CALCULATIONS FOR STOR-ALL INDUSTRIAL AVENUE**

**I. SITE DATA**

Total Area	=	4.35 Acres	
Building Area	=	1.09 Acres	✓
Paved Area	=	1.36 Acres	
Retention Area Bottom	=	0.58 Acres	2' EL 12.0
Retention Area Sides	=	0.49 Acres	
Remaining Open Space	=	0.83 Acres	

990517-2

ORIGINAL SUBMITTAL  
MAY 17 1999

**II. RAINFALL EVENTS**

5 yr - 1 day	8"	✓
25 yr - 3 day	16"	✓
100 yr - 3 day	18"	✓

WPB

**III. SOIL STORAGE**

$$\frac{(0.58 \text{ Ac.} \times 1.88") + (0.49 \times 8.18") + (0.83 \times 8.18")}{1.90 \text{ Ac.}} = 6.26"$$

% pervious = 1.9 Ac./4.35 Ac. = 0.44

S = 6.26" (0.44) = 2.75" ✓

**IV. SCS CALCULATIONS (see attached)**

Note: No discharge considered, 25 yr - 3 day storm stored on-site

C-16 basin

control elev. 8.5' ?

$$\text{Allowable Discharge} = \left( \frac{62.6 \text{ cfs}}{\text{mi}^2} \right) \times 4.55 \text{ ac} \left( \frac{1 \text{ mi}^2}{640 \text{ ac}} \right) = 0.43 \text{ cfs}$$

*Handwritten signature and date:*  
5/19/99

07-17-1998

MICHAEL B. SCHORAN & ASSOCIATES, INC.

PROJECT NAME: STOR-ALL BOYNTON ALT 4

AREA = 4.35 ACRES  
GROUND STORAGE = 2.75 INCHES  
100 YEAR RAINFALL = 18 INCHES  
100 YEAR FLOOD STAGE = 18.35 FEET

STAGE	STORAGE	DISCHARGE
12.00	0.00	0.00
18.50	5.66	0.00
19.00	6.70	11.25
19.50	7.92	31.82
20.00	9.13	58.46

PROJECT NAME: STOR-ALL BOYNTON ALT 4

\*\*STAGE - CUMULATIVE STORAGE CALCULATIONS\*\*

VERTICAL STORAGE AREAS

AREA NUMBER - 1  
STORAGE AREA : 0.58 ACRES  
STARTING STORAGE ELEVATION : 12.00 FEET

LINEAR STORAGE AREAS

AREA NUMBER - 1  
STORAGE AREA : 0.49 ACRES  
LINEAR STORAGE FROM ELEV. 12.00 FT. TO ELEV. 18.00 FT.  
VERTICAL STORAGE FROM ELEV. 18.00 FT. ON UP

AREA NUMBER - 2  
STORAGE AREA : 1.36 ACRES  
LINEAR STORAGE FROM ELEV. 18.00 FT. TO ELEV. 19.00 FT.  
VERTICAL STORAGE FROM ELEV. 19.00 FT. ON UP

STORAGE (AC-FT)

STAGE (FEET)	VERT. AREA 1	LIN. AREA 1	LIN. AREA 2	TOTAL (AF)
12.00	0.0	0.0	0.0	0.0
18.50	3.8	1.7	0.2	5.7
19.00	4.1	2.0	0.7	6.7
19.50	4.3	2.2	1.4	7.9
20.00	4.6	2.5	2.0	9.1

PROJECT NAME: STOR-ALL BOYNTON ALT 4

\*\*\* SCS RUNOFF & FLOOD ROUTING - 5 - YEAR STORM

RAINFALL = 8.0 INCHES 24 HOUR DURATION STORM

TIME (HR)	RAIN (IN)	RUNOFF (IN)	RUNOFF (A-P)	DISCHARGE (CFS)	STORAGE (A-P)	STAGE (FT)
0.00	0.00	0.00	0.00	0.0	0.00	12.00
5.00	0.50	0.00	0.00	0.0	0.00	12.00
10.00	1.70	0.34	0.12	0.0	0.12	12.14
10.50	1.90	0.41	0.16	0.0	0.16	12.18
11.00	2.15	0.59	0.21	0.0	0.21	12.25
11.25	2.35	0.71	0.26	0.0	0.26	12.30
11.50	2.55	0.84	0.31	0.0	0.31	12.35
11.75	3.90	1.84	0.67	0.0	0.67	12.77
12.00	5.25	2.96	1.07	0.0	1.07	13.23
12.25	5.54	3.21	1.16	0.0	1.16	13.34
12.50	5.83	3.47	1.26	0.0	1.26	13.45
12.75	5.98	3.61	1.31	0.0	1.31	13.50
13.00	5.14	3.74	1.36	0.0	1.36	13.56
13.50	6.36	3.94	1.43	0.0	1.43	13.64
14.00	6.54	4.11	1.49	0.0	1.49	13.71
19.00	7.47	4.95	1.80	0.0	1.80	14.06
24.00	8.00	5.44	1.97	0.0	1.97	14.27



PROJECT NAME: STON-ALL BOYNTON ALT 4

\*\*\* BCS RUNOFF & FLOOD ROUTING - 25 - YEAR STORM

RAINFALL = 11.0 INCHES 3 DAY DURATION STORM

TIME (HR)	RAIN (IN)	RUNOFF (IN)	RUNOFF (A-F)	DISCHARGE (CFS)	STORAGE (A-F)	STAGE (FT)
0.00	0.00	0.00	0.00	0.0	0.00	12.00
12.00	0.81	0.02	0.01	0.0	0.01	12.01
24.00	1.61	0.30	0.11	0.0	0.11	12.12
36.00	2.78	1.00	0.36	0.0	0.36	12.42
48.00	3.96	1.89	0.69	0.0	0.69	12.79
53.00	4.65	2.45	0.89	0.0	0.89	13.02
58.00	6.31	3.90	1.41	0.0	1.41	13.63
58.50	6.58	4.14	1.50	0.0	1.50	13.73
59.00	6.93	4.46	1.62	0.0	1.62	13.86
59.25	7.21	4.71	1.71	0.0	1.71	13.96
59.50	7.49	4.97	1.80	0.0	1.80	14.07
59.75	9.35	6.71	2.43	0.0	2.43	14.79
60.00	11.21	8.47	3.07	0.0	3.07	15.53
60.25	11.61	8.86	3.21	0.0	3.21	15.69
60.50	12.01	9.24	3.35	0.0	3.35	15.85
60.75	12.22	9.45	3.42	0.0	3.42	15.94
61.00	12.43	9.65	3.50	0.0	3.50	16.02
61.50	12.74	9.95	3.61	0.0	3.61	16.14
62.00	12.99	10.19	3.69	0.0	3.69	16.25
67.00	14.27	11.43	4.14	0.0	4.14	16.76
72.00	15.00	12.14	4.40	0.0	4.40	17.06

PROJECT NAME: STOR-ALL HOYNTON ALT 4

\*\*\* RGS RUNOFF & FLOOD ROUTING - 100 - YEAR STORM

RAINFALL = 13.3 INCHES 3 DAY DURATION STORM

TIME (HR)	RAIN (IN)	RUNOFF (IN)	RUNOFF (A-F)	DISCHARGE (CFS)	STORAGE (A-F)	STAGE (FT)
0.00	0.00	0.00	0.00	0.0	0.00	12.00
12.00	0.97	0.05	0.02	0.0	0.02	12.02
24.00	1.93	0.46	0.17	0.0	0.17	12.19
36.00	3.34	1.40	0.51	0.0	0.51	12.59
48.00	4.76	2.54	0.92	0.0	0.92	13.06
53.00	5.58	3.25	1.18	0.0	1.18	13.35
58.00	7.58	5.05	1.83	0.0	1.83	14.11
58.50	7.90	5.35	1.94	0.0	1.94	14.23
59.00	8.32	5.74	2.08	0.0	2.08	14.39
59.25	8.65	6.05	2.19	0.0	2.19	14.52
59.50	8.98	6.36	2.31	0.0	2.31	14.65
59.75	11.22	8.49	3.08	0.0	3.08	15.34
60.00	13.45	10.63	3.85	0.0	3.85	16.43
60.25	13.94	11.11	4.03	0.0	4.03	16.63
60.50	14.42	11.57	4.19	0.0	4.19	16.82
60.75	14.67	11.82	4.28	0.0	4.28	16.92
61.00	14.92	12.06	4.37	0.0	4.37	17.03
61.50	15.29	12.42	4.50	0.0	4.50	17.18
62.00	15.60	12.72	4.61	0.0	4.61	17.30
67.00	17.13	14.22	5.16	0.0	5.16	17.93
72.00	18.01	15.08	5.47	0.0	5.47	18.28



**DUNKELBERGER ENGINEERING & TESTING, INC.**

Geotechnical • Materials Testing/Inspection • Environmental

431

ORIGINAL SUBMITTAL

MAY 17 1999

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WPB

Michael B. Schorah and Associates, Inc.  
1850 Forest Hill Boulevard  
West Palm Beach, Florida 33406

May 27, 1998  
Project No. 98-21-1043

Attention: Mr. Michael LaCoursiere

Subject: **Geotechnical Services - Borehole Permeability Tests**  
**Stor-All**  
**Boynton Beach, Florida**

Dear Mr. LaCoursiere:

Dunkelberger Engineering & Testing, Inc. (DET) has conducted two borehole permeability tests at the referenced site to evaluate the hydraulic conductivity characteristics of the upper 10± feet of the soil profile components. The locations of the tests were selected by you. Results of the tests are reported herein.

Each permeability test was conducted in a 4.0-inch diameter by 10-foot (±) deep borehole whose sidewalls were stabilized with 2-inch diameter partially perforated well screen and 6/20 silica sand. Usual open hole, constant head test methodology was utilized for the hydraulic conductivity determination.

The measured depth to the water table ranged from 7.4 to 8.7 feet below the existing ground surface on May 21, 1998. Differences in water table depths can be attributed to slight variations in the ground surface elevations.

Results of the tests are presented on the attached sheets along with the pertinent stratigraphic, geometric and hydraulic conditions existing at the site. Review of the test results shows that the hydraulic conductivity of the profile components ranged from  $4.46 \times 10^{-4}$  to  $5.71 \times 10^{-4}$  cubic feet per second per square foot per foot head (cfs/sf-ft). Referencing an empirical correlation given in the South Florida Water Management District (SFWMD) Technical Publication 87-5, dated December 1987, the hydraulic conductivity corresponds to soil permeability values of about 39 to 49 feet per day. We suggest reducing the measured conductivity/permeability value by at least 25 to 30 percent to provide a factor of safety in the design.

1545 Donna Road • West Palm Beach, Florida 33409  
Telephone (561) 689-4299 • Fax (561) 689-5955

Michael B. Schorah and Associates, Inc.  
Project No. 98-21-1043

Page 2

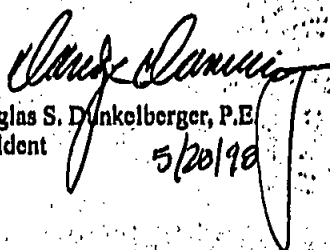
oOo

We trust that the information provided in this letter is clear and understandable. Should it require any clarification or amplification, however, please contact us.

Very truly yours,

**DUNKELBERGER ENGINEERING & TESTING, INC.**

  
Ronald A. Clark  
Engineering Associate

  
Douglas S. Dunkelberger, P.E.  
President  
5/20/98

RAC/USD:kk  
1043rpt

cc: Addressee (2)

Attachment: Sheets 1 and 2 - Field Permeability Test Results



**DE&T DUNKELBERGER ENGINEERING & TESTING, INC.**

**FIELD PERMEABILITY TEST**

Project Name / Number: Stor-All, Boynton Beach, Florida 98-21-1043

TEST NUMBER: BHP-2  
 TEST LOCATION: 75' north & 75' west of southeast property corner

**SUBSURFACE PROFILE**

Depth/ Elevation (ft)	Soil Description	Samples Taken (Y/N)
0.0 - 10.0	Gray, light-brown and dark brown fine SAND, trace silt	Y

Water Table Depth: 8.7'  
 Constant Head Maintained at: Ground Surface

**PERMEABILITY RESULTS**

Uncased (U) or Cased (C): C  
 Casing Depth (ft): 10.0  
 Casing Stick-up (ft): 0  
 Perforated length (ft): 10.0

Constant Head			Falling Head		
Start	Stop	Volume Used (gallons)	Start	Stop	Drop (Ft)
0 sec.	289 sec.	50	--	--	--

\*K, Hydraulic Conductivity (CFS/Ft<sup>2</sup> - Ft Head)

= 4.46x10<sup>-4</sup>

\*(Reference: Equations in SFWMD Permit Information Manual, Volume IV)



**PERMIT APPLICATION ROUTING**  
Regulation Department

Application Number: 990517-2 Permit Number: \_\_\_\_\_  
 Related Application Number: \_\_\_\_\_  
 Applicant: Stor All Ltd  
 Project: Stor All Industrial Avenue  
 County: Palm Beach Permit Type: ERP Land Use Type: COM

30 Day Deadline: 6/16/99  
 No Fee Required: \_\_\_\_\_  
 Fee Received: \$650.00 Fee Due: \$ \_\_\_\_\_ Fee Code: PS6A  
 (Do Not Issue Permit)

		DATE RECEIVED	DATE OUT
PROCESSED BY:	<u>Julie Maytok</u>	<u>5/17/99</u>	<u>5/17/99</u>
ROUTE TO:			
<u>Carlos DeRojas</u>	<u>B. Tilles</u>	<u>5/18/99</u>	
<u>NRM</u>			
<u>ENV. RES. COMPL. DIV.</u>			
<u>GIS</u>			
<u>RIGHT-OF-WAY</u>	<u>1150</u>		
<u>WEEKLY MAIL/FAN</u>			

NRM Signoff: \_\_\_\_\_ Date: \_\_\_\_\_  
 COMMENTS: \_\_\_\_\_

**FOR RIM USE ONLY**

Application Submittal Included:  
 Application Form: 5 Plans: 5 Aerials: 5 Engineer Reports: 5 Adjacent Property Owners Lists: \_\_\_\_\_



## South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045  
TDD (561) 697-2574 • www.sfwmd.gov

### NOTICE

May 17, 1998

**Subject:** Environmental Resource Permit Application  
Application No. 990517-2  
Applicant Stor All Industrial Avenue  
Palm Beach County, S 20/T 45 S/R 42 E

The South Florida Water Management District is currently processing the attached application. If you have any comments or objections concerning this project, please submit them in writing to this office within 30 days of receipt of this notice.

This is also an opportunity for applicable State agencies to concur with or object to the proposed project under the federal consistency provision of the Coastal Zone Management Act. Review must be in accordance with the procedures adopted by the Interagency Management Committee on October 25, 1989. Findings of inconsistency must describe how the project conflicts with your agency's statutory authorities in the Florida Coastal Management Program and provide alternative measures, if any, which would make the project consistent. Commenting agencies must provide a copy of all consistency comments letters to the Florida Coastal Management Program Director, Department of Community Affairs, 2555 Shumard Oak Boulevard, Tallahassee, Florida 32399-2100.

Please refer to the applicant's name and application number as referenced above in any correspondence to help facilitate processing. Questions concerning this project should be addressed to Rob Robbins at (561) 682-6951 or Tony Waterhouse at (561) 682-6887.

BAC:jm

#### Attachments

c: US Army Corps of Engineers

Department of Environmental Protection/Office of Protected Species Management  
Department of State, Division of Historical Resources  
Regional Planning Council  
Department of Community Affairs  
Palm Beach County DERM

**Governing Board:**  
Michael Collins, *Chairman*  
Michael D. Minton, *Vice Chairman*  
Mitchell W. Berger

Vera M. Carter  
Gerardo B. Fernandez  
Patrick J. Gleason

Nicolas J. Gulerres, Jr.  
Harkley R. Thomson  
Trudi K. Williams

James Harvey, *Interim Executive Director*  
Michael Slayton, *Deputy Executive Director*  
Trevo Campbell, *Deputy Executive Director*

Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680



# South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045  
TDD (561) 697-2574 • www.sfwmd.gov

(receipt)

Receipt No. 0000039723 • 0001

Refer to Application: 990517-2  
Project Name : STOR ALL INDUSTRIAL AVENUE

STOR ALL MANAGEMENT LTD  
1375 WEST HILLSBORO BOULEVARD  
DEERFIELD BEACH, FL 33442

REVENUE ACCOUNT CODE	RECEIPT OF PERMIT APPLICATION TYPE OF APPLICATION		FEE AMOUNT	
4615	ERP GENERAL PERMIT STANDARD GEN. PERMIT - NEW		\$650.00	
ITEM	TRANS TYPE	DATE RECEIVED	CHECK NO	AMOUNT RECEIVED
1	PAYMENT MADE BY APPLICANT	05/17/1999	1047	\$650.00
			BALANCE DUE	\$0.00

PROCESSED BY : JMAYTOK  
DATE : May 17, 1999  
SERVICE CENTER : WPB

c: Applicant  
Accounting  
Control  
File

Governing Board:  
Michael Collins, Chairman  
Michael D. Minton, Vice Chairman  
Mitchell W. Berger

Vera M. Carter  
Gerardo B. Fernandez  
Patrick J. Gleason

Nicola J. Outlerrez, Jr.  
Harkley R. Thornton  
Trudi K. Williams

James Harvey, Interim Executive Director  
Michael Slayton, Deputy Executive Director  
Trevor Campbell, Deputy Executive Director

Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680



Form 0071

ORIGINAL SUBMITTAL  
MAY 17 1999

WPB

990517-2

FOR AGENCY USE ONLY	
ACOE Application # _____	DEP/WMD Application # _____
Date Application Received _____	Date Application Received _____
Proposed Project Lat. _____	Fee Received \$ _____
Proposed Project Long. _____	Fee Receipt # _____

### SECTION A

Are any of the activities described in this application proposed to occur in, on, or over wetlands or other surface waters?  yes  no  
 Is this application being filed by or on behalf of a government entity or drainage district?  
 yes  no

A. Type of Environmental Resource Permit Requested (check at least one)

Noticed General - Include information requested in Section B.  
 Standard General (Single Family Dwelling)-include information requested in Sections C and D.  
 Standard General (all other projects) - Include information requested in Sections C and E.  
 Individual (Single Family Dwelling) - Include information requested in Sections C and D.  
 Individual (all other projects) - Include information requested in Sections C and E.  
 Conceptual - Include information requested in Sections C and E.  
 Mitigation Bank Permit (construction) - Include information requested in Section C and F. ( If the proposed mitigation bank involves the construction of a surface water management system requiring another permit defined above, check the appropriate box and submit the information requested by the applicable section. )  
 Mitigation Bank (conceptual) - Include information requested in Section C and F.

B. Type of activity for which you are applying (check at least one)

Construction or operation of a new system including dredging or filling in, on or over wetlands and/or other surface waters.  
 Alteration or operation of an existing system which was not previously permitted by a WMD or DEP.  
 Modification of a system previously permitted by a WMD or DEP. Provide previous permit numbers.  
 Alteration of a system  Extension of permit duration  Abandonment of a system  
 Construction of additional phases of a system  Removal of a system

C. Are you requesting authorization to use State Owned Lands.  yes  no  
(If yes include the information requested in Section G.)

D. For activities in, on or over wetlands or other surface waters, check type of federal dredge and fill permit requested:  
 Individual  Programmatic General  
 General  Nationwide  Not Applicable

E. Are you claiming to qualify for an exemption?  yes  no  
If yes provide rule number if known, \_\_\_\_\_



Form DEP 1

OWNER(S) OF LAND	ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER)
NAME <u>Stor-All Ltd.</u>	NAME
ADDRESS <u>1375 N. Hillsboro Blvd.</u>	ADDRESS
CITY, STATE, ZIP <u>Deerfield Beach, Florida 33442</u>	CITY, STATE, ZIP
COMPANY AND TITLE <u>Anderson Stor-All, Inc</u> <u>Jeff Anderson, President</u>	COMPANY AND TITLE
TELEPHONE (954) <u>421-7888</u> FAX (954) <u>426-1108</u>	TELEPHONE ( ) FAX ( )
AGENT AUTHORIZED TO SECURE PERMIT (IF AN AGENT IS USED)	CONSULTANT (IF DIFFERENT FROM AGENT)
NAME	NAME <u>Michael J. LaCoursiero, P.E.</u>
COMPANY AND TITLE	COMPANY AND TITLE <u>Michael B. Schorah &amp; Assoc., Inc.</u>
ADDRESS	ADDRESS <u>1850 Forest Hill Blvd., Suite 206</u>
CITY, STATE, ZIP	CITY, STATE, ZIP <u>West Palm Beach, Florida 33406</u>
TELEPHONE ( ) FAX ( )	TELEPHONE (561) <u>968-0080</u> FAX ( ) (561) <u>642-9726</u>
<p>Name of project, including phase if applicable <u>Stor-All Industrial Avenue</u> is this application for part of a multi-phase project? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no            Total applicant-owned area contiguous to the project <u>4.35</u> ac            Total project area for which a permit is sought <u>4.35</u> ac            Impervious area for which a permit is sought <u>2.45</u> ac            What is the total area (metric equivalent for federally funded projects) of work in, on, or over wetlands or other surface waters? <u>N/A</u>  <u>          </u> acres <u>          </u> square feet <u>          </u> hectares <u>          </u> square meters            Number of new boat slips proposed. <u>N/A</u></p>	
<p>Project location (use additional sheets, if needed)            County(ies) <u>Palm Beach</u>            Section(s) <u>20</u> Township <u>45B</u> Range <u>42B</u>            Section(s) <u>          </u> Township <u>          </u> Range <u>          </u>            Land Grant name, if applicable <u>N/A</u>            Tax Parcel Identification Number <u>Not Available</u>            Street address, road, or other location <u>East Industrial Avenue</u>            City, Zip Code if applicable <u>Boynton Beach, Florida</u></p>	



Describe in general terms the proposed project, system, or activity.

Development of a self-storage facility with attendant retention area

If there have been any pre-application meetings, including at the project site, with regulatory staff, please list the date(s), location(s), and names of key staff and project representatives.

N/A

Please identify by number any MSSW/Wetland resource/ERP/ACOE Permits pending, issued or denied for projects at the location, and any related enforcement actions.

Agency	Date	No./Type of Application	Action Taken
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Note: The following information is required only for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit and/or authorization to use state owned submerged lands and is not necessary when applying solely for an Environmental Resource Permit. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant). Please attach a plan view showing the owner's names and adjoining property lines. Attach additional sheets if necessary.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_



Form 8771

By signing this application form, I am applying, or I am applying on behalf of the applicant, for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relieve me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree, or I agree on behalf of my corporation, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Stor-All, Ltd.

Typed/Printed Name of Applicant (if no Agent is used) or Agent (if one is so authorized below) 5/14/99

Signature of Applicant/Agent Jeffrey M. Anderson, President, Anderson Stor-All, Inc., General Partner of Stor-All, Ltd.  
Date

**AN AGENT MAY SIGN ABOVE ONLY IF THE APPLICANT COMPLETES THE FOLLOWING:**

I hereby designate and authorize the agent listed above to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirement which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Typed/Printed Name of Applicant \_\_\_\_\_ Signature of Applicant \_\_\_\_\_ Date \_\_\_\_\_  
(Corporate Title if applicable)

Please note: The applicant's original signature (not a copy) is required above.

**PERSON AUTHORIZING ACCESS TO THE PROPERTY MUST COMPLETE THE FOLLOWING:**

I either own the property described in this application or I have legal authority to allow access to the property, and I consent, after receiving prior notification, to any site visit on the property by agents or personnel from the Department of Environmental Protection, the Water Management District and the U.S. Army Corps of Engineers necessary for the review and inspection of the proposed project specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review and inspection. Further, I agree to provide entry to the project site for such agents or personnel to monitor permitted work if a permit is granted.

Typed/Printed Name Jeffrey M. Anderson, President, Anderson Stor-All, Inc., General Partner of Stor-All, Ltd. Signature [Signature] Date 5/14/99  
(Corporate Title if applicable)



ORIGINAL SUBMITTAL

MAY 17 1999

WPB

990517 2

**SECTION C**  
**Environmental Resource Permit Notice of Receipt of Application**

This information is required in addition to that required in other sections of the application. Please submit five copies of this notice of receipt of application and all attachments with the other required information. **PLEASE SUBMIT ALL INFORMATION ON PAPER NO LARGER THAN 2' x 3'.**

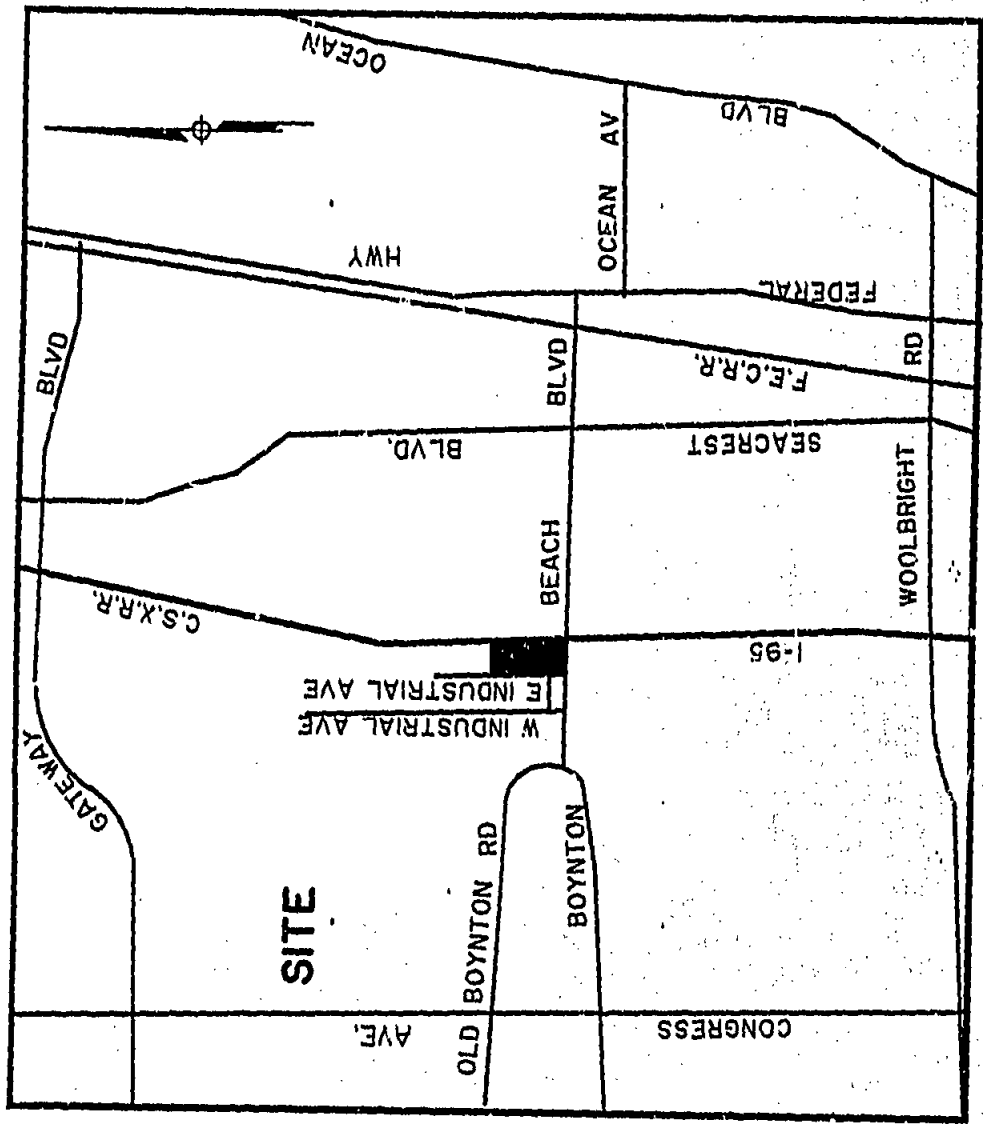
Project Name: STOR-ALL INDUSTRIAL AVENUE  
County: PALM BEACH  
Owner: STOR-ALL, LTD.  
Applicant: STOR-ALL, LTD.  
Applicant's Address: 1375 W. HILLSBORO BLVD.  
DEERFIELD BEACH, FLORIDA 33442

1. Indicate the project boundaries on a USGS quadrangle map. Attach a location map showing the boundary of the proposed activity. The map should also contain a north arrow and a graphic scale; show Sections(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it.
2. Provide the names of all wetlands, or other surface waters that would be dredged, filled, impounded, diverted, drained, or would receive discharge (either directly or indirectly), or would otherwise be impacted by the proposed activity, and specify if they are in an Outstanding Florida Water or Aquatic Preserve: NONE
3. Attach a depiction (plan and section views), which clearly shows the works or other facilities proposed to be constructed. Use multiple sheets, if necessary. Use a scale sufficient to show the location and type of works.
4. Briefly describe the proposed project (such as "construct a deck with boatshelter", "replace two existing culverts", "construct surface water management system to serve 150 acre residential development"):  
DEVELOPMENT OF A SELF STORAGE FACILITY ON A 4.35 ACRE SITE
5. Specify the acreage of wetlands or other surface waters, if any, that are proposed to be disturbed, filled, excavated, or otherwise impacted by the proposed activity: NONE
6. Provide a brief statement describing any proposed mitigation for impacts to wetlands and other surface waters (attach additional sheets if necessary): N/A

**FOR AGENCY USE ONLY**

Application Name: \_\_\_\_\_  
Application Number: \_\_\_\_\_  
Office where the application can be inspected: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SEC. 20, TWP. 45S, RNG. 42E



LOCATION SKETCH

9 9 0 5 1 7 2

ORIGINAL SUBMITTAL  
MAY 17 1999

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SOUTH FLORIDA WATER MANAGEMENT DISTRICT

**M A P S  
FOR PERMIT NO.**

50-04389-P

APPLICATION NO. 990517-2

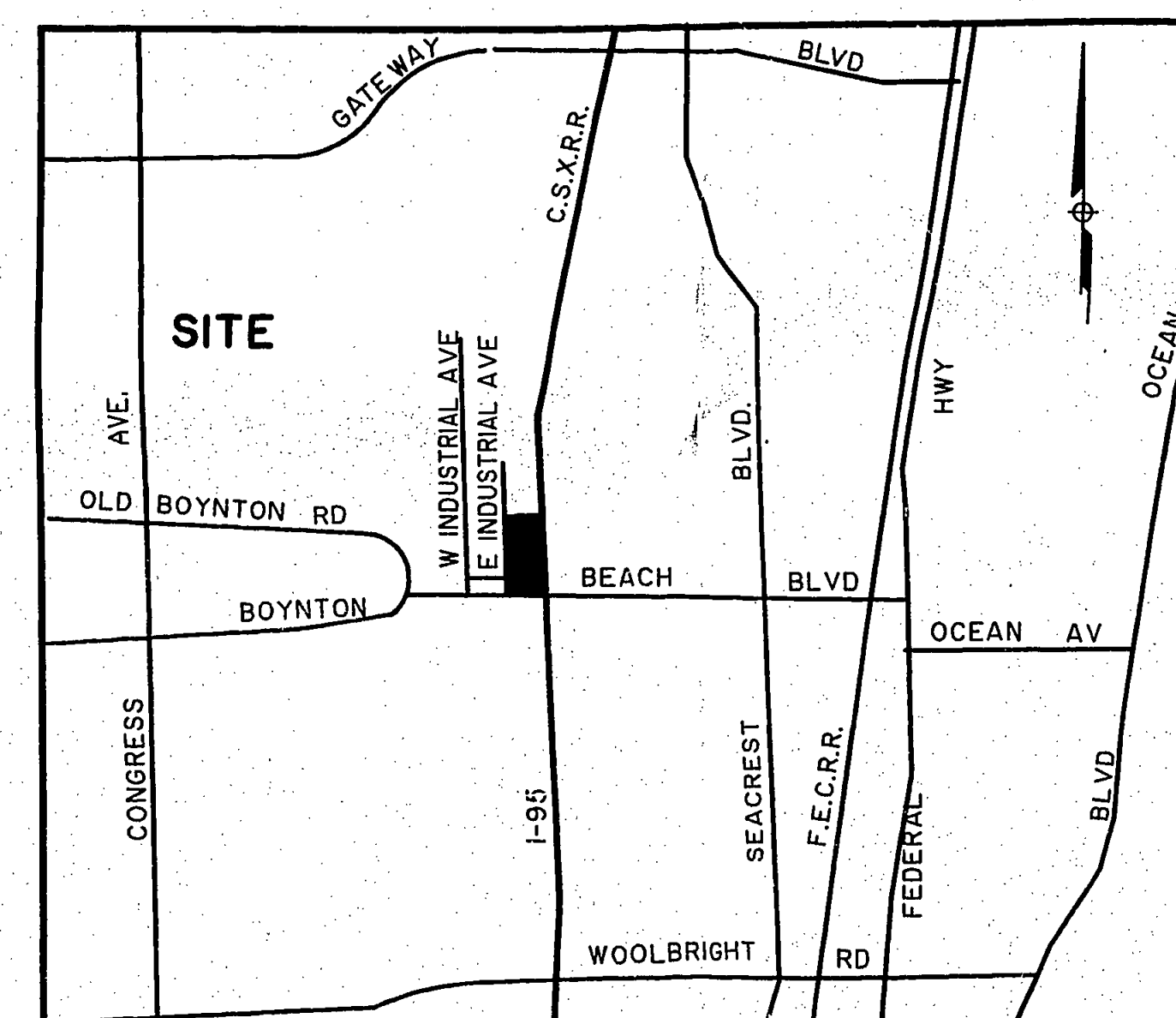
# 27 OF 29  
(BOX NO.)

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# STOR - ALL INDUSTRIAL AVE.

(JOB NO. 0304)

SEC. 20, TWP. 45S, RNG. 42E



LOCATION SKETCH  
NO SCALE

## INDEX


- 1 COVER SHEET
- 2 DIMENSION, STRIPING & CONDUIT PLAN
- 3 PAVING, GRADING AND DRAINAGE PLAN
- 4 PAVING, GRADING AND DRAINAGE DETAILS
- 5 PAVING, GRADING AND DRAINAGE DETAILS
- 6 WATER AND WASTEWATER PLAN
- 7 WATER SYSTEM DETAILS
- 8 WASTEWATER SYSTEM DETAILS

ORIGINAL SUBMITTAL  
MAY 17 1999  
WPB

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## DEVELOPMENT PLANS

**MICHAEL B. SCHORAH  
& ASSOCIATES, INC.**  
ENGINEERS • DEVELOPMENT CONSULTANTS • PLANNERS  
TEL. (561) 988-0080  
FAX. (561) 982-9728  
1850 FOREST HILL BLVD.  
WEST PALM BEACH, FLORIDA 33406



JOB NO. 98-939

SHEET 1 OF 8

50-04215-7  
990517-2





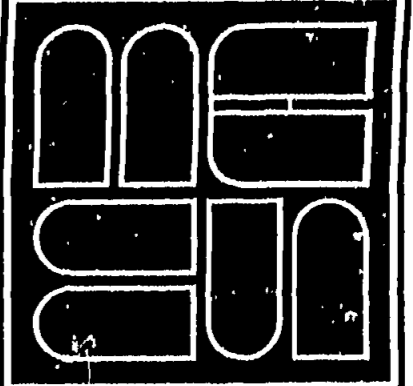
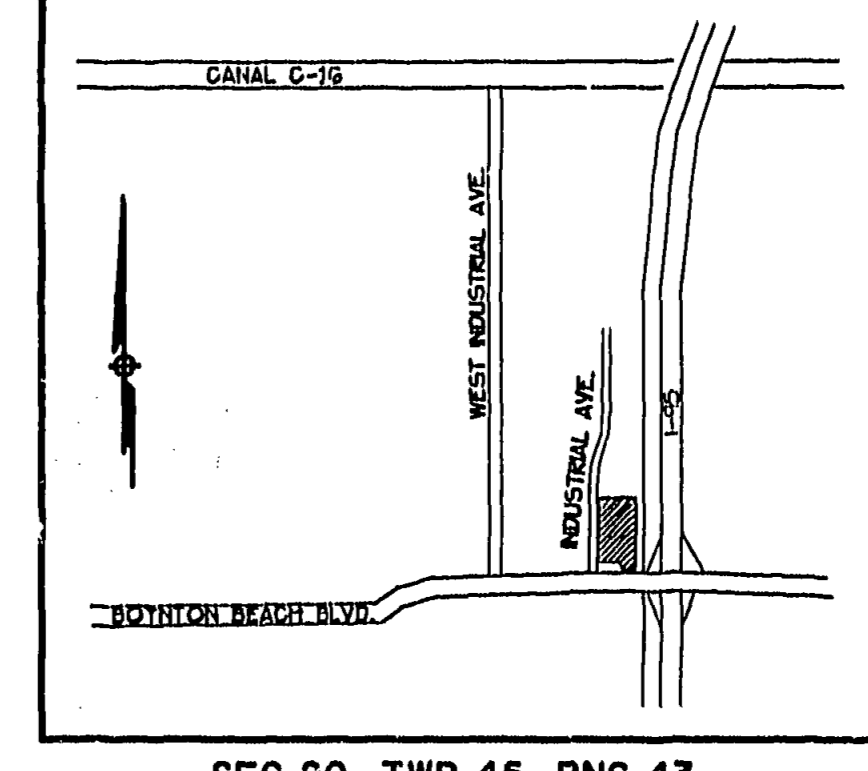
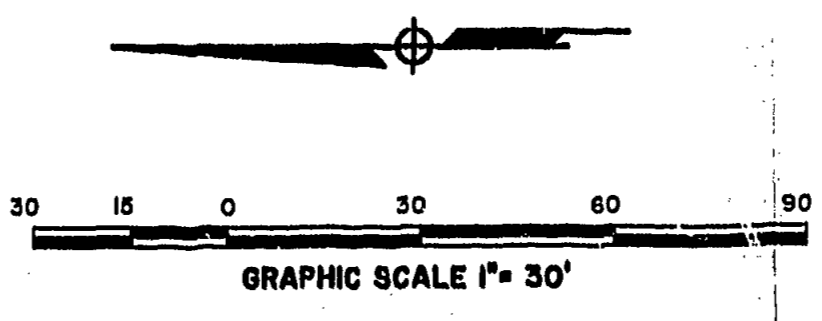
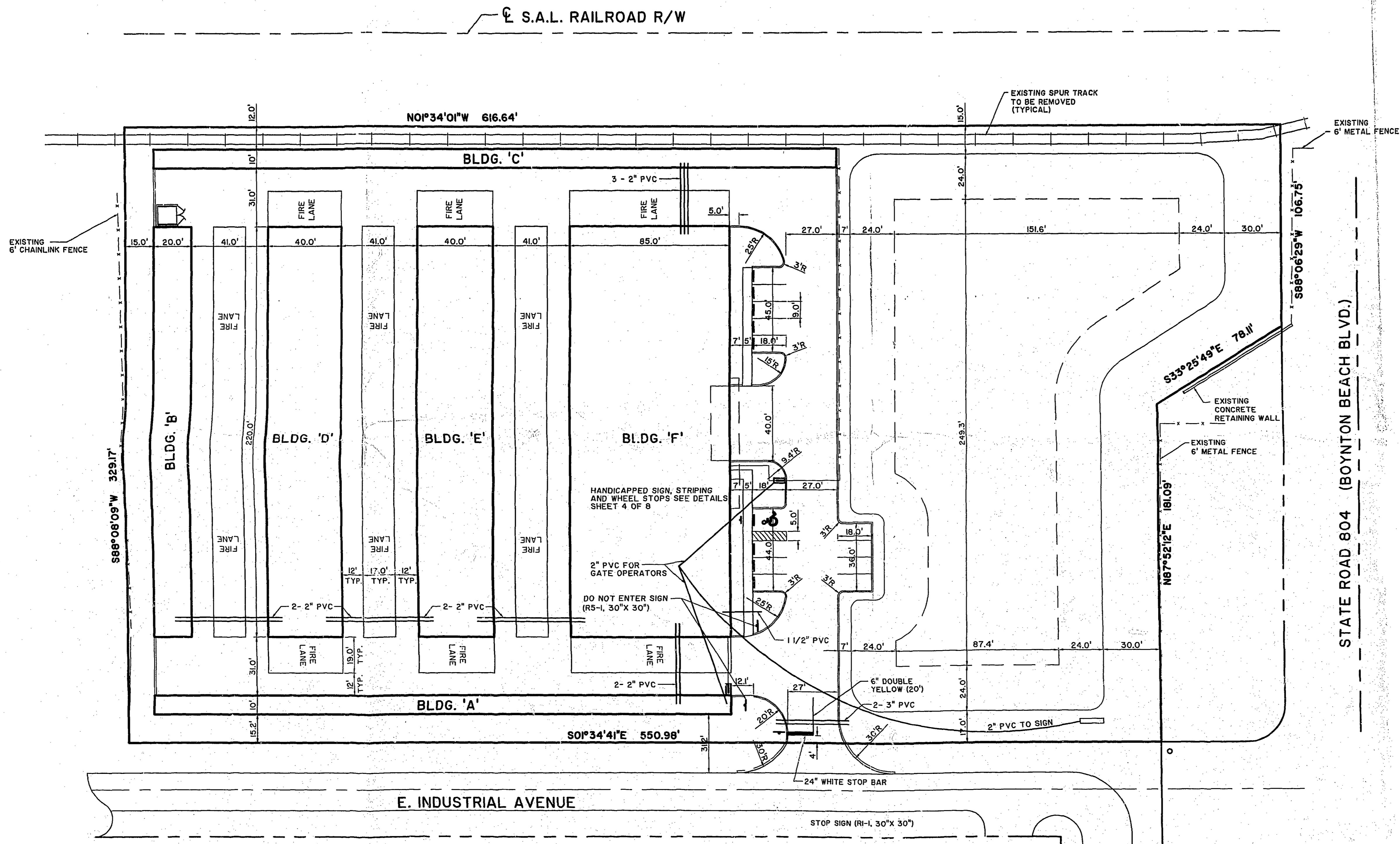






C:\SD\358567A Thu May 06 11:24:29 1999 PLOTTED BY GARDINA

# EXHIBIT 3



**MICHAEL B. SCHORAH & ASSOCIATES, INC.**  
 SURVEYORS, ENGINEERS, ARCHITECTS, PLANNERS  
 DEVELOPMENT CONSULTANTS  
 TEL (661) 988-0080  
 FAX (661) 942-8726  
 1850 FOREST HILL BLVD.  
 WEST PALM BEACH, FLORIDA 33406

PROJECT:  
**STOR - ALL INDUSTRIAL AVE.**  
 JOB NO. 0304

DESCRIPTION:  
**DIMENSION, STRIPING & CONDUIT PLAN**

SCALE:	DESIGNED BY:	DRAWN BY:
1" = 30'	M.L.	S. SMITH
REVISIONS:	DATE:	DATE:
5/7/99; GEN. ARCH. COOR.		

JOB NO.  
**98-939**

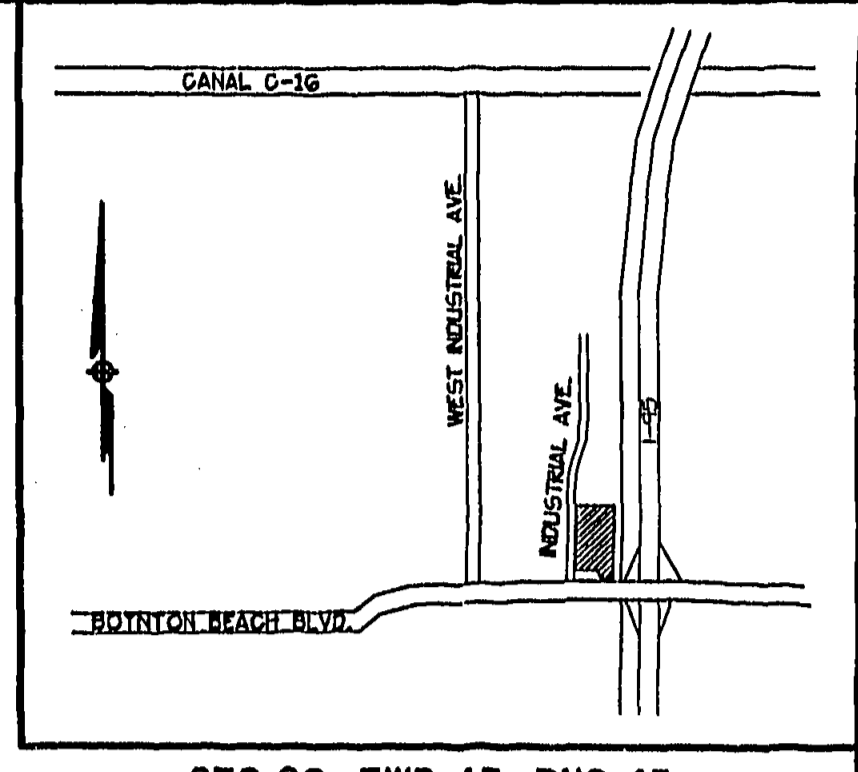
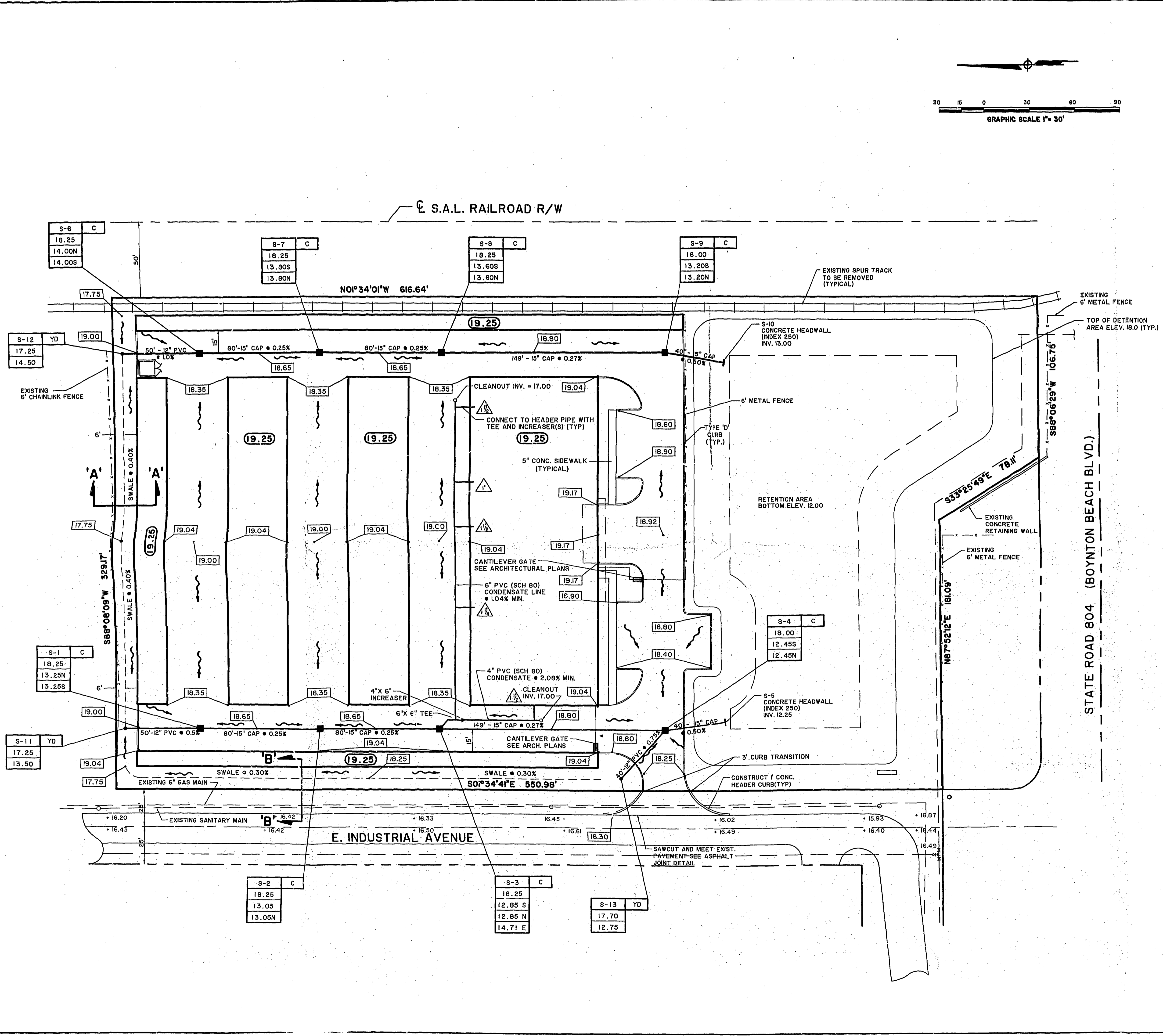
SHEET NO.  
**2**

OF 8  
 50-09389-1 990517-2

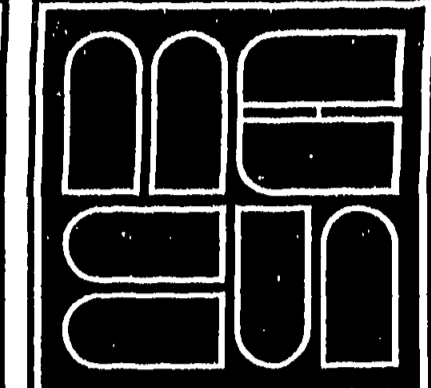
- NOTES:**
- CONTRACTOR SHALL PREPARE RECORD DRAWING INFORMATION FOR USE BY THE ENGINEER-OF-RECORD. RECORD INFORMATION SUBMITTED TO THE ENGINEER-OF-RECORD SHALL BE CERTIFIED BY A FLORIDA REGISTERED PROFESSIONAL SURVEYOR.
  - CONTRACTOR SHALL CLEAN AND GRUB SITE PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADDITIONAL OR REMOVING EXCESS MATERIAL, AS NECESSARY TO COMPLETE THE WORK.
  - BUILDING PAD PREPARATION SHALL CONFORM WITH THE REQUIREMENTS PRESENTED ON SHEET S-1 OF 20 "SOIL COMPACTION" AS PREPARED BY V. ST. JOHN WILLIAMS, P.E.

**EXHIBIT 4**

C:\US\BSE\A Thu May 06 11:46:47 1999 PLOTTED BY SARINA



SEC 20 TWP 45 RNG 43  
LOCATION MAP



**MICHAEL B. SCHORAH & ASSOCIATES, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
DEVELOPMENT CONSULTANTS  
TEL: (561) 988-0880  
1850 FOREST HILL BLVD.  
WEST PALM BEACH, FLORIDA 33406

PROJECT: **STOR - ALL INDUSTRIAL AVE.**  
JOB NO. **0304**  
DESCRIPTION: **PAVING, GRADING & DRAINAGE PLAN**

**LEGEND**

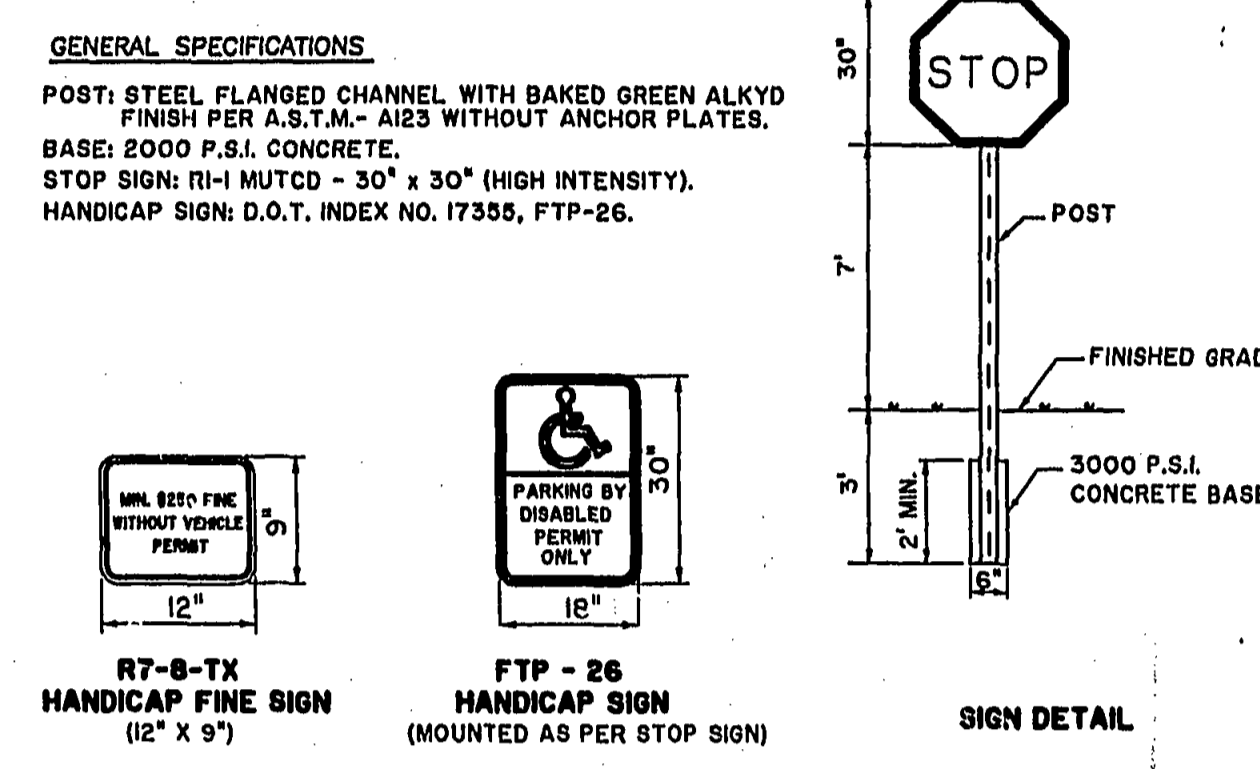
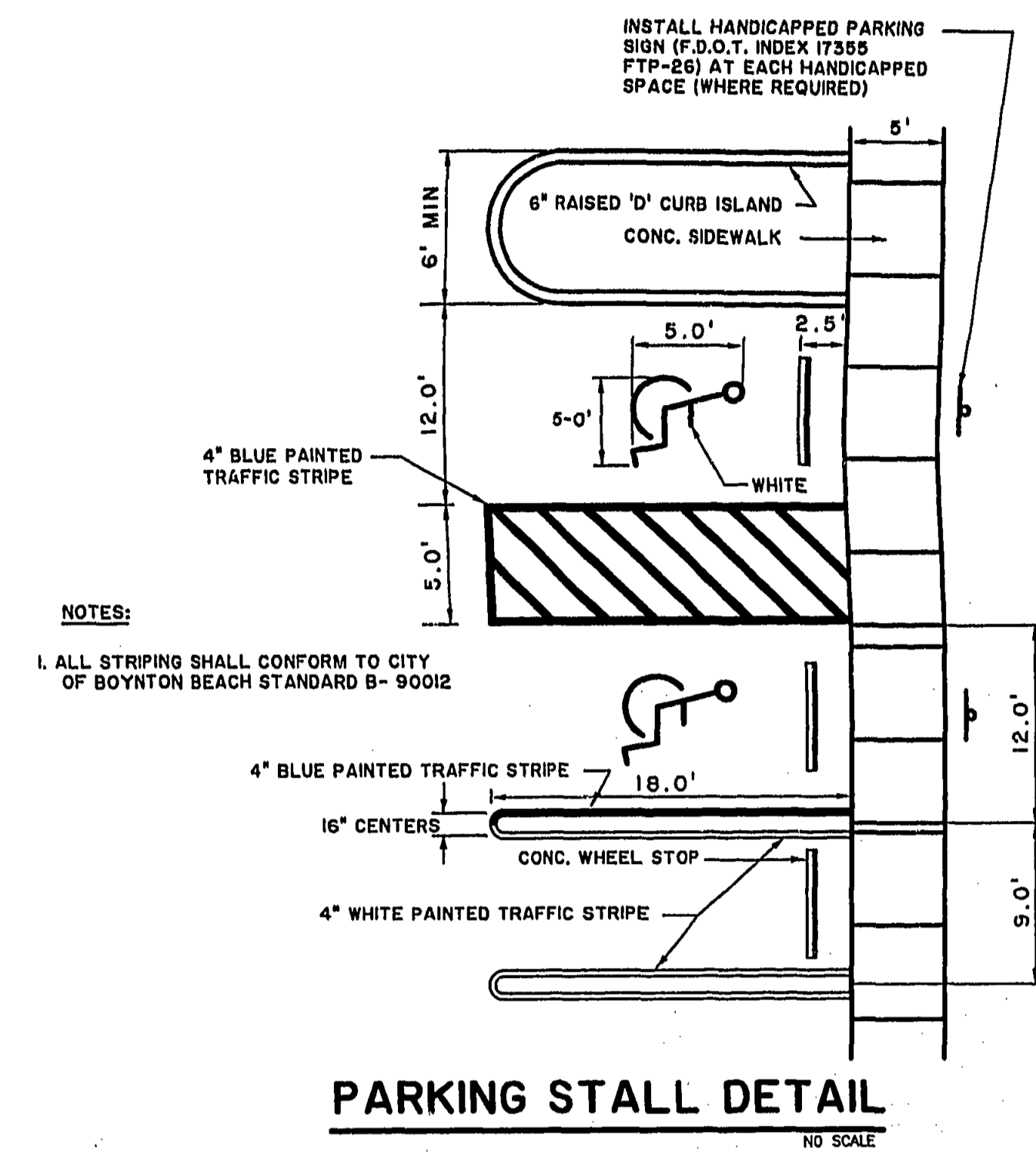
S-3 C	STRUCTURE NUMBER, TYPE AND SIZE IF LARGER THAN 4", GRATE ELEVATION
18.00	INVERT AND DIRECTION
13.80S	
(19.25)	FINISHED FLOOR ELEVATION
(18.50)	TOP OF PAVEMENT ELEVATION
■	INLET TYPE 'C'
~	SLOPE DIRECTION
CAP	CORRUGATED ALUMINUM PIPE
△	CONDENSATE LINE DIAMETER AND APPROX. LOCATION CONSULT PLUMBING DRAWINGS SHEET P81 OF 1

SCALE: 1" = 30'	DESIGNED BY: S. SWITH	DATE: 1998	DATE: 1998
REVISIONS: 5/27/98 PER ARCH. CORR.	DRAWN BY: S. SWITH	DATE: 1998	DATE: 1998

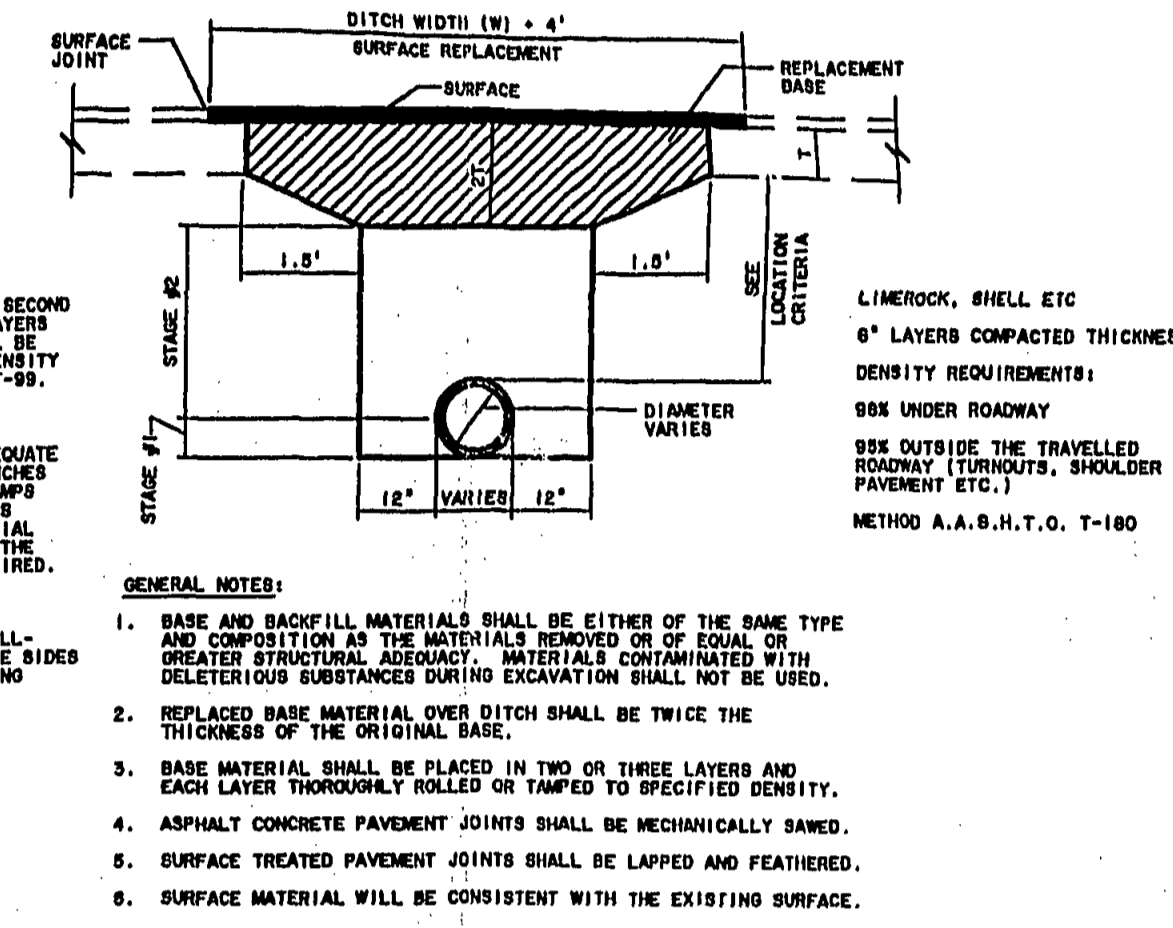
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SHEET NO. **3**  
OF 8

50-013879-P 990517-2

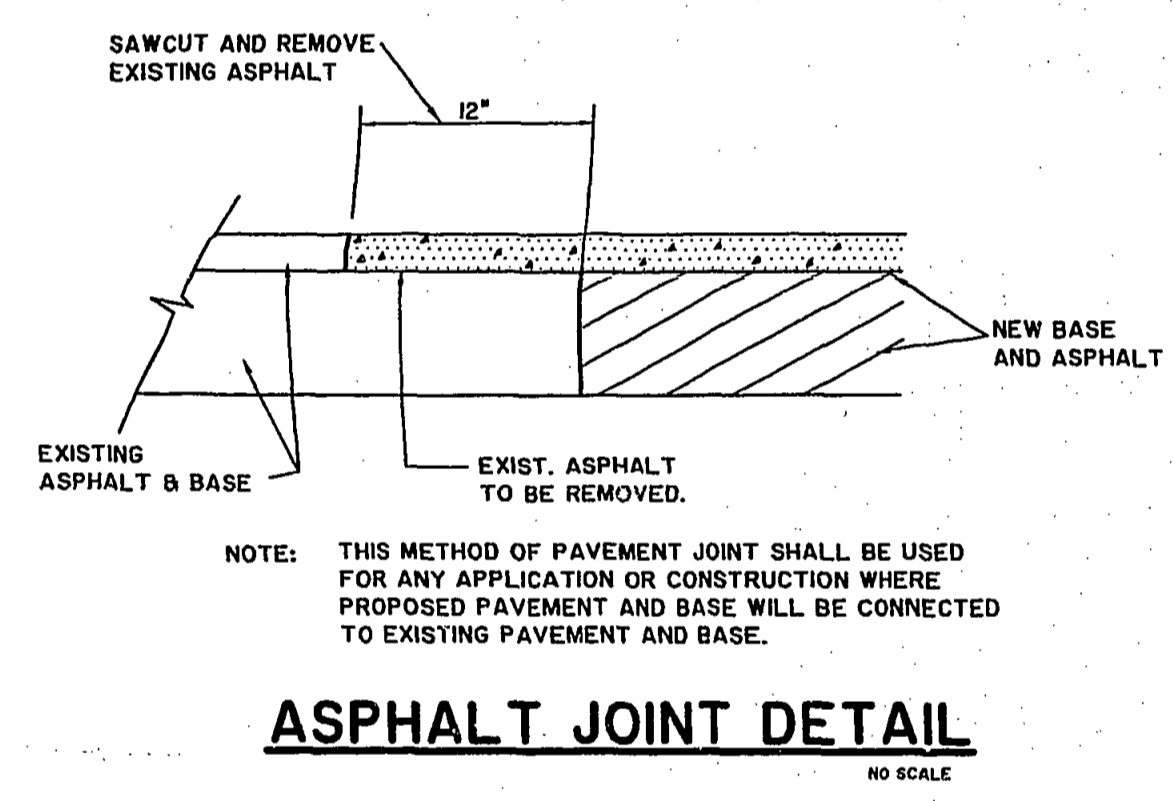




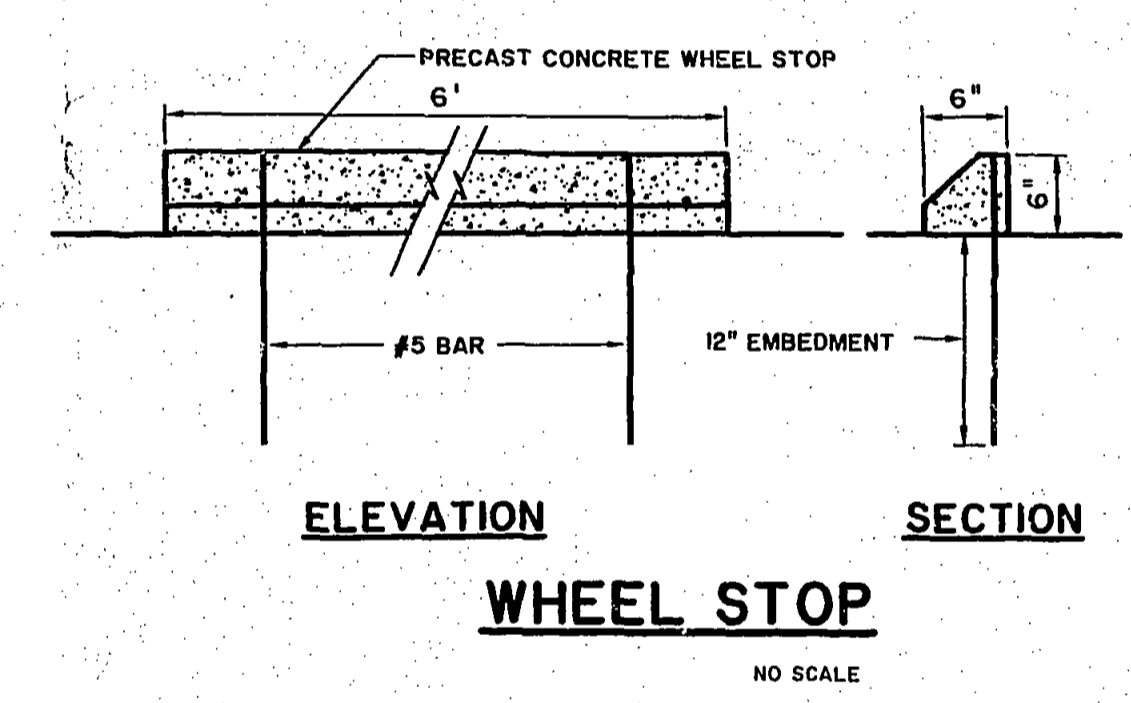
**HANDICAP, STOP SIGN AND HANDICAP FINE SIGN DETAILS**  
NO SCALE



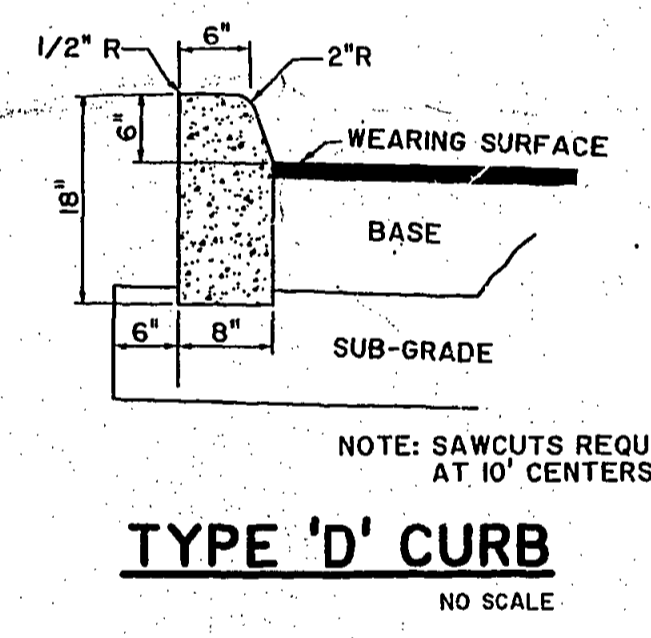
**REPLACEMENT OF FLEXIBLE PAVEMENT FOR PERMITTED PAVEMENT CUT**  
NO SCALE



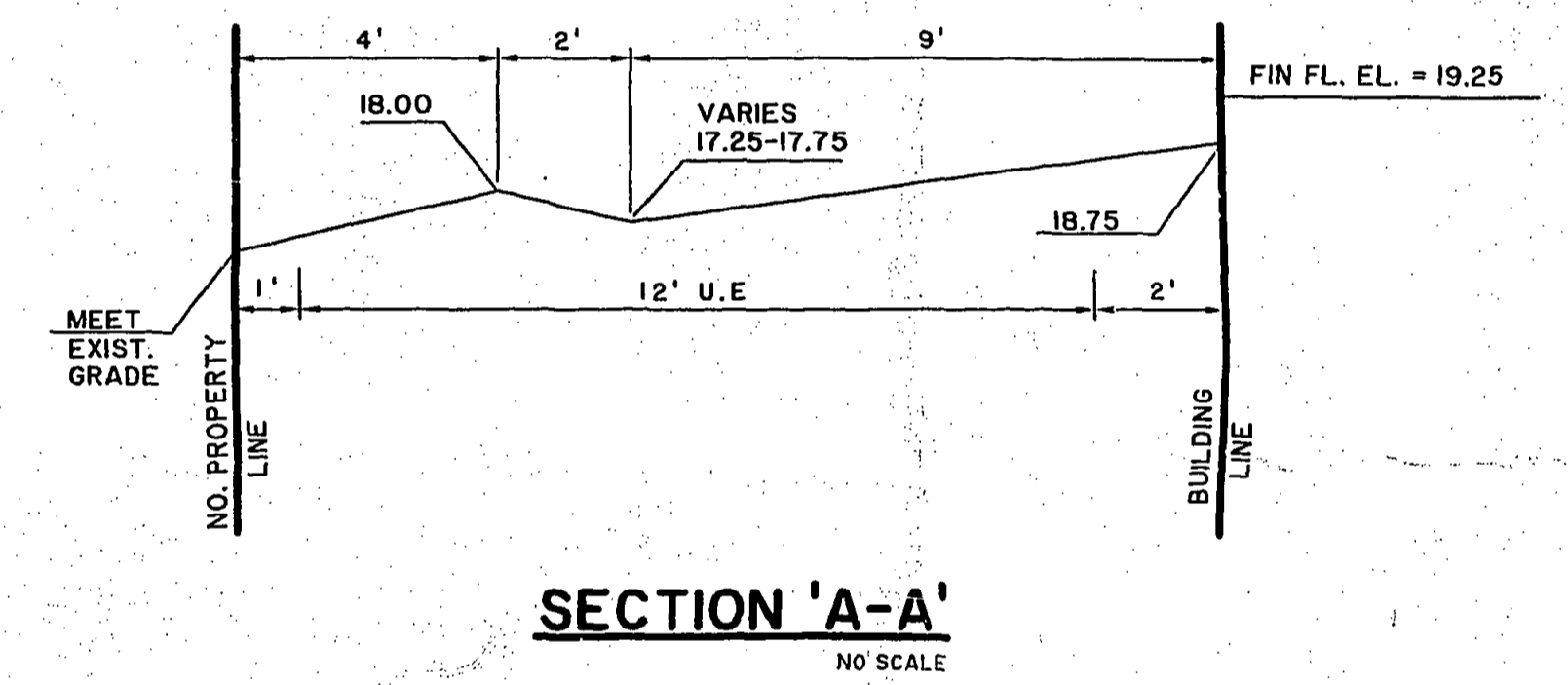
**ASPHALT JOINT DETAIL**  
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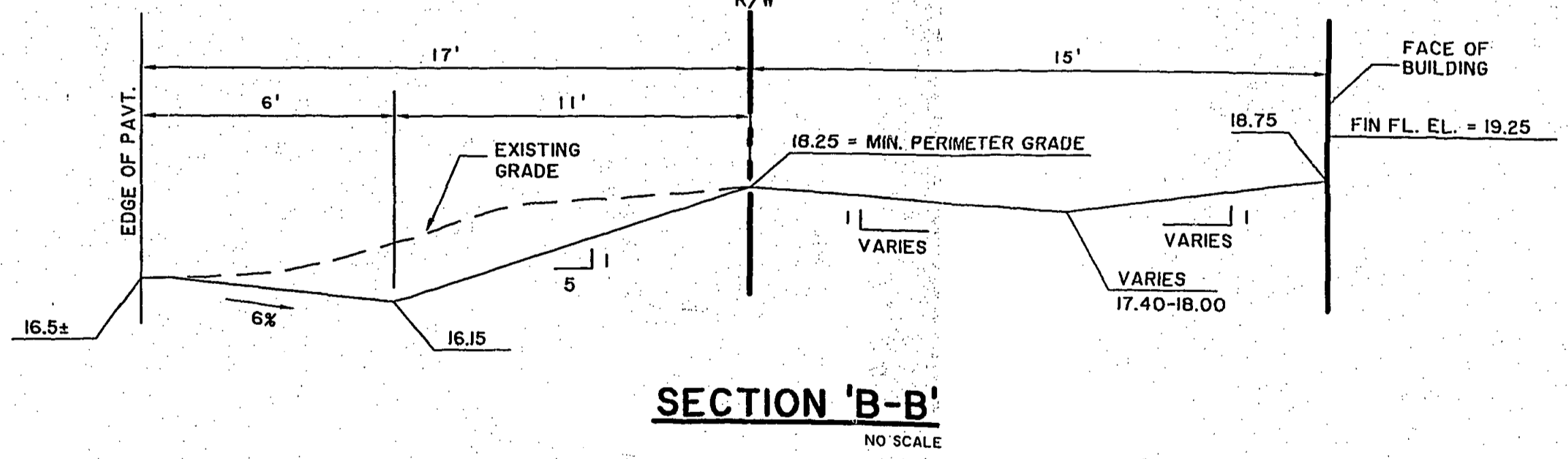
**WHEEL STOP**  
NO SCALE



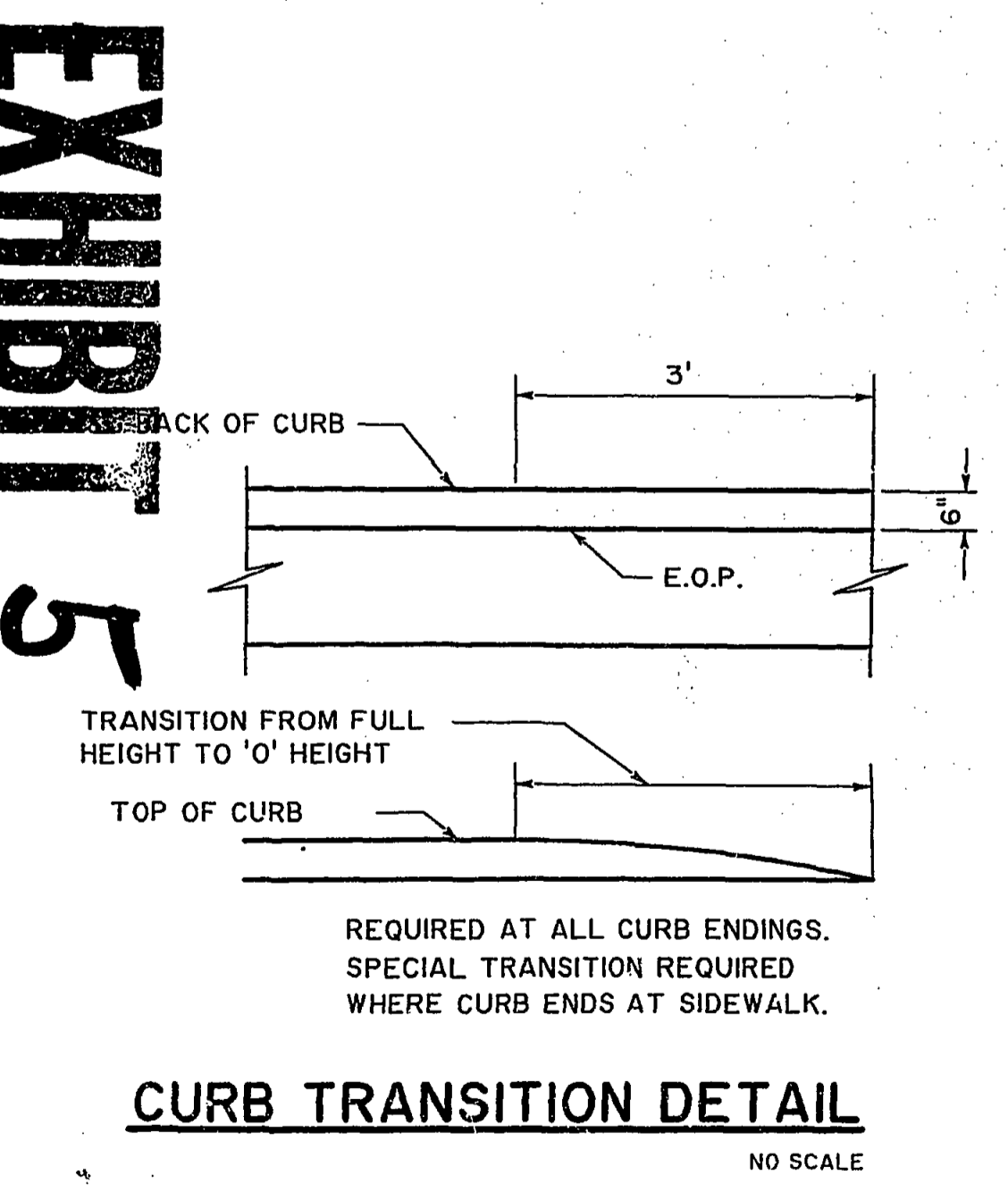
**TYPE 'D' CURB**  
NO SCALE



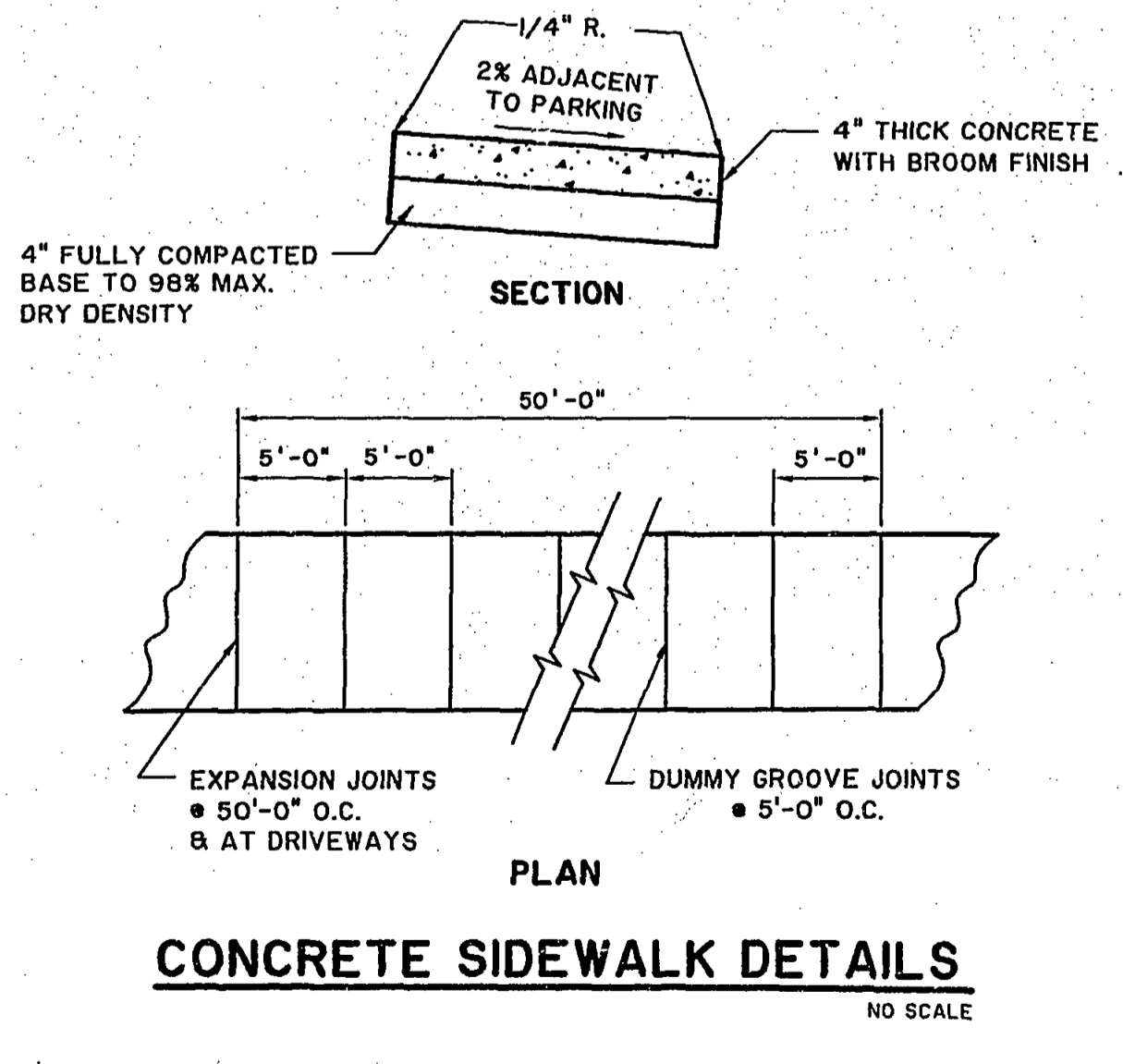
**SECTION 'A-A'**  
NO SCALE



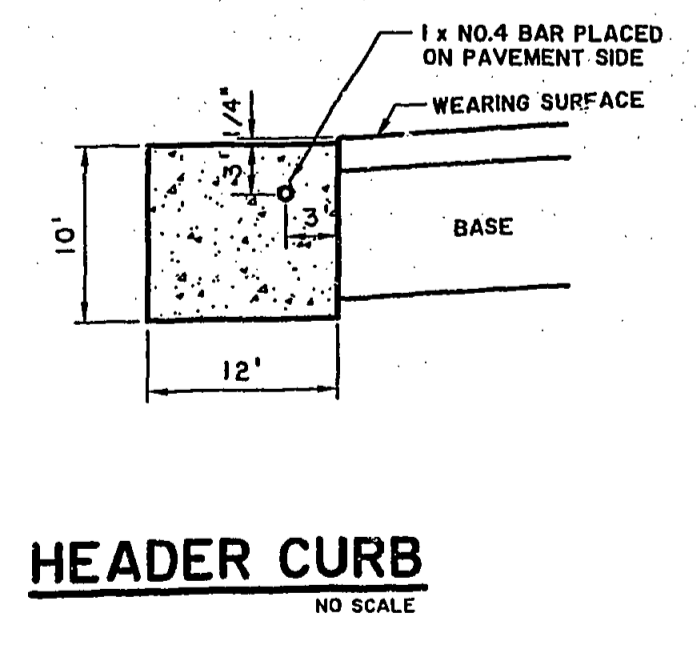
**SECTION 'B-B'**  
NO SCALE



**CURB TRANSITION DETAIL**  
NO SCALE



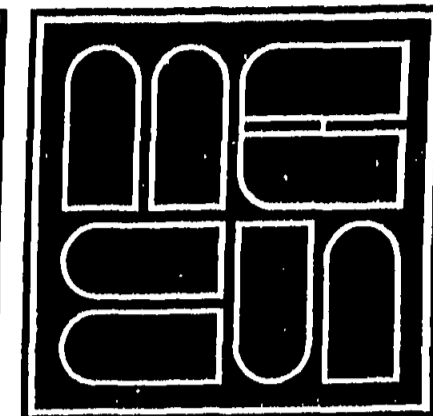
**CONCRETE SIDEWALK DETAILS**  
NO SCALE



**HEADER CURB**  
NO SCALE

PAVING SPECIFICATIONS		
WEARING SURFACE	BASE	SUB-GRADE
1 1/4" TYPE S-B ASPHALTIC CONCRETE SURFACE COURSE (SEE NOTE BELOW)	6" LIMEROCK COMPACTED TO 98% MAX. DRY DENSITY PER A.A.S.H.T.O.	12" STABILIZED TO 75 PSI (FBV) COMPACTED TO 98% MAX. DRY DENSITY PER A.A.S.H.T.O. STABILIZATION TYPE 'C'

**NOTES:**  
1. THE ASPHALT THICKNESS IS THE MINIMUM COMPACTED THICKNESS REQUIRED FOR THIS PROJECT.  
2. FOR THE PARKING LOT AND DRIVEWAYS THE BASE IS TO HAVE THE COMPACTION TESTED EVERY 100 LINEAR FEET AS DIRECTED BY THE ENGINEER.



**MICHAEL B. SCHORAH & ASSOCIATES, INC.**  
DEVELOPMENT CONSULTANTS  
ENGINEERS • SURVEYORS • PLANNERS

1850 FOREST HILL BLVD.  
WEST PALM BEACH, FLORIDA 33406

**PROJECT:**  
STOR - ALL INDUSTRIAL AVE.  
JOB NO. 0304

**DESCRIPTION:**  
PAVING, GRADING & DRAINAGE DETAILS

DESIGNED BY:	M.J.L.	DATE:	JULY 1988
DRAWN BY:	S. SMITH	DATE:	JULY 1988
SCALE:	AS SHOWN	REVISIONS:	5/27/88 SEE ARCH. CORRS.

JOB NO. 98-939  
SHEET NO. 4  
OF 8

50-04387-P 99057-2

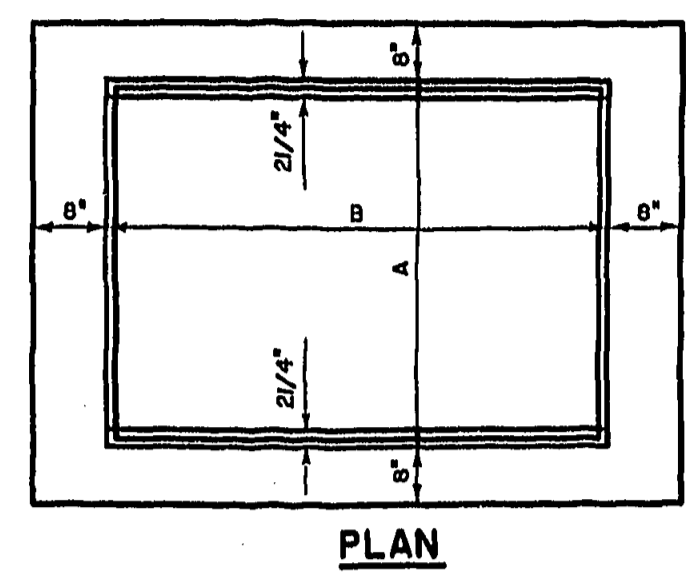
C:\SERV\380124 Mod May 05 14:37:49 1989 PLOTTED BY SUBRINA

**EXHIBIT 5**



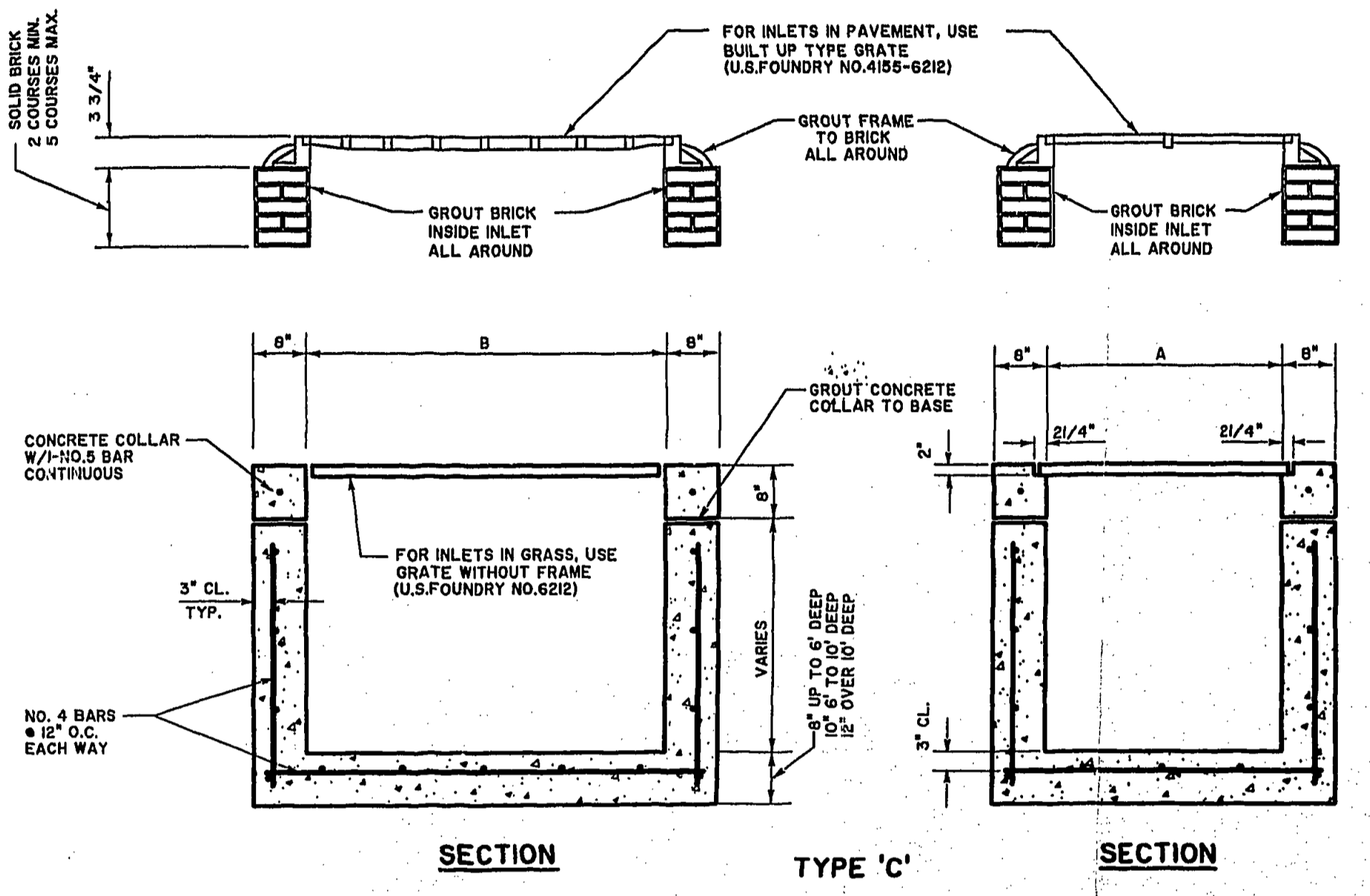
**EXHIBIT C**

C:\VSD\BSP07A Thu May 05 11:47:49 1999 PLOTTED BY SABRINA



INLET TYPE	DIMENSIONS		GRATE TYPE	MAX. PIPE SIZE	
	A	B		WALL A	WALL B
"C"	2'-0"	3'-6"	U.S. FOUNDRY NO. 622 TYPE S3	18"	24"
"E"	3'-0"	4'-6"	U.S. FOUNDRY NO. 625 TYPE S3-R	24"	48"

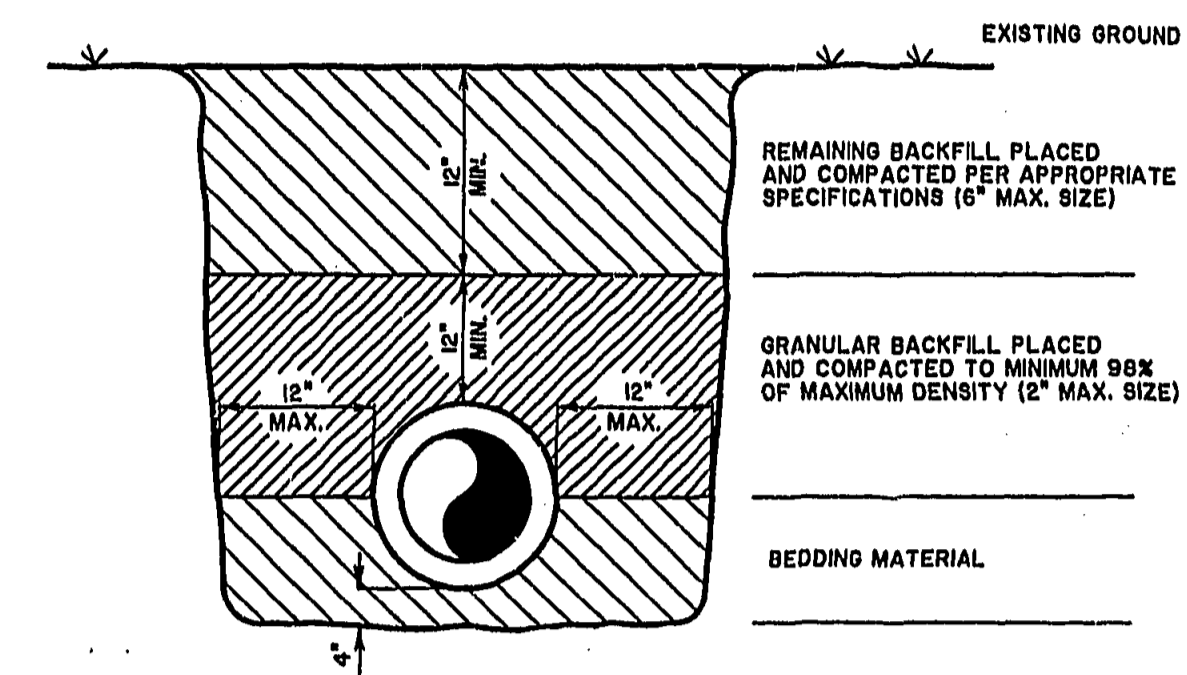
- NOTES:**
- INLET TO BE POURED IN PLACE WITH 3000 P.S.I. CONCRETE OR PRECAST WITH CLASS 15000 FALL CONCRETE.
  - ALL EXPOSED CORNERS AND EDGES TO BE CHAMFERED 3/4".
  - INLET GRATES MUST HAVE LOCKING CHAINS IN ACCORDANCE WITH D.O.T. INDEX OR AN APPROVED ALTERNATE SECURING MECHANISM.



**INLET DETAILS**  
NO SCALE

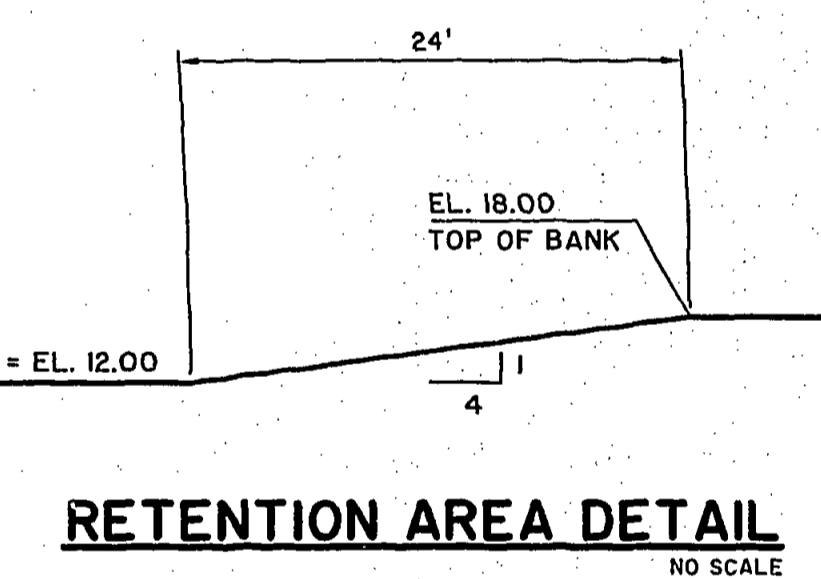
- BACKFILL NOTES**
- ALL STRUCTURES, PIPE LINES AND JOINTS AND OTHER CONSTRUCTION SHALL BE SUBJECT TO FIELD OBSERVATION BY THE ENGINEER (OR HIS REPRESENTATIVE) PRIOR TO BACKFILLING.
  - BACKFILLING SHALL BE DONE WITH APPROVED MATERIAL, FREE FROM LARGE CLOUDS, ROCKS, ORGANIC MATERIALS OR OTHER EXTRANEIOUS MATERIAL.
  - BACKFILLING OF STRUCTURE MANHOLES, ETC. EXCAVATIONS AND REQUIRED FILL UNDER STRUCTURE SHALL BE DONE IN HORIZONTAL LIFTS NOT EXCEEDING TWELVE (12) INCHES IN DEPTH AND SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 98% OF THE MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-99.
  - BACKFILL MATERIAL FOR PIPE EXCAVATION SHALL BE SELECTED, DEPOSITED AND COMPACTED SO AS TO ELIMINATE THE POSSIBILITY OF HORIZONTAL OR LATERAL SETTLEMENT OF THE PIPE. BACKFILL MATERIAL SHALL BE SOLIDLY TAMPED AROUND THE PIPE IN SIX (6) INCH LIFTS UP TO A LEVEL AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE PIPE. BACKFILLING SHALL BE CARRIED OUT SIMULTANEOUSLY ON BOTH SIDES OF THE PIPE. THE REMAINDERS OF THE BACKFILL SHALL BE PLACED IN SIX (6) INCH LIFTS (COMPACTED THROUGH), MOISTENED AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 98% OF THE MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-99. WATER SETTLING MAY BE UTILIZED AT THE OPTION OF THE CONTRACTOR, PROVIDED THE REQUIRED DENSITY IS ACHIEVED. IN GRASS AREAS PAVING IS TO BE PLACED OVER THE SHOULDERED TRENCH. COMPACTION SHALL BE CARRIED OUT TO ACHIEVE A DENSITY OF AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-99 FOR A MINIMUM OF THE TOP THREE (3) FEET OF THE BACKFILLED TRENCH (THE REMAINING DEPTH AS NOTED ABOVE) AND EXTENDING TO THE TRENCH WIDTH + TWO (2) FEET - SEE DETAIL.
  - DENSITY TESTS FOR DETERMINATION OF THE SPECIFIED COMPACTON SHALL BE MADE BY AN APPROVED ENGINEERING TESTING LABORATORY. TESTS SHALL BE TAKEN IN ALL COMPACTED LIFTS IF FOOT MINIMUM AND SPACED ONE (1) FOOT EVERY 50 FEET OF TRENCH (MAXIMUM WITH AT LEAST ONE (1) TEST IN EACH PIPE RUN STRUCTURE). TRENCH TRENCH CROSS SECTIONS ARE TO BE PAVED, A MINIMUM OF ONE (1) OF THE REQUIRED DENSITY TESTS MUST BE TAKEN IN EACH AREA.
  - EXCAVATION, SIDE SLOPES, SHORING, ETC. SHALL CONFORM TO O.S.A. STANDARDS.

**BACKFILL NOTES**

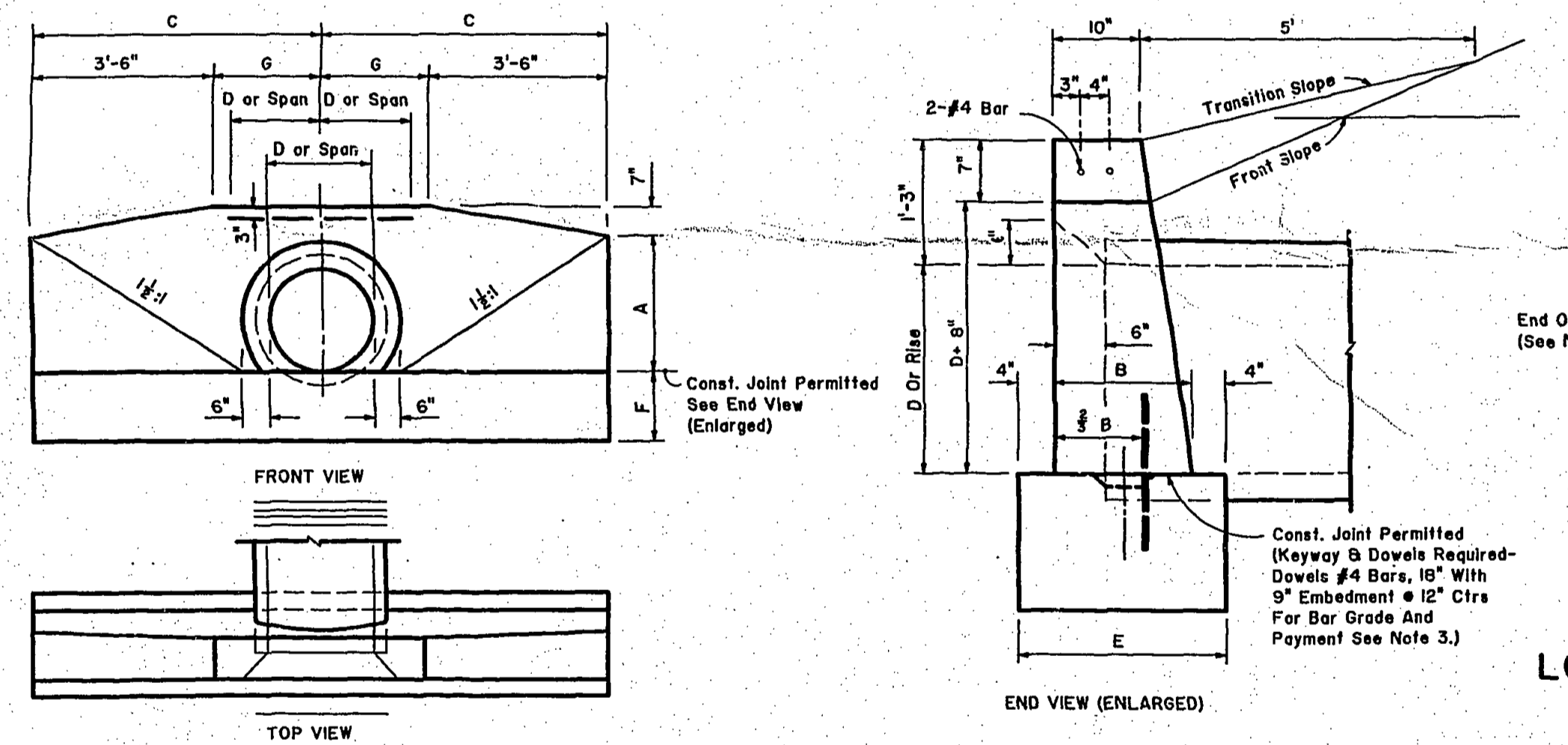


- NOTES:**
- BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMESTONE (D.P. 7-2) (S20). UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCK SHALL BE REMOVED.
  - THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTON UNDER THE PIPE MANHOLES.
  - THE PIPE SHALL BE PLACED IN A DRY TRENCH.
  - BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL LARGER ROCK, MUCK AND DEBRIS.
  - EXCAVATION, SIDE SLOPES, SHORING, ETC. SHALL CONFORM TO O.S.A. STANDARDS.

**TRENCH DETAIL**  
NO SCALE



**RETENTION AREA DETAIL**  
NO SCALE



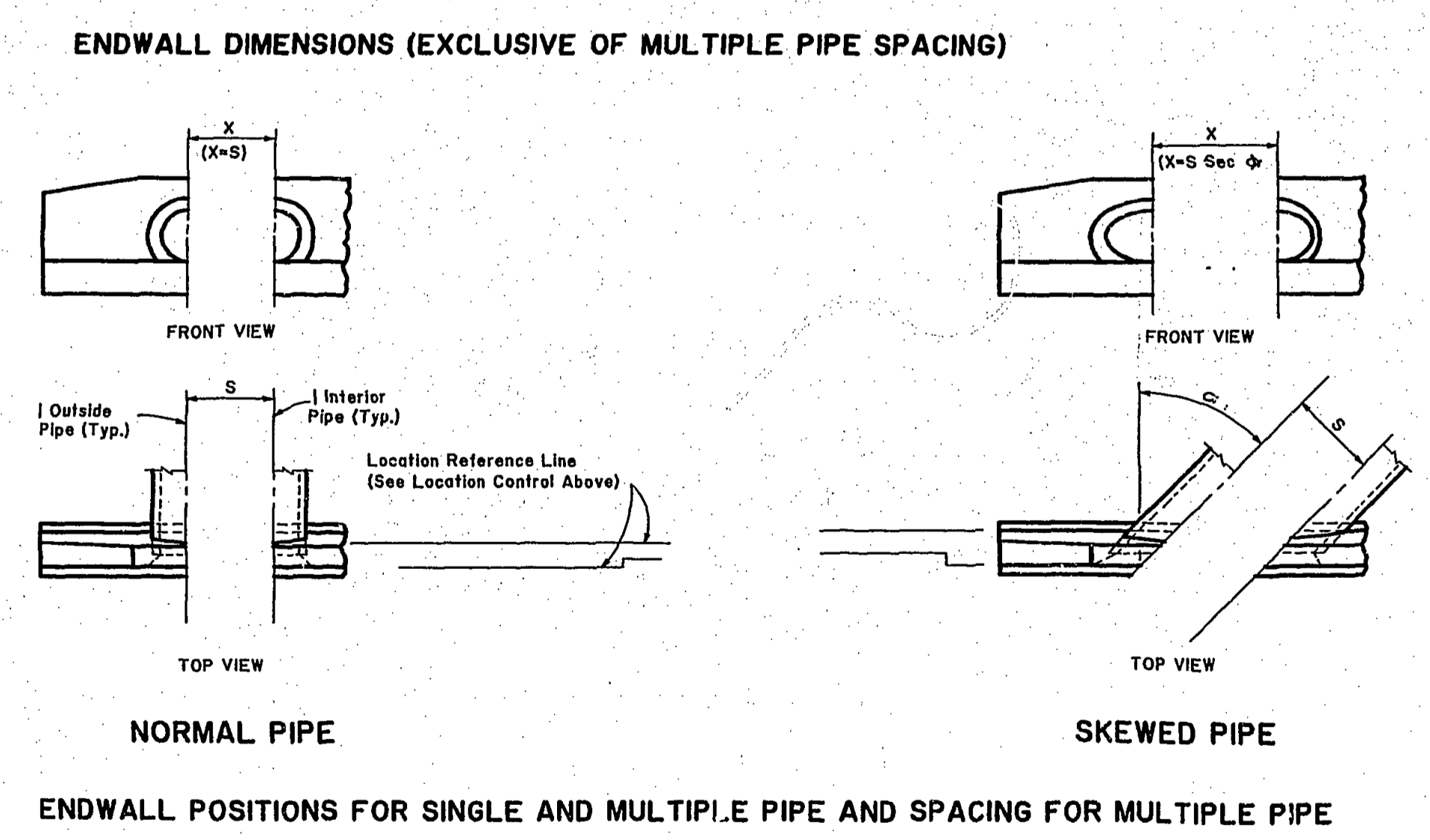
**STANDARD LOCATION CONTROL**

**GENERAL NOTES**

- Endwall dimensions, locations and positions are for round and elliptical concrete pipe and for round and pipe-trench corrugated metal pipe. Round concrete pipe shown.
- Front slope and ditch transitions shall be in accordance with Index No. 280.
- Endwalls may be cast in place or precast concrete. Reinforcing steel shall be Grades 40 or 60. Additional reinforcement necessary for handling precast units shall be determined by the Contractor or the supplier. Cost of reinforcement shall be included in the contract unit price for concrete. (index).
- All exposed corners and edges of concrete are to be chamfered 3/4".
- Concrete meeting the requirements of ASTM C-478 (4000 psi) may be used in lieu of Class - concrete in precast items manufactured in plants which are under the Standard Operating Procedures for the inspection of precast drainage products.
- On cut-off ditches with side slopes flatter than 1 1/2 : 1, provide 20' transitions from the endwall to the flatter side slope, 10' if very permitting.
- For sodding around endwalls see Index No. 281.
- Payment for concrete quantities for endwalls steeled to the pipe shall be made on the following basis:
 

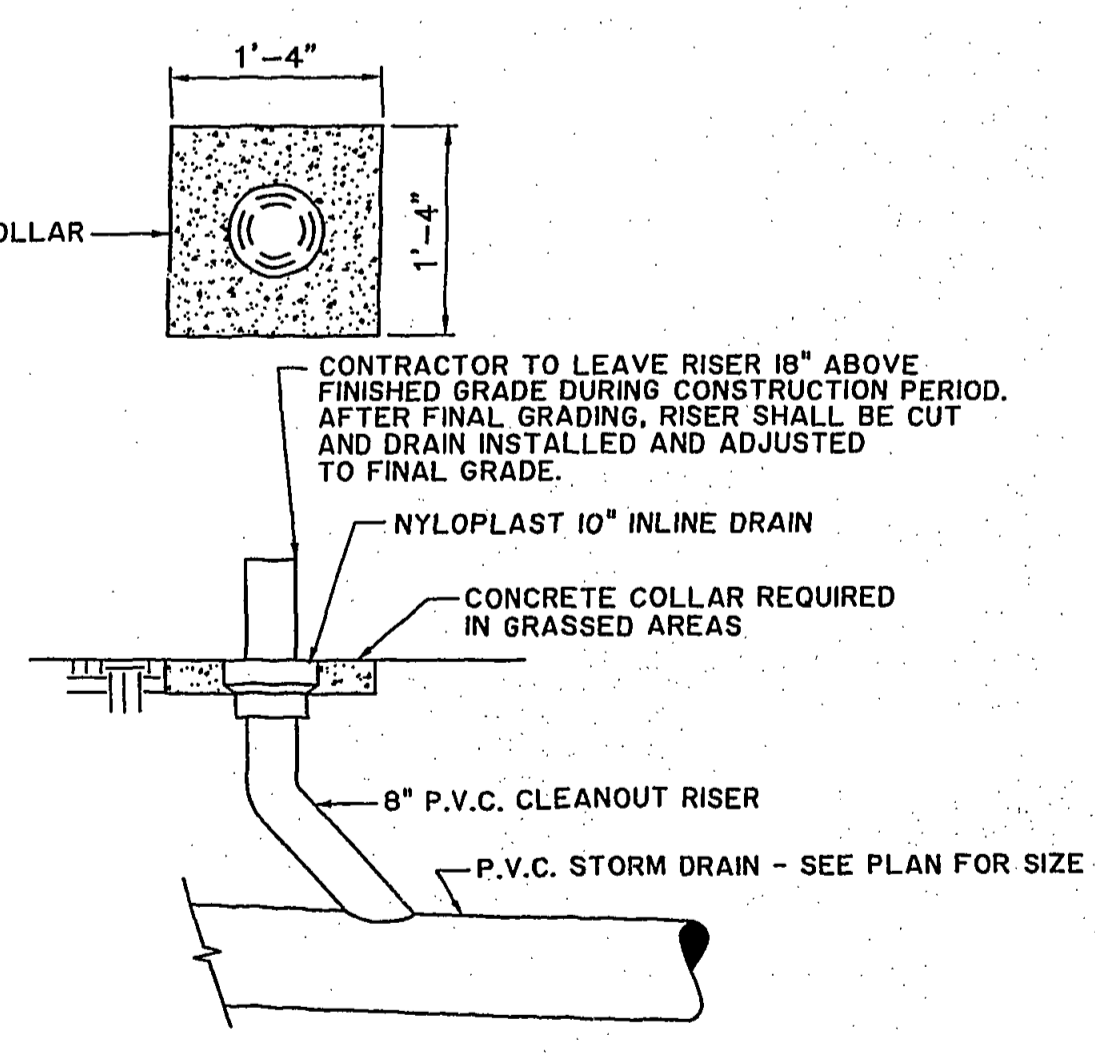
Endwall Slope To Pipe	Use Tabulated Value
0° to 15°	0%
15° to 30°	30%
30° or over	15%
- Pipe length plus quantities shall be based on the pipe and location shown in the standard location control end view, or lengths based on special endwall locations called for in the plans.
- Payment for pipe by pipe quantities shall be based on plus quantities, adjusted for endwall locations subsequently established by the Engineer.
- Endwalls to be paid for under the contract unit price for Class - Concrete (Endwall), CT.

- LEGEND**
- Pipe Slope
  - Center To Center Pipe Spacing
  - × Centerline To Centerline Dimension At Face Of Headwall



**ENDWALL DIMENSIONS (EXCLUSIVE OF MULTIPLE PIPE SPACING)**

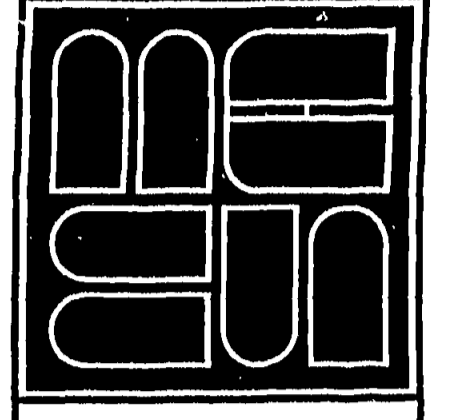
**STRAIGHT CONCRETE ENDWALLS** Δ  
D.O.T. INDEX 250



**YARD DRAIN DETAIL** Δ  
NO SCALE

**SPECIFICATIONS - PAVING AND DRAINAGE**

- CLEARING AND GRUBBING - WITHIN THE LIMITS OF CONSTRUCTION, ALL VEGETATION, ROOT MATERIAL, DEBRIS, RUBBLE AND WASTE SHALL BE REMOVED. ALL PROHIBITED EXOTIC INVASIVE PLANTS AND TREES ARE TO BE REMOVED AS PER D.E.M. AND S.F.W.M.D. PERMIT REQUIREMENTS.
- GUMBO - WHERE GUMBO OR OTHER PLASTIC CLAYS ARE ENCOUNTERED, THEY SHALL BE REMOVED WITHIN THE ROADWAY AREA ONE FOOT BELOW THE SUBGRADE EXTENDING HORIZONTALLY TO THE OUTSIDE EDGE OF THE SHOULDER AREA.
- HARDPAN - IF HARDPAN IS ENCOUNTERED IN THE ROADSIDE SWALE, IT WILL BE REMOVED TO A WIDTH OF TWO FEET AT THE SWALE INVERT AND REPLACED WITH GRANULAR MATERIAL.
- MUCK AND PEAT - IF MUCK AND/OR PEAT ARE ENCOUNTERED IN THE ROAD RIGHTS OF WAY, THEY WILL BE REMOVED COMPLETELY FROM THE CENTERLINE OF THE ROADWAY TO A WIDTH OF TEN FEET BEYOND THE EDGE OF PAVEMENT AND SHALL BE BACKFILLED WITH GRANULAR MATERIAL.
- IF THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE EXACT LOCATION OF ALL EXISTING UNDERGROUND UTILITIES, WHETHER SHOWN OR NOT, PRIOR TO CONSTRUCTION, IF THE LOCATION OF ANY EXISTING UTILITIES RESULT IN ANY CONFLICT WITH THE PLANS THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY ALL UTILITIES INVOLVED PRIOR TO CONSTRUCTION.
- PIPE BACKFILL - REQUIREMENTS FOR PIPE BACKFILL CROSSING ROADS OR PARKING AREAS SHALL BE DEFINED IN THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTION 425-B. PIPELINE BACKFILL SHALL BE PLACED IN SIX (6) INCH LIFTS AND COMPACTED TO 98% OF THE STANDARD PROCTOR (A.A.S.H.T.O.) T-99 SPECIFICATIONS.
- SEQUENCE OF CONSTRUCTION - SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO PAVEMENT OR ROADWAY CONSTRUCTION.
- INLETS - ALL INLETS SHALL BE THE TYPE DESIGNATED ON THE PLANS, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTION 425.
- CORRUGATED ALUMINUM PIPE - THE SHALL CONFORM WITH THE REQUIREMENTS OF THE FLORIDA D.O.T. SPECIFICATIONS, AND WITH THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTION 444-B, AND DESIGN MEMORANDUM DM06036, PIPE TO BE HELICAL (SPRAL FLOW).
- INSTALLATION OF CORRUGATED ALUMINUM PIPE - ALL JOINTS OR STORM SEWER PIPE SHALL BE MADE UP WITH ONE-HALF INCH NEOPRENE. ALL BANDS SHALL HAVE THE SAME CORRUGATION DESIGN AS THE PIPE. THE WIDTH OF THE BANDS SHALL BE AS FOLLOWS: 2 INCHES WIDE UP TO 48 INCH DIAMETER PIPE AND 24 INCH WIDE OVER 48 INCH DIAMETER PIPE. THE REQUIREMENTS OF D.O.T. DM06036 WILL BE ADHERED TO.
- REINFORCED CONCRETE PIPE - THE PIPE SHALL CONFORM WITH THE REQUIREMENTS OF CLASS II OF ASTM C-76 AND WITH THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTION 341.
- SUBGRADE - SHALL BE STABILIZED (75 P.S.I. F.V.), WHERE NOTED, AND MEET THE DENSITY REQUIREMENTS AS DETERMINED BY THE A.A.S.H.T.O. T-99 - LATEST REVISION SPECIFICATIONS. SUBGRADE SHALL EXTEND 12 INCHES BEYOND THE PROPOSED EDGE OF PAVEMENT. SUBGRADE SHALL BE 12 INCHES THICK COMPACTED TO 98% ACCORDING TO A.A.S.H.T.O. T-99. ALL MUCK, STUMPS, ROOTS OR OTHER DELETERIOUS MATTER ENCOUNTERED IN THE PREPARATIONS OF THE SUBGRADE SHALL BE REMOVED COMPLETELY FROM THE CENTERLINE OF THE ROADWAY TO A WIDTH OF TEN FEET BEYOND THE EDGE OF PAVEMENT. IF THE SUBGRADE IS REQUIRED TO BE STABILIZED, THE REQUIRED BEARING VALUE DETERMINATIONS SHALL BE MADE BY THE FLORIDA SOIL BEARING TEST, TEST METHOD "C" OF A.A.S.H.T.O. T-180 - LATEST REVISION SPECIFICATIONS.
- BASE - APPROVED LIMESTONE BASE MATERIAL SHALL BE COMPACTED TO NOT LESS THAN 98% MAXIMUM DENSITY AS DETERMINED BY A.A.S.H.T.O. T-99 - LATEST REVISION SPECIFICATIONS, AND AS CALLED FOR IN FLORIDA D.O.T. SPECIFICATIONS, DEPTS TO BE AS NOTED ON THE PLANS.
- PRIME COAT - BITUMINOUS PRIME COAT SHALL CONFORM WITH THE REQUIREMENTS OF THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTION 300, AND SHALL BE APPLIED AT THE RATE OF 0.5 GALLONS PER SQUARE YARD, UNLESS A LOWER RATE IS DIRECTED BY THE ENGINEER.
- TACK COAT - BITUMINOUS TACK COAT SHALL CONFORM WITH THE REQUIREMENTS OF THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTION 300, AND SHALL BE APPLIED AT THE RATE OF 0.08 GALLONS PER SQUARE YARD, UNLESS A VARIATION IN RATE IS APPROVED BY THE ENGINEER.
- SURFACE COURSE - TYPE I ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM WITH THE REQUIREMENTS OF THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTIONS 331 AND 332. THE MINIMUM COMPACTED THICKNESS TO BE AS NOTED ON PLANS.
- CONCRETE - ALL CONCRETE SHALL DEVELOP 2500 P.S.I. (MINIMUM) 28 DAY COMPRESSIVE STRENGTH OR GREATER WHERE NOTED ON PLANS. CLASS I CONCRETE SHALL CONFORM WITH THE FLORIDA D.O.T. SPECIFICATIONS, 1996, SECTION 345, CLASS I CONCRETE USED AS PAVING SHALL DEVELOP 3000 P.S.I. (MINIMUM) 28 DAYS COMPRESSIVE STRENGTH.
- REGULATIONS - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE CITY OF BOYNTON BEACH AND THE CURRENT FLORIDA D.O.T. SPECIFICATIONS AND ALL ADDENDA TO THE ABOVE REGULATIONS AND THEIR LATEST REVISIONS THERE TO SHALL GOVERN. CONSTRUCTION SHALL ALSO COMPLY WITH THE FLORIDA DEVELOPMENT MANUAL DEPARTMENT OF ENVIRONMENTAL REGULATION, CHAPTER 6 "STORMWATER AND EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES FOR DEVELOPING AREAS".
- ELEVATIONS - ALL ELEVATIONS REFER TO N.S.V.D. 1929.
- AS-BUILTS - THE CONTRACTOR SHALL COMPLETE "AS-BUILT" INFORMATION RELATIVE TO LOCATION OF THE INLETS AND MANHOLES AS WELL AS INVERTS AND RIM ELEVATIONS.
- GUARANTY - ALL MATERIAL AND EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR UNDER THIS CONTRACT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE THEREOF, AGAINST DEFECTIVE MATERIALS, DESIGN AND WORKMANSHIP. UPON RECEIPT OF NOTICE FROM THE OWNER OF FAILURE OF ANY PART OF THE GUARANTEED EQUIPMENT OR MATERIALS, DURING THE GUARANTY PERIOD, THE AFFECTED PART, PARTS, OR MATERIALS SHALL BE REPLACED PROMPTLY WITH NEW PARTS OR MATERIALS BY THE CONTRACTOR, AT NO EXPENSE TO THE OWNER. IN THE EVENT THE CONTRACTOR FAILS TO MAKE THE NECESSARY REPLACEMENT OR REPAIRS WITHIN SEVEN DAYS AFTER NOTIFICATION BY THE OWNER, THE OWNER MAY ACCOMPLISH THE WORK AT THE EXPENSE OF THE CONTRACTOR.
- WHERE CONNECTIONS TO AN EXISTING DRAINAGE SYSTEM ARE PROPOSED, SAID EXISTING DRAINAGE STRUCTURES AND LINES SHALL BE CLEANED OF ALL SILT AND OTHER DEBRIS PRIOR TO SAID CONNECTIONS BEING MADE, AND WHERE THE EXISTING DRAINAGE SYSTEM INCLUDES DITCHES, SAID DITCHES SHALL BE CLEANED AND REWORKED, AS NECESSARY, TO RETURN THEM TO AN APPROVED DESIGN SECTION.
- ALL MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF THE MANUAL ON UNIFORM PRACTICE CONTROL DEVICES FOR STREETS AND HIGHWAYS, FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, CITY OF BOYNTON BEACH REQUIREMENTS, AND PALM BEACH COUNTY, FLORIDA ENGINEERING DEPARTMENT DRAWING T-97-002.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR/SUB-CONTRACTOR TO VERIFY ALL CODES CURRENTLY IN FORCE AS OF THE DATE HEREON FOR CITY OF BOYNTON BEACH AND/OR PALM BEACH COUNTY WHETHER OR NOT SHOWN ON THESE DRAWINGS.



**MICHAEL B. SCHORAH & ASSOCIATES, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
DEVELOPMENT CONSULTANTS  
P.O. BOX 1000  
PALM BEACH, FLORIDA 33402  
TEL: (561) 842-2720  
FAX: (561) 842-2720  
1850 FOREST HILL BLVD., WEST PALM BEACH, FLORIDA 33406

**PROJECT:**  
STOR - ALL SELF STORAGE  
BOYNTON BEACH BOULEVARD

**DESCRIPTION:**  
CONCEPTUAL  
PAVING AND DRAINAGE DETAILS

DESIGNED BY:	FROELICH	JAN 7/98
SCALE:	AS SHOWN	
REVISIONS:	5/7/98 PER ARCH/COOR	

JOB NO.  
**98-939**

SHEET NO.  
**5**

OF 8

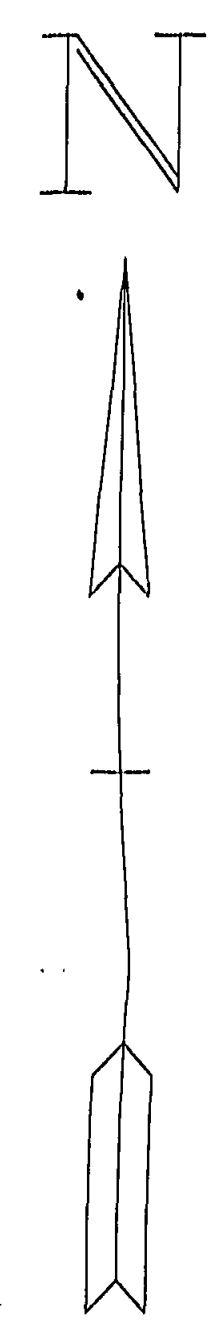




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FLIGHT DATE: 08/16, 1995

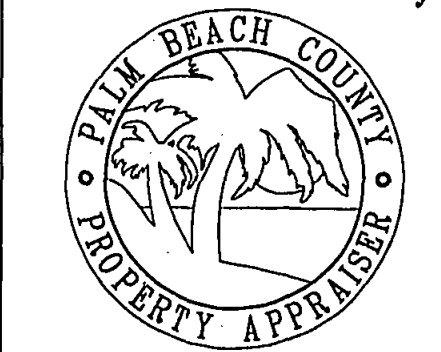


ORIGINAL SUBMITTAL  
MAY 17 1999  
WPB  
980517-2

**SUBJECT  
PROPERTY**

Note:  
Not to be reproduced in any form  
except by express written consent  
from the Palm Beach County  
Property Appraiser.  
Information shown herein is compiled  
from the best available sources and  
CANNOT be used for surveys or land  
transfer of any type.

Palm Beach County



Gary R. Nikolits, CFA  
Property Appraiser

RG|TWP|SEC  
43|45|20  
SCALE: 1" = 200'  
50-04389-P  
980517-2



South Florida Water Management District

**BEG. PERMIT  
NUMBER**

50-01503-S10

**APPLICATION NO.**

950621-20

50-01503-S-10



FORM DS-1  
10/87

# Request for Final Inspection

Field Engineering Division

Page ① of ③  
*med*

Date 4/9/97

Final Inspection Requested By: Cavan Thompson & Assoc. Inc.

County: P.B.C. Section(s) 16 Twp. 45 Rge. 43

Project Name: Boynton Beach Tri-Rail Station (Phase one)

Permit No.: 50-01503-5 Appl. # 950621-201

Project Engineer: Patrick J. Slony

Certification Letter Received? Yes  No

"As-Built" Drawings Received? Yes  No  (1 set of AS-Built's)

Area Engineer: Hamid Ajayi Field Representative Bob Rutzcliffe

Date of Final Inspection: 4/14/97

## Final Inspection Report

Phase One appears to have been constructed in general

conformance with permitted plans.

RR

This is a 12.0 acre development within the 578.3 acre Quantum Park Commercial development (aka Boynton Beach Park of Commerce).

The discharge from the 12.0 acre Tri Rail Station is into the Quantum Park Master System which has been certified by engineer for construction completion and has been accepted by this office previously. Per the engineer's certification and

record drawings as submitted on April 09, 1997, SWM system for this project constructed in substantial conformance with permit. Therefore, the project is recommended to be considered in operation phase letter follows.

C: B. Rutzcliffe w/ one set of Record Drawings, M. Cruz, Permit File # 50-01503-5!



Form #0001  
Rev. 2/92

South Florida Water Management District

Construction Completion/Construction Certification

Page (2) of (3)  
*WFLA*

RECEIVED

APR 09 1997

REGULATION DEPT. 4030

TO: South Florida Water Management District  
Director, Field Engineering Division  
Regulation Department  
P.O. Box 24680  
West Palm Beach, FL 33416-4680

Permit Number: 50-01503-S-10 ✓ Application Number: 950621-20 ✓

SUBJECT: Project Name: Boynton Bch Tri-Rail Sta Phase: Final ✓

Location: County: Palm Beach County S 16 ✓ T 45S ✓ R 43E ✓

The subject surface water management system has been designed, constructed and completed as follows: (use additional sheets if needed):

Completion Date: 12 20 96 ✓  
Month Day Year

Discharge Structure:	PERMITTED		EXISTING	
Weir	Width _____	Crest _____	Width _____	Crest _____
Blaeder/ Type _____	Dimensions _____	Invert <u>N/A</u> ✓	Dimensions _____	Invert _____

Retention/Detention Area:  
(if applicable)

ID	WTRM	Average	ID	ID	ID
Size	<u>1.09</u>		Size		Size
Side Slopes	<u>3:1</u>		Side Slopes		Side Slopes
	(H:V)			(H:V)	

Please state the location and description of the appropriate bench mark(s) that were used to determine the above information (Reference Florida Administrative Code (F.A.C.) 40E-4/40 Appendix 1.1.b). All elevations should be according to National Geodetic Vertical Datum (NGVD) (Reference 2.8 of the Basis of Review - B.O.R.).

I HEREBY CERTIFY THAT ALL SURFACE WATER MANAGEMENT FACILITIES FOR THE ABOVE REFERENCED PROJECT HAVE BEEN CONSTRUCTED IN SUBSTANTIAL ACCORDANCE WITH THE DESIGN APPROVED BY THE DISTRICT, AND HEREBY AFFIX MY SEAL THIS APR DAY OF APR 1997 (REFERENCE 3.1.7 B.O.R.).

*Certification is acceptable for this phase of the project. Planned 5/1/97*

*[Signature]*  
\_\_\_\_\_  
Engineer's Signature and Seal  
PATRICK J. Albrey 49428  
\_\_\_\_\_  
Name (Please Print) FLA. Registration No.

B.O.R./F.A.C. References added 4/91

LETTER OF TRANSMITTAL

Page (3) of (3)  
MTEL



CRAVEN THOMPSON  
& ASSOCIATES INC.

Engineers  
Planners  
Surveyors

Please Respond To:

Craven Thompson & Associates, Inc.  
3563 N.W. 53rd Street  
Fort Lauderdale, Florida 33309-6311  
Telephone: (954) 739-6400  
FAX: (954) 739-6409

Date 4/7/97

RECEIVED  
APR 09 1997  
REGULATION DEPT. 4030

To SOUTH FL. WATER MGMT DISTRICT  
DIR. FIELD ENG'G DIV.  
REGULATION DEPT.  
P.O. BOX 24680  
WEST PALM BCH. FL. 33416-4680.

Re BOYNTON BCH TRI-RAIL STA.

Job # 93-0055

Attn DIR. FIELD ENG'G. DIV.

GENTLEMEN

We are sending you the following items

NO	UNIT	DESCRIPTION
1	COPY	COMPLETION CERT. FORM
1	SET	ASBUILT (P/D, G)

These are transmitted as checked below:

- For approval  
 For your use  
 As requested  
 \_\_\_\_\_

- Sign & return  
 For review & comment

VIA:

- Hand deliver  
 Pick up  
 Regular mail

- Certified No. \_\_\_\_\_  
 \_\_\_\_\_

Remarks: \_\_\_\_\_

Copies to \_\_\_\_\_

Received by \_\_\_\_\_ Signed: Paul Knight

Date \_\_\_\_\_



# South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (407) 686-8800 • FL WATS 1-800-432-2045

CON 24-06

Regulation Department  
Application No.: 950621-20

September 25, 1995

Tri-County Commuter Rail Authority  
305 South Andrews Avenue  
Suite 200  
Fort Lauderdale, FL 33301

FINAL APPROVED

SEP 25 1995

WPB

Dear Permittee:

**SUBJECT: Notice of Intent to Construct Works  
Modification to Permit and  
Stormwater Discharge Certification No.: 50-01503-S-10  
Permittee: TRI-COUNTY COMMUTER RAIL AUTHORITY  
Project: BOYNTON BEACH TRI-RAIL STATION  
Location: PALM BEACH COUNTY, S16/T45S/R43E**

This letter is to notify you of the District's agency action concerning your request of June 21, 1995, to modify the above referenced Permit and Stormwater Discharge Certification. This action is taken pursuant to Rule 40E-1.606 and Chapter 40E-40, Florida Administrative Code.

Based on the information provided, District rules have been adhered to and a modification to the above referenced 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 19 Standard Limiting Conditions, and
3. 9 Special Conditions, and
4. 8 Exhibit(s).

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 in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

**Governing Board:**

Valerie Boyd, Chairman  
Frank Williamson, Jr., Vice Chairman  
William E. Graham

William Hammond  
Betsy Krant  
Richard A. Macheck

Eugene K. Pettis  
Nathaniel P. Reed  
Miriam Singer

Samuel E. Poole III, Executive Director  
Michael Slayton, Deputy Executive Director



TRI-COUNTY COMMUTER RAIL AUTHORITY  
Subject: Notice of Intent to Construct Works  
September 25, 1995  
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 25th day of September, 1995, in accordance with Section 120.60(3), Florida Statutes.

Sincerely,



Carlos A. de Rojas, P.E.  
Supv Prof - Civil Engineer  
West Palm Beach Service Center

CR/jc/lid

CERTIFIED MAIL NO. Z 028 127 793  
Enclosures



## South Florida Water Management District GENERAL PERMIT NOTICE OF RIGHTS

This Notice of Rights is intended to inform the recipient of the administrative and judicial review mandated by section 120.60(3), Florida Statutes. Be advised that although this notice is intended to be of procedures set forth herein have been the subject of judicial construction and interpretation which may at judicial review available. Recipients are therefore advised to become familiar with Chapters 120 and 373, 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 a hearing on the proposed agency action. The substantially affected person may request either a formal, 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 of mailing of the proposed agency action or
  - b. IF NOTICE OF THE APPLICATION WAS NOT PUBLISHED, within fourteen (14) days after receipt of notice.

The request for a section 120.57(1), F.S., formal hearing must comply with the requirements of F.S. 120.57(1), Florida Statutes, a copy of which is attached. Petitions are deemed filed upon receipt by the District and must substantially comply with the provisions of Rule 46E-1.50, Florida Administrative Code, shall constitute a section 120.57(1) hearing. If a petition for administrative hearing is not timely filed, the staff's proposed agency action 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 of mailing of the proposed agency action or
  - b. IF NOTICE OF THE APPLICATION WAS NOT PUBLISHED, within fourteen (14) days after receipt of 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., formal hearing not in substantial compliance with the provisions of rule 46E-1.50, Florida Administrative Code, 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 permit application before the Land and Water Adjudicatory Commission, as provided therein. Review is initiated by filing a request for review with the Land and Water Adjudicatory Commission and serving a copy of Environmental Regulation and any person named in the Order within 20 days after rendering of the Order. However, when the order to be reviewed has statewide or regional significance, as determined by the 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, and 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 120.58, Florida Statutes, as provided therein. Review under section 120.58 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 Notice 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, whether or not such person is named in the final action, may, within 60 days of the rendering of such decision and the date of publication of such decision in the official gazette, petition the court in the judicial circuit in which the affected person is domiciled for review of such decision solely to determine whether final agency action is in substantial compliance with the provisions and purposes of Chapter 373, Florida Statutes, and is appellate in nature and limited to the record below.

(1) Initiation of formal proceedings shall be made by petition to the District. The term petition as used herein includes any application or other document which expresses a request for formal proceedings. Each petition should be printed, typewritten or other duplicated in legible form on white paper or standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced and indented.

(2) All petitions filed under these rules shall contain:

- (a) The name and address of the District and the District's file or identification number, if known;
- (b) The name and address of the petitioner or petitioners;
- (c) An explanation of how each petitioner's substantial interests will be affected by the District's determination;
- (d) A statement of when and how petitioner received notice of the District's decision or intent to render a decision;
- (e) A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
- (f) A concise statement of the ultimate facts which petitioner believes entitle petitioner to the relief sought as well as the rules and statutes which support petitioner's claim for relief.
- (g) A demand for the relief to which the petitioner deems himself entitled; and
- (h) Other information which the petitioner contends is material.

(3) Upon receipt of a petition for formal proceedings, the Office of Counsel shall review the petition for compliance with subsection (2). The Board shall accept those petitions in substantial compliance therewith, which have been timely filed, which establish that the petitioner is a substantially affected party, and which state a dispute which is within the jurisdiction of the District to resolve. If accepted, the Board shall designate the presiding officer of the administrative hearing. The District shall promptly give written notice to all parties of the action taken on the petition, and shall state with particularity its reasons therefor.

(4) If a petition is filed that does not substantially comply with the requirement of subsection (2) of this section, the District shall issue an order dismissing the petition with leave to file an amended petition complying with the requirements of this rule within the time period designated in the order. If an amended petition complying with this rule is not filed with the District Clerk within the designated time period, the petitioner's right to a proceeding under Section 120.57, Florida Statutes, is waived.

(5) If a valid petition is filed, with the consent of all parties and upon a showing of good cause, Board action on the petition pursuant to Section 120.57(1)(b) shall be waived. "Good cause" shall mean a set of circumstances unforeseen and outside of the control of the person requesting the waiver.

(6) When a valid petition for administrative hearing has been filed, the Board action shall defer consideration of the matter pending the completion of the administrative hearing and the submittal of a recommended order, and any exceptions to that order.

(7) If the Board designates a Hearing Officer assigned by the Division of Administrative Hearings as the presiding officer, the District Clerk shall forward the petition and all relevant materials filed with the District to the Division of Administrative Hearings, and shall notify all parties of its action.

## LIMITING CONDITIONS

1. THE PERMITEE SHALL IMPLEMENT 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 PERMITEE 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 PERMITEE'S PROPERTY OR INTO SURFACE WATERS OF THE STATE WILL BE SUBMITTED TO THE DISTRICT AS REQUIRED BY SECTION 5.9, "BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN SOUTH FLORIDA WATER MANAGEMENT DISTRICT - MARCH, 1994." PARAMETERS TO BE MONITORED MAY INCLUDE THOSE LISTED IN CHAPTER 62-302, F.A.C. IF WATER QUALITY DATA IS REQUIRED, THE PERMITEE SHALL PROVIDE DATA ON VOLUMES OF WATER DISCHARGED, INCLUDING TOTAL VOLUME DISCHARGED DURING THE DAYS OF SAMPLING AND TOTAL MONTHLY DISCHARGES FROM THE PROPERTY OR INTO SURFACE WATERS OF THE STATE.
3. THIS PERMIT SHALL NOT RELIEVE THE PERMITEE OF ANY OBLIGATION TO OBTAIN NECESSARY FEDERAL, STATE, LOCAL OR SPECIAL DISTRICT APPROVALS.
4. THE OPERATION PHASE OF THIS PERMIT WILL NOT BECOME EFFECTIVE UNTIL THE DISTRICT'S ACCEPTANCE OF CERTIFICATION OF THE COMPLETED SURFACE WATER MANAGEMENT SYSTEM. THE PERMITEE SHALL REQUEST TRANSFER OF THE PERMIT TO THE RESPONSIBLE OPERATIONAL ENTITY ACCEPTED BY THE DISTRICT, IF DIFFERENT FROM THE PERMITEE. THE TRANSFER REQUEST CAN BE SUBMITTED CONCURRENTLY WITH THE CONSTRUCTION COMPLETION CERTIFICATION.
5. ALL ROAD ELEVATIONS SHALL BE SET IN ACCORDANCE WITH THE CRITERIA SET FORTH IN SECTION 6.5, "BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN SOUTH FLORIDA WATER MANAGEMENT DISTRICT - MARCH, 1994."
6. ALL BUILDING FLOOR ELEVATIONS SHALL BE SET IN ACCORDANCE WITH THE CRITERIA SET FORTH IN SECTION 6.4, "BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN SOUTH FLORIDA WATER MANAGEMENT DISTRICT - MARCH, 1994."
7. OFF-SITE DISCHARGES DURING CONSTRUCTION AND DEVELOPMENT WILL BE MADE ONLY THROUGH THE FACILITIES AUTHORIZED BY THIS PERMIT.
8. A PERMIT TRANSFER TO THE OPERATION PHASE SHALL NOT OCCUR UNTIL A RESPONSIBLE ENTITY MEETING THE REQUIREMENT IN SECTION 9.0, "BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN SOUTH FLORIDA WATER MANAGEMENT DISTRICT - MARCH, 1994," HAS BEEN ESTABLISHED TO OPERATE AND MAINTAIN THE SYSTEM. THE ENTITY MUST BE PROVIDED WITH SUFFICIENT OWNERSHIP OR LEGAL INTEREST SO THAT IT HAS CONTROL OVER ALL WATER MANAGEMENT FACILITIES AUTHORIZED HEREIN.
9. THE PERMIT DOES NOT CONVEY TO THE PERMITEE ANY PROPERTY RIGHT NOR ANY RIGHTS OR PRIVILEGES OTHER THAN THOSE SPECIFIED IN THE PERMIT AND CHAPTER 40E-4, FAC.
10. THE PERMITEE 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 APPLICANT'S SUBMITTED INFORMATION WHICH REASONABLY DEMONSTRATES THAT ADVERSE WATER RESOURCE RELATED IMPACTS WILL NOT BE CAUSED BY THE COMPLETED PERMIT ACTIVITY. SHOULD ANY ADVERSE IMPACTS CAUSED BY THE COMPLETED SURFACE WATER MANAGEMENT SYSTEM OCCUR, THE DISTRICT WILL REQUIRE THE PERMITTEE TO PROVIDE APPROPRIATE MITIGATION TO THE DISTRICT OR OTHER IMPACTED PARTY. THE DISTRICT WILL REQUIRE THE PERMITTEE TO MODIFY THE SURFACE WATER MANAGEMENT SYSTEM, IF NECESSARY, TO ELIMINATE THE CAUSE OF THE ADVERSE IMPACTS.
12. WITHIN 30 DAYS OF ISSUANCE OF THIS PERMIT, THE PERMITTEE OR AUTHORIZED AGENT SHALL NOTIFY THE DISTRICT (VIA THE SUPPLIED CONSTRUCTION COMMENCEMENT NOTICE OR EQUIVALENT) OF THE ACTUAL OR ANTICIPATED CONSTRUCTION START DATE AND THE EXPECTED COMPLETION DATE.
13. WHEN THE DURATION OF CONSTRUCTION EXCEEDS ONE YEAR, THE PERMITTEE OR AUTHORIZED AGENT SHALL SUBMIT CONSTRUCTION STATUS REPORTS ON AN ANNUAL BASIS (VIA THE SUPPLIED ANNUAL STATUS REPORT OR EQUIVALENT) BEGINNING ONE YEAR AFTER THE INITIAL COMMENCEMENT OF CONSTRUCTION.
14. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE OR AUTHORIZED AGENT SHALL FILE A WRITTEN STATEMENT OF COMPLETION AND CERTIFICATION BY A FLORIDA REGISTERED PROFESSIONAL ENGINEER. THESE STATEMENTS MUST SPECIFY THE ACTUAL DATE OF CONSTRUCTION COMPLETION AND MUST CERTIFY THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE DISTRICT (VIA THE SUPPLIED CONSTRUCTION COMPLETION/ CONSTRUCTION CERTIFICATION OR EQUIVALENT). THE CONSTRUCTION COMPLETION CERTIFICATION MUST INCLUDE, AT A MINIMUM, EXISTING ELEVATIONS, LOCATIONS AND DIMENSIONS OF THE COMPONENTS OF THE WATER MANAGEMENT FACILITIES. ADDITIONALLY, IF DEVIATIONS FROM THE APPROVED DRAWING ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED.
15. WITHIN 30 DAYS OF ANY SALE, CONVEYANCE OR OTHER TRANSFER OF ANY OF THE LAND WHICH IS PROPOSED FOR DEVELOPMENT UNDER THE AUTHORIZATION OF THIS PERMIT, THE PERMITTEE SHALL NOTIFY THE DISTRICT OF SUCH TRANSFER IN WRITING VIA EITHER FORM 0483, REQUEST FOR PERMIT TRANSFER; OR FORM 0920, REQUEST FOR TRANSFER OF SURFACE WATER MANAGEMENT CONSTRUCTION PHASE TO OPERATION PHASE (TO BE COMPLETED AND SUBMITTED BY THE OPERATING ENTITY), IN ACCORDANCE WITH SECTIONS 40E-1.6105 AND 40E-4.351, F.A.C.
16. A PRORATED SHARE OF SURFACE WATER MANAGEMENT RETENTION/DETENTION AREAS, SUFFICIENT TO PROVIDE THE REQUIRED FLOOD PROTECTION AND WATER QUALITY TREATMENT, MUST BE PROVIDED PRIOR TO OCCUPANCY OF ANY BUILDING OR RESIDENCE.
17. 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.
18. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO INSURE THAT ADVERSE OFF-SITE WATER RESOURCE RELATED IMPACTS DO NOT OCCUR DURING CONSTRUCTION.
19. THE PERMITTEE MUST OBTAIN A WATER USE PERMIT PRIOR TO CONSTRUCTION DEWATERING, UNLESS THE WORK QUALIFIES FOR A GENERAL PERMIT PURSUANT TO SUBSECTION 40E-20.302(4), F.A.C.



## SPECIAL CONDITIONS

- 1 . MINIMUM BUILDING FLOOR ELEVATION: 14.5 FEET NGVD.
- 2 . MINIMUM ROAD CROWN ELEVATION. 12 FEET NGVD.
- 3 . DISCHARGE FACILITIES: THROUGH PREVIOUSLY PERMITTED FACILITIES.
- 4 . THE PERMITTEE SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION, SHOALING OR WATER QUALITY PROBLEMS THAT RESULT FROM THE CONSTRUCTION OR OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM.
- 5 . MEASURES SHALL BE TAKEN DURING CONSTRUCTION TO INSURE THAT SEDIMENTATION AND/OR TURBIDITY PROBLEMS ARE NOT CREATED IN THE RECEIVING WATER.
- 6 . THE DISTRICT RESERVES THE RIGHT TO REQUIRE THAT ADDITIONAL WATER QUALITY TREATMENT METHODS BE INCORPORATED INTO THE DRAINAGE SYSTEM IF SUCH MEASURES ARE SHOWN TO BE NECESSARY.
- 7 . FACILITIES OTHER THAN THOSE STATED HEREIN SHALL NOT BE CONSTRUCTED WITHOUT AN APPROVED MODIFICATION OF THIS PERMIT.
- 8 . OPERATION OF THE SURFACE WATER MANAGEMENT SYSTEM SHALL BE THE RESPONSIBILITY OF THE PERMITTEE.
- 9 . ENDANGERED SPECIES, THREATENED SPECIES, OR SPECIES OF SPECIAL CONCERN HAVE BEEN OBSERVED ONSITE AND/OR THE PROJECT CONTAINS SUITABLE HABITAT FOR THESE SPECIES. IT SHALL BE THE PERMITTEE'S RESPONSIBILITY TO COORDINATE WITH THE FLORIDA GAME AND FRESH WATER FISH COMMISSION AND/OR U.S. FISH AND WILDLIFE SERVICE FOR APPROPRIATE GUIDANCE, RECOMMENDATIONS, AND/OR NECESSARY PERMITS TO AVOID IMPACTS TO LISTED SPECIES.

BOYNTON BEACH TRI-RAIL STATION

PERMIT SUMMARY SHEET

APPLICATION NUMBER: 950621-20      PERMIT MODIFICATION NO. 50-01503-S-10

LOCATION: PALM BEACH COUNTY, S16/T45S/R43E

OWNER: TRI-COUNTY COMMUTER RAIL AUTHORITY

ENGINEER: CRAVEN THOMPSON & ASSOCIATES, INC.

PROJECT AREA:            12 ACRES      DRAINAGE AREA:            12 ACRES

PROJECT USE: COMMERCIAL

**FACILITIES:**

1. EXISTING: The project site located within the Quantum Park commercial development (a.k.a. Boynton Beach Park of Commerce), which received conceptual approval on October 8, 1986. There is an existing master swm system currently serving the developed parcels.
2. PROPOSED: The applicant is proposing to construct a swm system to serve 12.0-acres of commercial development known as the Boynton Beach Tri-Rail Station, located in Quantum Park. The proposed system consists of inlets and culverts which will direct storm runoff into dry detention areas for pre-treatment prior to overflowing into the existing master system. The submitted plans are in agreement with the conceptual assumptions and no adverse water resources related impacts are anticipated as a result of the construction and operation of the proposed swm system.

PROJECT LEVEL:

DRAINAGE BASIN: C-16

RECEIVING BODY: LWDD E-4 CANAL VIA MASTER SYSTEM

WATER QUALITY: PROVIDED IN THE MASTER SWM SYSTEM.

BOYNTON BEACH TRI-RAIL STATION

PERMIT SUMMARY SHEET

ENVIRONMENTAL ASSESSMENT:

**PROJECT SITE DESCRIPTION**

The project site is located in an area surrounded by sand pine/scrub communities. No wetlands exist within the project site. The site is dominated with sand pine and scrub vegetation.

**EXISTING ON SITE UPLAND COMMUNITIES:**

ID NO	TOTAL ACREAGE	BIOLOGICAL CONDITION	COMMUNITY TYPE	COMMUNITY ACREAGE
U-1	12.00	N/A	SAND PINE	12.00

TOTAL ON SITE UPLAND ACREAGE: 12.00

ENVIRONMENTAL SUMMARY

No wetlands exist on the site. Adverse impacts to wetlands are not anticipated as a result of the proposed project.

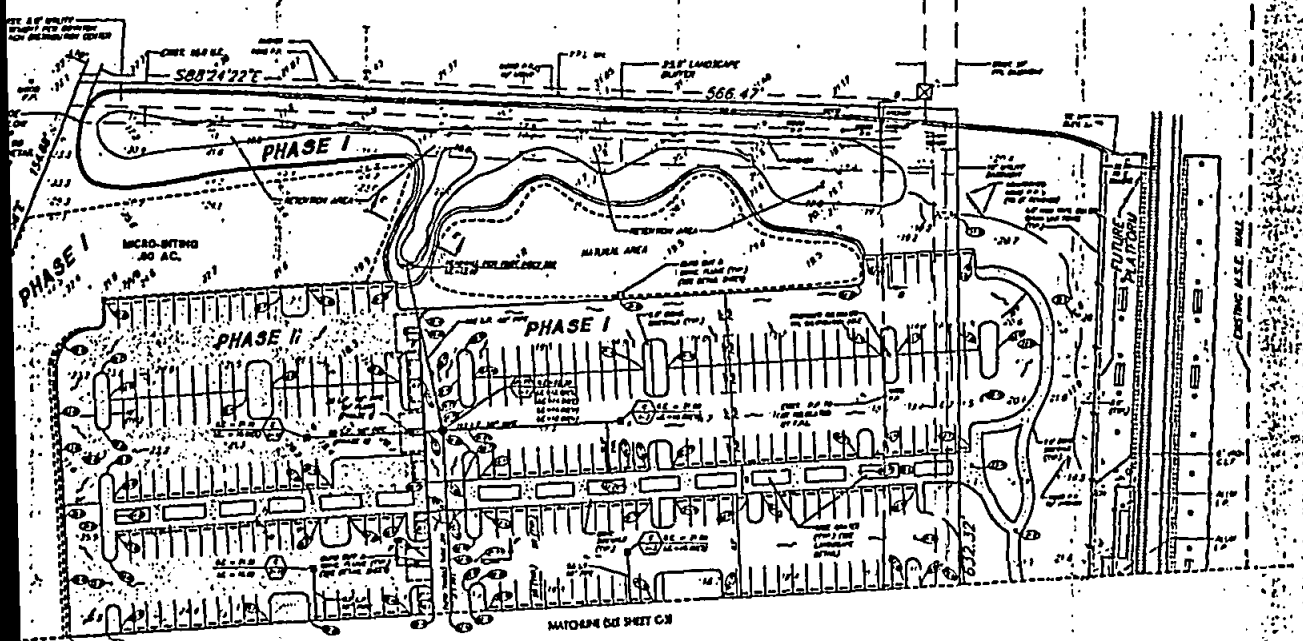
**APPLICABLE LAND USE:**

The following land use table reflects the acreage of this parcel only. The acreage reflected in the "WTRM ACREAGE" entry reflects the dry detention area.

	TOTAL PERMITTED	PREVIOUSLY PERMITTED	THIS PHASE	
TOTAL ACRES	12.00	.00	12.00	acres
WTRM ACREAGE	1.05	.00	1.09	acres
PAVEMENT	8.28	.00	8.28	acres
BUILD COVERAGE	.05	.00	.05	acres
PERVIOUS	2.58	.00	2.58	acres



# PLAT OF BOYNTON BEACH DISTRIBUTION CENTER




**NOTES**

1. ALL DIMENSIONS SHOWN PERTAIN TO THE PROPOSED EXISTING STRUCTURES UNLESS OTHERWISE NOTED.
2. SEE THE PLAN FOR THE EXISTING ROAD WIDTHS.

**LEGEND**

- |   |                    |   |                                     |   |                      |
|---|--------------------|---|-------------------------------------|---|----------------------|
| ① | Proposed Structure | ② | Proposed Utility / Existing Utility | ③ | Proposed Street Area |
| ④ | Proposed Driveway  | ④ | Proposed Utility / Existing Utility | ④ | Proposed Street Area |
| ⑤ | Proposed Driveway  | ⑤ | Proposed Utility / Existing Utility | ⑤ | Proposed Street Area |
| ⑥ | Proposed Driveway  | ⑥ | Proposed Utility / Existing Utility | ⑥ | Proposed Street Area |
| ⑦ | Proposed Driveway  | ⑦ | Proposed Utility / Existing Utility | ⑦ | Proposed Street Area |
| ⑧ | Proposed Driveway  | ⑧ | Proposed Utility / Existing Utility | ⑧ | Proposed Street Area |
| ⑨ | Proposed Driveway  | ⑨ | Proposed Utility / Existing Utility | ⑨ | Proposed Street Area |
| ⑩ | Proposed Driveway  | ⑩ | Proposed Utility / Existing Utility | ⑩ | Proposed Street Area |
| ⑪ | Proposed Driveway  | ⑪ | Proposed Utility / Existing Utility | ⑪ | Proposed Street Area |
| ⑫ | Proposed Driveway  | ⑫ | Proposed Utility / Existing Utility | ⑫ | Proposed Street Area |
| ⑬ | Proposed Driveway  | ⑬ | Proposed Utility / Existing Utility | ⑬ | Proposed Street Area |
| ⑭ | Proposed Driveway  | ⑭ | Proposed Utility / Existing Utility | ⑭ | Proposed Street Area |
| ⑮ | Proposed Driveway  | ⑮ | Proposed Utility / Existing Utility | ⑮ | Proposed Street Area |
| ⑯ | Proposed Driveway  | ⑯ | Proposed Utility / Existing Utility | ⑯ | Proposed Street Area |
| ⑰ | Proposed Driveway  | ⑰ | Proposed Utility / Existing Utility | ⑰ | Proposed Street Area |
| ⑱ | Proposed Driveway  | ⑱ | Proposed Utility / Existing Utility | ⑱ | Proposed Street Area |
| ⑲ | Proposed Driveway  | ⑲ | Proposed Utility / Existing Utility | ⑲ | Proposed Street Area |
| ⑳ | Proposed Driveway  | ⑳ | Proposed Utility / Existing Utility | ⑳ | Proposed Street Area |

JUN 15 1955



**PLAT OF BOYNTON BEACH DISTRIBUTION CENTER**

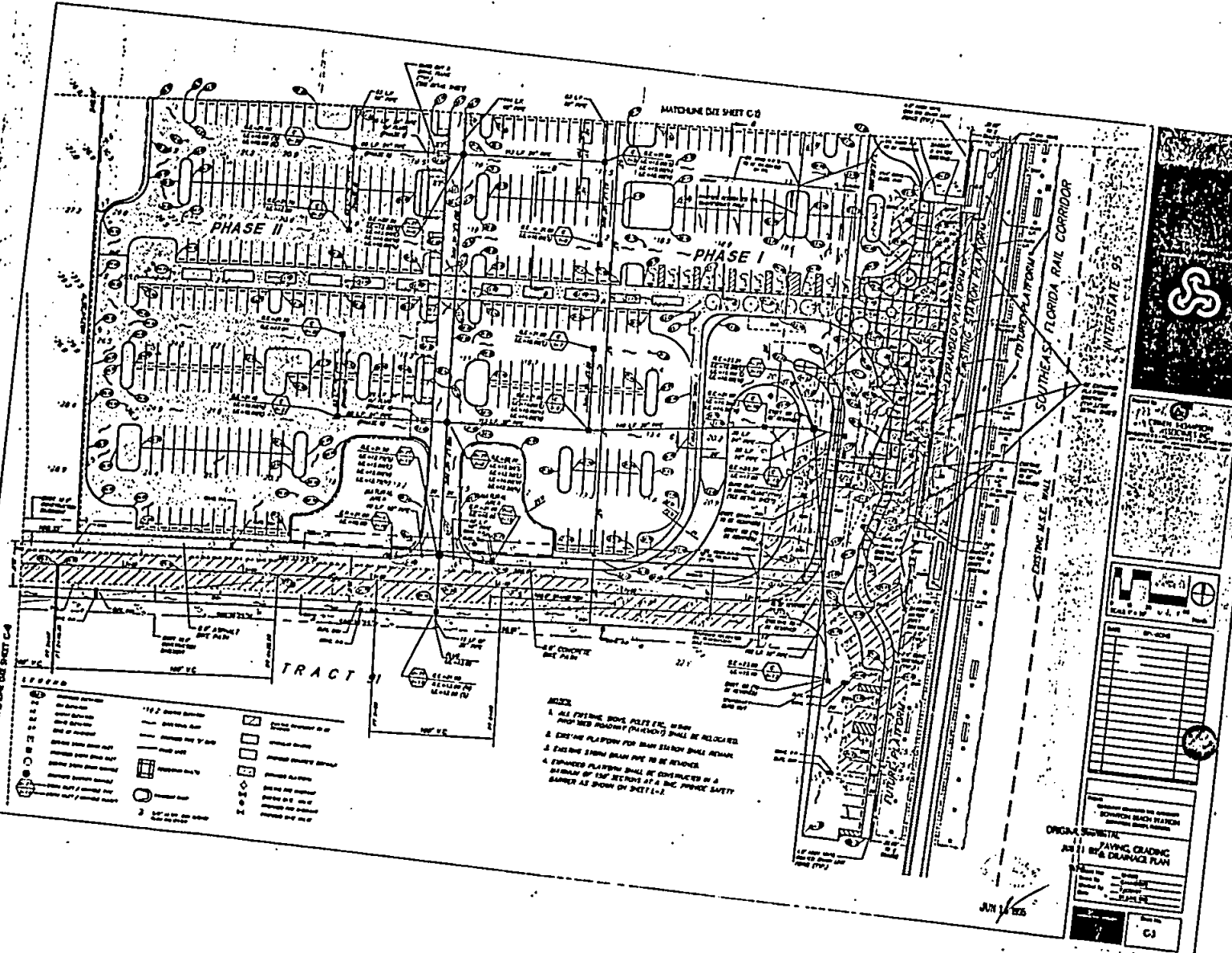
PAVING & CONCRETE PLAN

DATE: JUN 15 1955

SHEET: C3



**EXHIBIT 4**









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STAFF REPORT DISTRIBUTION LIST

PROJECT: BOYNTON BEACH TRI-RAIL STATION  
APPLICATION NUMBER: 950621-20  
PERMIT MODIFICATION NUMBER: 50-01503-S-10

INTERNAL DISTRIBUTION

Reviewer:

- X Juan A. Chan, P.E.
- X Stacy Myers
- X Carlos A. De Rojas, P.E.
- X Robert M. Brown
- X B. Colavecchio - REG
- M. Cruz - REG
- M. Elsner - UDP
- J. Giddings - LDP
- J. Golden - REG
- F. Lund - UDP
- R. Mireau - OMD
- R. Robbins - NRM
- D. Thatcher - CPR
- W. Van Voorhess - GPA
- L. Wagner - LDP
- X P. Walker - GPA
- X K. Wallace - REG
- A. Waterhouse - REG
- Director, Big Cypress Basin
- X Area Engineer
- Day File
- X Enforcement
- X Environmental PPC Reviewer
- X Field Representative
- Office of Counsel
- X Permit File

DEPT. OF ENVIRONMENTAL PROTECTION

- X West Palm Beach

EXTERNAL DISTRIBUTION

- X Applicant:  
TRI-COUNTY COMMUTER RAIL AUTHORITY
- X Applicant's Consultant:  
CRAVEN THOMPSON & ASSOCIATES, INC.
- X Engineer, County of:  
PALM BEACH
- X Engineer, City of:  
BOYNTON BEACH
- X Local Drainage District:  
LAKE WORTH DRAINAGE DISTRICT

COUNTY

- X Palm Beach -Building Division
- Environmental Res Mgmt.
- Health Dept.
- Land Development Div.
- School Brd., Growth Mgt.

BUILDING AND ZONING

OTHER

- David Sinclair
- Div of Recreation and Park - District 7
- F.G.F.W.F.C.
- Mr. Ed Dailey, President
- Port St. Lucie Planning Division
- S.W.F.R.P.C. - Glenn Heath
- Sierra Club - Central Florida Group

July 26, 1995

ADDL/REVISED SUBMITTAL Mr. Juan A. Chan

JUL 28 1995

South Florida Water Management District  
Surface Water Management Division  
3301 Gun Club Road  
West Palm Beach, FL 33406

RECEIVED

JUL 28 1995

RE: **BOYNTON BEACH TRI-RAIL STATION**  
**SFWMD APPLICATION NO. 950621-20** REGULATION DEPT. - 402  
**PERMIT MODIFICATION 50-01503-S-10**  
**CT&A PROJECT NO. 93-0055.01**

CRNIEN THOMPSON



& ASSOCIATES INC.

Engineers  
Planners  
Surveyors

Dear Mr. Chan:

The following is in response to your letter dated July 18, 1995 regarding the above referenced project:

*Comment 1. Please submit documentation evidencing legal ownership of the project site. In addition, the submittal states that the City of Boynton Beach will operate and maintain the on-site surface water management (swm) system. Please submit documentation from the City of Boynton Beach demonstrating acceptance of responsibility for operation and maintenance of the proposed on-site swm system.*

**Response:** The documentation evidencing legal ownership of Lot 90 by Tri-County Commuter Rail Authority has been forwarded to Carlos De Rojas's attention. The on-site swm system will be operated and maintained by Tri-County Commuter Rail Authority, not the City of Boynton Beach. Also, the documentation regarding the operation and maintenance of the swm system has been forwarded to Carlos's attention.

*Comment 2. The District received a Notice of Intent to Conduct Pre-Permit Work( Early Work) Application along with the swm Permit Application. However, the \$200.00 application processing fee for the early work permit was not included. Please submit the \$200.00 early work permit application processing fee.*

3563 N.W. 53rd Street  
Fort Lauderdale, FL 33309-6311  
(305) 739-6400  
Fax (305) 739-6409

West Palm Beach

Mr. Juan A. Chan  
SFWMD Application No. 950621-20  
Permit Modification 50-01503-S-10 ADDL/REVISED SUBMITTAL  
CT&A project No. 93-0055.01  
July 28, 1995  
Page 2

JUL 28 1995

**Response:** As discussed with you during our telephone conversation, unless some unforeseen delays arise the early work permit will not be necessary. However, if the early work permit is needed a check will be sent for the early work permit processing fee.

*Comment 3. The submitted plans reflect Phase I and Phase II delineations. Will the project be constructed in phases? If so, will all of the drainage facilities be constructed during Phase I? Please address in detail.*

**Response:** The project will be constructed in two phases. Phase I will be completed approximately late 1995 or early 1996. The plans reflect the delineation between Phase I and II. The majority of the drainage system to be complete in Phase I with a small portion to be constructed in Phase II. The Permit Application is for both Phase I and II, as the previously submitted calculations indicate.

*Comment 4. The submitted flood routings and plans reflect conflicting control structure data. The 5-year/1-day routings utilize a 0.45' diameter bleeder with an invert elevation 12.0 NGVD and the 25-year/3-day routing reflects a 0.33' diameter bleeder with an invert elevation of 12.0 NGVD. In addition, the bleeder(s) is/are not reflected in the outfall control structure details in the drainage plans. Please submit revised drainage plans and calculations without conflicting discharge data and which accurately reflect the proposed outfall control structure with all applicable details.*

**Response:** The flood routings are intended to reflect the proportional allowable discharge from the site based on the Master Drainage System for Quantum Park. The existing control structure for the entire Quantum Park development that discharges into LWDD E-4 then onto SFWMD C-16 Canal controls the Master Drainage System. The proportional outfall discharge for the Tri-Rail site has been incorporated into the flood routing calculations. The bleeder information was only theoretical. This was used as a means to reflect what would happen if this site was only allowed to discharge its proportional outfall discharge prior to entering the Master Drainage System. The resulting different bleeder information was a trial and error solution to discharge the proportional amount for the site at the appropriate stage. As seen in the proportional discharge flood routing results, the site elevations have been set to protect pavement and buildings from the flood criteria set in the SFWMD Permit No.50-01503-S for the entire Quantum Park Development.

Mr. Juan A. Chan  
SFWMD Application No. 950621-20  
Permit Modification 50-01503-S-10  
CT&A project No. 93-0055.01  
July 28, 1995  
Page 3

If you have any questions regarding this matter do not hesitate to contact this office.

Sincerely,

CRAVEN THOMPSON & ASSOCIATES



PATRICK J. GIBNEY, P.E.  
Project Engineer

ADDL/REVISED SUBMITTAL

JUL 28 1995

PJG/bi

cc: Herb Kahlert  
Les Nehiley  
Warren S. Craven  
Bob Cole

F:\common\trifwmd.res

Board of Directors

Rick Chesser

Betty T. Ferguson

Allen C. Harper

Marie Horenburger

Ed Kennedy

Wendy U. Larsen

Lori Nance Parrish

Carol A. Roberts

David Rush

Gilbert M. Robert  
Executive Director

Tri-County  
Commuter Rail Authority



RECEIVED

JUL 28 1995

REGULATION DEPT. - 402

July 25, 1995

Mr. Carlos De Rojas, P.E.  
Surface Water Management Div.  
South Florida Water Management District  
3301 Gun Club Road  
P.O. Box 24680  
West Palm Beach, FL. 33416

RE: Boynton Beach Parking Lot Expansion and Platform Improvement,  
TCRA Agreement No. 95-443

Subject: CT&A Project # 93-0055.01, Portions of Lot 90 Quantum Park  
PID, City of Boynton Beach

Dear Mr. Rojas:

Tri-County Commuter Rail Authority will be the responsible party to maintain the water management facilities described in the permit application submitted by our consultants, Craven, Thompson & Associates, Inc.

Sincerely,

  
Jim Nadaskay, P.E.  
Manager of Engineering and Construction

Attachment

c: Jeff Jackson  
Les Nehiley  
Herb Kahlert  
Joe Handley, CTA  
File

305 South  
Andrews Avenue  
Suite 200  
Fort Lauderdale  
Florida 33301

Customer Information  
1-800-874-7245

Executive Offices  
(305) 728-8512

AJN/lm



This Instrument Was Prepared  
By And Should Be Returned To:

JK  
Scott G. Williams, Esquire  
SHUTTS & BOWEN  
250 Australian Avenue South  
Suite 500  
West Palm Beach, Florida 33401

DEC-15-1994 4:19PM 94-415030  
ORB 8545 Pg 1066  
1  
Con 1,532,617.05 Doc 10,728.90

Property Appraisers Parcel  
Identification (Folio) Number:

SPECIAL WARRANTY DEED

THIS SPECIAL WARRANTY DEED, executed as of the 31st day of October, 1994, by QUANTUM ASSOCIATES, a Florida general partnership (the "Grantor"), whose mailing address is 115 West Washington Street, Indianapolis, Indiana 46204 to TRI-COUNTY COMMUTER RAIL AUTHORITY, an agency of the State of Florida, whose mailing address is 305 South Andrews Avenue, Suite 200, Ft. Lauderdale, Florida 33301 (the "Grantee").

W I T N E S S E T H:

That Grantor, for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration to Grantor in hand paid by Grantee, the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, and sold to Grantee and Grantee's heirs and assigns forever, the following described real property situate, lying, and being in Palm Beach County, Florida (the "Property") to wit:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF.

TO HAVE AND TO HOLD the same in fee simple forever.

This conveyance is made SUBJECT TO the following:

1. Restrictions, covenants, conditions and easements as contained on the Plat of Quantum Park at Boynton Beach, PID Plat No. 8, recorded in Plat Book 57, Page 196, of the Public Records of Palm Beach County, Florida.
2. Reservations, covenants and conditions contained in the Declaration of Protective Covenants of Quantum Park at Boynton Beach, dated October 14, 1987 and recorded October 15, 1987 in Official Records Book 5450, page 1105, together with amendment, as recorded in Official Records Book 6393, page 218, all of the Public Records of Palm Beach County, Florida.
3. The Development Order issued under the Quantum Park Development of Regional Impact (the "DRI"), dated April 26, 1985 and filed in Official Records Book 4534, Page 1728, together with the modification as filed in Official Records Book 5584, Page 1273, all on the Public Records of Palm Beach County, Florida.
4. Easement in favor of Florida Power and Light Company contained in Easement dated August 29, 1961 and recorded August 30, 1961 in Official Records Book 672, Page 38, of the Public Records of Palm Beach County, Florida.
5. Easement in favor of Florida Power and Light Company contained in Easement dated March 19, 1984 and recorded August 6, 1984, in Official Records Book 4315, Page 1279, of the Public Records of Palm Beach County, Florida.

CLERKS NOTE: THE CONVEYANCE EVIDENCED BY THIS DEED IS PART OF A LARGER TRANSACTION INVOLVING A DEED FROM THIS SAME GRANTOR AND QRA, INC. INTO THE QUANTUM COMMUNITY DEVELOPMENT DISTRICT (THE "QCDD") AND A GRANT OF EASEMENT FROM THE QCDD TO THIS SAME GRANTEE. ALL APPLICABLE FLORIDA DOCUMENTARY STAMPS HAVE BEEN ATTACHED TO THIS DEED.

~~Judgment Validating Bonds issued February 14, 1992, in Case No. CB91-334  
13795 AD of the Circuit Court in and for Palm Beach County, Florida.~~

And Grantor covenants with Grantee that, except as above noted, at the time of the delivery of this deed said property was free from all encumbrances made by Grantor, and that Grantor hereby specially warrants the title to said property and will defend it against the lawful claims of all persons claiming by, through, or under Grantor, but not otherwise.

IN WITNESS WHEREOF, Grantor has executed this deed as of the day and year first above written.

Signed, sealed, and delivered in the presence of:

Steven E. Fivel  
Steven E. Fivel  
(Type or print name)

Armen A. Jussal  
Armen A. Jussal  
(Type or print name)

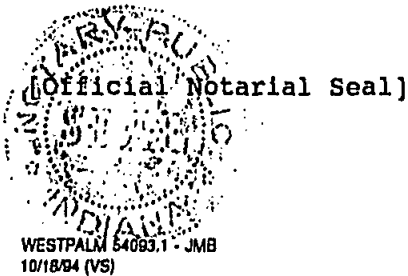
QUANTUM ASSOCIATES, a Florida general partnership

By: QUANTUM SIMON, INC., an Indiana corporation, general partner

By: Melvin Simon  
Its: President

STATE OF INDIANA )  
COUNTY OF MARION ) ss.:

The foregoing instrument was acknowledged before me this 31<sup>st</sup> day of October, 1994, by Melvin Simon, as general partner of Quantum Associates, a Florida general partnership, on behalf of the partnership, who is personally known to me, or who produced a driver's license as identification.



Shirley J. Ryan  
Notary Public  
SHIRLEY J. RYAN  
(Print or type name)  
Commission No.: \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

SHIRLEY J. RYAN, Notary Public  
County of Residence: Marion  
My Commission Expires: June 17, 1995

EXHIBIT "A"

ORB 8545 Pg 1068  
DOROTHY H. WILKEN, CLERK PB COUNTY, FL

FEE SIMPLE PARCEL BEING CONVEYED FROM QUANTUM ASSOCIATES TO  
TRI-COUNTY RAIL AUTHORITY:

A PARCEL OF LAND SITUATE IN SECTION 16, TOWNSHIP 45 SOUTH, RANGE  
43 WEST, PALM BEACH COUNTY, FLORIDA, ALSO BEING A PORTION OF  
TRACT 90 OF THE PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.I.D.  
PLAT NO. 8, AS RECORDED IN PLAT BOOK 57, AT PAGES 196 AND 197 OF  
THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, BEING MORE  
PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID TRACT 90; THENCE SOUTH  
00° 30' 27" EAST, ALONG THE EAST LINE OF SAID TRACT 90, SAID LINE  
ALSO BEING THE WEST LINE OF THE SEABOARD ALL FLORIDA RAILWAY  
RIGHT-OF-WAY, A DISTANCE OF 632.32 FEET; THENCE SOUTH 86° 35' 25"  
WEST, A DISTANCE OF 598.67 FEET; THENCE NORTH 03° 24' 35" WEST, A  
DISTANCE OF 540.98 FEET TO A POINT ON THE WEST LINE OF SAID TRACT  
90; THENCE NORTH 21° 57' 58" EAST ALONG SAID WEST LINE OF TRACT 90,  
A DISTANCE OF 154.88 FEET TO A POINT ON THE NORTH LINE OF SAID  
PLAT; THENCE SOUTH 88° 24' 22" EAST ALONG SAID NORTH LINE, A  
DISTANCE OF 566.47 FEET TO THE POINT OF BEGINNING.

ABOVE DESCRIBED PARCEL OF LAND LYING IN THE CITY OF BOYNTON  
BEACH, FLORIDA CONTAINS 9.200 ACRES MORE OR LESS.

RECORDER'S MEMO: Legibility of document  
unsatisfactory when received.



# South Florida Water Management District

File

3301 Gun Club Road, West Palm Beach, Florida 33406 • (407) 686-8800 • FL WATS 1-800-432-2045

CON 24-06-02

Application No. 950621-20  
Regulation Department

July 18, 1995

Mr. Patrick J. Gibney  
Craven Thompson & Associates, Inc.  
3563 N.W. 53rd St.  
Ft. Lauderdale, FL 33309

Dear Mr. Gibney:

Subject: Permit (Mod) No. 56-01503-S-10, Boynton Beach Tri-Rail Station,  
Boynton Beach, Palm Beach County, S16/T45S/R43E

The staff has completed a preliminary review of the above referenced application. According to Rule 40E-40, Florida Administrative Code (FAC), satisfactory answers to the following 4 comments must be provided before our review can continue.

- 1/1. Please submit documentation evidencing legal ownership of the project site. In addition, the submittal states that the City of Boynton Beach will operate and maintain the proposed on-site surface water management (swm) system. Please submit documentation from the City of Boynton Beach demonstrating acceptance of responsibility for operation and maintenance of the proposed on-site swm system.
- 2/2. The District received a Notice of Intent to Conduct Pre-Permit Work (Early Work) application along with the swm permit application. However, the \$200.00 application processing fee for the early work permit was not included. Please submit the \$200.00 early work permit application processing fee.
- 3/3. The submitted drainage plans reflect Phase I and Phase II delineations. Will the project be constructed in phases? If so, will all of the drainage facilities be constructed during Phase I? Please address in detail.
- 4/4. The submitted flood routings and plans reflect conflicting control structure data. The 5-year/1-day routings utilize a 0.45' diameter bleeder with an invert at elevation 12.0' NGVD and the 25-year/3-day routing reflects a 0.33' diameter bleeder with an invert at elevation 12.0' NGVD. In addition, the bleeder(s) is/are not reflected in the outfall control structure details in the drainage plans. Please submit revised drainage plans and calculations without conflicting discharge data and which accurately reflect the proposed outfall control structure with all applicable details.

**Governing Board:**

Valerie Boyd, Chairman  
Frank Williamson, Jr., Vice Chairman  
William E. Graham

William Hammond  
Betsy Kraut  
Richard A. Michel

Eugene K. Petrus  
Nathaniel P. Reed  
Marian S. ...

Samuel E. Poole III, Executive Director  
Michael Slayton, Deputy Executive Director

Mr. Patrick J. Gibney  
Craven Thompson & Associates, Inc.  
Subject: Boynton Beach Tri-Rail Station  
July 18, 1995  
Page 2 of 2

In accordance with 40E-1.603(8) FAC, if the requested information is not received within 90 days of the date of this letter, this application may be processed for denial, if not withdrawn by the applicant. Please submit FOUR copies of the requested information to Mr. Juan A. Chan, P.E. at this office and include the above referenced application number. Please attach a copy of the enclosed "Transmittal Form For Requested Additional Information" to each of the required FOUR copies of the requested information.

Should you have any questions, please call Mr. Juan A. Chan at (407) 687-6857.

Sincerely,



Carlos De Rojas, P.E.  
Supervising Professional  
Surface Water Management Division

CDR/jac  
Attachment

- c: DEP/Palm Beach County Engineer/PBC Land Dev. Div./PBC Dept. of Env. Rsc. Mgmt./Engineer, City of Boynton Beach/Lake Worth Drainage District/Tri-County Commuter Rail Authority
- bc: J. Chan/B. Colavecchio/Field Representative/Area Engineer/Enforcement/S. Myers/J. Karas



Stage - Storage Computations

=====

Stage Feet NGVD	.26 ac DETNI Storage ac-ft	.83 ac DETNI2 Storage ac-ft	Total Storage ac-ft
	* 17	* 22	
	**	**	
	***	***	
	****	****	
	***** 12	***** 17	
-----			
12.00	0.00	0.00	0.00
12.25	0.00	0.00	0.00
12.50	0.01	0.00	0.01
12.75	0.01	0.00	0.01
13.00	0.03	0.00	0.03
13.25	0.04	0.00	0.04
13.50	0.06	0.00	0.06
13.75	0.08	0.00	0.08
14.00	0.10	0.00	0.10
14.25	0.13	0.00	0.13
14.50	0.16	0.00	0.16
14.75	0.20	0.00	0.20
15.00	0.23	0.00	0.23
15.25	0.27	0.00	0.27
15.50	0.32	0.00	0.32
15.75	0.37	0.00	0.37
16.00	0.42	0.00	0.42
16.25	0.47	0.00	0.47
16.50	0.53	0.00	0.53
16.75	0.59	0.00	0.59
17.00	0.65	0.00	0.65
17.25	0.72	0.01	0.73
17.50	0.78	0.02	0.80
17.75	0.85	0.05	0.90
18.00	0.91	0.08	0.99 >.50 AF (CR)
18.25	0.97	0.13	1.10
18.50	1.04	0.19	1.23
18.75	1.11	0.25	1.36
19.00	1.17	0.33	1.50
19.25	1.23	0.42	1.65
19.50	1.30	0.52	1.82
19.75	1.37	0.63	2.00
20.00	1.43	0.75	2.18
20.25	1.49	0.88	2.37
20.50	1.56	1.02	2.58
20.75	1.63	1.17	2.80
21.00	1.69	1.33	3.02
21.25	1.76	1.50	3.26
21.50	1.82	1.68	3.50
21.75	1.88	1.87	3.75
22.00	1.95	2.08	4.03



PERMIT APPLICATION ROUTING  
Regulation Department

RECEIVED

JUN 27 1995

Juan

Application Number: 950621-20

Permit Number: RIGHT OF WAY MANAGEMENT  
50-01523-5

Applicant: ~~Florida~~ Tri-Ramway Commuter Rail Authority

Project: Logan Beach Tri-Rail Station

County: Alachua

30 Day Deadline 21-JUN-95

No Fee Required \_\_\_\_\_ Fee Received \$ 500.00 Fee Due \$ \_\_\_\_\_  
(Do Not Issue Permit)

PROCESSED BY: [Signature] DATE RECEIVED: 21-JUN-95 DATE OUT: 26-JUN-95

ROUTE TO: ~~Logan Beach~~  
Right-of-Way

NRM Signoff \_\_\_\_\_ Date \_\_\_\_\_

COMMENTS: \_\_\_\_\_

A RIGHT OF WAY OCCUPANCY PERMIT

- Will be required
- Will not be required
- May be required

Reviewer B. Hough Date 6/27/95

FOR REGULATORY ADMINISTRATION USE ONLY

1 Automated  
Permit File Requested

Application Submittal Included:

1 Application Form 1 Plans  
1 Aerials 1 Engineer Reports



**SURFACE WATER MANAGEMENT (CONTINUED)**



FD-300 (Rev. 5-8-82)

**TYPE OF PERMIT**

- 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 \_\_\_\_\_ ACRE SITE. (PLEASE FILL IN THE ACREAGE OF YOUR ENTIRE PROJECT.)
- \*PHASES OF THE SITE: CONSTRUCTION AND OPERATION OF A SURFACE WATER MANAGEMENT SYSTEM WHICH WILL SERVE 10.03 ACRES (PLEASE FILL IN THE ACREAGE OF THE PART OF YOUR PROJECT FOR WHICH A CONSTRUCTION AND OPERATION PERMIT IS SOUGHT) OF THE ENTIRE 578.3 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):
- 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 encompasses the projects 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 such inspectors to monitor permitted work of a permit as granted.

Printed (typed) name and address of principal or owner, if not owner \_\_\_\_\_

Signature (if acting as agent, please attach owner's signature) \_\_\_\_\_ Date \_\_\_\_\_

Department administering laws to apply for all ADAS permits for the Districts \_\_\_\_\_

State of the application: \_\_\_\_\_

**FOR DISTRICT USE ONLY**

APPLICATION NUMBER 950621-2D

FEE REQUIRED \_\_\_\_\_

FEE PAID 500.00

RECEIPT NUMBER 17273

Rec H

6/21/95

June 20, 1995

Mr. Carlos De Rojas  
South Florida Water Management District  
Surface Water Management Division  
P.O. Box 24680  
3301 Gun Club Road  
West Palm Beach, FL 33416-4680

ORIGINAL SUBMITTAL

JUN 21 1995

WPB

RE: BOYNTON BEACH TRI-RAIL STATION EXPANSION  
CT&A PROJECT NO. 93-0055.01

Dear Carlos:

Enclosed please find the following for your review and approval for the Modification of a General Permit for Quantum Park:

CRAVEN THOMPSON



& ASSOCIATES INC.

Engineers  
Planners  
Surveyors

- Four (4) copies of the Permit Application Checklist for the above referenced project.
- One (1) completed copy of RC-1A.
- Four (4) completed copies of RC-1S.
- Four (4) copies of Survey: Boundary, Topographic and Tree. (Located in pocket of Permit Application Checklist)
- Four (4) sets of Paving, Grading and Drainage Plans.
- A check in the amount of \$500.00 payable to SFWMD for Modification of a General Permit.
- One (1) completed Notice of Intent to Conduct Pre-Permit Work application.

Should you have any questions or require any additional information, please do not hesitate to contact this office.

Sincerely,

Craven Thompson & Associates

*Patrick J. Gibney*  
Patrick J. Gibney  
Project Engineer

bi/PJG

3563 N.W. 53rd Street  
Fort Lauderdale, FL 33309-8311  
(305) 739-6400  
Fax (305) 739-6409  
West Palm Beach

cc: Les Nelilly, Tri- Rail  
Herbert Kahlert  
Joe Handly  
Warren S. Craven



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# South Florida Water Management District

3301 Gun Club Road • P.O. Box 24680 • West Palm Beach, FL 33416-4680 • (407) 627-6909 • FI. WATS 1-800-432-2045

Form #0948  
Rev. 4/93

17273

Tri-County Commuter Rail Authority  
305 South Andrews Avenue  
Suite 200  
Fort Lauderdale, FL 33301

Refer to Application 950621-20

Boynton Beach Tri-Rail Station

## RECEIPT FOR PERMIT APPLICATION FEE

4620 Surface Water Management Permit

\$500.00

CK 012242

PROCESSED BY: JPP  
DATE: 06/26/95  
SC: WPB

White - Applicant

Yellow - Accounting

Pink - Control

Gold - File

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11/87



South Florida Water Management District  
P O Box 24680, West Palm Beach, FL 33416-4680  
FORM 6844  
Rev. 11/87

ORIGINAL SUBMITTAL

JUN 21 1995

Notice of Intent to Conduct Pre-Permit Work  
(Chapter 40E-40, Florida Administrative Code)

Applicant's Name: Tri-County Commuter Rail Authority

Property Owner's Name: Tri-County Commuter Rail Authority WPB

Applicant/Authorized Agent: Craven Thompson & Associates, Inc.

Mailing Address: 3563 NW 53rd Street

City Ft. Lauderdale State FL Zip 33309 Phone (305) 739-6400

Surface Water Management Permit Application Number \_\_\_\_\_ Date of Application \_\_\_\_\_

Surface Water Management Permit Number (for Mods) 50-01503-S

Project Name Boynton Beach Tri-Rail Station

Project Location: City Boynton Beach County Palm Beach

Section(s) 16 Township(s) 45 Range(s) 43

Site Activities to be Authorized with Drawings (if different from application submission) \_\_\_\_\_

Brief Statement of Reasons for this Request Construct S&W Facilities

Brief Statement of Specific Work to be Conducted Expansion of Parking Lot and Platform.

Date of Commencement 9/95 Date of Completion 1/96

Brief Statement of Facts Which Show Why the Proposed Activities Qualify for a General Permit:  
\_\_\_\_\_  
\_\_\_\_\_

I HEREBY CERTIFY THAT:

- All Necessary Federal, State, Local and Special District Authorizations have been Received;
- These Activities will not Cause Any Off-Site Water Resource Impacts;
- These Activities will not Cause any Adverse Water Resource Related Quantity, Quality or Environmental Impacts;

ENVIRONMENTAL IMPACTS:

- There are No Known Water Resource Related Concerns Associated with the Project; and
- The Limiting Conditions Specified in Rule 40E-40.381, F.A.C. will be Satisfied.

Applicant's Signature [Signature] Date 5-19-95

Name Michael J. Gabner Title Project Manager

(IF NOT THE OWNER, CERTIFY BELOW)

I HEREBY CERTIFY THAT I AM AN AUTHORIZED AGENT OF THE OWNER

Signature \_\_\_\_\_ Date \_\_\_\_\_

NOTE:

- Include a recent aerial of sufficient clarity and scale to recognize land type (if different from application submission), and
- Voluntary publication of the Notice of Intent pursuant to Rule 40E-1.606(3)(b), must provide the information as set forth in Rule 40E-1.606(3)(b) and occur within seven days of submission to the District, if at all. Once received, proof of publication must be submitted to the District



Form DE-15 - 101  
01/90

# RC-15 APPLICATION FOR A SURFACE WATER MANAGEMENT PERMIT

FOR SFWMD USE ONLY

Application No. \_\_\_\_\_

ORIGINAL SUBMITTAL ONLY

## SECTION I - SITE INFORMATION

N A I M

<input checked="" type="checkbox"/>	A	LOCATION SKETCH IS SUBMITTED AS ITEM I-1.	JUN 21 1995	<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.	WPB	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>	C	WETLANDS		
<input checked="" type="checkbox"/>		EXISTING COVER IS SUBMITTED AS ITEM I-3.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		PROPOSED PRESERVATION TECHNIQUES ARE SUBMITTED AS ITEM I-4.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" 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"/>
<input checked="" 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		
<input checked="" type="checkbox"/>		BASIN WATER TABLE ELEVATION TABLE IS SUBMITTED AS ITEM II-4A.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		SUPPORTING INFORMATION IS SUBMITTED AS ITEM II-4B.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" type="checkbox"/>		DESCRIPTION OF AFFECTED SYSTEMS IS SUBMITTED AS ITEM II-5.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<input checked="" 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"/>
<input checked="" type="checkbox"/>	F	WATER WITHDRAWAL IS SUBMITTED AS ITEM II-8.		<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 checked="" 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"/>
<input checked="" 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		
<input checked="" type="checkbox"/>		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"/>
<input checked="" type="checkbox"/>		CONSTRUCTION TECHNIQUES DESCRIPTION IS SUBMITTED AS ITEM III-4		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>





# SECTION III - MASTER PLAN (CONTINUED)

SFWMD  
ONLY

<input checked="" type="checkbox"/>	<b>E</b>	<b>LEGAL RESERVATIONS</b>	
<input checked="" type="checkbox"/>		CONCEPTUAL APPROVAL, RESERVATIONS NOT REQUIRED <input type="checkbox"/> YES <input type="checkbox"/> NO	
<input checked="" type="checkbox"/>		LEGAL RESERVATIONS ARE SUBMITTED AS ITEM III-5.	
<input checked="" type="checkbox"/>	<b>F</b>	AFFECTED FACILITIES ANALYSIS IS SUBMITTED AS ITEM III-6	

## SECTION IV - SURFACE WATER MANAGEMENT ANALYSIS

	<b>A</b>	<b>FACILITIES</b>	
<input checked="" type="checkbox"/>		DESCRIPTION OF EXISTING FACILITIES IS SUBMITTED AS ITEM IV-1	
<input checked="" type="checkbox"/>		DESCRIPTION OF PREVIOUSLY APPROVED/PERMITTED FACILITIES IS SUBMITTED AS ITEM IV-2	
<input checked="" type="checkbox"/>		DESCRIPTION OF PROPOSED FACILITIES FOR THE ENTIRE PROJECT IS SUBMITTED AS ITEM IV-3	
<input checked="" type="checkbox"/>		DESCRIPTION OF PROPOSED FACILITIES FOR THIS PHASE IS SUBMITTED AS ITEM IV-4.	
NA		FACILITY DETAILS FOR EXFILTRATION TRENCH ARE SUBMITTED AS ITEM IV-5.	
NA		PERCOLATION TESTS AND CALCULATIONS ARE SUBMITTED AS ITEM IV-6.	
NA		EXFILTRATION TRENCH COMPUTATIONS ARE SUBMITTED AS ITEM IV-7.	
<input checked="" type="checkbox"/>		FACILITY DETAILS FOR GRAVITY DISCHARGE STRUCTURE(S) ARE SUBMITTED AS ITEM IV-8.	
NA		STAGE-DISCHARGE CALCULATION IS SUBMITTED AS ITEM IV-9.	
NA		SPREADER SWALE VELOCITY CALCULATION IS SUBMITTED AS ITEM IV-10.	
<input checked="" type="checkbox"/>	<b>B</b>	A STAGE-DISCHARGE, A STAGE-STORAGE, AND A LAND COVERAGE TABLE FOR EACH BASIN ARE SUBMITTED AS ITEM IV-11	
<input checked="" type="checkbox"/>	<b>C</b>	DRAINAGE BASIN(S) AND/OR PHASE(S) TABLES ARE SUBMITTED AS ITEM IV-12.	
<input checked="" type="checkbox"/>	<b>D</b>	WATER QUALITY BEST MANAGEMENT PRACTICES DESCRIPTION IS SUBMITTED AS ITEM IV-13A	
<input checked="" type="checkbox"/>		RETENTION/DETENTION VOLUME CALCULATIONS FOR EACH BASIN OR PHASE ARE SUBMITTED AS ITEM IV-13B.	
<input checked="" type="checkbox"/>	<b>E</b>	WET SEASON WATER TABLE AND SOIL STORAGE CALCULATIONS ARE SUBMITTED AS ITEM IV-13C.	
<input checked="" type="checkbox"/>	<b>F</b>	ALLOWABLE DISCHARGE SUPPORTING CALCULATIONS ARE SUBMITTED AS ITEM IV-14.	
<input checked="" type="checkbox"/>	<b>G</b>	FLOOD ROUTINGS ARE SUBMITTED AS ITEM IV-15.	
	<b>H</b>	<b>FLOODPLAIN ENCROACHMENT</b>	
NA		CONVEYANCE PREDEVELOPMENT CONDITIONS ARE SUBMITTED AS ITEM IV-16.	
NA		CONVEYANCE POST-DEVELOPMENT CONDITIONS ARE SUBMITTED AS ITEM IV-17	
NA		STORAGE PREDEVELOPMENT SITE RUNOFF CONDITIONS ARE SUBMITTED AS ITEM IV-18	
NA		STORAGE PREDEVELOPMENT BASIN STORAGE CONDITIONS ARE SUBMITTED AS ITEM IV-19.	
NA		FLOODPLAIN <input type="checkbox"/> IMPORTER <input type="checkbox"/> EXPORTER SUPPORTING INFORMATION IS SUBMITTED AS ITEM IV-20	



### SECTION V - LEGAL AND INSTITUTIONAL

<input checked="" type="checkbox"/>	A	PROOF OF OWNERSHIP SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-1.	---	---	---	---
<input checked="" type="checkbox"/>	B	RESPONSIBLE ENTITY(IES) SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-2.	---	---	---	---
	C	UTILITIES				
<input checked="" type="checkbox"/>		WATER UTILITIES SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-3.	---	---	---	---
<input checked="" type="checkbox"/>		SEWERAGE SUPPORTING INFORMATION IS SUBMITTED AS ITEM V-4.	---	---	---	---
	D	RECEIVING BODY(IES)				
<input checked="" type="checkbox"/>		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 PERM. IS APPLIED FOR. APPLICATION NO. _____ ORIGINAL SUBMITTAL	---	---	---	---
		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. WPB	---	---	---	---
<input checked="" type="checkbox"/>	G	BOUNDARY SURVEY IS SUBMITTED AS ITEM V-9.	---	---	---	---

JUN 21 1995

### SECTION VI - PUBLIC NOTICING INFORMATION

NA	A	DEPICTION OF WORKS AND FACILITIES IS SUBMITTED AS ITEM VI-1.	---	---	---	---
NA	B	PROJECT MAP IS SUBMITTED AS ITEM VI-2.	---	---	---	---
NA	C	WETLANDS STATEMENT IS SUBMITTED AS ITEM VI-3.	---	---	---	---
NA	D	MITIGATION STATEMENT IS SUBMITTED AS ITEM VI-4.	---	---	---	---

### 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"/>	---	---	---	---

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

# BACK-UP MATERIAL

PERMIT NO. 50-01503-S10

APPLICATION NO. 950021-20

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PERMIT APPLICATION CHECKLIST

FOR

BOYNTON FRESH TRI-RAIL STATION

CT&A PROJECT NO. 93-0055.01

JUNE, 1995



ORIGINAL SUBMITTAL

JUN 21 1995

WPB

*[Handwritten signature]*  
6/20/95

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

PERMIT APPLICATION CHECKLIST

FOR

BOYNTON BEACH TRI-RAIL STATION

CT&A PROJECT NO. 93-0055.01

JUNE, 1995

<u>Item No.</u>	<u>Description</u>
SECTION I	SITE INFORMATION
I-1	<u>Location Map:</u> Refer to attached Exhibit I-1 for the boundaries of the entire Quantum Park site and for the limits of the Boynton Beach Tri-Rail Station.
I-2	<u>Aerial Photograph:</u> Refer to attached Exhibit I-2.
I-3	<u>Description of Existing Vegetative Cover:</u> Approximately 2/3 of the site consists of sand pine, scrub oak, slash pine plant community with the other third as disturbed land consisting of various grasses and ground cover.
I-4	<u>Preservation Techniques:</u> 58 acres of the Quantum Park development has been set aside for water management, of this 41.7 acres are lakes and 13.1 acres are dry detention. There are no wetlands within the Quantum Park development.
I-5	<u>Wetlands Control Elevation Table:</u> There are no proposed wetlands in the Boynton Beach Tri-Rail Station.
SECTION II	PROJECT INFORMATION
II-1A	<u>Project Description:</u> Quantum Park is a 578.3 acre office, research park and light industrial development which has been previously issued a conceptual permit (SFWMD Permit No. 50-01503-S) and construction permits for various phases. This application is for construction of 10.03 acres for the Boynton Beach Tri-Rail Station.
II-2	<u>Topographic Map:</u> See attached survey.
II-3	<u>Drainage Map:</u> Refer to Exhibit IV-1 and the previously submitted Master Drainage Plan currently on file with SFWMD which shows how the drainage will be handled for the entire site. Stormwater runoff from the proposed project will be discharged into dry retention area on the north side of the site before entering the Basin 1 Master Drainage System. All work will conform to existing South Florida Water Management District Master Conceptual permit No. 50-01503-S and all existing modifications.



- II-4                    Basin Water Table Elevation: The control water elevation of Quantum Park Basin 1 is 8.00 NGVD, as defined by SFWMD Permit No. 50-01503-S.
- II-5                    Not applicable.
- II-6                    Not applicable.
- II-7                    Not applicable.
- II-8                    Water Withdrawals: A water use permit (No. 50-01685-W) was issued by SFWMD in August, 1988 granting the use of ground water and surface water to provide irrigation for parcels within the overall Quantum Park development.
- II-9                    Not applicable.

SECTION III            MASTER PLAN

- III-1                   Paving, Grading & Drainage Plan: Refer to attached engineering plans and details.
- III-2                   Drainage Plan Details: Refer to attached engineering plans and details.
- III-3                   Receiving Body List: Stormwater is discharged through two control structures to Lake Worth Drainage District's (LWDD) E-4 Canal and onto the SFWMD C-16 Canal.
- III-4                   Construction Techniques Description: In order to avoid adverse impacts on water resource quantity and quality on-site and off-site during construction, direct discharge of runoff from the site into adjacent property and receiving waters shall be prevented. This will be accomplished through the use of silt barriers and the overflow weir in the dry detention area at the north side of the site.
- III-5                   Legal Reservations: The lakes are owned and operated by Quantum Community Development District. This information is currently on file at SFWMD.
- III-6                   Affected Facilities: There are no other water resource related facilities that will be affected.
- III-7                   Not applicable

SECTION IV            SURFACE WATER MANAGEMENT ANALYSIS

- IV-1                   Existing Facilities: See the attached Quantum Park Basin 1 Master Drainage Plan (Exhibit IV-1) for 578.3 acres of hydrologically related areas which contains the Boynton Beach Tri-Rail Station (10.03 acres). All roadways, water management facilities and conveyance systems are interconnected with a two control structure discharging runoff to the LWDD E-4 Canal and then onto the SFWMD C-16 Canal.

- IV-2 Facilities Previously Approved or Permitted by South Florida Water Management District: SFWMD Conceptual Permit No. 50-01503-S was issued and previous modification have been approved for construction of earlier phases.
- IV-3 Proposed Facilities: The proposed stormwater management system of the Boynton Beach Tri-Rail Station will consist of a piping system, inlets and a detention area to convey on-site runoff to the Quantum Park Basin 1 Master Drainage System. The detention area will provide the necessary pretreatment required for development of the parcel. The overflow weir from the detention area to the Quantum Park Basin 1 Master Drainage System will be set at 18.00 NGVD to provide the necessary pretreatment. The hydraulically calculated (per Rossi and Malavasi Engineers, Inc. Boynton Beach Park of Commerce, Quantum Park, Master Drainage Plan 8/5/86) water surface elevation for the 3 year storm is 19.27 NGVD. (See Exhibit IV-3) This water surface will be used only to size the on-site drainage piping system
- IV-4 Proposed Facilities (Phasing): The Boynton Beach Tri-Rail Station conforms to the SFWMD conceptual permit and runoff will be routed to the lakes previously permitted and constructed; which is part of the overall stormwater management system.
- IV-5 Not applicable.
- IV-6 Not applicable.
- IV-7 Not applicable.
- IV-8 Discharge Structure: Refer to your file for details of the existing control structures, located at the outfall of the lake system serving Quantum Park discharging into the LWDD E-4 Canal and then onto the SFWMD C-16.
- IV-9 Not applicable (Refer to Conceptual Permit No. 50-01503-S and later modifications).
- IV-10 Not applicable.
- IV-11 In order to determine if the Boynton Beach Tri-Rail Station is within the proportional limits of the conceptual permit, the following calculations were performed:
- Total On-Site Area = 10.03 acres
- Calculate proportional lake area  
(total area = 58.00 acres)
- $\frac{10.03 \text{ ac} \times 100}{(578.3-58.0)} = 1.93\%$
- $58.0 \text{ ac} \times 0.0193 = 1.12 \text{ ac}$

Land Coverage/Stage Storage Table:

<u>Land Use</u>	<u>Size (Acres)</u>	<u>Type of Storage</u>	<u>Site Storage From (EL,NGVD)</u>	<u>Site Storage To (EL,NGVD)</u>
*Lake Area	1.12	V	12.00	--
<b>On-Site</b>				
Green Area/Landscaped Area	3.07	L	12.00	30.00
Parking/Roads/Sidewalks	6.98	L	21.00	27.00
<b>Seaboard All Florida Right of Way</b>				
Green Area/Landscaped Area	0.60	L	17.00	24.00
Parking/Roads/Sidewalks	1.32	L	21.00	26.00
Building Area	<u>0.05</u>	L	--	--
<b>TOTAL</b>	<b>13.12</b>			

\*Lake previously permitted. The elevation of the lake for the following calculations will be set at the minimum elevation within the Tri-Rail site.

Total not including Seaboard All Florida Right of Way and lake = 10.03 acres.

IV-12

Land Use Table:

Construction and Operation

1.	Impervious Area	
	Roads/Parking/Sidewalks	8.28
	Buildings	0.05
	*Lake	<u>1.12</u>
		9.45
2.	Pervious Area	
	Green/Landscaped Area	3.67

\*Lake previously permitted.  
 Future building square footage = 2,178 (0.05 Ac)

IV-13A

Water quality treatment shall be provided by utilizing the detention area on the north side of the site. Detention for the first (1/2) one half inch of runoff from the site area minus the roof area is provided in the detention area on-site. Additional water quality treatment through retention/detention is provided in the system of interconnected lakes and dry detention area prior to off-site discharge.

PROJECT NAME: TRI-RAIL  
PROJECT NO.: 93-0055.01  
DATE: 27-Feb-95

GIVEN

-----  
ACREAGES:

TOTAL:	12.00 AC	
IMPERVIOUS:		69.42%
ROOFS:	0.05 AC	
ROADS:	8.28 AC	
LAKE:	0.00 AC	
PERVIOUS:	3.67 AC	30.58%

MINIMUM ELEVATIONS:

ROADS AND PARKING:	12.00 NGVD
FLOORS:	14.50 NGVD
LAKE: (CONTROL EL)	8.00 NGVD

DEIGN STORM EVENTS

10 YR - 1 DAY	10.00 IN.
25 YR - 3 DAY	15.60 IN.
100 YR - 3 DAY	19.70 IN.

QUALITY

-----  
FIRST INCH RUNOFF: 1.00 AC-FT  
12.00 AC-IN

2.5 IN. TIMES % IMPERVIOUS:

A) SITE AREA	
WATER QUALITY :	11.95 AC
B) IMPERVIOUS AREA	
WATER QUALITY :	8.28 AC
C) % IMPERVIOUS:	69.29 %
D) 2.5" TIMES	
% IMPERVIOUS:	1.73 IN
E) VOLUME QUALITY	
DETENTION:	1.73 AC-FT

CONTROL VOLUME: 1.73 AC-FT

.5 IN. DRY DETENTION,  
RETENTION - PRETREATMENT: 0.50 AC-FT

VOLUME TREATED IN LAKE: 1.23 AC-FT

-----  
SOIL STORAGE  
-----

FROM FIGURE C-III-1, SOIL STORAGE (IN.)

AVERAGE SITE GRADE	23.00 NGVD
DEPTH TO WATER TABLE	15.00 FT

AVAILABLE SOIL STORAGE	8.18 IN
------------------------	---------

PERVIOUS AREA x AVAILABLE SOIL STORAGE

S = 30.02 AC-IN

SS = (PREVIOUS AREA/TOTAL AREA) x SOIL STORAGE

SS = 2.50 IN



Water Quality

$$\begin{aligned} \text{Total Area} &= 12.00 \\ \text{Building/Roof Area} &= 0.05 \\ \text{Pervious Area} &= 3.67 \end{aligned}$$

$$\text{Site Area } 12.00 - 0.05 = 11.95$$

A.) Calculate first inch of run-off from site area:

$$\begin{aligned} 1" \times 1.44 \text{ Ac} &= 12.00 \text{ Ac-In} \\ &= 1.00 \text{ Ac-Ft} \end{aligned}$$

B.) Calculate 2.5 inches by the % of impervious area:

$$\begin{aligned} \text{Site Area} - \text{Pervious Area} &= \text{Impervious Area} \\ 11.95 - 3.67 \text{ Ac} &= 8.28 \text{ Ac} \end{aligned}$$

$$\% \text{ Impervious} = \frac{\text{Impervious Area}}{\text{Site Area}} \times 100\%$$

$$= \frac{8.28}{11.95} \times 100$$

$$= 69.3\%$$

2.5" x % Impervious = # of inches to be treated

$$2.5" \times .693 = 1.73"$$

Volume to be treated = Total Area x inches to be treated

$$\begin{aligned} &= 12.0 \times 1.73 \\ &= 20.76 \text{ Ac - In} \\ &= 1.73 \text{ Ac - Ft} \end{aligned}$$

The required wet detention for water quality will be the larger of the two calculated volumes. Thus 1.73 Ac.-Ft. is required for water quality volume and shall be provided in wet detention.

C.) Due to the land use of the site (Industrial), dry pretreatment is required. The required dry pretreatment volume is:

$$\text{Dry Pretreatment Volume} = 1/2" \times \text{Site Area}$$

$$\begin{aligned} &= 1/2 \times 11.95 \\ &= 5.98 \text{ Ac.-In.} \\ &= .50 \text{ Ac.-Ft.} \end{aligned}$$

The required dry pretreatment shall be provided on-site in the detention area. All stormwater runoff shall be routed through the detention area prior to staging and discharging over the weir to the Quantum Park Basin 1 Master Drainage System.



CRAVEN • THOMPSON & ASSOCIATES INC.  
ENGINEERS • PLANNERS • SURVEYORS

JO. BOYNTON BEACH TRT-RAIL STAT.

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

CALCULATED BY PT DATE 3/14/95

CHECKED BY \_\_\_\_\_ DATE \_\_\_\_\_

93-0055.01

### RETENTION AREA

<u>ELEVATION</u>	<u>AREA (Ac)</u>	<u>Ac-FT.</u>	<u>CUMULATIVE Ac-FT</u>
12.0	.003		—
14.0	.008	.011	.011
16.0	.03	.038	.049
17.0	.26	.145	.194
18.0	.42	.340	.534
19.0	.57	.495	<u>1.03</u>
20.0	.74	.660	1.68
21.0	.89	.815	2.50
22.0	1.09	.980	3.48

STORAGE REQUIRED FOR PRE TREATMENT  
.50 Ac-FT

IV-13C

Soil Storage

Average developed site pervious  
 areas elevation = 23.0 NGVD  
 Wet season water table (WSWT)  
 elevation = 8.0 NGVD\*  
 Average depth to WSWT = 15.0'

\*This is based upon South Florida Water Management District Permit  
 No. 50-01503-S.

15.0 feet of soil stored 8.18 inches of run-off

3.67 acres pervious area

storage = 3.67 acres x 8.18 inches

= 30.0 acre-inches

Site soil storage =  $\frac{\text{Total ac-in}}{\text{Total Area}}$

=  $\frac{30.00 \text{ ac-in}}{12.00 \text{ ac}}$

= 2.50 inches

IV-14

Proposed Discharge: In order for the Boynton Beach Tri-Rail Station to conform  
 to the conceptual permit, the proportional stage discharge must be determined.

Total Basin = 578.3 ac

Tri-Rail Station = 12.00 ac

$\frac{12.00}{578.3} \times 100 = 2.07\%$

Therefore the proportional discharge in accordance with the conceptual permit will  
 be as follows:

Stage	Proportional Discharge
8.0	0.00 cfs x .0207 = 0.00 cfs
9.0	7.79 cfs x .0207 = 0.16 cfs
10.0	28.9 cfs x .0207 = 0.60 cfs
11.0	39.9 cfs x .0207 = 0.83 cfs
12.0	48.5 cfs x .0207 = 1.00 cfs
13.0	55.8 cfs x .0207 = 1.16 cfs
13.32	58.0 cfs x .0207 = 1.20 cfs
14.00	62.2 cfs x .0207 = 1.29 cfs
14.50	64.0 cfs x .0207 = 1.32 cfs

IV-15 Flood Routing: See Exhibit IV-15a,b & c.

5 Year - 24 Hour storm event: maximum stage 15.21 NGVD. Therefore, minimum parking lot grade of 21.0 NGVD is acceptable.

25 Year - 72 Hour storm event: maximum stage 21.65 NGVD.

100 Year - 72 Hour storm event with zero discharge: maximum stage is 23.11 NGVD. Therefore, a minimum finished floor elevation of 25.00 NGVD is acceptable.

IV-16 Not applicable.

IV-17 Not applicable.

IV-18 Not applicable.

IV-19 Not applicable.

IV-20 Not applicable.

#### SECTION V

#### LEGAL AND INSTITUTIONAL INFORMATION

V-1 Proof of Ownership: Ownership documents are included in this submittal.

V-2 Responsible Entity: The entity responsible for maintenance of the surface water management system shall be the City of Boynton Beach and the Quantum Community Development District. Application for permits to these agencies will be submitted simultaneously with this submittal to SFWMD.

V-3 Water Supply: Potable water shall be supplied by the City of Boynton Beach. A Letter of Commitment is on file at SFWMD.

V-4 Wastewater Service: Wastewater service to the site shall be supplied by the City of Boynton Beach. A Letter of Commitment is on file at SFWMD.

V-5, V-6 Receiving Bodies: The project is currently permitted to discharge into the SFWMD C-16 Canal via the LWDD E-4 Canal.

V-7 Land Use: Land use will be consistent with the Quantum Park master plan presently on file at SFWMD.

V-8 DRI: Quantum Park is an approved DRI. A copy of the Development Order is on file at the SFWMD.

V-9 Boundary Survey: See attached.

#### SECTION VI PUBLIC NOTICING INFORMATION

VI-1 Proposed Works: See attached plans.

VI-2 Location Map: See attached plans and exhibit I-1.

VI-3 Affected Wetlands: There are no viable wetlands to be disturbed.

VI-4 Mitigation: Not Applicable.

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT**

**PERMIT APPLICATION CHECKLIST**

**FOR**

**BOYNTON BEACH TRI-RAIL STATION**

**CT&A PROJECT NO. 93-0055.01**

**APRIL, 1985**

**LIST OF EXHIBITS**

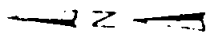
LOCATION MAP	EXHIBIT I-1
AERIAL PHOTOGRAPH	EXHIBIT I-2
QUANTUM PARK BASIN 1 MASTER DRAINAGE PLAN	EXHIBIT IV-1
QUANTUM PARK MASTER DRAINAGE PLAN 8/5/86 HYDRAULIC GRADE CALCULATIONS	EXHIBIT IV-3
FLOOD ROUTING	
5 YEAR 1 DAY	EXHIBIT IV-15a
25 YEAR 3 DAY	EXHIBIT IV-15b
100 YEAR 3 DAY	EXHIBIT IV-15c





298

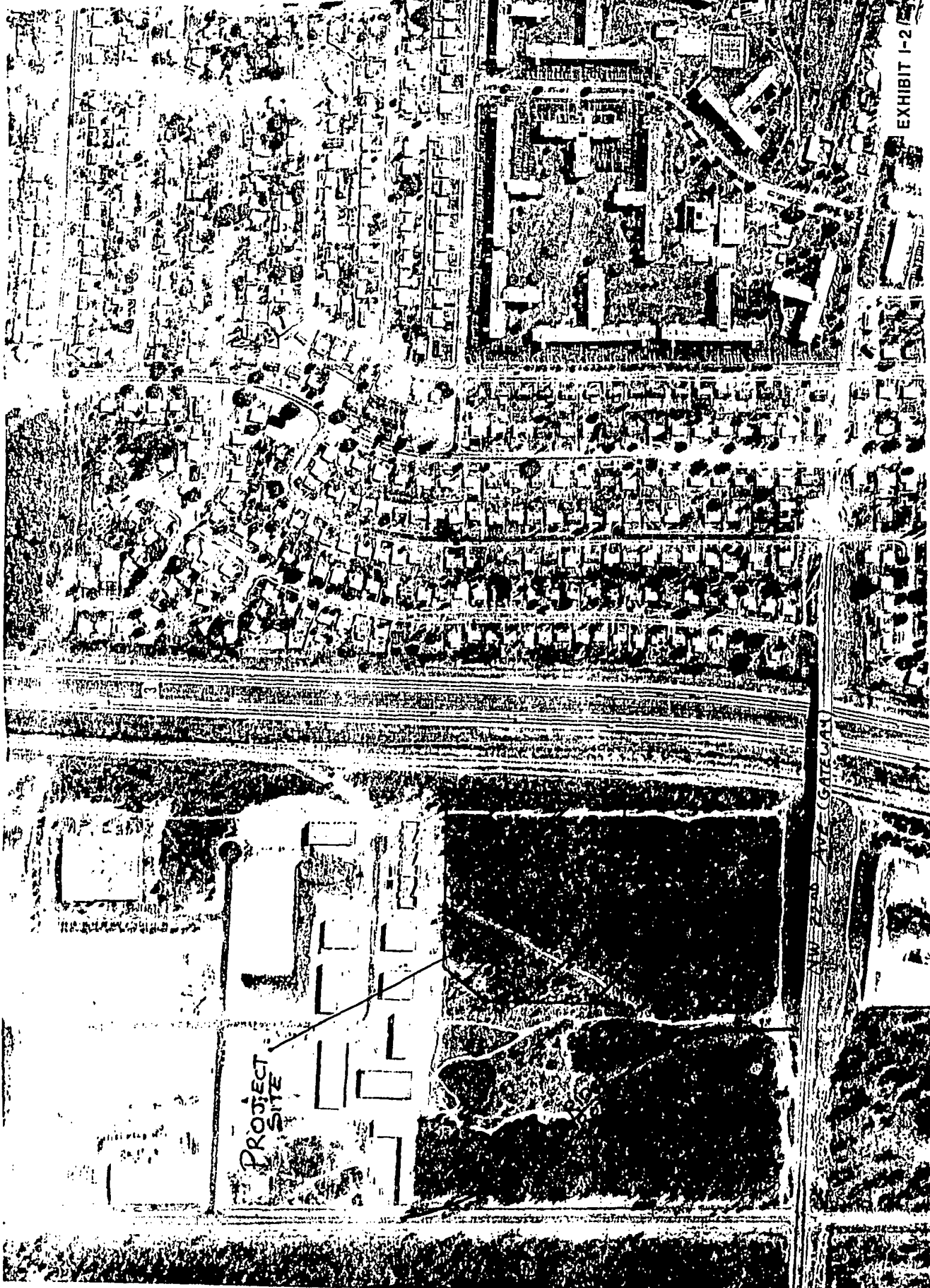
PALM BEACH COUNTY  
FLORIDA



TWP 45  
R1G 43  
SEC 16

LEGEND

- 1 MINER RD
- 2 NE 16TH AVE
- 3 INT 95
- 4 NE 3TH ST

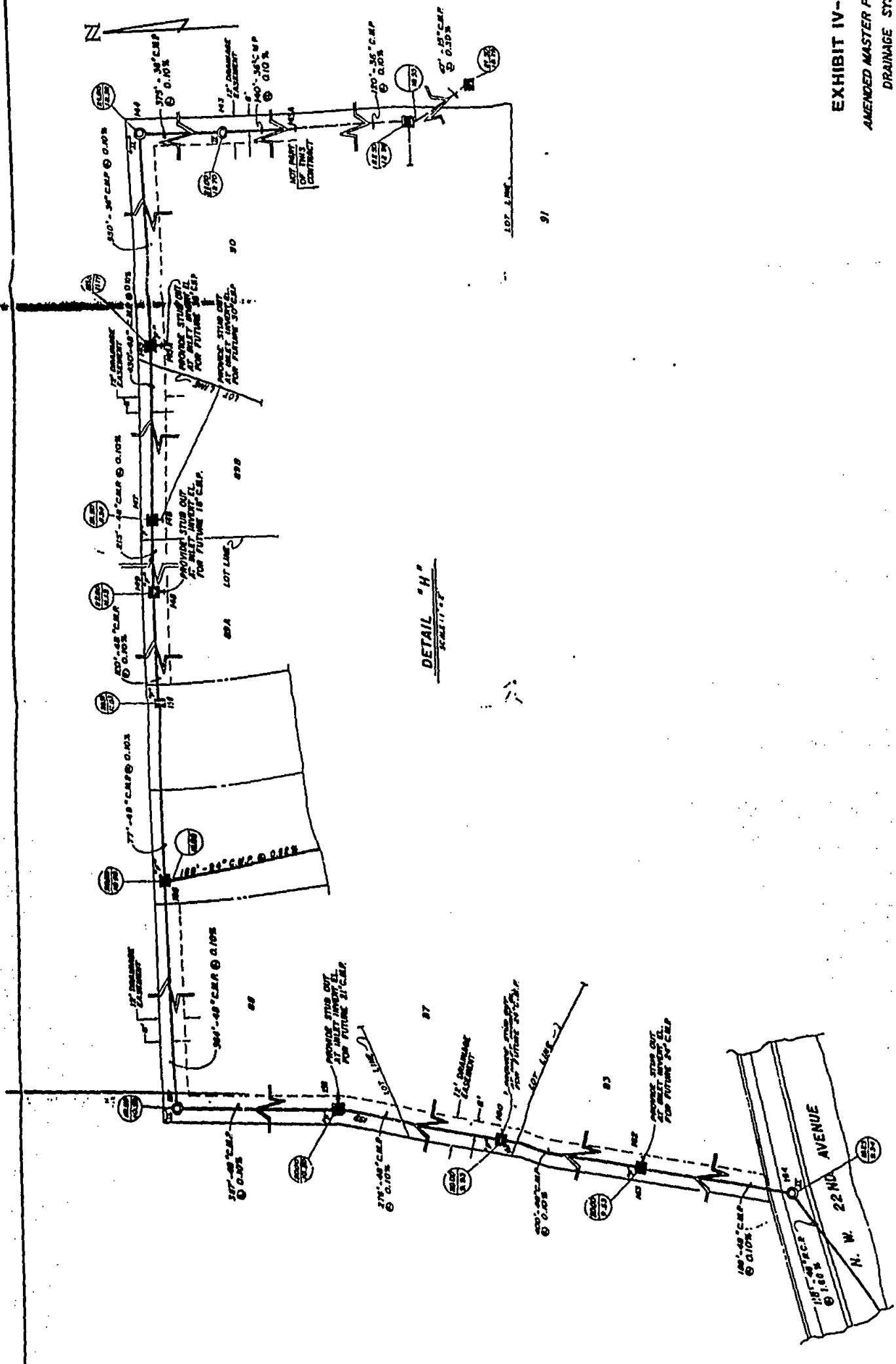


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DETAIL "H"  
SCALE 1" = 2'

91

EXHIBIT IV-3

AMENDED MASTER PLAN-DEC. 1987

DRAINAGE SYSTEM

DETAIL "H"

ROSSI AND MALAVASI ENGINEERS, INC. WEST PALM BEACH, FLORIDA	BOYNTON BEACH PARK OF COMMERCE FOR QUANTUM ASSOCIATES
DATE: 1988	PROJECT: 87-001
DRAWN BY: J. J. JONES	CHECKED BY: J. J. JONES
SCALE: 1" = 2'	DATE: 1988

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ROSSI AND MALAVASI ENGINEERS, INC. - Consulting Engineers

BY: R. Weiss

DATE: 12-24-87 PROJECT NAME: BOYNTON BEACH PARK OF COMMERCE SHEET NO. 6 of 9  
AMENDED MASTER PLAN JOB NO. 3424-86

STORM DRAINAGE DESIGN CRITERIA: Min. Time of Concentration - 18 Min. For Pervious Areas Use 45 FPM Flow.  
Minimum Street Crown Elevation = 12.00 M.G.V.D. Lake Water Surface = 8.00 N.G.V.D.

FROM	TO	Δ (ACRES)	A (ACRES)	CONC. TIME (min.)	I (IN/HR)	R	Q (cfs)	HYD. GRAD. (ft/ft)	PIPE DIA. (in.)	PIPE LENGTH (ft.)	HEAD LOSS (ft.)	HYD. GRAD. STAGE (MGVD)	INLET GRADE ELEV.	VELOCITY (ft/sec)
122	124	0.56	0.22	17	5.60	0.63	29.00	0.0094	30	143	1.34	19.15	22.31	
123	124	3.44	3.44	10	6.01	0.63	34.76	0.0069	24	20	0.14	17.95	--	
124	126	0.57	12.23	10	5.40	0.63	42.22	0.0005	36	76	0.65	17.81	21.25	
125	126	1.00	1.00	10	6.01	0.63	0.07	0.00665	18	20	0.13	17.29	--	
126	127	1.13	15.24	20	5.24	0.63	50.31	0.0057	42	177	1.01	17.16	21.25	
127	120	--	15.24	22	5.03	0.63	40.29	0.0053	42	195	1.03	16.15	21.55	
120	132	--	59.81	32	4.21	0.63	150.63	0.0035	72	253	0.09	15.12	22.50	
129	132	1.54	1.54	10	6.01	0.63	6.61	0.0044	18	14	0.06	14.29	--	
130	131	2.01	2.01	10	6.01	0.63	0.62	0.0044	21	14	0.06	14.66	--	
131	132	0.07	2.00	10	6.01	0.63	0.92	0.0046	21	37	0.17	14.40	21.74	
132	136	0.07	63.50	35	4.02	0.63	160.02	0.0037	72	300	1.11	14.23	21.76	
135	136	2.06	2.06	10	6.01	0.63	0.04	0.0045	21	14	0.06	13.10	--	
133	134	2.45	2.45	10	6.01	0.63	10.51	0.0035	24	14	0.05	13.34	--	
134	136	0.30	2.75	10	6.01	0.63	11.00	0.0045	24	37	0.17	13.29	10.50	
136	137	0.30	60.61	35	4.02	0.63	173.76	0.0042	72	50	0.21	13.12	10.50	
137	139	--	60.61	30	3.05	0.63	166.41	0.00305	72	255	0.90	12.91	19.25	
130	139	3.53	3.55	10	6.01	0.63	15.23	0.0076	24	10	0.00	12.01	--	
139	142	--	72.16	45	3.51	0.63	159.57	0.00355	72	625	2.22	11.93	10.00	
140	142	3.00	3.00	10	6.01	0.63	12.07	0.00525	24	10	0.05	9.76	--	
141	142	3.64	3.64	10	6.01	0.63	15.62	0.0027	30	20	0.05	9.76	--	
142	LAKE	1.30	00.10	47	3.42	0.63	172.76	0.0000	2000	203	1.71	9.71	12.50	
2														
143A	143 <sup>90</sup>	6.65	6.65	25	4.75	0.63	19.90	0.0018	36	140	0.25	20.03	--	
143	144 <sup>90</sup>	--	6.65	29	4.42	0.63	10.52	0.00250	36	375	0.59	20.50	19.75	
144	145 <sup>90</sup>	--	6.65	35	4.02	0.63	16.04	0.0013	36	550	0.72	19.99	20.00	
145	147	11.37	10.02	40	3.75	0.63	42.57	0.002	48	430	0.86	19.27	21.50	

B7B

TRI RAIL  
NW CORNER

TRI-RAIL  
SE  
CORNER

EXHIBIT IV-3

ROSSI AND MALAVASI ENGINEERS, INC. - Consulting Engineers

BY: S. Weiss

DATE: 12-24-87 PROJECT NAME: BOYNTON BEACH PARK OF COMMERCE SHEET NO. 7 of 9  
AMENDED MASTER PLAN JOB NO. 3424-86

STORM DRAINAGE DESIGN CRITERIA: Min. Time of Concentration - 18 Min. For Pervious Areas Use 45 FPM Flow.  
Minimum Street Crown Elevation = 12.80 M.G.V.D. Lake Water Surface = 8.50 M.G.V.D.

FROM	TO	Δ (ACRES)	A (ACRES)	CONC. TIME (min.)	I (IN/HR)	R	Q (cfs)	HYD. GRAD. (ft/ft)	PIPE DIA. (in.)	PIPE LENGTH (ft.)	HEAD LOSS (ft.)	HYD. GRAD. STAGE (MGVD)	INLET GRADE ELV.	VELOCITY (ft/sec)
147	149	4.77	22.79	42	3.65	0.63	52.41	0.0031	48	215	0.67	18.41	21.50	
149	150	1.00	23.79	44	3.56	0.63	53.36	0.00315	48	180	0.32	17.74	22.00	
150	156	0.89	24.68	45	3.51	0.63	54.57	0.0033	48	77	0.25	17.42	20.25	
151	153	0.50	0.50	20	5.24	0.63	1.65	0.00054	15	76	0.04	21.49	23.94	
152	153	3.26	3.26	20	5.24	0.63	10.76	0.0067	21	20	0.13	21.58	--	
153	154	0.50	4.26	22	5.03	0.63	13.50	0.0100	21	172	1.06	21.45	23.94	
154	155	--	4.26	24	4.04	0.63	12.99	0.01	21	140	1.40	19.59	21.70	
155	156	--	4.26	26	4.66	0.63	12.51	0.005	24	100	0.94	18.11	20.97	
156	157	0.09	29.03	40	3.30	0.63	63.32	0.0044	48	364	1.60	17.17	20.25	
157	159	--	29.03	53	3.19	0.63	59.95	0.004	48	307	1.95	15.57	18.50	
159	161	3.06	32.09	56	3.00	0.63	63.02	0.003	48	276	1.21	14.02	20.00	
161	163	0.05	37.94	60	2.96	0.63	70.75	0.0056	48	400	2.24	12.01	20.00	
163	164	4.23	42.17	62	2.90	0.63	77.04	0.0067	48	100	1.26	10.57	20.00	
164	165	--	42.17	63	2.03	0.63	75.72	0.0020	48 RCP	110	0.33	9.31	19.23	
165	183	0.70	42.07	63	2.05	0.63	76.97	0.0020	48 RCP	62	0.17	0.90	17.36	
166	167	0.65	0.65	10	6.01	0.63	2.79	0.00150	15	76	0.12	14.39	32.14	
167	168	0.65	1.30	10	6.01	0.63	5.50	0.0032	10	329	1.05	14.27	32.14	
168	169	--	1.30	11	6.59	0.63	5.40	0.00305	10	66	0.20	13.22	36.04	
169	172	0.26	1.56	12	6.40	0.63	6.29	0.0035	10 RCP	83	0.29	13.02	41.33	
170	171	0.00	0.00	10	6.01	0.63	0.34	--	15 RCP	50	--	12.73	52.30	
171	172	0.00	0.16	10	6.01	0.63	0.69	--	18 RCP	297	--	12.73	53.11	
172	176	0.23	1.95	16	5.74	0.63	7.05	0.0045	10 RCP	322	1.45	12.73	40.62	
175	176	1.54	1.54	10	6.01	0.63	6.61	0.0026	21	33	0.09	11.37	--	
173	174	3.44	3.44	10	6.01	0.63	14.74	0.0041	24 RCP	45	0.10	11.94	--	
174	176	0.55	3.99	11	6.59	0.63	16.57	0.0054	24 RCP	107	0.50	11.76	25.37	
176	180	0.55	0.03	21	5.13	0.63	25.95	0.0015	36 RCP	395	0.59	11.20	25.01	
177	178	3.46	3.46	10	6.01	0.63	14.04	0.0042	24 RCP	46	0.19	11.41	--	

JOB NO. 3424-86 ROSSI AND MALAVASI ENGINEERS, INC. CONSULTING ENGINEERS EXHIBIT IV-3

ROSSI AND MALAYSI ENGINEERS, INC. - Consulting Engineers

BY: S. Weiss

DATE: 12-24-87 PROJECT NAME: ROYNTON BEACH PARK OF COMMERCE SUBST NO. 8 of 9  
AMENDED MASTER PLAN JOB NO. 3424-86

STORM DRAINAGE DESIGN CRITERIA: Min. Time of Concentration - 10 Min. For Pervious Areas Use 45 FPM Flow.  
Minimum Street Crown Elevation = 12.00 W.G.V.D. Lake Water Surface = 8.00 N.G.V.D.

FROM	TO	Δ (ACRES)	A (ACRES)	CONC. TIME (min.)	I (IN/HR)	X	Q (cfs)	HYD. GRAD. (ft/ft)	PIPE DIA. (in.)	PIPE LENGTH (ft.)	HEAD LOSS (ft.)	HYD. GRAD. SPACE (MGVD)	INLET GRADE ELEV.	VELOCITY (ft./sec)
178	180	0.76	4.22	11	6.59	0.63	17.52	0.0058	24 RCP	92	0.53	11.22	20.31	
179	180	2.83	2.83	10	6.81	0.63	12.14	0.0088	21	30	0.26	10.95	--	
180	182	0.74	15.02	25	4.75	0.63	47.34	0.0021	42 RCP	400	0.84	10.69	20.31	
181	182	0.61	0.61	10	6.81	0.63	2.62	0.0016	15 RCP	54	0.09	9.94	18.80	
182A	182	3.43	3.43	10	6.81	0.63	14.72	0.0060	24	23	0.16	10.01	--	
182	183	0.50	20.36	29	4.42	0.63	56.69	0.0032	42 RCP	324	1.84	9.09	17.61	
183	185	0.73	63.98	66	2.75	0.63	110.81	0.0018	60 RCP	250	0.45	8.01	16.65	
184	185	0.39	0.39	10	6.81	0.63	1.67	0.00065	15 RCP	55	0.04	8.40	19.01	
185	LAKE	0.39	64.74	60	2.70	0.63	110.12	0.0017	72	210	0.36	8.36	18.43	
186A	186	2.23	2.23	10	6.81	0.63	9.57	0.0081	18 RCP	54	0.44	10.20	--	
186	187	0.49	2.72	10	6.81	0.63	11.67	0.0110	18 RCP	56	0.66	9.76	20.24	
187	LAKE	0.49	3.21	10	6.81	0.63	13.77	0.0137	18	80	1.10	9.10	19.39	
188	189	0.00	0.00	15	5.09	0.63	2.97	0.0019	15 RCP	92	0.17	8.71	18.21	
189	LAKE	0.00	1.60	16	5.74	0.63	5.79	0.0067	15	80	0.54	8.54	18.21	
190	192	3.14	3.14	20	5.24	0.63	10.37	0.0094	21	29	0.27	9.03	--	
191	192	3.00	3.00	20	5.24	0.63	9.90	0.0086	21	26	0.22	8.98	--	
192	193	1.30	7.52	21	5.13	0.63	30.40	0.0072	36	76	0.55	8.76	11.25	
193	LAKE	1.34	0.06	22	5.03	0.63	42.10	0.0037	42	58	0.21	8.21	11.25	
194	195	0.07	0.07	15	5.09	0.63	3.23	0.0054	15	76	0.42	9.62	11.25	
195	LAKE	0.07	1.74	16	5.74	0.63	6.29	0.02	15	60	1.20	9.20	11.25	
199	200	0.40	0.40	10	6.81	0.63	2.06	0.00090	15 RCP	45	0.04	8.26	19.31	
200	LAKE	0.40	0.96	10	6.81	0.63	4.12	0.015	18 RCP	145	0.22	8.22	20.07	

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EXHIBIT W-3



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Execution Date.....: 10-11-1995  
 Program Name.....: SCS -- (S-06/85)  
 Project Name.....: RPT-PAUL STATION  
 Engineer Name.....: PJS  
 Project Area.....: 13 acres  
 Ground Storage.....: 2.9 inches  
 Termination Discharge.....: 1 cfs  
 Distribution Type.....: SFWD  
 Return Frequency.....: 1 years  
 Rainfall Duration.....: 1 day  
 24-hr Rainfall.....: 7.5 inches  
 Reporting Sequence.....: Standardized

Bleeder Information.....: Invert--(NGVD)-Ft Diameter-Ft Width-Ft  
 Circular.....: 12 .45  
 Storage Information.....: Component Storage Area Start Elev Ending Elev  
 Name Type (acres) (NGVD-ft) (NGVD-ft)  
 Entry No. 1.....: DETENTION1 L .26 12 17  
 Entry No. 2.....: DETENTION L .85 17 22  
 Entry No. 3.....: IMPERVIOUS L 8.28 21 25  
 Entry No. 4.....: PERVIOUS L 2.66 19.5 20  
 Entry No. 5.....: LAKE V 1.12 12

Point No.	Stage (ft)	Storage (af)	Discharge (cfs)
1	12.00	0.00	0.00
2	12.50	0.57	0.40
3	13.00	1.15	0.67
4	13.50	1.74	0.86
5	14.00	2.34	1.02
6	14.50	2.96	1.16
7	15.00	3.59	1.28
8	15.50	4.24	1.39
9	16.00	4.90	1.49
10	16.50	5.57	1.58
11	17.00	6.25	1.67
12	17.50	6.96	1.76
13	18.00	7.71	1.84
14	18.50	8.51	1.92
15	19.00	9.34	1.99
16	19.50	10.22	2.07
17	20.00	11.17	2.14
18	20.50	12.22	2.20
19	21.00	13.38	2.27
20	21.50	14.91	2.33
21	22.00	17.05	2.39

----- R E S E R V O I R -----

Time (hr)	Rain Fall (in)	Accum. Runoff (in)	Basin Discharge (cfs)	Accum. Inflow (af)	Volume (af)	Accum. Outflow (af)	Instant Discharge (cfs)	Average Discharge (cfs)	Stage (ft)
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00
4.00	0.34	0.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00
8.00	1.03	0.09	0.8	0.1	0.1	0.0	0.1	0.0	12.07
10.00	1.50	0.33	2.0	0.3	0.3	0.0	0.2	0.1	12.26
11.00	2.02	0.57	3.5	0.6	0.5	0.0	0.3	0.3	12.43
11.50	2.39	0.82	6.0	0.8	0.8	0.1	0.5	0.4	12.61
11.75	3.66	1.76	45.8	1.8	1.7	0.1	0.7	0.6	13.06
12.00	4.92	2.82	51.4	2.8	2.7	0.1	1.0	0.8	13.88
12.30	5.47	3.30	11.7	3.3	3.2	0.1	1.2	1.1	14.57
13.00	3.75	3.86	6.2	3.6	3.4	0.2	1.2	1.2	14.77
14.00	5.14	3.90	3.8	3.9	3.6	0.3	1.3	1.2	14.98
16.00	5.50	4.33	2.5	4.3	3.8	0.5	1.3	1.3	15.16
20.00	7.14	4.82	1.5	4.8	3.9	0.9	1.3	1.3	15.21
24.00	7.50	5.16	1.0	5.2	3.8	1.4	1.3	1.3	15.14
30.00	7.50	5.16	0.0	5.2	3.2	2.0	1.2	1.3	14.66
36.00	7.50	3.16	0.0	5.2	2.6	2.6	1.1	1.1	14.21
40.00	7.50	3.16	0.0	5.2	2.3	2.9	1.0	1.0	13.93

Maximum Stage = 15.21 feet  
 Maximum Discharge = 1.32 cfs

Execution Date..... 03-24-1995

Program Name..... SCS -- (S) (S) (S)

Project Name..... TRILLIATION STATION  
 Engineer's Name..... RJB  
 Project Area..... 12 acres  
 Ground Storage..... 2.5 inches  
 Formation Discharge..... 1 cfs  
 Distribution Type..... SFWMD  
 Return Frequency..... 25 years  
 Rainfall Duration..... 3 -day  
 24-hr Rainfall..... 15.6 inches  
 Reporting Sequence..... Standardized

Bleeder Information.....		Invert-NGVD-Ft	Diameter-Ft	Width-Ft		
Circular.....	12	12	12			
Storage Information.....		Component	Storage (af)	Area (acres)	Start Elev (NGVD-ft)	Ending Elev (NGVD-ft)
Entry No. 1.....	DETENTION I	-	0.25	12	17	
Entry No. 2.....	DETENTION	-	0.27	17	22	
Entry No. 3.....	IMPERVIOUS	L	8.23	21	25	
Entry No. 4.....	IMPERVIOUS	L	2.64	19.5	20	
Entry No. 5.....	LA E	V	1.12	12		

Point No.	Stage (ft)	Storage (af)	Discharge (cfs)
1	12.00	0.00	0.00
2	12.50	0.57	0.24
3	13.00	1.15	0.38
4	13.50	1.74	0.48
5	14.00	2.34	0.56
6	14.50	2.96	0.63
7	15.00	3.59	0.69
8	15.50	4.24	0.75
9	16.00	4.90	0.81
10	16.50	5.57	0.86
11	17.00	6.25	0.91
12	17.50	6.96	0.95
13	18.00	7.71	0.99
14	18.50	8.51	1.04
15	19.00	9.34	1.08
16	19.50	10.22	1.12
17	20.00	11.17	1.15
18	20.50	12.22	1.19
19	21.00	13.38	1.22
20	21.50	14.91	1.26
21	22.00	17.05	1.29

----- R E S E R V O I R -----									
Time (hr)	Rain Accum. (in)	Runoff (in)	Basin Discharge (cfs)	Accum. Inflow (af)	Volume (af)	Accum. Outflow (af)	Instant Discharge (cfs)	Average Discharge (cfs)	Stage (ft)
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00
4.00	0.38	0.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00
8.00	0.76	0.02	0.2	0.0	0.0	0.0	0.0	0.0	12.02
12.00	1.14	0.13	0.4	0.1	0.1	0.0	0.0	0.0	12.10
16.00	1.52	0.29	0.6	0.3	0.3	0.0	0.1	0.1	12.22
20.00	1.90	0.50	0.7	0.5	0.4	0.1	0.2	0.1	12.36
24.00	2.28	0.74	0.8	0.7	0.6	0.2	0.2	0.2	12.51
28.00	2.65	1.13	1.2	1.1	0.9	0.2	0.3	0.3	12.76
32.00	3.03	1.55	1.3	1.5	1.2	0.4	0.4	0.3	13.03
36.00	3.44	1.99	1.4	2.0	1.5	0.5	0.4	0.4	13.29
40.00	4.49	2.46	1.4	2.5	1.8	0.6	0.5	0.5	13.55
44.00	5.05	2.93	1.5	2.9	2.1	0.8	0.5	0.5	13.81
48.00	5.60	3.42	1.5	3.4	2.4	1.0	0.6	0.5	14.06
52.00	6.30	4.06	2.4	4.1	2.9	1.2	0.6	0.6	14.41
56.00	7.74	3.38	5.3	5.4	4.0	1.4	0.7	0.7	15.25
58.00	8.92	6.50	7.9	6.5	5.0	1.5	0.8	0.8	15.99
59.00	9.80	7.33	11.5	7.5	5.7	1.6	0.9	0.8	15.53
59.50	10.58	8.07	18.1	8.1	6.4	1.6	0.9	0.9	17.00
59.75	13.21	10.62	123.1	10.6	9.0	1.7	1.0	0.9	17.98
60.00	15.83	13.18	124.3	13.2	11.5	1.7	1.1	1.1	19.50
60.50	16.97	14.30	27.1	14.3	12.6	1.7	1.2	1.2	20.53
61.00	17.37	14.89	14.1	14.9	13.1	1.8	1.2	1.2	20.82
62.00	18.36	15.67	8.6	15.7	13.8	1.9	1.2	1.2	21.11
64.00	19.33	16.62	5.6	16.6	14.5	2.1	1.2	1.2	21.56
68.00	20.45	17.73	3.4	17.7	15.2	2.3	1.3	1.3	21.57
72.00	21.20	18.47	2.2	18.5	15.6	2.9	1.3	1.3	21.65
80.00	21.20	18.47	0.0	18.5	14.7	3.7	1.3	1.3	21.44
88.00	21.20	18.47	0.0	18.5	13.9	4.6	1.2	1.2	21.17
96.00	21.20	18.47	0.0	18.5	13.1	5.4	1.2	1.2	20.87
104.00	21.20	18.47	0.0	18.5	12.3	6.2	1.2	1.2	20.53
112.00	21.20	18.47	0.0	18.5	11.5	7.0	1.2	1.2	20.16
120.00	21.20	18.47	0.0	18.5	10.8	7.7	1.1	1.1	19.78
132.00	21.20	18.47	0.0	18.5	9.6	8.8	1.1	1.1	19.17
144.00	21.20	18.47	0.0	18.5	8.6	9.9	1.0	1.1	18.55
153.25	21.20	18.47	0.0	18.5	7.8	10.7	1.0	1.0	18.06

Maximum Stage = 21.65 feet  
 Maximum Discharge = 1.27 cfs

Inception Date..... 05-24-1998

Program Name..... SCS -- 05/05/851

Project Name..... TRI-RAIL STATION  
 Engineer's Name..... PJG  
 Project Area..... 12 acres  
 Ground Storage..... 2.5 inches  
 Termination Discharge..... 1 cfs  
 Distribution Type..... SFWMD  
 Return Frequency..... 100 years  
 Rainfall Duration..... 3-day  
 24-hr Rainfall..... 19.7 inches  
 Reporting Sequence..... Standardized

Storage Information.....	Component Name	Storage Type	Area (acres)	Start Elev (NGVD-ft)	Ending Elev (NGVD-ft)
Entry No. 1.....	DETENTION1	L	.26	12	17
Entry No. 2.....	DETENTION	L	.83	17	22
Entry No. 3.....	IMPERVIOUS	L	8.28	21	25
Entry No. 4.....	PERVIOUS	L	2.66	19.5	20
Entry No. 5.....	LAKE	V	1.12	12	

Point No.	Stage (ft)	Storage (af)	Discharge (cfs)
1	12.00	0.00	0.00
2	12.50	0.57	0.00
3	13.00	1.15	0.00
4	13.50	1.71	0.00
5	14.00	2.28	0.00
6	14.50	2.96	0.00
7	15.00	3.59	0.00
8	15.50	4.24	0.00
9	16.00	4.92	0.00
10	16.50	5.57	0.00
11	17.00	6.25	0.00
12	17.50	6.96	0.00
13	18.00	7.71	0.00
14	18.50	8.51	0.00
15	19.00	9.34	0.00
16	19.50	10.22	0.00
17	20.00	11.17	0.00
18	20.50	12.22	0.00
19	21.00	13.38	0.00
20	21.50	14.91	0.00
21	22.00	17.05	0.00
22	22.50	19.80	0.00
23	23.00	23.13	0.00
24	23.50	27.04	0.00
25	24.00	31.53	0.00
26	24.50	36.60	0.00
27	25.00	42.25	0.00

----- R E S E R V O I R -----									
Time (hr)	Rain (in)	Accum. Runoff (in)	Basin Discharge (cfs)	Accum. Inflow (af)	Volume (af)	Accum. Outflow (af)	Instant Discharge (cfs)	Average Discharge (cfs)	Stage (ft)
0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00
4.00	0.48	0.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00
8.00	0.96	0.07	0.4	0.1	0.1	0.0	0.0	0.0	12.06
12.00	1.44	0.26	0.7	0.3	0.3	0.0	0.0	0.0	12.22
16.00	1.92	0.51	0.9	0.3	0.5	0.0	0.0	0.0	12.44
20.00	2.40	0.82	1.0	0.8	0.8	0.0	0.0	0.0	12.71
24.00	2.88	1.16	1.1	1.2	1.2	0.0	0.0	0.0	13.00
28.00	3.36	1.70	1.7	1.7	1.7	0.0	0.0	0.0	13.45
32.00	4.27	2.27	1.8	2.3	2.3	0.0	0.0	0.0	13.92
36.00	4.97	2.87	1.8	2.9	2.9	0.0	0.0	0.0	14.41
40.00	5.67	3.49	1.9	3.5	3.5	0.0	0.0	0.0	14.90
44.00	6.37	4.12	1.9	4.1	4.1	0.0	0.0	0.0	15.39
48.00	7.07	4.76	2.0	4.8	4.8	0.0	0.0	0.0	15.88
52.00	7.96	5.59	3.1	5.6	5.6	0.0	0.0	0.0	16.49
56.00	9.77	7.30	6.8	7.3	7.3	0.0	0.0	0.0	17.68
58.00	11.27	8.74	10.1	8.7	8.7	0.0	0.0	0.0	18.58
59.00	12.37	9.81	14.8	9.8	9.8	0.0	0.0	0.0	19.18
59.50	13.36	10.76	23.2	10.8	10.8	0.0	0.0	0.0	19.66
59.75	16.68	14.01	157.2	14.0	14.0	0.0	0.0	0.0	20.57
60.00	20.00	17.28	158.2	17.3	17.3	0.0	0.0	0.0	21.67
60.50	21.43	18.70	34.4	18.7	18.7	0.0	0.0	0.0	22.24
61.00	22.18	19.44	17.9	19.4	19.4	0.0	0.0	0.0	22.40
62.00	23.19	20.44	10.9	20.4	20.4	0.0	0.0	0.0	22.58
64.00	24.41	21.64	7.1	21.6	21.6	0.0	0.0	0.0	22.77
68.00	25.83	23.05	4.3	23.1	23.1	0.0	0.0	0.0	22.98
72.00	26.77	23.99	2.8	24.0	24.0	0.0	0.0	0.0	23.11

Maximum Stage = 23.11 feet  
 Maximum Discharge = 0.00 cfs

See

MAPS S-1, S-2 + S-3

in Map  
Section of  
Microfiche



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

**M A P S  
FOR PERMIT NO.**

50-01503-S,0

APPLICATION NO. 950621-20

# 7 OF 23

(BOX NO.)

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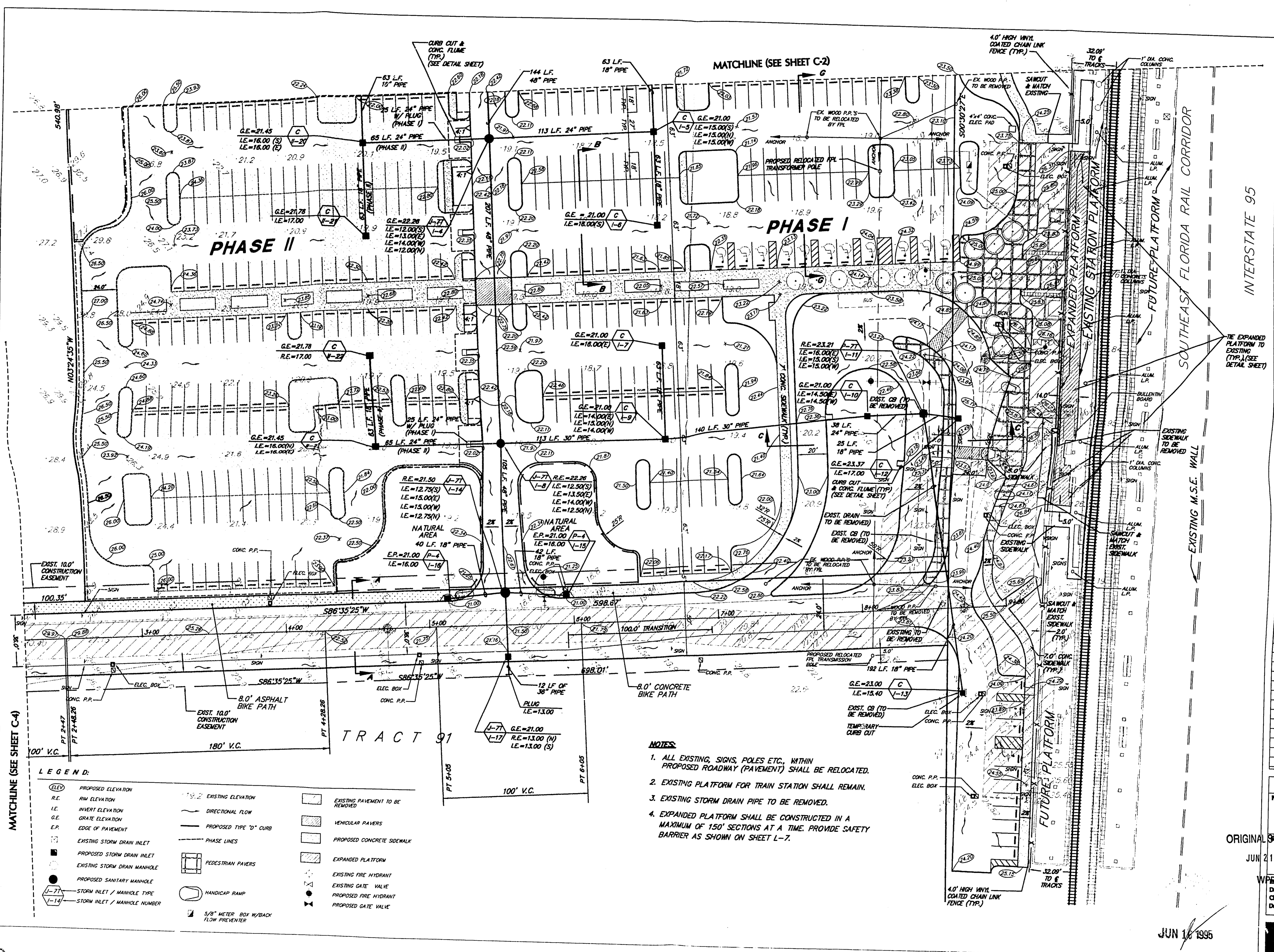






**EXHIBIT 4**

DATE: 06/01/95  
DRAWN BY: GMM/OTZ  
CHECKED BY: FJG/BNY  
DATE: 01 JUNE 1995



**LEGEND:**

(ELEV)	PROPOSED ELEVATION	(ELEV)	EXISTING ELEVATION	(Hatched)	EXISTING PAVEMENT TO BE REMOVED
R.E.	RAW ELEVATION	(Dashed)	DIRECTIONAL FLOW	(Hatched)	VEHICULAR PAVERS
I.E.	INVERT ELEVATION	(Dashed)	PROPOSED TYPE 10" CURB	(Hatched)	PROPOSED CONCRETE SIDEWALK
G.E.	GRATE ELEVATION	(Dashed)	PHASE LINES	(Hatched)	EXPANDED PLATFORM
E.P.	EDGE OF PAVEMENT	(Dashed)	PEDESTRIAN PAVERS	(Hatched)	EXISTING FIRE HYDRANT
(Symbol)	EXISTING STORM DRAIN INLET	(Symbol)	5/8" METER BOX W/BACK FLOW PREVENTER	(Symbol)	EXISTING GATE VALVE
(Symbol)	PROPOSED STORM DRAIN INLET	(Symbol)		(Symbol)	PROPOSED FIRE HYDRANT
(Symbol)	EXISTING STORM DRAIN MANHOLE	(Symbol)		(Symbol)	PROPOSED GATE VALVE
(Symbol)	PROPOSED SANITARY MANHOLE	(Symbol)		(Symbol)	
(Symbol)	STORM INLET / MANHOLE TYPE	(Symbol)		(Symbol)	
(Symbol)	STORM INLET / MANHOLE NUMBER	(Symbol)		(Symbol)	

- NOTES:**
1. ALL EXISTING, SIGNS, POLES ETC., WITHIN PROPOSED ROADWAY (PAVEMENT) SHALL BE RELOCATED.
  2. EXISTING PLATFORM FOR TRAIN STATION SHALL REMAIN.
  3. EXISTING STORM DRAIN PIPE TO BE REMOVED.
  4. EXPANDED PLATFORM SHALL BE CONSTRUCTED IN A MAXIMUM OF 150' SECTIONS AT A TIME, PROVIDE SAFETY BARRIER AS SHOWN ON SHEET L-7.

Prepared by: **CRANEN THOMPSON & ASSOCIATES INC.**  
ENGINEERS • PLANNERS • SURVEYORS  
3807 NW 53rd Street - Fort Lauderdale, Florida 33309  
(954) 381-8400

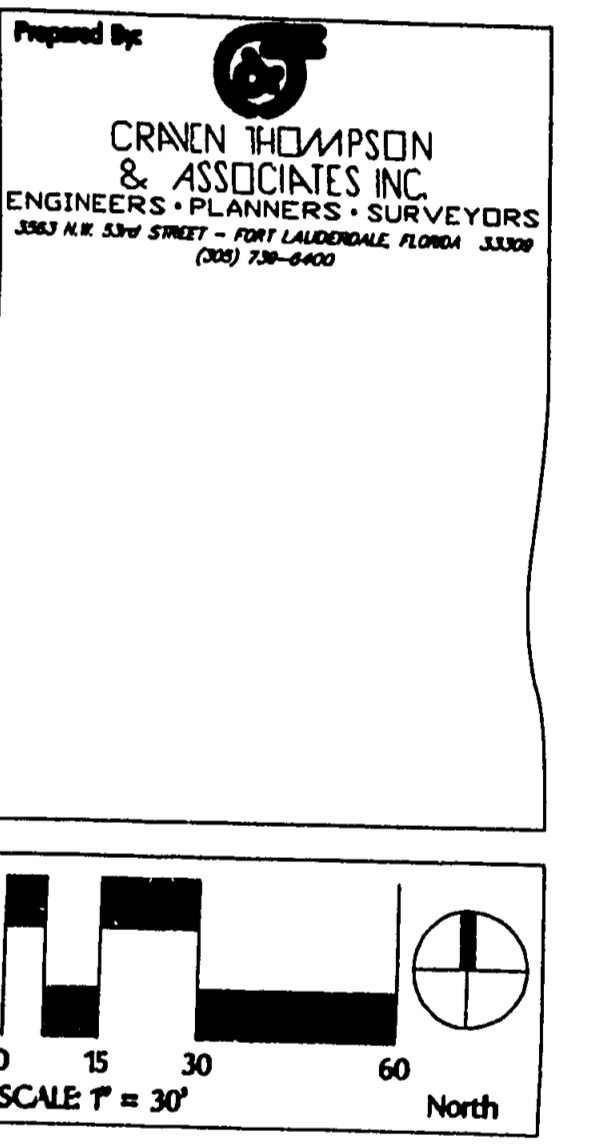
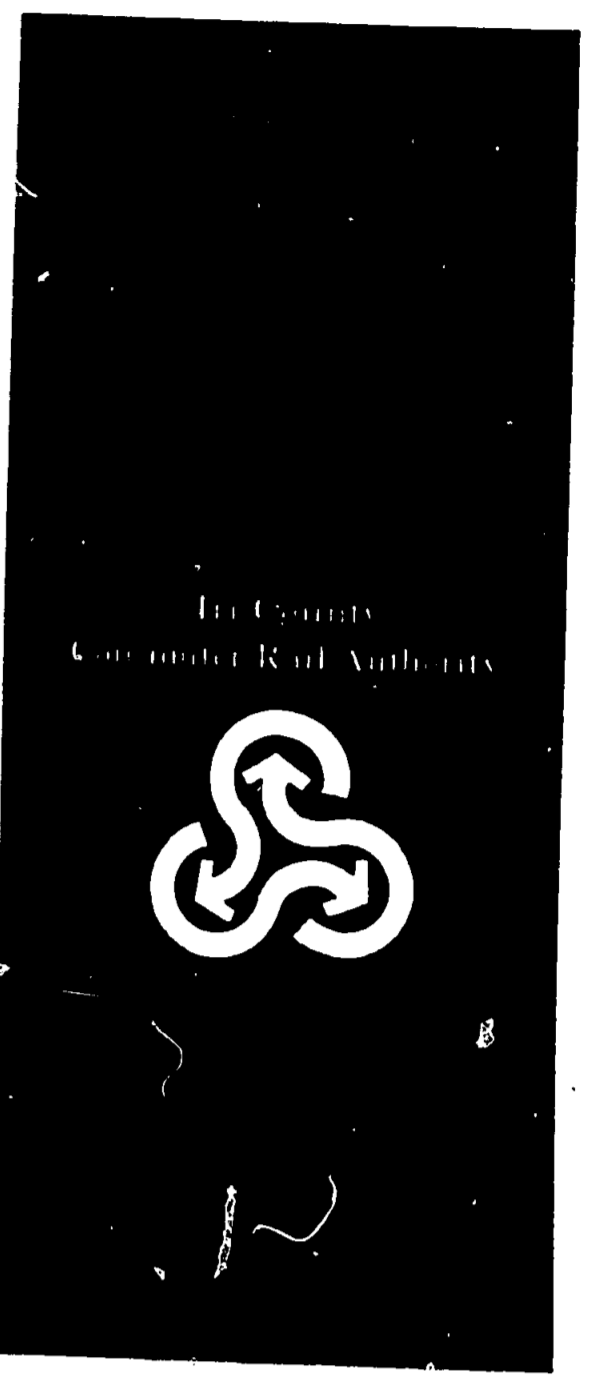
Project: **TRICOUNTY COMMUTER RAIL AUTHORITY  
BOYNTON BEACH STATION  
BOYNTON BEACH, FLORIDA**

ORIGINAL SUBMITTAL  
JUN 21 1995  
PAVING, GRADING & DRAINAGE PLAN

Project No: 93-0055  
Drawn By: GMM/OTZ  
Checked By: FJG/BNY  
Date: 01 JUNE 1995

Sheet No: **C-3**

58-01503-3  
950621-20

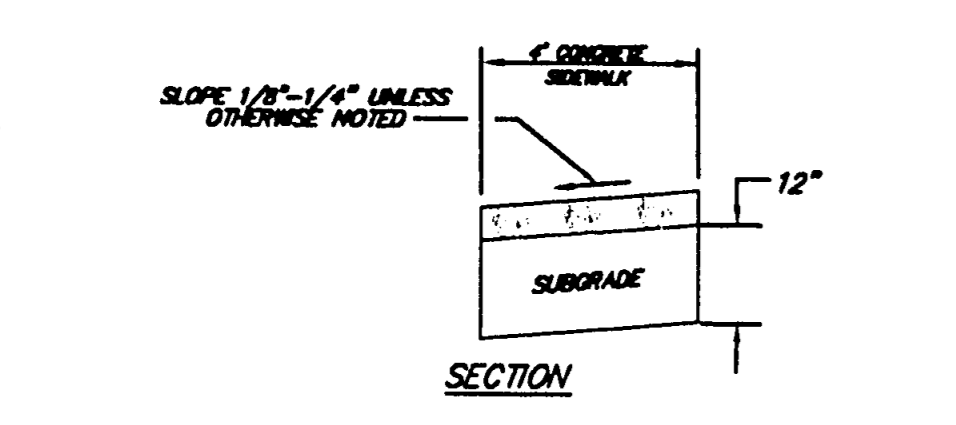
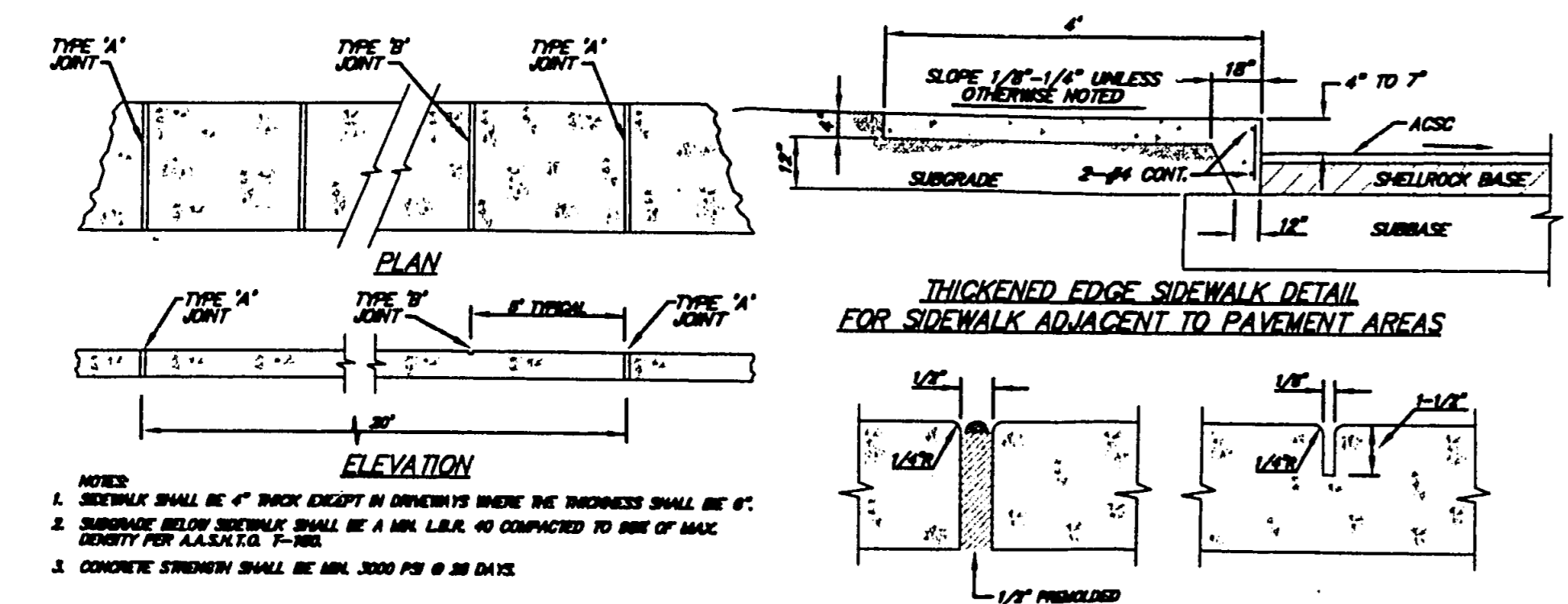


DATE	REVISIONS

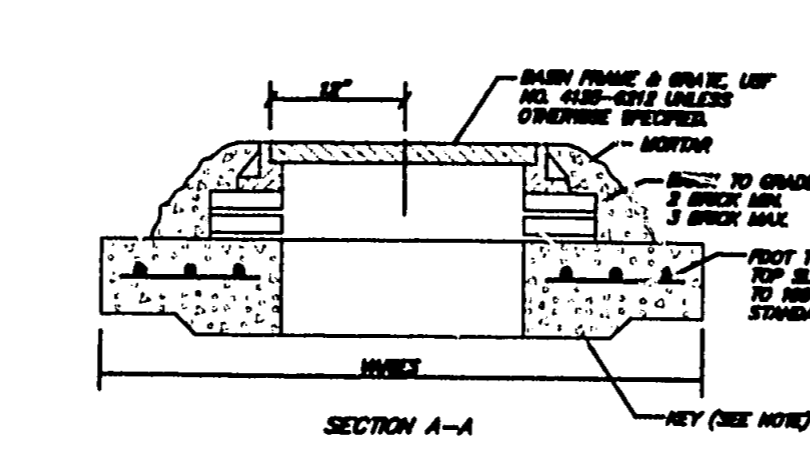
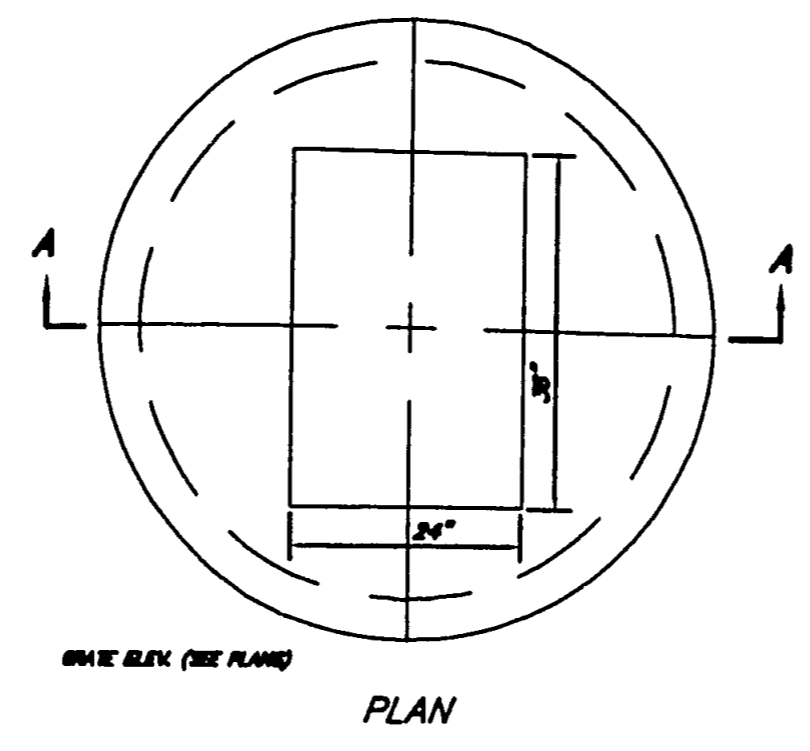
JUN 14 1995



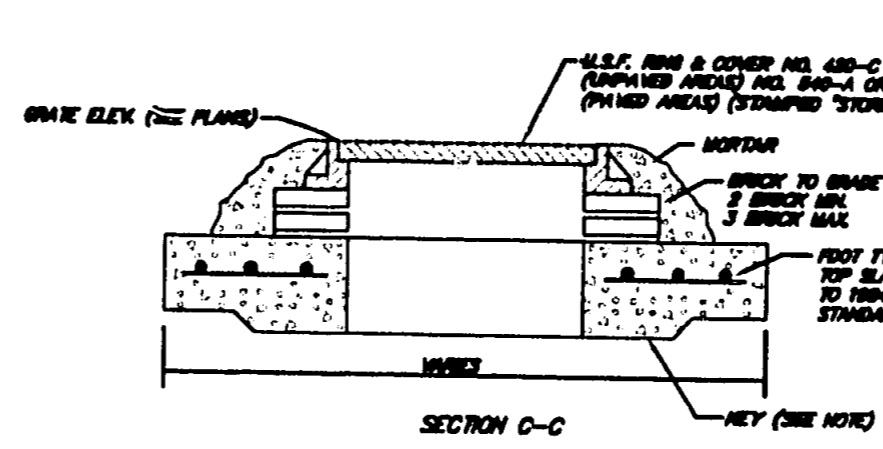
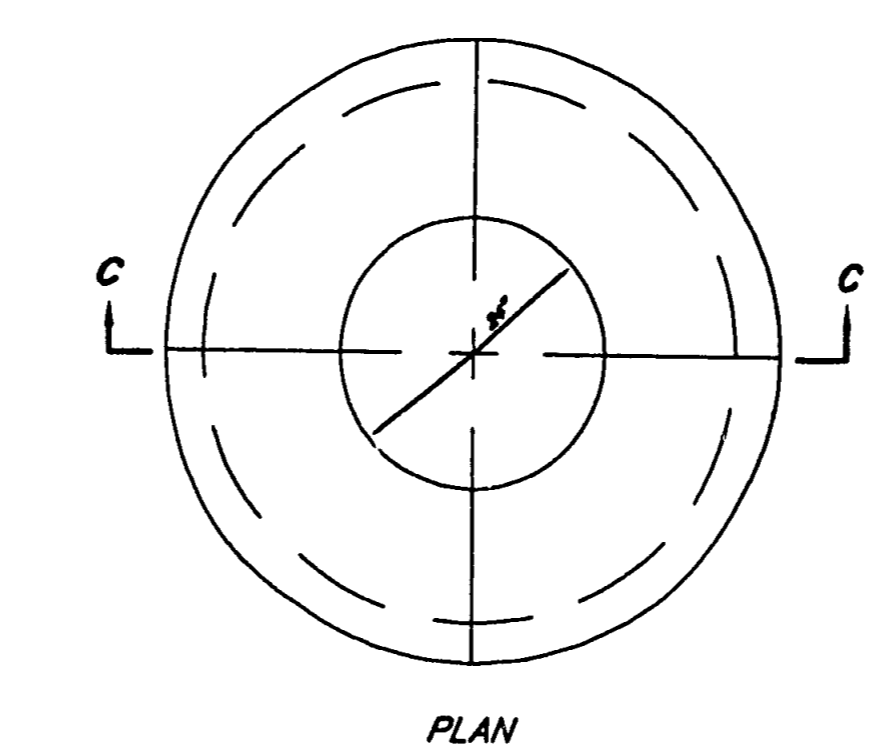




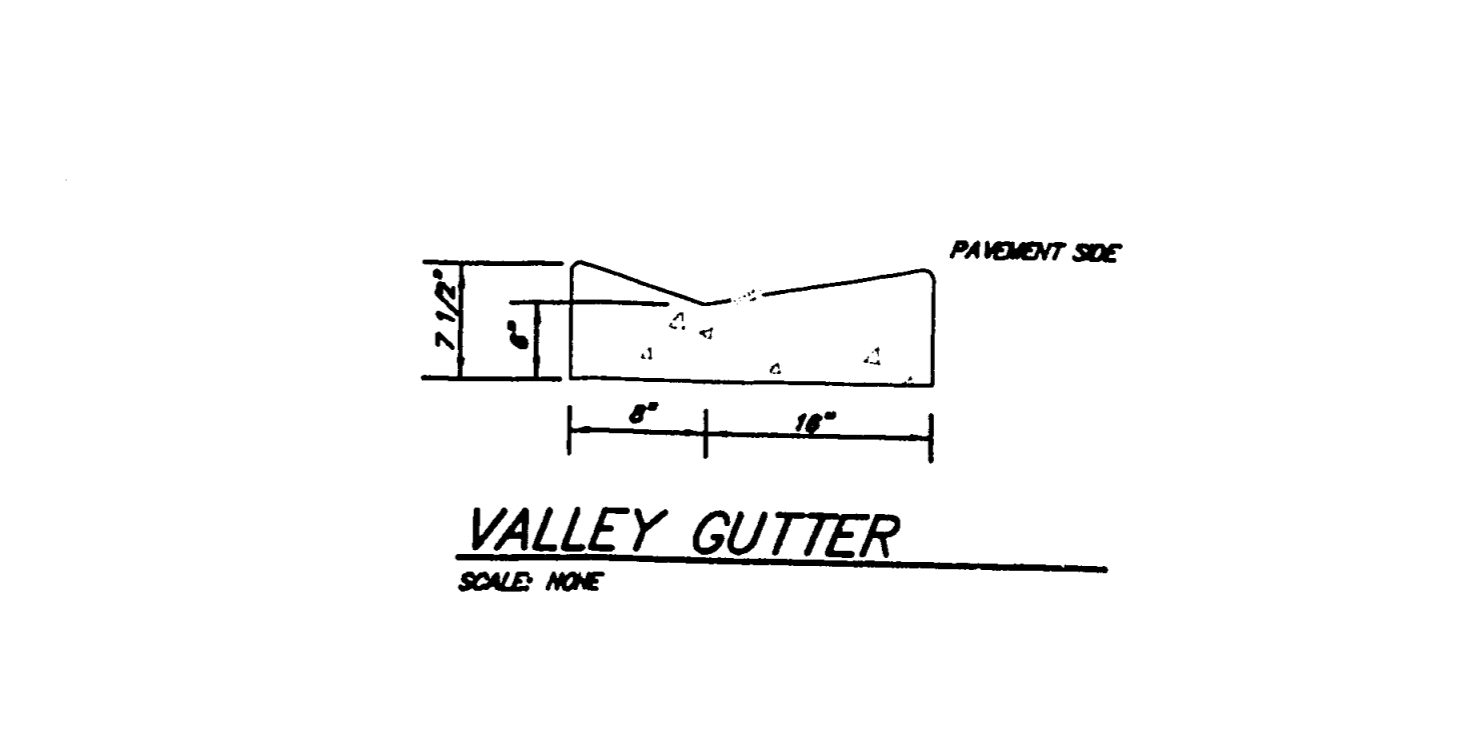
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SCALE: NONE



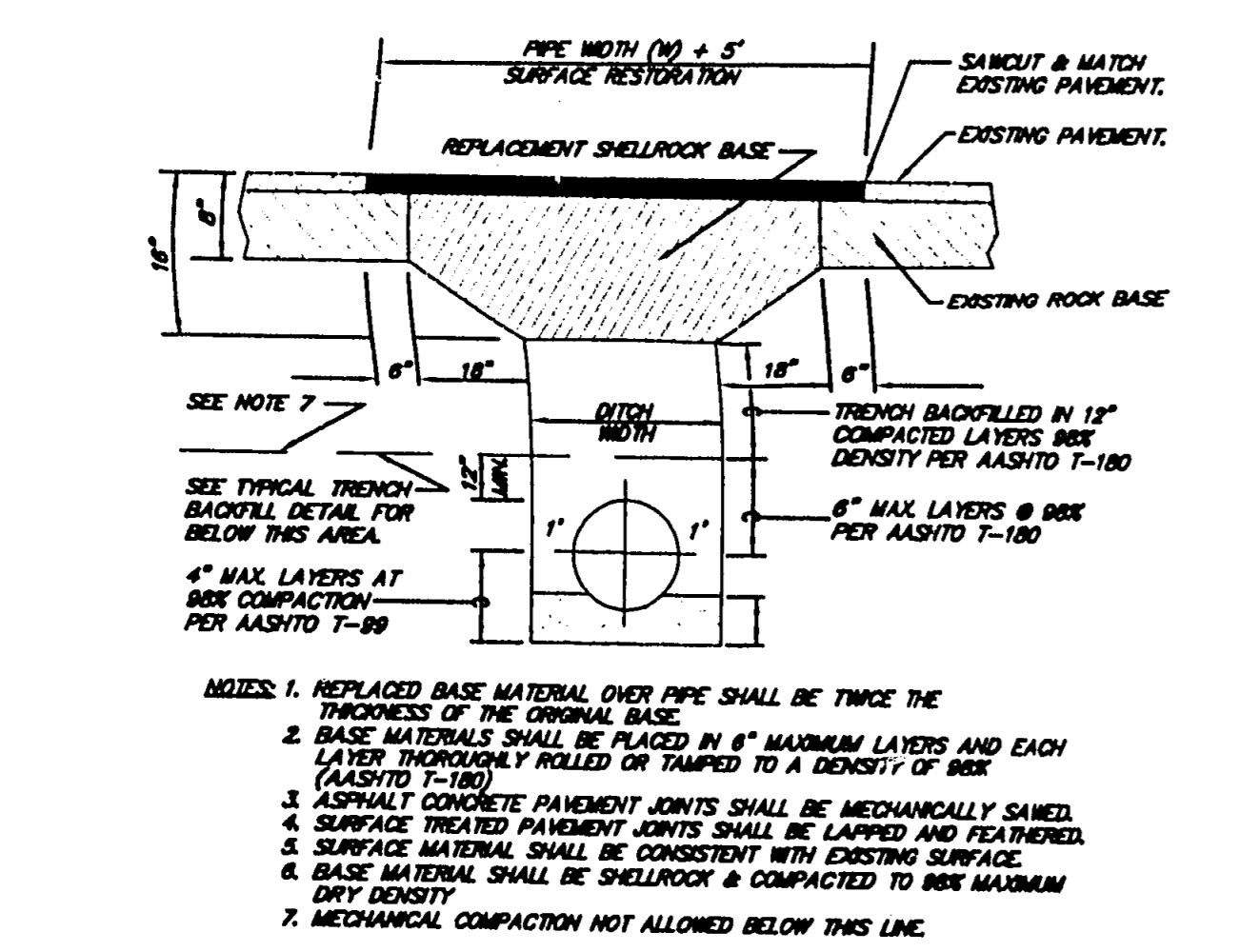
**TOP SLAB DETAIL**  
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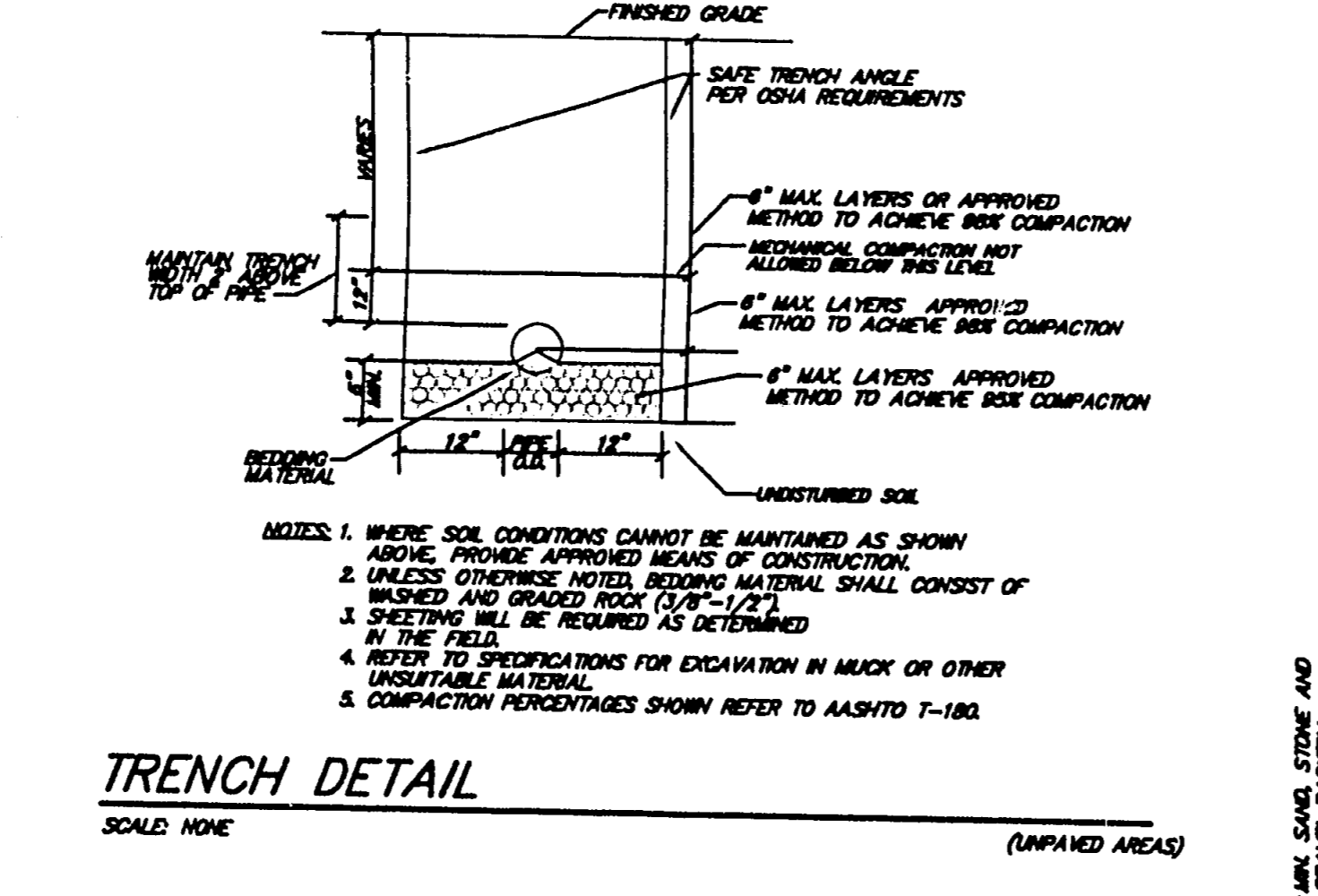
**VALLEY GUTTER**  
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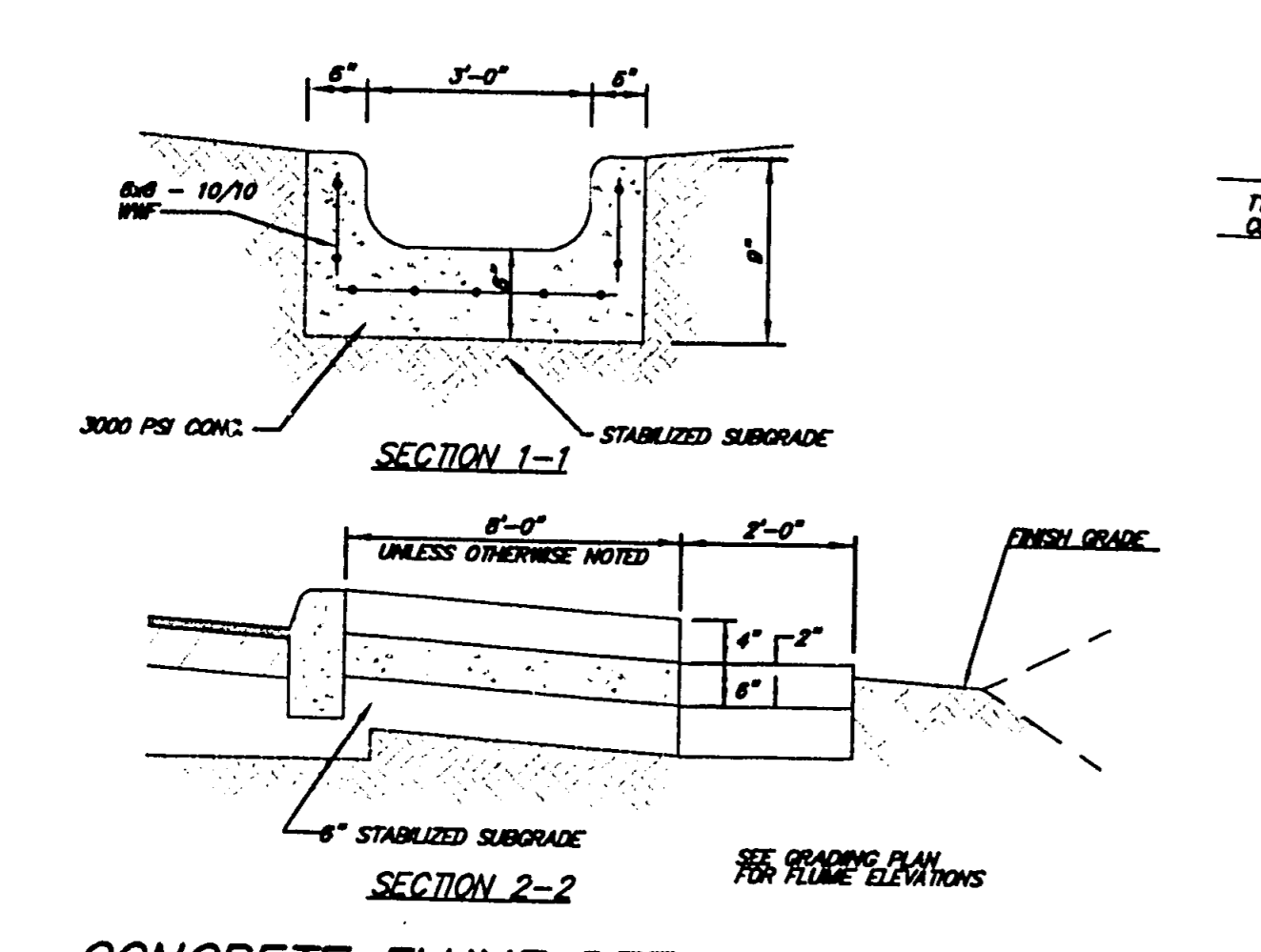
**DRAINAGE STRUCTURE BOTTOM DETAIL**  
SCALE: NONE



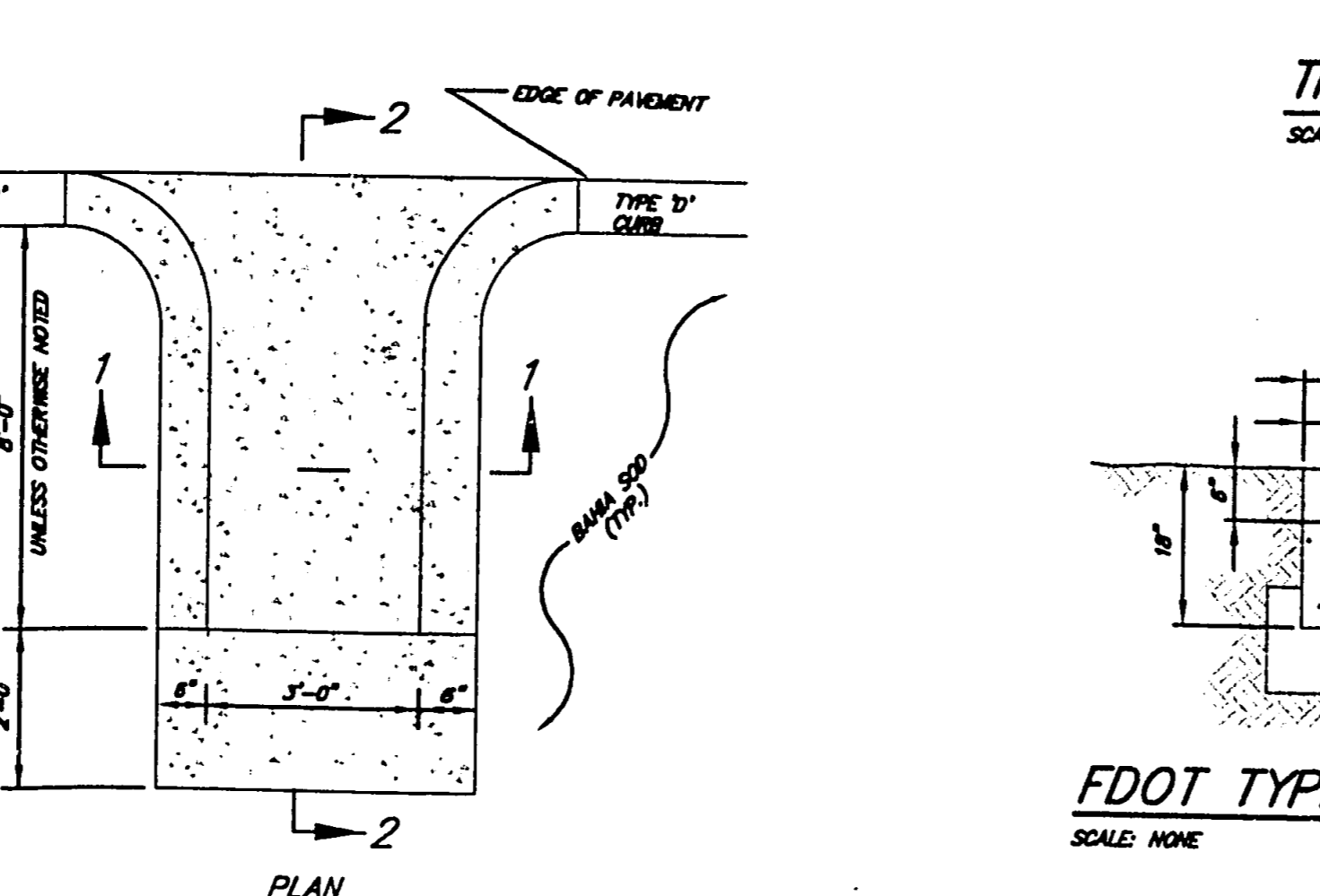
**TRENCH DETAIL**  
SCALE: NONE



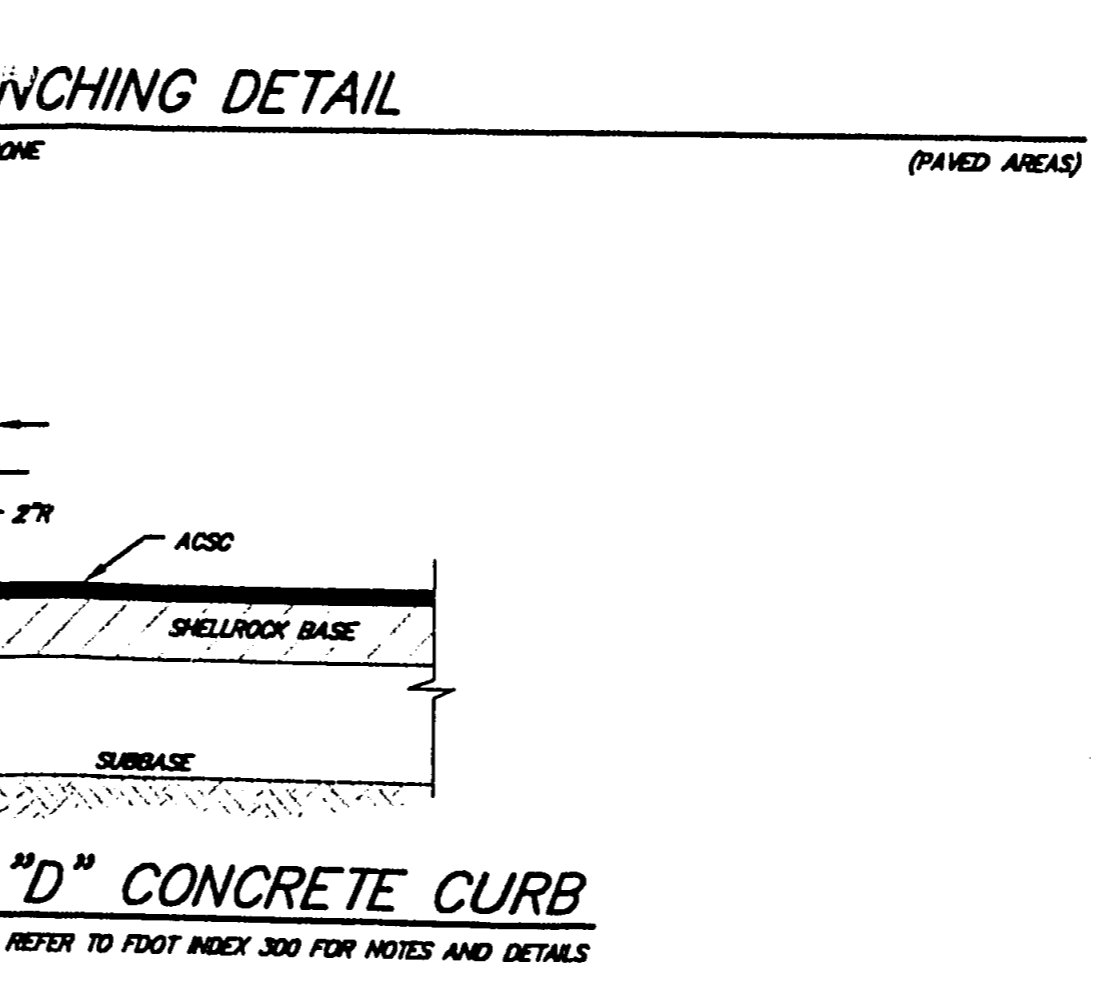
**TRENCHING DETAIL**  
SCALE: NONE



**CONCRETE FLUME DETAIL**  
SCALE: NONE



**FDOT TYPE "D" CONCRETE CURB**  
SCALE: NONE



**TYPE "C" CATCH BASIN**  
SCALE: NONE

Prepared By:  
**CRANEN THOMPSON & ASSOCIATES INC.**  
ENGINEERS - PLANNERS - SURVEYORS  
3067 N.W. 53rd STREET - FORT LAUDERDALE, FLORIDA 33309  
(305) 758-6400

DATE: \_\_\_\_\_ REVISIONS: \_\_\_\_\_

0 15 30 60  
SCALE: 1" = 30'  
North

Project: **TRICOUNTY COMBATEL RAIL AUTHORITY BOYNTON BEACH STATION BOYNTON BEACH, FLORIDA**

Sheet Title: **PAVING, GRADING & DRAINAGE DETAIL SHEET 1**

Project No: 95-0025  
Drawn By: GAMMOTIZ  
Checked By: FJCRNEY  
Date: 01 JUNE 1995

Sheet No: **C-5**

JUN 18 1995

EXHIBIT 6



**SOUTH FLORIDA WATER  
MANAGEMENT DISTRICT**

**CONVERSION FILE**

**PERMIT NUMBER:**

50-01503-S

**ISSUED DATE:**

July 29, 2003



# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • TOLL FREE 1-800-432-2048 • TDD (561) 697-2574  
Mailing Address: P.O. Box 24080, West Palm Beach, FL 33416-0680 • www.sfwmd.gov

District Permit 50-01503-S

July 29, 2003

Rhonda K. Archer, Assistant Manager  
Quantum Community Development District  
c/o Special District Services  
4600 East Park Dr., Suite 201  
Palm Beach Gardens, FL 33410

Dear Ms. Archer:

**Subject: Notice of Permit Transfer and Conversion from Construction to Operation Phase  
Quantum Park (aka Boynton Beach Park of Commerce)  
Palm Beach County, Sections 8,16,17,20,21, Township 45 South, Range 43 East**

In response to your request of March 13, 1998 for transfer and conversion from the construction phase to the operation phase for the above referenced permit, the parcels listed below have been officially transferred from Quantum Associates to Quantum Community Development District.

<u>Application No.</u>	<u>Parcel Name</u>	<u>Issue Date</u>
08296-D	Quantum Park Master System – Lakes and Road R/Ws	11-Dec-1986
03027-C	Quantum Park Master System – Floor Elevations	09-Jul-1987
11207-F	Quantum Park	10-Mar-1988
910214-8	Quantum Park Master System – Deepening of Lakes	26-Mar-1991

As a condition of transfer, you have agreed that all terms and conditions of the permit and subsequent modifications, if any, are understood and accepted, and any proposed modification shall be applied for and authorized by this District prior to such modification.

Copies of the permit documents, including conditions, can be obtained from the Regulation Resource Area in the Environmental Resource Regulation Department at the West Palm Beach Service Center.

If you have any questions, please contact Jennifer Krumlauf at the West Palm Beach Service Center at (561) 682-2712.

Sincerely,

Anne Roth, Director  
Regulatory Information Management Division  
Environmental Resource Regulation Department

AR/jk

GOVERNING BOARD

Nicolas J. Cullérez, Jr. Esq., *Chair*  
Patricia Brooks-Thomas, *1st Chair*  
Irela M. Bagué

Michael Collins  
Hugh M. English  
Lennart F. Lindstedt, P.E.

Kevin McCarty  
Harkley R. Thornton  
Trudi K. Williams, P.E.

EXECUTIVE OFFICE

Henry Dean, *Executive Director*



**Quantum Park (Ika Boynton Beach Park of Commerce)**

**July 29, 2003**

**Page 2 of 2**

- c: **Palm Beach County Engineer**  
**Arthur Felsher, Quantum Associates, Inc.**  
**Juan A. Chan, Mock Roos & Associates, Inc.**  
**Suzanne M. Amaducci, Shutts & Bowen LLP**  
**Douglas MacDonald, Quantum Park Property Owners Association, Inc.**

**Quantum Park (fka Boynton Beach Park of Commerce)**  
**July 29, 2003**

bc: Vault File - Permit No. 50-01503-S (Applications 08296-D, 03027-C, 11207-F,  
910214-8)  
Area Engineer - PB (4230)  
Service Center - PB (6150)



South Florida Water Management District

RECEIVED

MAR 16 1998

**REQUEST FOR CONVERSION OF ENVIRONMENTAL RESOURCE/SURFACE WATER MANAGEMENT PERMIT FROM CONSTRUCTION PHASE TO OPERATION PHASE AND TRANSFER OF PERMIT TO THE OPERATING ENTITY (TO BE COMPLETED AND SUBMITTED BY THE OPERATING ENTITY)**

REGULATION DEPT. 4030

Form #0920  
08/95

SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
Field Engineering Division \*Please see page 2 of 2

Date March 13, 1998  
~~February~~, ~~1997~~

It is hereby requested that District Environmental Resource/Surface Water Management Permit No. 50-01503-S (under Application No(s). 08296-D & 11207-F), authorizing the construction and operation of a surface water management system for the below mentioned project, be converted from the construction phase to the operation phase and be transferred from the construction phase permittee to the operation phase operating entity.

03027-C  
910214-8

PROJECT: Boynton Park of Commerce a/k/a Quantum Park

FROM: Name Quantum Associates c/o Arthur Felsher  
Address 115 West Washington Street  
City Indianapolis State IN Zip 46204

TO: Name Quantum Community Development District  
Address 10300 N.W. 11th Manor  
City Coral Springs State FL Zip 33071

Enclosed is documentary evidence of satisfaction of permit conditions (other than long term monitoring) in accordance with Rule 40E-4.361, Florida Administrative Code (F.A.C.). Also enclosed is a copy of the documents required below, including the document transferring title to the operating entity for the common areas on which the surface water management system is located.

The surface water management facilities are hereby accepted for operation and maintenance in accordance with the engineer's certification and as outlined in the restrictive covenants and articles of incorporation for the operating entity.

The signatory, as representative for the operating entity, hereby agrees that the operating entity will be perpetually bound by all terms and conditions of the permit, including all compliance requirements. Authorization for any proposed modification to the project shall be applied for and obtained prior to conducting such modification.

Quantum Community Development District  
Operating Entity Name

Asst. Manager (954) 753-0380  
Title and Telephone Number of Signatory

Rhonda Archer  
Authorized Signature

Rhonda K. Archer  
Printed Name of Signatory

- enclosure:
- ( ) Documentary evidence of satisfaction of permit conditions (other than long term monitoring)
  - ( ) Copy of recorded transfer of title to surface water management system
  - ( ) Copy of plat(s)



# South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045

CON 24-05

February 7, 1997

Quantum Associates  
2455 East Sunrise Blvd., Suite 1106  
Ft. Lauderdale, FL 33304

Dear Sir or Madam:

**Subject: Boynton Park of Commerce aka Quantum Park  
Phase Construction Completion/Construction Certification  
Application Nos. 08296-D & 11207-F, SWM Permit No. 50-01503-S  
Palm Beach County, S16,17,20,21/T45S/R43E**

**RECEIVED**

FEB 19 1997

MELVIN SIMON & ASSOC., INC.  
ARTHUR FELSHER

**RECEIVED**

DEC 31 1998

REGULATION DEPT. 4030

This letter acknowledges receipt of an engineer's Construction Completion/Construction Certification, record drawings and an As-Built Master Drainage Plan from Santiago Malavasi, P.E. of Rossi and Malavasi Engineers, Inc. pertaining to the subject project's surface water management system. District staff have reviewed the submitted information and it has been incorporated into the permit file.

Per the referenced certification, our staff consider the Master Surface Water Management System (including 8-onsite interconnected lakes totalling 67.81 acres, 6.92 acre dry detection area and 3-discharge control structures serving the entire 578.3 acre industrial development) and the Surface Water Management System for the Backbone Roadways at the Quantum Park project constructed in conformance with the permit. This satisfies the requirement of the referenced surface water management permit with regard to construction of the surface water management system and statement of completion and certification by a Florida registered professional engineer for the phases included in the above referenced application numbers.

Furthermore, according to the Rules of the South Florida Water Management District, Rule 40E-1 and 40E-4, Florida Administrative Code (40E-1.6107, Transfer of Environmental Resource, Surface Water Management or Water Use Permit; 40E-4.351, Transfer of Permits; 40E-4.61, Conversion from Construction Phase to Operation Phase, and 40E-4.81, General Conditions), upon construction completion and certification of the surface water management system, the permittee shall request transfer of the permit to the responsible operating entity. Therefore, the subject phase of the Quantum Park project and the phase previously certified by engineer for construction completion (Quantum Park of Boynton Beach, Lots 12,13,14) shall be transferred to the entity responsible for operation and maintenance of the water management system.

The required transfer should be made via the enclosed transfer form. This form should be filled out and submitted, along with a copy of the recorded deed restrictions (including amendments, if any), as well as a copy of all recorded plats (if not previously furnished). It will then be processed and included in the District's permit finalization process. Please be aware that the permit file must contain documentation that applicable conditions to the permit have been satisfied.

**Governing Board:**

Valerie Boyd, Chairman  
Frank Williamson, Jr., Vice Chairman  
William E. Graham

William Hammond  
Betsy Krant  
Richard A. Machek

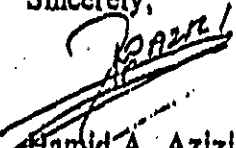
Eugene K. Pettis  
Nathaniel P. Reed  
Miriam Singer

Samuel E. Poole III, Executive Director  
Michael Slayton, Deputy Executive Director

Quantum Associates  
February 7, 1997  
Page 2

Please submit the above or notify District staff within thirty (30) days of the date of this letter. Should you have any questions, please contact Ms. Marissa Cruz, Staff Engineering Associate, at (561) 687-6590, or the undersigned at (561) 687-6596.

Sincerely,

  
Hamid A. Azizi  
Staff Engineer  
Field Engineering Division  
South Florida Water Management District

AHA  
Enclosure

c: Santiago Malavasi, P.E., Rossi and Malavasi Engineers, Inc. w/Enclosure  
Quantum Associates, Indianapolis, IN., w/Enclosure  
Catalfumo Management & Investment, Inc., w/Enclosure  
Southern Design Group, Inc.  
City of Boynton Beach Engineer  
Palm Beach County Engineer  
F.D.E.P.  
E.P.A.  
L.W.D.D.

**Subject: Re: Quantum Park Master System 50-01503-S**

**Date: Mon, 21 Jul 2003 14:37:43 -0400**

**From: Brent Nicholas <bnichola@sfwmd.gov>**

**Organization: South Florida Water Management District**

**To: Jennifer Krumlauf <jkrumla@sfwmd.gov>**

Jennifer,

There are no outstanding issues with this project from the environmental side. This is an old project and only had preservation requirements but no monitoring or maintenance.

Brent



**Subject: Quantum Park Master System 50-01503-S**

**Date: Mon, 21 Jul 2003 10:17:39 -0400**

**From: Jennifer Krumlauf <jkrumla@sfwma.gov>**

**Organization: South Florida Water Management District**

**To: Brent Nicholas <bnichola@sfwmd.gov>**

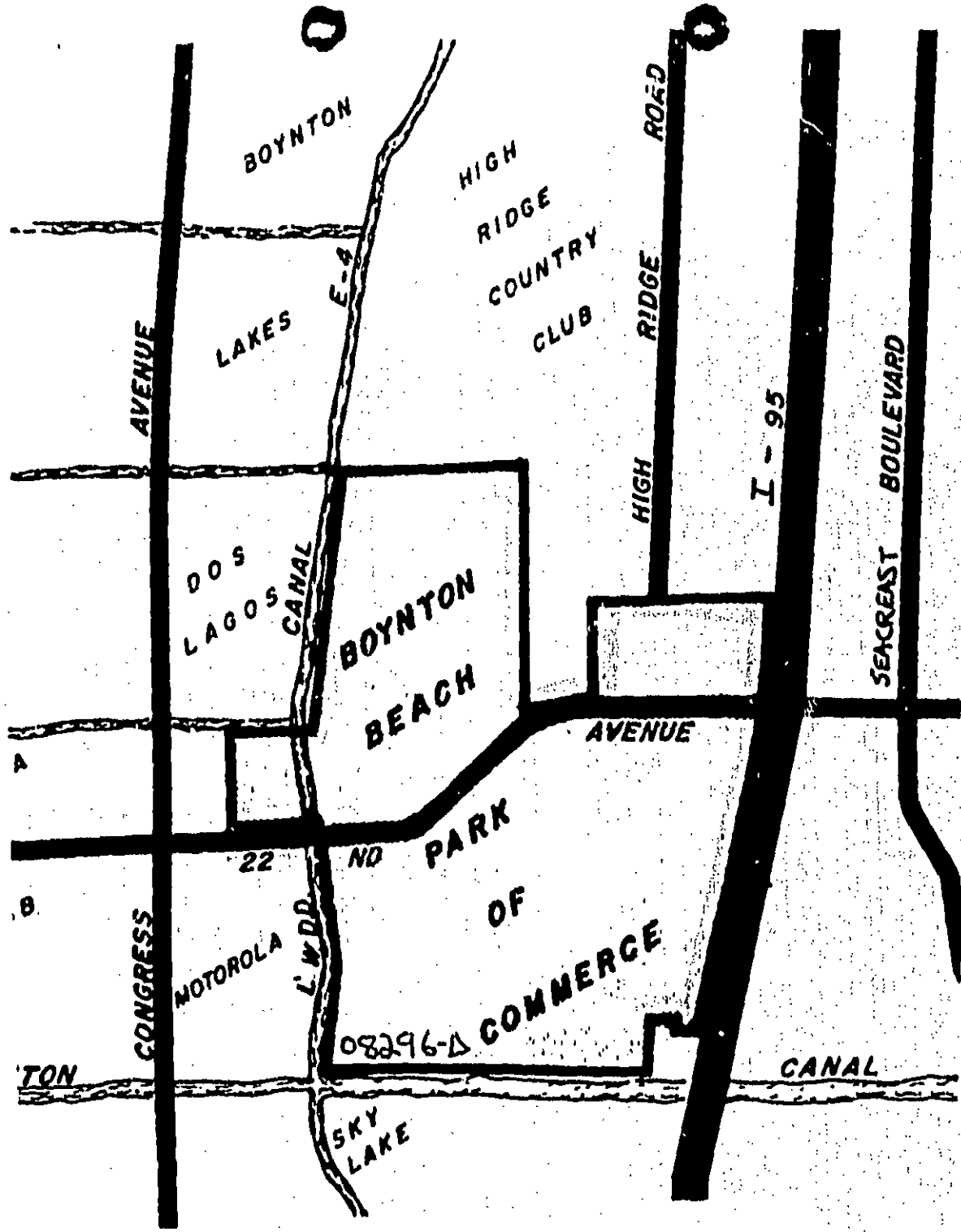
Brent,

I'm finalizing a conversion transfer Heidi started in 1997/98. At the time, everything was submitted by the Quantum CDD to receive the master system which includes the lakes and road r/w's but for some reason the transfer was never actually finalized.

Nothing was included in the permit for the master system about wetland preserve areas (08296-D and 11207-F) except for one comment of "Environmental: No significant impact." However, looking through the file I saw correspondence from 2001-2002 regarding issues with the maintenance of environmental preserve areas within the project area. May I finalize the conversion transfer, especially since the developer, Quantum Associates, Inc. has been dissolved since 1996 and it appears that the CDD has been involved as a responsible party?

Thanks,  
Jennifer

Jennifer Krumlauf <jkrumla@sfwmd.gov>  
Specialist Engineering Associate  
Regulatory Information Management  
Environmental Resource Regulation



SCALE 1" = 1500'

EXHIBIT 1





# South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045

TDD (561) 697-2574

182

*changes operating entity  
to Quantum Community  
Development District*

CON 24-06

Regulation Department  
Application No.: 981116-21

November 20, 1998

Quantum Community Development District  
c/o Mock, Roos & Associates, Inc.  
5720 Corporate Way  
West Palm Beach, FL 33407-2066

Dear Permittee:

**SUBJECT: PERMIT MODIFICATION NO.: 50-01503-S**  
**Project: QUANTUM PARK AKA BOYNTON PARK OF COMMERCE**  
**Location: Palm Beach County, S16,17,20,21/T45S/R43E**

District staff has reviewed the information submitted on November 16, 1998, for to revise the permittee from Quantum Associates, Inc. to Quantum Community Development District. Based on that information, District staff has determined that the proposed activities are in compliance with the original surface water management permit and appropriate provisions of FAC Rule 40E-4.331(2)(b). Therefore, these changes have been recorded in our files. Please understand that your permit remains subject to the Standard Limiting Conditions and all other Special Conditions not modified and as originally issued.

Sincerely,

Carlos A. de Rojas, P.E.  
Sr Supv Engineer  
West Palm Beach Service Center

CD/cd

c: Palm Beach County Engineer  
MOCK ROOS

*Governing Board:*

Frank Williamson, Jr., Chairman  
Eugene K. Pettis, Vice Chairman  
Mitchell W. Berger

Vera M. Carter  
William E. Graham  
William Hammond

Richard A. Machek  
Michael D. Minton  
Miriam Singer

Samuel E. Poole III, Executive Director  
Michael Slayton, Deputy Executive Director

RECEIVED

JAN 22 1999

REGULATION DEPT. 4030

## ORDINANCE NO 091-48

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF BOYNTON BEACH, FLORIDA, ESTABLISHING THE QUANTUM COMMUNITY DEVELOPMENT DISTRICT; ESTABLISHING THE BOUNDARIES OF THAT DISTRICT; APPOINTING THE INITIAL BOARD OF SUPERVISORS; PROVIDING FOR POWERS OF THE BOARD; PROVIDING FOR CONFLICTS, SEVERABILITY, CODIFICATION AND AN EFFECTIVE DATE.

WHEREAS, on May 10, 1991, Quantum Associates, a Florida General Partnership, QRA, Inc., and Quantum Property Owner's Association, Inc., both Florida corporations, submitted a petition to the City for the creation of a community development district for Quantum Corporate Park ("QUANTUM") in accordance with Section 190.005(2)(a), Florida Statutes; and

WHEREAS, the petition which is attached hereto as Exhibit "A" and made a part hereof contains the information required in Section 190.005(1)(a), Florida Statutes; and

WHEREAS, a public hearing on the petition was conducted by the City Commission on May 28, 1991 at City Hall in accordance with the requirements of Sections 190.005(2)(b) and 190.005 (1)(d), Florida Statutes; and

WHEREAS, the City Commission has reviewed the six (6) factors set forth in Section 190.005(1)(e) and the record of the public hearing held on May 28, 1991 in making its determination as to whether to grant or deny the establishment of the Quantum Community Development District; and

WHEREAS, the City Commission has determined that:

1. That all statements contained within the Petition have been found to be true and correct.
2. That the creation of the District is not inconsistent with any applicable element or portion of the State Comprehensive Plan or of the effective local government comprehensive plan.



3. That the land within the proposed District is of sufficient size, sufficiently compact and sufficiently contiguous to be developable as one functional interrelated community.

4. That the creation of the District is the best alternative available for delivering the community development services and facilities to the Quantum Corporate Park.

5. That the proposed services and facilities to be provided by the District are not incompatible with the capacity and uses of existing local and regional community services and facilities.

6. That the area identified in the Petition is amenable to be included in the proposed District; and

WHEREAS, the City Commission has determined that the creation of the Quantum Community Development District would be consistent with the criteria for community development districts as set forth in the Uniform Community Development District Act of 1980;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF BOYNTON BEACH, FLORIDA, THAT:

Section 1. Each whereas clause set forth above is true and correct and herein incorporated by this reference.

Section 2. In accordance with the provisions of Chapter 190, Florida Statutes, the City Commission of the City of Boynton beach, Florida hereby establishes a community development district as follows:

CREATION AND NAME: There is hereby created a Community Development District to be known as the QUANTUM COMMUNITY DEVELOPMENT DISTRICT.

BOUNDARIES OF DISTRICT: The land area to be served by the District comprises approximately 504 acres. It is located east of Congress Avenue immediately west of Interstate 95 and south of Miner Road. A map showing the location of the land area to be serviced by the District is attached as

Composite Exhibit "B". All of the land in the proposed District is within the City of Boynton Beach, Florida. The metes and bounds legal description of the boundaries of the District is attached as Exhibit "C".

BOARD OF SUPERVISORS: The initial Board of Supervisors are as follows. Their terms, powers and duties are as described in Chapter 190, Florida Statutes.

- (a) R. Scott Ireland  
1125 N.E. 125th Street  
North Miami, Florida 33161
- (b) J. Berle Oster, Esquire  
27 S.E. 24th Avenue, Ste. 5  
Pompano Beach, Florida 33062
- (c) Steven W. Deutsch  
1900 S.E. 17th Street  
Ft. Lauderdale, Florida 33316
- (d) Harold C. Morrison  
5841 Margate Boulevard  
Margate, Florida 33063
- (e) Philip R. Augustyn  
1900 S.E. 17th Street  
Ft. Lauderdale, Florida 33316

Section 3. The Board of Supervisors shall have only such powers as set forth in Florida Statutes 190.011 and 190.012.

Section 4. That all ordinances or parts of ordinances in conflict herewith be and the same are hereby repealed.

Section 5. Should any section or provision of this ordinance or portion hereof, any paragraph, sentence, or word be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the remainder of this ordinance.

Section 6. Authority is hereby granted to codify said ordinance.

Section 7. This ordinance shall become effective immediately upon passage.

FIRST READING this 2 day of July,  
1991.

SECOND, FINAL READING and PASSAGE this 16 day of July, 1991.

CITY OF BOYNTON BEACH, FLORIDA

Arline W. ...  
Mayor

...  
Vice Mayor

Lillian Artes  
Commissioner

...  
Commissioner

...  
Commissioner

ATTEST:

...  
City Clerk

(Corporate Seal)

QUANTUM.CDD  
REV. 7/2/91

PREPARED BY QUANTUM TRU  
MICHAEL E. BOYD, ESQ.  
STEELE, HEYTON & DAVIS  
1900 Phillips Point West  
West Palm Beach, FL 33401-0199  
W/PB TA

MAR-09-1994 3:45pm 94-083354  
ORB 8158 H 1324  
ORIGINATOR TO SUBMITTING AGENCY  
Con 10.00 Doc .70

ASSIGNMENT OF RESERVATIONS

This Assignment is made this 14<sup>th</sup> day of March, 1994, between Quantum Associates ("Developer") and Quantum Park Property Owners' Association, Inc. ("POA") (Developer and POA are hereinafter collectively referred to as "Seller"), and Quantum Community Development District ("District").

Quantum Park  
Assoc. Inc. is  
located in  
West Palm Beach  
Springfield

WITNESSETH

Seller, in consideration of \$1.00 and other good and valuable consideration to it paid by the District, the receipt and sufficiency of which is hereby acknowledged, does hereby grant, convey, assign, transfer, and set over unto the District, its legal representatives, successors, and assigns, the right and privilege, to be exercised coincident with the rights of Seller reserved hereunder, all interests that Seller has or may have under the laws of the State of Florida or otherwise, or that Seller may otherwise have in, to, and under, each of the reservations of conservation tracts, maintenance buffer easements, lake maintenance easements, water management tracts, drainage easements, ingress and egress easements, and like easements and rights-of-way, identified and set forth in the attached Exhibit A, all located in Palm Beach County, Florida (the Reservations).

TO HAVE AND TO HOLD said Reservations unto the District, its legal representatives, successors, and assigns, to and for its or their uses forever with the right of substitution and subrogation of the District in and to all covenants and restrictions

ORB 815B Pg 1325

heretofore given or made in respect of said Reservations or any part thereof, to the extent said covenants and warranties are assignable or can be enforced, at the District's expense, for the District's benefit.

Seller does for itself and its legal representatives, successors, and assigns, reserve unto Seller the right to exercise, coincident with the District, all such Reservations hereby conveyed to the District.

IN WITNESS WHEREOF, Developer has caused this instrument to be executed by its duly authorized agents, and its corporate seal affixed hereto.

Signed, sealed and declared in the presence of:

QUANTUM ASSOCIATES, a Florida general partnership  
By: Quantum Simon, Inc., an Indiana corporation, a general partner

Witness Steven E. Fivel  
Printed Name of Witness  
Witness Anthony A. [unclear]  
Printed Name of Witness

By [Signature]  
Printed Name: Malvin Simon  
Its: President

QUANTUM PARK PROPERTY OWNERS' ASSOCIATION, INC.

Witness Steven E. Fivel  
Printed Name of Witness  
Witness Anthony A. [unclear]  
Printed Name of Witness

By [Signature]  
Printed Name: Malvin Simon  
Its: Vice President



ORB 8158 P: 1326

State of INDIANA  
County of MARION

Before me, the undersigned authority, an officer duly authorized in the State and County aforesaid to take acknowledgments, personally appeared Melvin Simon as President of Quantum Simon, Inc., a general partner of Quantum Associates, who is personally known to me and he acknowledged before me that he executed the foregoing instrument on behalf of said Partnership for the purposes therein contained.

Witness my hand and seal in the County and State last aforesaid, this 15th day of March, 1994.

My commission expires:

Kathleen A. Gray  
Notary Public  
Printed name: \_\_\_\_\_  
Commission Number: \_\_\_\_\_

Kathleen A. Gray, Notary Public  
My Commission Expires 12/31/95  
Notary of Marion County, Indiana

State of INDIANA  
County of MARION

Before me, the undersigned authority, an officer duly authorized in the State and County aforesaid to take acknowledgments, personally appeared Melvin Simon as Vice President of Quantum Park Property Owners' Association, Inc., who is personally known to me and he acknowledged before me that he executed the foregoing instrument on behalf of said corporation for the purposes therein contained.

Witness my hand and seal in the County and State last aforesaid, this 15th day of March, 1994.

My commission expires:

Kathleen A. Gray  
Notary Public  
Printed name: \_\_\_\_\_  
Commission Number: \_\_\_\_\_

Kathleen A. Gray, Notary Public  
My Commission Expires 12/31/95  
Notary of Marion County, Indiana



RESTRICTIONS "A"

ORB 815B Pg 1327

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57, Page 160.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57, Page 162.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57, page 164.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57 page 166 as affected by Resolution recorded in Official Records Book 5673, Page 1733.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57 page 169 as affected by Affidavit recorded in Official Records Book 5686, Page 161.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57 page 191, as affected by Affidavits recorded in Official Records Book 5486, Page 263, Official Records Book 5918, Page 209, and Resolution recorded in Official Records Book 5673, Page 1733.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57 page 194 as affected by Affidavits recorded in Official Records Book 5486, Page 262 and Resolution recorded in Official Records Book 5673, Page 1735.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 57 page 196.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 60 Page 29.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 60 page 32.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 60 page 34.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 60 page 37.

Restrictions, dedications and easements set out on the Plat, recorded in Plat Book 60 page 106.

RECORDERS MEMO: Legibility of Writing, Typing or Printing unsatisfactory in this document when received.

008 8158 1328  
RECORD VERIFIED - CROOTHY R. WILKIN  
CLERK OF THE COURT - PB COUNTY, FL

ACCEPTANCE OF ASSIGNMENT

The attached Assignment is hereby accepted this 20 day of March, 1994 by Quantum Community Development District (the "District"), and the District hereby accepts and assumes responsibility for the operation and maintenance of the Reservations conveyed to the District pursuant to the Assignment and for the operation and maintenance of the real property and improvements conveyed to the District by that certain Warranty Deed from Quantum Associates by that certain Warranty Deed from Quantum Park Property Owners' Association, Inc. and by that certain Bill of Sale from Quantum Associates, all dated March 1, 1994.

Attest:

QUANTUM COMMUNITY DEVELOPMENT DISTRICT

*William H. G.*  
Asst. Chairman

By *James P. Lindgren*  
Chairman

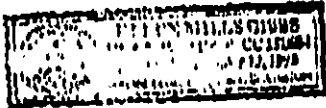
State of Florida  
County of BERKAD

Before me, the undersigned authority, an officer duly authorized in the State and County aforesaid to take acknowledgments, personally appeared James K. Lindgren and William H. G. as Chairman and Secretary, respectively, of Quantum Community Development District, who are personally known to me and they acknowledged before me that they executed the foregoing instrument for the purpose therein contained and that they did not take an oath.

Witness my hand and seal in the County and State last aforesaid, this 20 day of March, 1994.

*[Signature]*  
Notary Public

Printed Name: \_\_\_\_\_  
Commission Number: \_\_\_\_\_  
My commission expires: \_\_\_\_\_



Seal

RECEIVED  
DEC 31 1998  
REGULATION DEPT. 4030

## ACQUISITION AGREEMENT

This Acquisition Agreement is entered into as of the 1<sup>st</sup> day of February, 1994 by and between Quantum Associates ("Developer") and Quantum Park Property Owners' Association, Inc. ("POA") (Developer and POA are hereinafter collectively referred to as "Seller"), and Quantum Community Development District (the "District"). All capitalized terms not defined herein shall have the meanings given to them in the District's Resolution dated as of November 27, 1991, as amended and supplemented on January 20, 1994 by District Resolutions 94-6 and 94-7 (collectively, the "Resolution").

## WITNESSETH

WHEREAS, the District is a local unit of special purpose government organized and existing under Florida Statutes, Chapter 190 (the "Act") and was created by an Ordinance enacted by the City Commission of the City of Boynton Beach, Florida on July 2, 1991 at the Petition of Developer; and

WHEREAS, the District was created for the purpose of delivering certain community development services and facilities within its jurisdiction, such services and facilities to include a roadway and street lighting system and facilities, a sewage and wastewater transmission system and facilities, a stormwater

979177 AD (R.F.)

management and drainage control system and facilities (such systems and facilities, and other improvements within the District, all as more specifically described in the Quantum Community Development District Engineering Report prepared by Craven, Thompson & Associates dated October, 1991, being referred to hereafter collectively as the "Project"); and

WHEREAS, the District believes that it necessary and desirable, and in the best interests of the District and the owners of the lands within the District, to acquire the Project in order to improve the health and general welfare of the owners of lands within the District; and

WHEREAS, Seller has provided or constructed portions of the Project, all as more particularly described in Exhibit A attached hereto (such portions of the Project are collectively referred to as the "Transferred Improvements"); and

WHEREAS, the District desires to acquire from Seller, and Seller desires to convey to the District, on the terms and conditions set forth herein, Seller's interests in the Transferred Improvements; and

WHEREAS, in order to operate and maintain the Transferred Improvements and to acquire, construct, operate and maintain the other portions of the Project, the District will require Developer (i) to convey to the District Seller's interest in the Transferred Improvements, and (ii) to assign or otherwise convey to the District all existing reservations made to Seller of conservation tracts, road rights of way, maintenance buffer easements, lake

maintenance easements, water management tracts, drainage easements, sewer easements, ingress and egress easements, and like easements and rights-of-way within the District; and

WHEREAS, the District proposes to issue its \$10,000,000 Special Assessment Bonds, Series 1994 (the "Bonds"), to finance the cost of acquiring Seller's rights and interest in the Transferred Improvements.

NOW, THEREFORE, in consideration of the mutual covenants herein contained, and for \$10.00 and other good and valuable consideration, receipt of which is hereby acknowledged, the parties agree as follows:

1. Conveyance of Transferred Improvements. Seller shall convey to the District on the Closing Date (hereafter defined), all of its right, title and interest in the Transferred Improvements. The conveyance shall be made by statutory warranty deed, in recordable form, for those Transferred Improvements which are realty and by absolute bill of sale or written assignment for those Transferred Improvements which are tangible or intangible personalty. All said instruments of conveyance or assignment shall be in form reasonably acceptable to the District and shall be subject to the Approved Exceptions (as hereinafter defined).

2. Conveyance of Reservations. Seller shall transfer and assign to the District, on the Closing Date, Seller's existing reservations made to Seller of conservation tracts, road rights of way, maintenance buffer easements, lake maintenance easements, water management tracts, drainage easements, sewer easements,



ingress and egress easements, and like easements and rights-of-way within the District which relate to the Transferred Improvements or which are otherwise necessary for the District to construct, operate and maintain the Project on the lands within the District (hereinafter the "Reservations"), reserving unto Seller at all times the right to the use of all such Reservations coincident with the use rights conveyed to the District. Said transfer and assignment of the Reservations shall be accomplished by Developer's execution and delivery at Closing of a written Assignment of Reservations. A form of said Assignment of Reservations is attached hereto as Exhibit "B". Seller agrees to execute and deliver to District such additional assignments of the Reservations as the District may reasonably require pursuant to paragraph 13 hereinbelow.

3. Title Evidence. Seller shall, at Seller's expense, provide the District at Closing with a title report for those Transferred Improvements which will be conveyed by warranty deed. Said report shall be issued by a qualified title insurer, licensed in the State of Florida. The title report shall show title to the Transferred Improvements to be vested in Seller, subject only to (i) liens which can and shall be discharged by Developer on or before the Closing Date; and (ii) those items which will not have a material adverse effect, as determined in the reasonable discretion of the District, upon the operation and maintenance of the Project (the foregoing subsections (i) and (ii) are

collectively referred to hereafter as the "Acceptable Encumbrances").

4. Plans and Specifications. The District acknowledges receipt of the Plans and Specifications applicable to the Transferred Improvements. The District further acknowledges that such Plans and Specifications are consistent with the plans and specifications used to establish the value of the Transferred Improvements.

5. Engineer Certification. Before payment by the District for the Transferred Improvements, Seller shall provide the District with a certificate, signed by the Consulting Engineer, certifying (i) that the amount to be paid to Developer for the Transferred Improvements or other portions of the Project is equal to or less than the actual cost, together with related expenses, of constructing or installing same; (ii) that the Transferred Improvements or other portions of the Project for which payment is to be made are part of the Project, and (iii) that the Transferred Improvements have been installed or constructed in conformity with the Plans and Specifications and applicable laws governing the installation or construction of the same.

6. Warranty. On the Closing Date, and to the extent the District is required to warrant the water distribution and sanitary sewer system included within the Transferred Improvements to the City of Boynton Beach or any other applicable governmental unit, Seller shall provide the District with a warranty for a

period not to exceed the lesser of the warranty period required by the City or one (1) year from the date of Closing.

As to the remainder of the Transferred Improvements, Seller hereby warrants to the District that such improvements are free from any material defect, whether patent or latent, in design, manufacture, construction, workmanship and materials, subject to ordinary wear and tear. Seller agrees to indemnify and hold the District harmless from any claim, loss, damage, or other expense whatsoever, including reasonable attorneys fees, that the District may suffer as a result of the failure of such improvements to be as warranted. This warranty shall expire twelve (12) months from the date of this Agreement.

In the event any defect, malfunction, or failure, not caused by the District's misuse or damage, occurs during the warranty period, Seller will correct the defect, malfunction, or failure without any expense, cost or charge to the District. Such correction will consist of repair to the defective item to make it operational, and if such item cannot be repaired or it is not commercially practicable to do so, then at Developer's option, the item may be replaced. If after sixty (60) days written notice Seller fails to proceed promptly to comply with the terms of this warranty, the District may have the defect, malfunction, or failure corrected and Seller will be liable for all expenses incurred.

7. Assurance. Seller does hereby represent, warrant, and assure the District that the instruments and closing documents

executed and to be executed at Closing shall assign or convey Seller's right, title and interest in the Transferred Improvements and the Reservations in accordance with the terms of the Agreement.

8. Payment for Transferred Improvements. From available proceeds of the Bonds and in accordance with the terms of the Resolution pursuant to which the Bonds are issued, the District shall pay to Developer at the Closing the sum of \$15,416,380.42 for Transferred Improvements as total payment for (i) the Transferred Improvements and the Reservations, and (ii) the Agreement to Convey or Dedicate. The transfer of the Transferred Improvements and the delivery of the Agreement to Dedicate, and the District's payment for same, shall be in accordance with the terms of this Agreement and Section 503(b) of the Resolution which Section is specifically incorporated herein by reference and made a part hereof. The District shall requisition the purchase funds from the Trustee in order that the purchase price will be paid on the Closing Date.

9. Closing. The closing shall be held at the office of Steel, Hector & Davis, in West Palm Beach, Florida or such other place as the parties may agree upon. The closing shall occur within thirty (30) days of the date of the execution of this Agreement by Seller and District, provided Seller shall have the right to extend the closing date for one period of thirty (30) days, and for a second extension of thirty (30) days upon the consent of the District, which consent shall not be withheld upon a showing of good cause by Seller (the "Closing Date").

At the closing, Seller shall deliver to the District the following documents, each fully executed, witnessed, and acknowledged as required: (i) warranty deed, bill of sale or assignment required under Section 1 hereof; (ii) the Assignment of Reservations; (iii) the title report required by Section 3 hereof; (iv) a closing affidavit; and (v) a closing statement.

10. Waivers. Any failure by any party to this Agreement to comply with any of its obligations, agreements or covenants may be waived in writing by either party.

11. Amendment. This Agreement cannot be amended or terminated orally but only by writing executed by both parties and approved by Bond Counsel, such approval not to be unreasonably withheld.

12. Applicable Law. This Agreement is made and shall be construed under the laws of the State of Florida.

13. Further Assurances. At any and all times, Seller shall, so far as it may be authorized by law, make, do, execute, acknowledge, and deliver, all and every other further act, deed, easement conveyance, assignment, transfer, and assurance as may be reasonably necessary or desirable, as determined by the District, (i) for the better assuring, conveying, granting, assigning, and confirming of any and all rights or interest in the Transferred Improvements that are intended or required to be acquired by or conveyed to the District as contemplated by the Resolution and this Agreement, (ii) for the District to construct, operate, and maintain the Project, and (iii) for the District to obtain

additional assignments of the Reservations necessary for maintenance of the Project on the lands within the District.

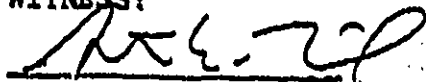
14. Specific Enforcement. Seller and Buyer acknowledge that the parties would be irreparably damaged (and damages at law would be an inadequate remedy) if the covenants and agreements of Developer contained herein are not specifically enforced. Therefore, in the event Seller or Buyer fails to comply with any covenant or agreement contained herein, the non defaulting party, in addition to all other rights and remedies, shall be entitled to a decree for specific performance of those covenants and agreements without being required to show any actual damage or to post any bond or other security.

15. Survival. Notwithstanding anything to the contrary herein contained, the requirements of Sections 5, 6 and 7 hereof shall survive the closing of the transactions contemplated hereby.

16. Counterparts. This Agreement may be executed in counterparts, and when so executed by both Seller and Buyer shall constitute one agreement binding on the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

WITNESS:





QUANTUM ASSOCIATES, a Florida  
general partnership

By: Quantum Simon, Inc., an  
Indiana corporation, a  
general partner

By:  
Its

  
President



02/18/94 15:02 FAX 407 22  
JAN-31-1994 15:28 FROM

JUDGE ROSE  
TO

7011/021

172537028 P.11

WITNESS:

[Signature]  
AA Justice

QUANTUM PARK PROPERTY OWNERS' ASSOCIATION, INC

By [Signature]  
Its VICE PRESIDENT

WITNESS:

[Signature]  
Shonda Tucker

QUANTUM COMMUNITY DEVELOPMENT DISTRICT

By [Signature]  
Chairman

Attest:

[Signature]  
SECRETARY

## EXHIBIT "A"

## DESCRIPTION OF TRANSFERRED IMPROVEMENTS

The Transferred Improvements are all portions of the Project which will be provided by Developer prior to the Closing Date (as said term is defined in this Agreement), as generally described on the attached Exhibits A-1 and A-2. Legal descriptions included in this composite Exhibit A shall be subject to verification by the District Engineer. Transferred Improvements for which a legal description is not included herewith shall be provided at closing.

**EXHIBIT A-1**  
**QUANTUM CORPORATE PARK**  
**TRANSFERRED IMPROVEMENTS**

**STREETS:**

Quantum Boulevard  
High Ridge Road (South)  
Quantum Place a/k/a Quantum Lane  
Park Ridge Boulevard  
Alpha Drive  
Beta Drive  
Quantum Lakes Drive

**LANDSCAPING/IRRIGATION:**

Quantum Boulevard  
High Ridge Road (South)  
Quantum Place a/k/a Quantum Lane  
Park Ridge Boulevard  
Alpha Drive  
Beta Drive  
Quantum Lakes Drive

**STORM DRAIN/WATER MANAGEMENT:**

Quantum Boulevard  
High Ridge Road (South)  
Quantum Place aka Quantum Lane  
Park Ridge Boulevard  
Alpha Drive  
Beta Drive  
Quantum Lakes Drive

**STREET LIGHTING:**

Quantum Boulevard  
High Ridge Road (South)  
Quantum Place aka Quantum Lane  
Park Ridge Boulevard  
Alpha Drive  
Beta Drive  
Quantum Lakes Drive

**ENTIRE WATER DISTRIBUTION SYSTEM**

**ENTIRE SANITARY SEWER SYSTEM**

**LIFT STATIONS:**

Lift Station #2  
Lift Station #3  
Lift Station #4

**SAND PINE PRESERVES #1**

**SAND PINE PRESERVES #2**

**WETLAND CONSERVATION AREA #1**

**WETLAND CONSERVATION AREA #2**

## EXHIBIT A-1

DESCRIPTION: STREETS FOR PRIVATE ROAD PURPOSES FOR QUANTUM BOULEVARD:

ALL OF TRACT "C", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, F.I.D. PLAT NO. 1-A, AS RECORDED IN PLAT BOOK 47, AT PAGES 180 AND 181, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

## TOGETHER WITH:

ALL OF TRACT "E", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, F.I.D. PLAT NO. 1, AS RECORDED IN PLAT BOOK 37, AT PAGES 182 AND 183, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

## TOGETHER WITH:

ALL OF TRACT "B", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, F.I.D. PLAT NO. 2, AS RECORDED IN PLAT BOOK 37, AT PAGES 184 AND 185, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

## TOGETHER WITH:

ALL OF TRACT "B", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, F.I.D. PLAT NO. 6, AS RECORDED IN PLAT BOOK 37, AT PAGE 191, 192 AND 193, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

 AND THE FOLLOWING FOR QUANTUM LAKES DRIVE:

ALL OF TRACT "E", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, F.I.D. PLAT NO. 6, AS RECORDED IN PLAT BOOK 37, AT PAGES 191, 192 AND 193, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

 AND THE FOLLOWING FOR PARK RIDGE BOULEVARD:

ALL OF TRACT "F", AS SHOWN ON THE PLAT OF QUANTUM PARK AT BOYNTON BEACH, F.I.D. PLAT NO. 4, AS RECORDED IN PLAT BOOK 37, AT PAGES 186, 187 AND 188 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

 AND THE FOLLOWING FOR ALPHA DRIVE AND BETA DRIVE:

ALL OF TRACT "A", TOGETHER WITH ALL OF TRACT "B", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, F.I.D. PLAT NO. 10, AS RECORDED IN PLAT BOOK 60, AT PAGES 34, 35 AND 36 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

✓ AND THE FOLLOWING FOR HIGH RIDGE ROAD:

ALL OF TRACT "C", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 6, AS RECORDED IN PLAT BOOK 57, AT PAGES 191, 192 AND 193 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

TOGETHER WITH:

ALL OF TRACT "C", AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 5, AS RECORDED IN PLAT BOOK 57, AT PAGES 189 AND 190 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

TOGETHER WITH:

ALL OF TRACT "T" AND "O", AS SHOWN ON THE PLAT QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 4, AS RECORDED IN PLAT BOOK 57, AT PAGES 186, 187 AND 188 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

TOGETHER WITH THE FOLLOWING TWO DESCRIBED PARCELS:

- 1) A PARCEL OF LAND LYING IN SECTION 21, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH, STATE OF FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE WEST 40.00 FEET OF THE NORTHWEST ONE-QUARTER (N.W. 1/4) OF SAID SECTION 21, BOUNDED AS FOLLOWS:

ON THE NORTH: BY A LINE 421.37 FEET (AS MEASURED AT RIGHT ANGLES TO) AND PARALLEL WITH THE EXISTING NORTH RIGHT-OF-WAY LINE OF THE BOYNTON CANAL, C-16, AS SAID RIGHT-OF-WAY LINE IS DESCRIBED IN DEED RECORDED IN OFFICIAL RECORDS BOOK 1084, PAGE 48 OF THE PUBLIC RECORDS OF SAID COUNTY;

ON THE SOUTH: BY A LINE 387.49 FEET NORTH OF (AS MEASURED AT RIGHT ANGLES TO) AND PARALLEL WITH THE NORTH RIGHT-OF-WAY OF SAID BOYNTON CANAL, C-16;

ON THE EAST: BY A LINE 40.00 FEET EAST OF (AS MEASURED AT RIGHT ANGLES TO) AND PARALLEL WITH THE WEST LINE OF THE NORTHWEST ONE-QUARTER (N.W. 1/4) OF SAID SECTION 21.

IT IS INTENDED THAT THE NORTH LINE, THE EAST LINE AND THE SOUTH LINE OF THIS PARCEL BE A COMMON LINE RESPECTIVELY TO:

THE WESTERLY EXTENSION OF THE NORTH LINE, THE WEST LINE, AND THE WESTERLY EXTENSION OF THE SOUTH LINE OF THAT CERTAIN PARCEL CONVEYED TO GEORGE J. AND HARRIET GOULD AND DESCRIBED AS PARCEL "O" IN DEED RECORDED IN OFFICIAL RECORD BOOK 5139, PAGE 0153.

- 2) A PARCEL OF LAND LYING IN SECTION 21, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH, STATE OF FLORIDA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE WEST 40.00 FEET OF THE NORTHWEST ONE-QUARTER (N.W. 1/4) OF SAID SECTION 21, LYING NORTH OF THE NORTH RIGHT-OF-WAY LINE OF THE BOYNTON CANAL (A PERPETUAL EASEMENT) ACQUIRED BY THE CENTRAL AND SOUTHERN FLOOD CONTROL DISTRICT AS RECORDED IN OFFICIAL RECORDS BOOK 1064, PAGE 45 OF THE PUBLIC RECORDS OF SAID COUNTY, AND SOUTH OF A LINE 167.49 FEET NORTH OF (AS MEASURED AT RIGHT ANGLES) TO THE SAID NORTH RIGHT-OF-WAY LINE, SAID LINE ALSO BEING THE NORTH LINE OF THAT CERTAIN PARCEL CONVEYED TO CURT G. JOA-INC., AS DESCRIBED IN A DEED RECORDED IN OFFICIAL RECORDS BOOK 1711, PAGE 371 OF THE PUBLIC RECORDS OF SAID COUNTY.

○ AND THE FOLLOWING FOR QUANTUM LAKE:

ALL OF TRACT "A", AS SHOWN ON THE PLAT QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 9, AS RECORDED IN PLAT BOOK 60, AT PAGES 32 AND 33 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

1. QUANTUM BOULEVARD IS SUBJECT TO ADDITIONAL RIGHT-OF-WAY DEDICATION FOR CONGRESS AVENUE, A PORTION OF TRACT "A", AS SHOWN ON SAID PLAT, QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A.
2. PARK RIDGE BOULEVARD IS SUBJECT TO ADDITIONAL RIGHT-OF-WAY DEDICATION FOR N.W. 22ND AVENUE, A PORTION OF TRACT "B", AS SHOWN ON SAID PLAT, QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 4.

ALL OF THE ABOVE DESCRIBED LANDS ARE SITUATED IN THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA.



**DESCRIPTION: TWO SAND PINE PRESERVES**

ALL OF LOT 93, AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 3, AS RECORDED IN PLAT BOOK 60, AT PAGES 29, 30, AND 31 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

**TOGETHER WITH:**

ALL OF LOT 71, AS SHOWN ON THE PLAT, QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 9, AS RECORDED IN PLAT BOOK 60, AT PAGES 32 AND 33 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

THE ABOVE DESCRIBED LANDS ARE SITUATED IN THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA.

**MOCK • ROOS**  
ENGINEERS • SURVEYORS • PLANNERS

January 20, 1999

Ms. Heidi Schloss, Specialist Engineering Associate  
South Florida Water Management District  
Regulation Department  
Environmental Resource Compliance Division  
3301 Gun Club Road  
West Palm Beach, FL 33416

RECEIVED  
JAN 22 1999  
REGULATION DEPT, 4030

Subject: Permit Transfer from Construction to Operation Phase  
Quantum Park (w/k/w Boynton Park of Commerce)  
Permit No. 50-01503-S  
Palm Beach County, S16,17,20,21/T45S/R43E  
(Our Reference No. 98122.00)

Dear Heidi:

As per our meeting on January 19, 1999, enclosed is a copy of the Ordinance establishing Quantum Community Development District (QCDD) as a legal entity to deliver development and facilities services to the Quantum Corporate Park. You stated that this is the last document required in order for the SFWMD to transfer the permit from the Construction Phase to the Operation Phase of the Master Surface Water Management System.

As always, should you require additional information or if you have any questions, please contact me at extension 226 at your convenience.

Very truly yours,

MOCK, ROOS & ASSOCIATES, INC.

*Juan A. Chan*

Juan A. Chan, P.E.  
Senior Project Engineer

JAC:alg

Enclosure

Copies: Tom McGillicuddy, QCDD Chairman  
Eugene A. Gerlica, P.E.



December 29, 1998

RECEIVED  
DEC 31 1998  
REGULATION DEPT. 4030

Ms. Heidi Schloss, Specialist Engineering Associate  
South Florida Water Management District  
Regulation Department  
Environmental Resource Compliance Division  
3301 Gun Club Road  
West Palm Beach, FL 33416

Subject: Permit Transfer from Construction to Operation Phase  
Quantum Park (a/k/a/ Boynton Park of Commerce)  
Permit No. 50-01503-S  
Palm Beach County, S16,17,20,21/T45S/R43E  
(Our Reference No. 98122.00)

Dear Heidi:

We are continuing our efforts as the District Engineer for Quantum Community Development District (QCDD) to transfer the above referenced permit from the construction phase to the operation phase as required by SFWMD rules. As you may recall, the master surface water management system for Quantum Park was accepted as complete by SFWMD on February 7, 1997 (copy of acceptance letter is attached). As a result of the completion certification, the previous permittee of record, Quantum Associates, was requested to transfer the permit from the construction phase to the operation phase. In their attempt to do so, it was discovered that two outstanding applications (No. 03027-C, issued 7/9/87 and No. 910214-8, issued 3/26/91) pertaining to the master SWM system were not certified. In your letter dated 7/22/98 to Mr. Willard, the attorney representing Quantum Associates, you indicated that in order to complete the transfer from the construction to the operation phase two actions were necessary. One, to request a modification of the permit to officially change the entity responsible for the operation and maintenance of the master SWM system from the property owners association to Quantum Community Development District. Second, to transfer and certify the two outstanding applications.

We have requested and received a permit modification (copy is attached) to change the responsible entity to the QCDD. We also researched the two referenced outstanding applications and found the following. Application No. 03027-C, issued 3/26/91, was to lower the finished floor elevation within Basin 3 from 14.5' to 14.0' NGVD. Application No. 910214-8, issued 3/26/91, was to deepen the lakes for water use purposes. It is our understanding that neither application required certification as no construction with respect to the functioning of master SWM system was involved.

Mock, Roos & Associates, Inc.

5720 Corporate Way, West Palm Beach, Florida 33407-2066, (561) 683-3113, fax 478-7248

Ms. Heidi Schloss  
December 29, 1998  
Page Two

SFWMD Staff has already accepted the master SWM system as being constructed in conformance with the permit, including the lakes, thus no further certifications should be necessary. In addition, the two outstanding applications have in essence already been assigned/transferred to the QCDD by way of the acquisition agreement between the QCDD and the seller (Quantum Associates, Inc. and Quantum Park Property Owners Association). A copy of the agreement is attached for your review.

We sincerely hope this information is sufficient to allow SFWMD Staff to finish processing the permit transfer from the construction phase to the operation phase as requested. Should you have any questions or require additional information regarding the above, please feel free to contact me at extension 226.

Very truly yours,

MOCK, ROOS & ASSOCIATES, INC.

*Juan A. Chan*  
Juan A. Chan, P.E.  
Senior Project Engineer

JAC:jch

Enclosure

Copies: Tom McGillicuddy, QCDD Chairman  
Robert Brown, Director, Environmental Resource Compliance Division,  
SFWMD  
Humid Azizi, Environmental Resource Compliance Division, SFWMD  
Eugene A. Gerlica, P.E.

Called 1-12-99 - LEFT MESSAGE - DR  
NEED COPY OF ORDINANCES



## South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045  
TDD (561) 697-2574

CON 24-06

July 22, 1998

Mr. James G. Willard, Esquire  
Shutts and Bowen LLP  
Attorneys and Counselors at Law  
20 North Orange Avenue, Suite 1000  
Orlando, Florida 32801

Dear Mr. Willard:

**Subject: Construction Completion / Construction Certification,  
Permit Conversion to Operation Phase, Permit Transfer to Operating Entity  
Surface Water Management Permit No. 50-01503-S  
QUANTUM PARK AT BOYNTON BEACH, Palm Beach County**

This is a recap of our telephone conversation of July 21, 1998, in which we discussed outstanding post permit compliance items to be provided by your clients, Quantum Associates.

Specifically, and of great importance is that the permit be modified to change the permit condition which identifies the entity responsible to maintain and operate the primary surface water management system. Currently the permit still states that the operating entity would be the property owners association. At some time, your clients changed the operating entity to a community development district, whereas no request was received by District staff to change the permit condition. The permit file does not contain documentation of the community development district's creation. Thus, the need for a permit modification, to correctly identify the community development district as the approved operating entity.

Enclosed is a copy of the project matrix describing the permitting history within the project. It shows two applications for permit modification, which have not been certified by the project engineer. They are: application no. 03027-C (issued 7/9/87), and application no. 910214-8 (issued 3/26/91). If they have been superseded by another application, then the engineer should state so in writing. In order to convert and transfer the permit for the backbone drainage facilities to the operating entity, all components of the system must have been addressed and all application numbers accounted for.

Lots 4 and 5 (application no. 06068-4) lots 41C and 42A (application no. 900802-13), and lot 49 (application no. 911111-1) were issued to Quantum Associates, who are therefore considered the permittee. Until these permit modifications are transferred to the actual owners, the current permittee will remain responsible.

*Governing Board:*

Frank Williamson, Jr., Chairman  
Eugene K. Pettis, Vice Chairman  
Mitchell W. Berger

Vera M. Carter  
William E. Graham  
William Hammond

Richard A. Machek  
Michael D. Minton  
Miriam Singer

Samuel E. Poole III, Executive Director  
Michael Slayton, Deputy Executive Director

Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680

Mr. James G. Willard, Esquire  
July 22, 1998  
Page 2

Upon the approved permit modification and receipt and acceptance of the outstanding engineer's certifications, staff will resume processing the permit conversion / transfer request. I have enclosed another form to be submitted for the remainder of the applications issued for the backbone system. Property transfer forms are also enclosed for the three other applications that Quantum Associates no longer owns.

Please contact me at (561) 682-6957, in the West Palm Beach Service Center, should you have questions or need assistance.

Sincerely,



Heidi M. Schloss, Specialist Engineering Associate  
Environmental Resource Compliance Division  
Regulation Department  
South Florida Water Management District

HS/c  
(Enclosures)

c: Quantum Associates  
Ms. Rhonda K. Archer, Quantum Community Development District  
Ms. Angela D. Shaw, Esquire, Shutts and Bowen LLP  
Palm Beach County Engineer





**FAX TRANSMISSION**

**SHUTTS & BOWEN LLP**  
20 NORTH ORANGE AVENUE  
SUITE 1000  
ORLANDO, FLORIDA 32801-4626  
407-423-3200 (Main)  
407-425-8316 (Fax)

---

<b>To:</b>	Hamid Azizi	<b>Company:</b>	South Florida Water Management District
<b>Fax #:</b>	561-682-6896	<b>Phone:</b>	561-686-8800 x 6596
<b>Date:</b>	July 7, 1998	<b>Pages:</b>	1, including cover sheet
<b>From:</b>	Angela Shaw	<b>User ID:</b>	4019
<b>CI/MA #</b>	10711-0016		
<b>Subject:</b>	Quantum Park - SWM Permit No. 50-01503-S		

**COMMENTS:** You should have received a letter from Jim Willard, of my office, dated June 22, 1998 regarding the transfer of the above referenced permit from construction to operation phase, as well as the transfer of the permit from Quantum Associates to Quantum Community Development District. Please call me as soon as possible to discuss the status of this transfer. Your prompt attention is appreciated.

cc: James G. Willard, Esq.  
Arthur Felsner (via fax)

This facsimile contains privileged and confidential information intended only for the use of the addressee named above. If you are not the intended recipient of this facsimile, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination or copying of this facsimile is strictly prohibited. If you have received this facsimile in error, please notify us immediately by telephone and return the original facsimile to us at the above address via the U.S. Postal Service. Thank you.

**NOTE: PLEASE CALL IMMEDIATELY IF ALL PAGES ARE NOT RECEIVED**  
MAIN NUMBER: (407) 423-3200

THE PERSON SENDING THIS FACSIMILE IS: Angela Shaw  
HARD COPY TO FOLLOW BY U.S. MAIL - YES/NO

# SHUTTS & BOWEN LLP

ATTORNEYS AND COUNSELLORS AT LAW  
(A PARTNERSHIP INCLUDING PROFESSIONAL ASSOCIATIONS)

20 NORTH ORANGE AVENUE  
SUITE 1000  
ORLANDO, FLORIDA 32801  
TELEPHONE (407) 423-3200  
FACSIMILE (407) 426-0316

June 22, 1998

RECEIVED

JUN 24 1998

REGULATION DEPT, 4030

Hamid A. Azizi  
Staff Engineer, Field Engineering Division  
South Florida Water Management District  
3302 Gun Club Road  
West Palm Beach, FL 33406

RE: Boynton Park of Commerce a/k/a Quantum Park Phase  
Construction/Certification Application No. 082-96-D and  
11207-F, SWM Permit No. 50-01503-S, Palm Beach County,  
Section 16, 17, 20, 21/Township 45 South/Range 43 East

Dear Mr. Azizi:

Our firm represents Quantum Associates, as the owner of certain lots in Quantum Park, in relation to the above-referenced Water Management Permit. I have enclosed for your reference a copy of the letter sent to you on March 13, 1998 from Rhonda K. Archer, as Assistant Manager of the Quantum Community Development District, which requests the transfer of the Environmental Resource/Surface Water Management Permit (the "Master Permit") from construction phase to operation phase as well as the transfer of the Master Permit from Quantum Associates to the Quantum Community Development District (the "CDD").

Evidently, Warren Craven, the engineer for the Quantum CDD, was told by the South Florida Water Management District that the transfer that has been requested will not be granted until three other permits were finalized. The three permits that the District referenced relates to the following lots and owners within Quantum Park:

AMSTERDAM OFFICE  
EUROPA BOULEVARD 89  
1063 AD AMSTERDAM  
THE NETHERLANDS  
TELEPHONE 011-3120-001-8989  
FACSIMILE 011-3120-042-1470

LONDON OFFICE  
40 MOUNT STREET  
LONDON W1P 8BE ENGLAND  
TELEPHONE 011-44171-493-4848  
FACSIMILE 011-44171-493-4299

MIAMI OFFICE  
1900 MIAMI CENTER  
201 SOUTH BISCAYNE BOULEVARD  
MIAMI, FLORIDA 33131  
MIAMI (305) 356-6300  
BROWARD (954) 467-8941  
FACSIMILE (305) 381-9902

TALLAHASSEE OFFICE  
210 SOUTH MONROE STREET  
SUITE 600A  
TALLAHASSEE, FLORIDA 32301  
TELEPHONE (904) 821-0600  
FACSIMILE (904) 821-0604

WEST PALM BEACH OFFICE  
ONE CLEARLAKE CENTRE, SUITE 600  
280 AUSTRALIAN AVENUE, SUITE 111  
WEST PALM BEACH, FLORIDA 33401  
MAILING ADDRESS P. O. BOX 3858  
WEST PALM BEACH, FLORIDA 33402-3858  
TEL. (407) 833-8500  
FACSIMILE (407) 833-8530

Hamid A. Azizi  
June 22, 1998  
Page 2

RECEIVED  
JUN 24 1998  
REGULATION DEPT. 4030

<u>Lots</u>	<u>Owner</u>
4, 5	United Way
41C, 42A	School Board of Palm Beach County
49	Canada Dry Distributors

Quantum Associates is not the owner of the above referenced lot. The transfer of the Master Permit should not be conditioned upon events that neither Quantum Associates nor the Quantum CDD has any control over. The above referenced owners purchased the subject lots several years ago and we can only speculate as to their development schedule.


Accordingly, you are urged to process the transfer of the Master Permit to the Quantum CDD, as requested in Ms. Archer's letter, at the earliest possible time.

If you have any questions, please do not hesitate to contact me.

Very truly yours

  
James G. Willard

cc: Art Felsher  
Rhonda K. Archer  
Warren Craven  
Angela D. Shaw, Esquire



**QUANTUM** Community Development District

March 13, 1998

South Florida Water Management District  
Hamid A. Azizi  
Staff Engineer  
Field Engineering Division  
3302 Gun Club Road  
West Palm Beach, Florida 33406

RECEIVED

MAR 17 1998

Re: Boynton Park of Commerce aka Quantum Park  
Phase Construction Completion/Construction Certification  
Application Nos. 08296-D & 11207-F, SWM Permit No. 50-01503-S  
Palm Beach County, S16, 17, 20, 21/T45S/R43E

Dear Mr. Azizi:

Enclosed please find the following for the purpose of transferring the Environmental Resource/Surface Water Management Permit from Construction Phase to Operation Phase and from Quantum Associates to the Quantum Community Development District:

1. Copy of SFWMD letter indicating satisfaction of permit conditions, dated February 27, 1997.
2. A copy of the recorded transfer of title (Assignment of Reservations), transferring the system from Quantum Associates to the Quantum Community Development District.
3. Copies of the plats.

Should you have any questions regarding the enclosed, please feel free to contact me.

Sincerely,



Rhonda K. Archer  
Assistant Manager

/rka

cc: Quantum Associates, Inc.  
Arthur Felsher

# SHUTTS & BOWEN LLP

ATTORNEYS AND COUNSELLORS AT LAW  
A PARTNERSHIP INCLUDING PROFESSIONAL ASSOCIATIONS

80 NORTH CHICAGO AVENUE  
SUITE 1000  
ORLANDO, FLORIDA 32801  
TELEPHONE (407) 423-3200  
FACSIMILE (407) 423-8310

March 12, 1998

## VIA FEDERAL EXPRESS

Rhonda K. Archer  
Quantum Community Development District  
10300 Northwest 11th Manor  
Coral Springs, Florida 33071

**RE: Transfer of South Florida Water Management District Permit**

Dear Rhonda:

Pursuant to our conversation on Wednesday, March 11, 1998, enclosed you will find copies of the plat for Quantum Corporate Park which you requested to enclose with the package that you will be sending to the South Florida Water Management District.

Upon submission of the same, please provide me with a copy of the transfer application as well as the exhibits (with the exception of the exhibit that is enclosed).

Should you have any further questions or concerns, please do not hesitate to contact me.

Very truly yours,

SHUTTS & BOWEN LLP

  
Suzanne M. Amadio

SMA/ccj  
Enclosures  
cc: Art Frisher  
James G. Willard, Esquire

ORL98 70542.1 - CEJ

AMSTERDAM OFFICE  
EUROPA BOULEVARD 89  
1093 AD AMSTERDAM  
THE NETHERLANDS  
TELEPHONE 011-3120-661-0969  
FACSIMILE 011-3120-642-1475

LONDON OFFICE  
48 MOUNT STREET  
LONDON W1Y 0RE ENGLAND  
TELEPHONE 011-44171-493 4840  
FACSIMILE 011-44171-493-4299

MIAMI OFFICE  
1000 MIAMI CENTER  
201 SOUTH DISCAYNE BOULEVARD  
MIAMI, FLORIDA 33131  
MIAMI (305) 358-0300  
BROWARD (954) 467-9941  
FACSIMILE (305) 361-9962

WEST PALM BEACH OFFICE  
ONE CLEARLAKH CENTER, SUITE 800  
200 AUSTRALIAN AVENUE SOUTH  
WEST PALM BEACH, FLORIDA 33401  
MAILING ADDRESS P. O. BOX 3688  
WEST PALM BEACH, FLORIDA 33402-3688  
TELEPHONE (888) 838-8300  
FACSIMILE (561) 850-8530



# SHUTTS & BOWEN

ATTORNEYS AND COUNSELLORS AT LAW  
(A PARTNERSHIP INCLUDING PROFESSIONAL ASSOCIATIONS)

20 NORTH ORANGE AVENUE  
SUITE 1000  
ORLANDO, FLORIDA 32801  
TELEPHONE (407) 425-3200  
FACSIMILE (407) 425-0310

RECEIVED

MAR 16 1998

February 20, 1997

REGULATION DEPT, 4030

Rhonda Archer  
Quantum Community Development District  
10300 Northwest 11th Manor  
Coral Springs, Florida 33071

**RE: Transfer of Quantum South Florida Water Management District  
Permit to Quantum Community Development District ("CDD")**

Dear Rhonda:

Enclosed you will find the Request for Conversion of Environmental Resource/Surface Water Management Permit from Construction Phase to Operation Phase which contemplates changing the South Florida Water Management District Permit from Quantum Associates to the CDD. Please have the appropriate person on behalf of the CDD execute this transfer application where indicated and submit it to the South Florida Water Management District as soon as possible.

I have also enclosed in this package the enclosures required to be submitted with the transfer application which include (1) documentary evidence of satisfaction of permit conditions (FYI, this is the "substantial completion letter" Rossi and Malavasi sent to us written by SFWMD that we faxed to Jim Groh with a letter that we were ready to close); (2) copy of recorded transfer of title; and (3) copy of plats. This entire package must be submitted to the South Florida Water Management District.

Should you have any questions or concerns regarding the same, please do not hesitate to contact me.

Very truly yours,

SHUTTS & BOWEN LLP

  
Suzanne M. Amaducci

SMA/cej  
Enclosures  
cc: Arthur Felsher  
James G. Willard, Esq.  
ORL05 37023.1 - CEJ

AMSTERDAM OFFICE  
EUROPA BOULEVARD 88  
1093 AD AMSTERDAM,  
THE NETHERLANDS  
TELEPHONE 011-3120-601-0909  
FACSIMILE 011-3120-647-1478

KEY LARGO OFFICE  
OCEAN REEF CLUB  
31 OCEAN REEF DRIVE  
SUITE A206,  
OCEAN REEF PLAZA  
KEY LARGO, FLORIDA 33037  
TELEPHONE (305) 367-2861

LONDON OFFICE  
49 MARK LANE  
LONDON W1P 5SQ ENGLAND  
TELEPHONE 011-44171-493-4840  
FACSIMILE 011-44171-493-4299

MIAMI OFFICE  
1500 MIAMI CENTER  
201 SOUTH BISCAYNE BOULEVARD  
MIAMI, FLORIDA 33131  
MIAMI (305) 358-8300  
BROWARD (954) 467-8844  
FACSIMILE (305) 381-9083

WEST PALM BEACH OFFICE  
ONE CLEARLAKE CENTRE, SUITE 900  
280 AUSTRALIAN AVENUE SOUTH  
WEST PALM BEACH, FLORIDA 33401  
MAILING ADDRESS P. O. BOX 3555  
WEST PALM BEACH, FLORIDA 33402-3555  
TELEPHONE (561) 833-8300  
FACSIMILE (561) 830-8330

**SOUTH FLORIDA WATER  
MANAGEMENT DISTRICT**

**CONVERSION FILE**

**MAPS**

**PERMIT NUMBER:**

5D-01503-S

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**ISSUED DATE:**

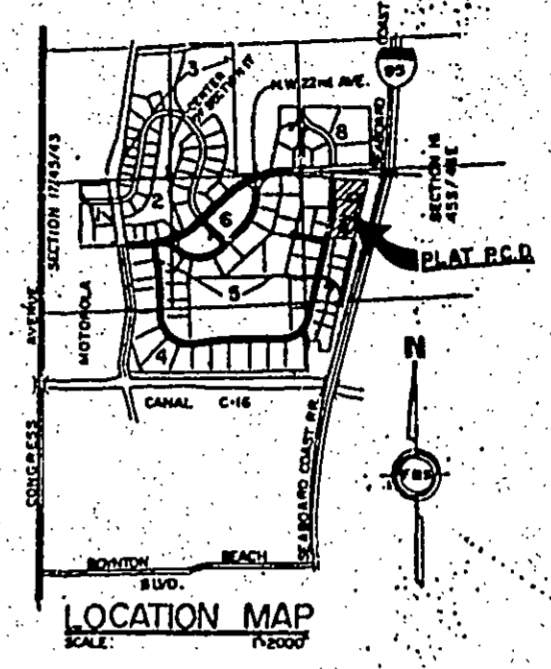
July 29, 2003

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**PLAT OF P.C.D. CENTER**  
 LYING IN  
**SECTION 16, TOWNSHIP 45 SOUTH, RANGE 43 EAST**  
 PALM BEACH COUNTY, STATE OF FLORIDA.  
 JUNE, 1988 IN 2 SHEETS, SHEET NO 1

**106**

STATE OF FLORIDA  
 COUNTY OF PALM BEACH  
 This Plat was filed for record in Book  
 No. 756 Day of August  
 1988 and duly recorded in Public Records  
 at 10:00 in year 1988  
 By A. DANIEL, Clerk of Public Records  
Richard A. Platt



**DESCRIPTION:**  
 A PARCEL OF LAND LYING IN THE SOUTHWEST ONE-QUARTER (SW1) OF SECTION 16, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH, STATE OF FLORIDA; AND MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE WEST ONE-QUARTER (W1) CORNER OF SAID SECTION 16; THENCE, SOUTH 88° 28' 32" EAST ALONG THE NORTH LINE OF THE SOUTHWEST ONE-QUARTER (SW1) OF SAID SECTION 16 A DISTANCE OF 706.07 FEET; THENCE, SOUTH 01° 31' 38" WEST A DISTANCE OF 120.92 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF N.W. 23RD AVENUE, AS SAID RIGHT-OF-WAY IS DESCRIBED IN DEED RECORDED IN OFFICIAL RECORD BOOK 2228 PAGE 577 OF THE PUBLIC RECORDS OF SAID COUNTY AND THE POINT OF BEGINNING; THENCE, SOUTH 85° 17' 07" EAST ALONG SAID SOUTH RIGHT-OF-WAY LINE A DISTANCE OF 607.72 FEET TO THE WEST RIGHT-OF-WAY LINE OF THE SEABOARD ALL-FLORIDA RAILWAY RIGHT-OF-WAY, AS SAID RIGHT-OF-WAY LINE IS DESCRIBED IN FINAL JUDGEMENT (TRACT ONE) OF THE CIRCUIT COURT OF THE FIFTEENTH JUDICIAL CIRCUIT OF FLORIDA, PALM BEACH COUNTY, RECORDED IN MINUTES CIRCUIT COURT, NO. 14 AT PAGE 470, AND DATED APRIL 15, 1926; THENCE, SOUTH 14° 58' 00" WEST ALONG SAID WEST RIGHT-OF-WAY LINE A DISTANCE OF 1,188.51 FEET TO THE SOUTH LINE OF THE NORTHWEST ONE-QUARTER (NW1) OF THE SOUTHWEST ONE-QUARTER (SW1) OF SAID SECTION 16; THENCE, NORTH 68° 46' 28" WEST ALONG SAID SOUTH LINE A DISTANCE OF 419.19 FEET TO THE EAST RIGHT-OF-WAY LINE OF HIGH RIDGE ROAD AS SAID RIGHT-OF-WAY IS SHOWN ON THE PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.L.D. PLAT NUMBER 8; THENCE, ALONG SAID EAST RIGHT-OF-WAY LINE THROUGH THE FOLLOWING A NUMBERED COURSES AND DISTANCES:

1. NORTH 14° 10' 59" EAST A DISTANCE OF 343.78 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE WEST HAVING A RADIUS OF 1,600.00 FEET AND A CENTRAL ANGLE OF 74° 42' 16";
2. NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 410.63 FEET TO A POINT OF TANGENCY;
3. NORTH 00° 31' 17" WEST A DISTANCE OF 416.77 FEET;
4. NORTH 46° 35' 48" EAST A DISTANCE OF 36.64 FEET TO THE POINT OF BEGINNING

CONTAINING 13.9333 ACRES, MORE OR LESS.

**DEDICATION:**  
 KNOW ALL MEN BY THESE PRESENTS THAT QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, OWNER OF THE LAND SHOWN AND DESCRIBED HEREON AS P.C.D. CENTER, LYING AND BEING IN SECTION 16, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA HAS CAUSED THE SAME TO BE SURVEYED AND PLATTED AS SHOWN HEREON AND DOES HEREBY DEDICATE AS FOLLOWS:

1. THE UTILITY EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO THE CITY OF BOYNTON BEACH, FLORIDA POWER & LIGHT CO., QUANTUM COMMUNICATIONS, INC., AND SOUTHERN BELL, ITS SUCCESSORS AND ASSIGNS, UNLESS OTHERWISE SPECIFICALLY INDICATED, FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES.

IN WITNESS WHEREOF, THE SAID QUANTUM ASSOCIATES, HAS CAUSED THESE PRESENTS TO BE SIGNED BY THE DULY AUTHORIZED GENERAL PARTNER OF SAID GENERAL PARTNERSHIP SIGNING BELOW THE DATE & YEAR INDICATED.

**QUANTUM ASSOCIATES**  
Edward B. Deutsch  
 PARTNER, QUANTUM ASSOCIATES  
 A FLORIDA GENERAL PARTNERSHIP  
 WITNESSES:  
Richard A. Platt  
 WITNESS

**ACKNOWLEDGEMENT**  
 STATE OF FLORIDA  
 COUNTY OF PALM BEACH  
 BEFORE ME, PERSONALLY APPEARED EDWARD B. DEUTSCH, A PARTNER OF QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, TO ME WELL KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT ON BEHALF OF THE PARTNERSHIP, AND HE ACKNOWLEDGED BEFORE ME THAT HE EXECUTED SAID INSTRUMENT FOR THE PURPOSES EXPRESSED THEREIN.  
 WITNESS MY HAND AND OFFICIAL SEAL THIS 9<sup>th</sup> DAY OF June 1988.  
 MY COMMISSION EXPIRES: Feb. 26, 1991  
Angela Gorman  
 NOTARY PUBLIC

**TITLE CERTIFICATION**  
 STATE OF FLORIDA  
 COUNTY OF DADE  
 WE, SHEA AND GOULD, DULY LICENSED ATTORNEYS IN THE STATE OF FLORIDA, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE TO THE HEREIN DESCRIBED PROPERTY; THAT AS OF October 8, 1987, AT 1:00 PM APPARENT RECORD TITLE TO THE PROPERTY IS HELD IN QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP; THAT THE REAL ESTATE TAXES FOR THE YEAR 1988 AND PRIOR YEARS HAVE BEEN PAID; THAT THE PROPERTY IS FREE OF ENCUMBRANCES AND THERE ARE NO OTHER MORTGAGE ENCUMBRANCES OF RECORD.  
 DATE: October 21, 1987 BY: Shea and Gould  
Richard A. Platt  
 WITNESS

**MORTGAGEE'S CONSENT**  
 STATE OF NEW YORK  
 COUNTY OF ALBANY  
 THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE HOLDERS OF A MORTGAGE DATED AS OF OCTOBER 29, 1985 AND RECORDED IN OFFICIAL RECORD BOOK 4596, AT PAGE 58 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, UPON THE HEREON DESCRIBED PROPERTY AND DO HEREBY JOIN IN THE CONSENT TO THE DEDICATIONS OF THE LANDS DESCRIBED IN THE DEDICATION HERETO, BY THE OWNER THEREOF.  
 IN WITNESS WHEREOF, THE SAID CORPORATION HAS CAUSED THESE PRESENTS TO BE SIGNED BY ITS Vice President AND ATTESTED BY ITS Vice President AND ITS CORPORATE SEAL TO BE AFFIXED HEREON BY AND WITH THE AUTHORITY OF ITS BOARD OF DIRECTORS, THIS 19<sup>th</sup> DAY OF May A.D., 1987.  
 THE CHASE MANHATTAN BANK, (N.A.)  
 ONE CHASE MANHATTAN PLAZA  
 NEW YORK, NEW YORK 10081  
 ATTEST: William A. Rame BY: William F. Conroy

**ACKNOWLEDGEMENT**  
 STATE OF NEW YORK  
 COUNTY OF NEW YORK  
 BEFORE ME PERSONALLY APPEARED WILLIAM F. CARUDDY TO ME WELL KNOWN, AND KNOWN TO ME TO BE THE INDIVIDUAL DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AS VICE-PRESIDENT OF THE ABOVE NAMED CHASE MANHATTAN BANK, (N.A.), A CORPORATION, AND HE ACKNOWLEDGED TO AND BEFORE ME THAT HE EXECUTED SUCH INSTRUMENT AS VICE-PRESIDENT OF SAID CORPORATION, AND THAT THE SEAL AFFIXED TO THE FOREGOING INSTRUMENT IS THE CORPORATE SEAL OF SAID CORPORATION AND THAT IT WAS AFFIXED TO SAID INSTRUMENT BY DUE AND REGULAR CORPORATE AUTHORITY AND THAT SAID INSTRUMENT IS THE FREE ACT AND DEED OF SAID CORPORATION, SAID CORPORATION NOW KNOWN AS THE CHASE MANHATTAN BANK (N.A.).  
 WITNESS MY HAND AND OFFICIAL SEAL THIS 19<sup>th</sup> DAY OF MAY A.D., 1987.  
Stacy A. DePalma  
 NOTARY PUBLIC  
 MY COMMISSION EXPIRES: 5/19/89

**CITY APPROVAL**  
 APPROVED July 19 A.D., 1988  
 BY: Raymond Hunter Jr. MAYOR  
 BY: Gregory J. Anzoni CITY CLERK  
 BY: Thomas A. Clark CITY ENGINEER

**SURVEYOR'S NOTES:**

1. PERMANENT REFERENCE MONUMENTS ARE DESIGNATED TO BE PERMANENT REFERENCE MONUMENTS (P.R.M.).
2. PERMANENT CONTROL POINTS ARE DESIGNATED TO BE PERMANENT CONTROL POINTS (P.C.P.).
3. MINIMUM BUILDING SETBACK LINES SHALL BE AS REQUIRED BY THE P.C.D. ZONING REGULATIONS OF THE CITY OF BOYNTON BEACH AND THE COVENANTS.
4. MINIMUM BUILDING SETBACK LINES FROM EASEMENTS SHOWN HEREON SHALL BE NO LESS THAN 15 FEET OR MORE RESTRICTIVE AS REQUIRED BY THE CITY OF BOYNTON BEACH.
5. THERE SHALL BE NO BUILDINGS PLACED ON UTILITY EASEMENTS.
6. IN INSTANCES WHERE DRAINAGE AND UTILITY EASEMENTS INTERSECT, THE AREAS OF INTERSECTION ARE DRAINAGE AND UTILITY EASEMENTS AND THE USE, CONSTRUCTION AND MAINTENANCE OF EACH EASEMENT SHALL NOT INTERFERE WITH THE USE, CONSTRUCTION AND MAINTENANCE OF THE OTHER.
7. BEARING DATUM: THE WEST LINE OF THE SOUTHWEST ONE-QUARTER (SW1) OF SECTION 16, TOWNSHIP 45 SOUTH, RANGE 43 EAST IS ASSUMED TO BEAR NORTH 00° 31' 17" WEST AND ALL BEARINGS SHOWN HEREON ARE RELATIVE THERETO.

**SURVEYOR'S CERTIFICATION**  
 STATE OF FLORIDA  
 COUNTY OF PALM BEACH  
 I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY, MADE UNDER MY RESPONSIBLE DIRECTION AND SUPERVISION, AND THAT SAID SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THE (P.R.M.) PERMANENT REFERENCE MONUMENTS HAVE BEEN SET AND THAT THE (P.C.P.) PERMANENT CONTROL POINTS WILL BE SET UNDER THE GUARANTEES POSTED WITH THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA, FOR THE REQUIRED IMPROVEMENTS; AND FURTHER THAT THE SURVEY DATA COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AMENDED.  
 DATE: April 29, 1987 BY: Rafael Rodriguez  
 RAFAEL RODRIGUEZ, PROFESSIONAL LAND SURVEYOR  
 REGISTRATION NO. 2345  
 STATE OF FLORIDA

RECEIVED  
 MAR 16 1988  
 REGULATION DEPT. 4030

NO. 5  
 Sheet  
 #1



NOTE  
 THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.  
 THIS INSTRUMENT PREPARED BY JORGE G. PENONZO IN THE OFFICES OF F.R.S. AND ASSOCIATES, 1840 FOREST HILL BOULEVARD, SUITE 107, WEST PALM BEACH, FLORIDA 33406. TELEPHONE: 947-5696

**756 PG 106**

Sheet 1 of 2 sheets

**F.R.S. & ASSOCIATES**  
 ENGINEERS, LAND SURVEYORS, AND PLANNERS  
 WEST PALM BEACH, FLORIDA

APPROVED BY: Richard A. Platt  
 CLERK OF PUBLIC RECORDS  
 86-3-024

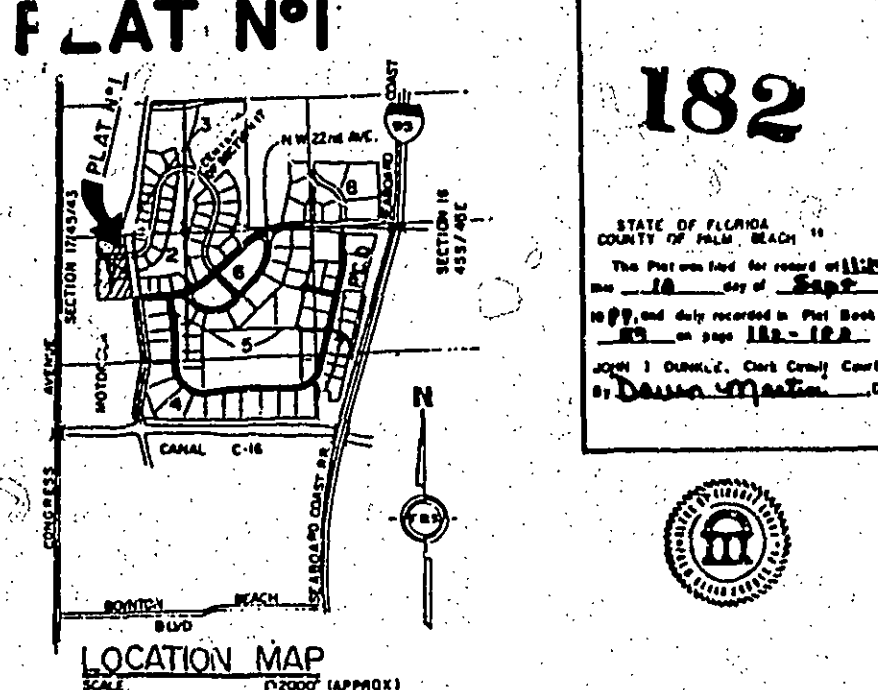
**PLAT OF P.C.D. CENTER**





QUANTUM PARK AT BOYNTON BEACH, P.I.D. FLAT NO 1  
LYING IN  
THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA  
IN 2 SHEETS, SHEET NO. 1, 182

182



**RECORDERS:**  
A RECORD OF ALL LOTS IN THE FOREGOING DESCRIBED TRACT OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, HAS BEEN FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982.

**RECORDING:**  
I, JAMES H. HARRIS, COUNTY CLERK, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982, AT 10:00 A.M.

**NOTARIAL:**  
I, JAMES H. HARRIS, COUNTY CLERK, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982, AT 10:00 A.M.

**DEED:**  
I, JAMES H. HARRIS, COUNTY CLERK, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982, AT 10:00 A.M.

**RECORDERS:**  
A RECORD OF ALL LOTS IN THE FOREGOING DESCRIBED TRACT OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, HAS BEEN FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982.

**RECORDING:**  
I, JAMES H. HARRIS, COUNTY CLERK, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982, AT 10:00 A.M.

**NOTARIAL:**  
I, JAMES H. HARRIS, COUNTY CLERK, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982, AT 10:00 A.M.

**DEED:**  
I, JAMES H. HARRIS, COUNTY CLERK, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED IN THE OFFICE OF THE COUNTY CLERK, PALM BEACH COUNTY, FLORIDA, THIS 15th DAY OF FEBRUARY, 1982, AT 10:00 A.M.

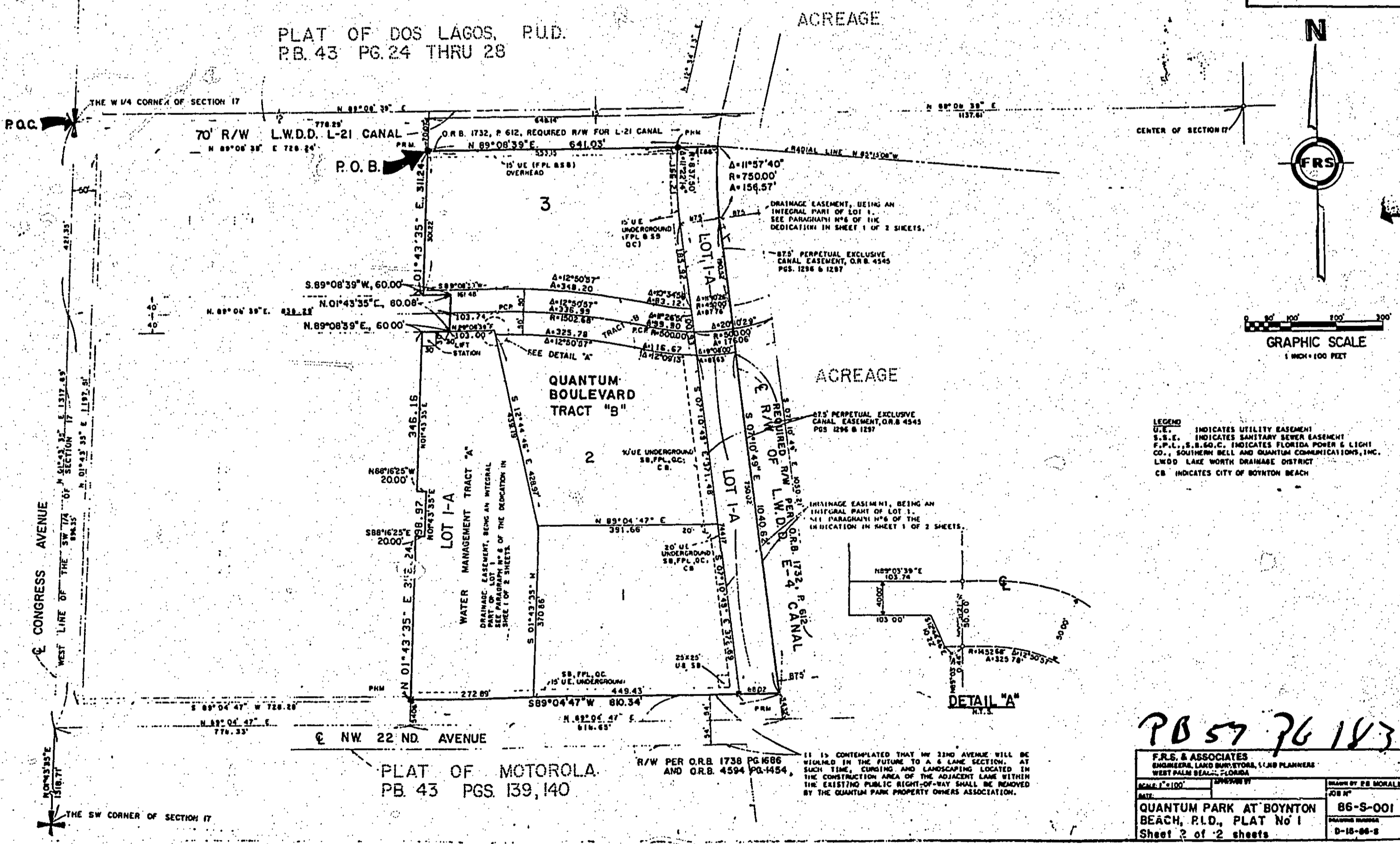
No 20  
Sheet  
#1

QUANTUM PARK AT BOYNTON BEACH, P.I.D. FLAT NO 1  
BEACH, FLA. PLAT NO 1  
SHEET 1 OF 2, 182

PLANNED BY: JAMES H. HARRIS  
DESIGNED BY: JAMES H. HARRIS  
PREPARED BY: JAMES H. HARRIS  
DATE: FEBRUARY 15, 1982

**QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°1**  
 LYING IN  
 THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST  
 PALM BEACH COUNTY, STATE OF FLORIDA.  
 198 IN 2 SHEETS, SHEET N°2

**183**



No 20  
 Page  
 #2

PB 57 76 183  
 P.A.L. & ASSOCIATES  
 QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT No 1  
 Sheet 2 of 2 sheets



**QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A**

LYING IN  
THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA.  
180 IN 2 SHEETS, SHEET NO. 1

180

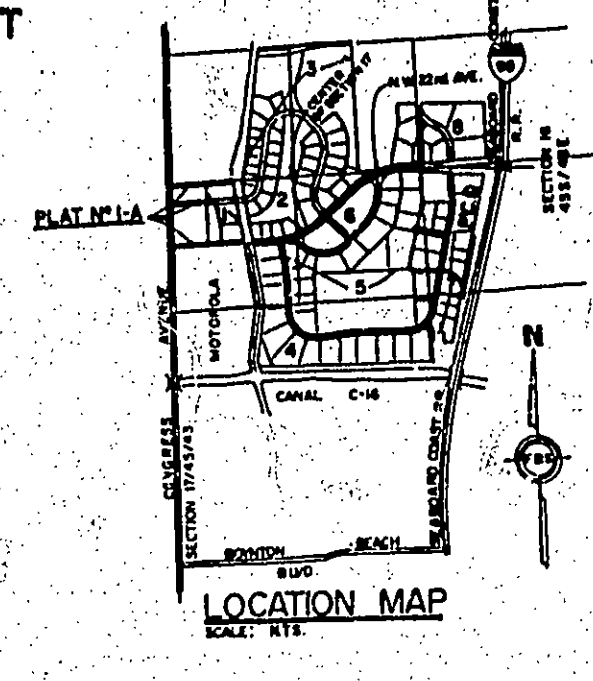
**RECORDING:**  
A PLAT OF THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, BEING THE QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A, LIES IN 2 SHEETS, SHEET NO. 1.

**RECORDING:**  
A PLAT OF THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, BEING THE QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A, LIES IN 2 SHEETS, SHEET NO. 1.

**RECORDING:**  
A PLAT OF THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, BEING THE QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A, LIES IN 2 SHEETS, SHEET NO. 1.

**RECORDING:**  
A PLAT OF THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, BEING THE QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A, LIES IN 2 SHEETS, SHEET NO. 1.

**RECORDING:**  
A PLAT OF THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, BEING THE QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A, LIES IN 2 SHEETS, SHEET NO. 1.



**LOCATION MAP**  
PLAT NO. 1-A

**RECORDING:**  
A PLAT OF THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, STATE OF FLORIDA, BEING THE QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A, LIES IN 2 SHEETS, SHEET NO. 1.

**PLAT NO. 1-A**  
QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 1-A  
SHEET 1 OF 2 SHEETS

**DATE:** 10/15/11  
**BY:** [Signature]

**SCALE:** AS SHOWN

**PREPARED BY:** [Signature]

**DATE:** 10/15/11

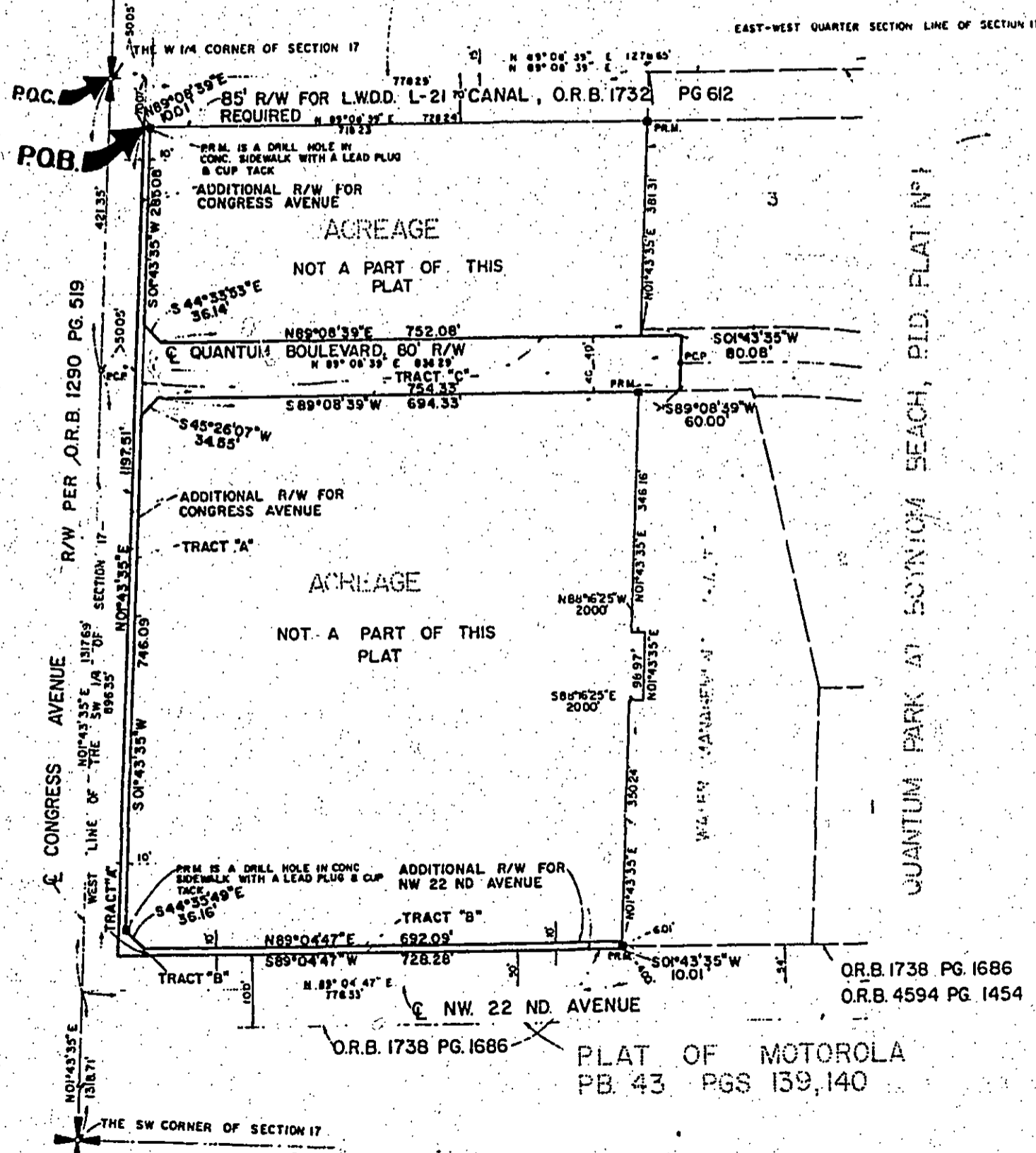
# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°1-A

LYING IN  
THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA.  
198 IN 2 SHEETS, SHEET N°2

## 181

STATE OF FLORIDA  
COUNTY OF PALM BEACH  
The Plat was filed for record on \_\_\_\_\_  
at \_\_\_\_\_ o'clock of \_\_\_\_\_  
A.M. and duly recorded in Plat Book N° \_\_\_\_\_  
on page \_\_\_\_\_  
JOHN B. DUNKLE, Clerk Circuit Court  
By \_\_\_\_\_, D.C.

PLAT OF DOS LAGOS, A.P.U.D.  
P.B. 43 PG. 24 THRU 28



F.R.S. & ASSOCIATES ENGINEERS, LAND SURVEYORS, LAND PLANNERS WEST PALM BEACH, FLORIDA		
SCALE 1" = 100'	APPROVED BY	DRAWN BY PB MORALES
DATE		JOB NO.
QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT N° 1-A		86-S-45
Sheet 2 of 2 sheets		DRAWING NUMBER D-96-86-S



# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°2

LYING IN  
SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA.  
198 IN 2 SHEETS, SHEET N° 1.

# 184

### DESCRIPTION:

A PARCEL OF LAND LYING IN SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH, STATE OF FLORIDA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE CENTERLINE OF THE LAKE NORTH DRAINAGE DISTRICT E-4 CANAL (AS SAID CENTERLINE IS SHOWN IN OFFICIAL RECORD BOOK 4788, PAGE 983 OF THE PUBLIC RECORDS OF SAID COUNTY) WITH THE NORTH RIGHT-OF-WAY LINE OF NORTHWEST 23RD AVENUE (AS SAID RIGHT-OF-WAY IS DESCRIBED IN DEED RECORD BOOK 1728, PAGE 1886 AND OFFICIAL RECORD BOOK 4394, PAGE 1434 OF THE PUBLIC RECORDS OF SAID COUNTY) SAID RIGHT-OF-WAY BEING 100.00 FEET IN WIDTH, THENCE, NORTH 07° 10' 48" WEST ALONG THE CENTERLINE OF SAID E-4 CANAL A DISTANCE OF 850.10 FEET TO A POINT ON AN ARC OF A CURVE (A RADIAL LINE PASSING THROUGH SAID POINT BEARS NORTH 09° 45' 48" WEST) WHICH IS A CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 450.00 FEET AND A CENTRAL ANGLE OF 87° 39' 39" THENCE, NORTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 831.43 FEET TO A TANGENT LINE, THENCE, NORTH 13° 34' 13" EAST ALONG SAID TANGENT LINE A DISTANCE OF 587.94 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY HAVING A RADIUS OF 687.30 FEET AND A CENTRAL ANGLE OF 83° 38' 30" THENCE, NORTHEASTLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 417.73 FEET TO A TANGENT LINE, THENCE, NORTH 09° 01' 43" EAST ALONG SAID TANGENT LINE A DISTANCE OF 300.00 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTH HAVING A RADIUS OF 300.00 FEET AND A CENTRAL ANGLE OF 131° 54' 17" THENCE, NORTHWESTERLY, EASTERLY AND SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 1384.18 FEET TO A TANGENT LINE, THENCE, SOUTH 39° 00' 00" EAST ALONG SAID TANGENT LINE A DISTANCE OF 320.00 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE WEST HAVING A RADIUS OF 648.70 FEET AND A CENTRAL ANGLE OF 80° 00' 00" THENCE, SOUTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 667.16 FEET TO A TANGENT LINE, THENCE, SOUTH 19° 00' 00" WEST ALONG SAID TANGENT LINE A DISTANCE OF 650.00 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY HAVING A RADIUS OF 450.00 FEET AND A CENTRAL ANGLE OF 83° 13' 54" THENCE, SOUTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 488.77 FEET TO A TANGENT LINE, THENCE, SOUTH 43° 43' 54" EAST ALONG SAID TANGENT LINE A DISTANCE OF 123.77 FEET THENCE, SOUTH 11° 11' 51" WEST ALONG SAID TANGENT LINE TO THE NORTH RIGHT-OF-WAY LINE OF SAID NORTHWEST 23RD AVENUE, THENCE, TRAVELING ALONG SAID NORTH RIGHT-OF-WAY LINE THROUGH THE FOLLOWING 3 PARCELS, COURSES AND DISTANCES:

- 1) SOUTH 04° 44' 00" WEST A DISTANCE OF 134.50 FEET TO THE BEGINNING OF A CURVE CONCAVE NORTHERLY HAVING A RADIUS OF 1172.44 FEET AND HAVING A CENTRAL ANGLE OF 171° 17' 17" THENCE, WESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 1161.31 FEET TO A TANGENT LINE;
- 2) SOUTHWESTERLY ALONG SAID TANGENT LINE A DISTANCE OF 176.04 FEET TO THE POINT OF BEGINNING.

CONTAINING IN TOTAL 75.2234 ACRES MORE OR LESS.

**DEDICATION:**  
KNOW ALL MEN BY THESE PRESENTS THAT QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, OWNER OF THE LAND SHOWN AND DESCRIBED HEREON AS QUANTUM PARK AT BOYNTON BEACH LYING IN SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA HAS CAUSED THE SAME TO BE SURVEYED AND PLATTED AS SHOWN HEREON, AND DOES HEREBY DEDICATE AS FOLLOWS:

1. WATER MANAGEMENT TRACT #1 (LAKE) AS SHOWN HEREON IS HEREBY DEDICATED FOR LAKE AND PAVED DETENTION PURPOSES TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., ITS SUCCESSORS OR ASSIGNS, AND IS THE PERPETUAL OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH. TRACT #1 LAKE IS ALSO A DRAINAGE EASEMENT.
2. TRACT #2 (QUANTUM BOULEVARD) AS SHOWN HEREON IS HEREBY DEDICATED FOR PRIVATE ROAD PURPOSES TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., ITS SUCCESSORS OR ASSIGNS, AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH. IN ADDITION, THE PUBLIC IS HEREBY GRANTED A PERPETUAL NONEXCLUSIVE EASEMENT OVER AND UPON TRACT #2 FOR THE PURPOSES OF AND FROM LOT #18 SHOWN AND DESIGNATED IN QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO. 2, RECORDED IN THE PUBLIC RECORDS OF PALM BEACH COUNTY; HOWEVER, THE PUBLIC SHALL HAVE NO RIGHTS TO OR CONTROL OVER, THE CONFIGURATION OF TRACT #2 OR THE EXACT CONFIGURATION OF WHICH (1) SHALL BE DETERMINED BY QUANTUM ASSOCIATES, INC., (OR ITS SUCCESSORS OR ASSIGNS), AND (2) MAY BE DIFFERENT THAN THE CONFIGURATION SHOWN ON THIS PLAT.
3. TRACT #3 (QUANTUM BOULEVARD) AS SHOWN HEREON IS HEREBY DEDICATED TO THE CITY OF BOYNTON BEACH, FLORIDA, FOR POWER & LIGHT, QUANTUM COMMUNICATIONS, INC., (AND ITS SUCCESSORS OR ASSIGNS) AND SOUTHERN BELL FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES ONLY, AND TO BE USED IN A MANNER SO AS NOT TO INTERFERE WITH THE USE OF THE SAID TRACT FOR PRIVATE ROAD PURPOSES.
4. TRACT #4 (WETLAND) AS SHOWN HEREON IS HEREBY DEDICATED FOR PROPER PURPOSES TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., ITS SUCCESSORS OR ASSIGNS, AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH.
5. THE UTILITY EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO THE CITY OF BOYNTON BEACH, FLORIDA, FOR POWER & LIGHT, QUANTUM COMMUNICATIONS, INC., AND SOUTHERN BELL, ITS SUCCESSORS AND ASSIGNS, UNLESS OTHERWISE SPECIFICALLY INDICATED, FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES.
6. THE DRAINAGE EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY FOR CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES ONLY, AND ARE HEREBY DEDICATED TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., ITS SUCCESSORS OR ASSIGNS, AND ARE THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH.
7. TRACT #5 AS SHOWN HEREON IS SOLELY A DRAINAGE EASEMENT AND ALSO PART OF THE LAKE, SAID TRACT #5 IS SUBDIVIDED INTO EIGHTEEN (18) UNEQUAL PORTIONS AS SHOWN IN SHEET 2 OF 2 SHEETS, EACH TO BE AN INTEGRAL PART OF THE CORRESPONDING LOT, AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., FOR WATER RETENTION PURPOSES.

### ACKNOWLEDGEMENT

STATE OF FLORIDA  
COUNTY OF BROWARD SS:  
BEFORE ME, PERSONALLY APPEARED EDWARD S. DEUTSCH, A PARTNER OF QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, TO ME WELL KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT ON BEHALF OF THE PARTNERSHIP, AND HE ACKNOWLEDGED BEFORE ME THAT HE EXECUTED SAID INSTRUMENT FOR THE PURPOSES EXPRESSED THEREIN.  
WITNESS MY HAND AND OFFICIAL SEAL THIS 9th DAY OF June 1987.  
BY COMMISSION EXPIRES: Feb. 26, 1991  
Daphne Gomez  
NOTARY PUBLIC

### MORTGAGEE'S CONSENT

STATE OF NEW YORK  
COUNTY OF NEW YORK SS:  
THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE HOLDERS OF A MORTGAGE DATED AS OF OCTOBER 29, 1985, AND RECORDED IN OFFICIAL RECORD BOOK 4694, AT PAGE 58 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, UPON THE HEREON DESCRIBED PROPERTY AND DO HEREBY JOIN IN THE CONSENT TO THE DEDICATION OF THE LANDS DESCRIBED IN THE DEDICATION HERETO, BY THE OWNER THEREOF.

IN WITNESS WHEREOF, THE SAID CORPORATION HAS CAUSED THESE PRESENTS TO BE SIGNED BY ITS Vice President, AND ATTESTED BY ITS Vice President, AND ITS CORPORATE SEAL TO BE AFFIXED HERETO, AND WITH THE AUTHORITY OF ITS BOARD OF DIRECTORS, THIS 9th DAY OF June 1987.

THE CHASE MANHATTAN BANK (N.A.)  
ONE CHASE MANHATTAN PLAZA  
NEW YORK, NEW YORK 10011  
Wm. A. Lomas  
William A. Lomas  
Vice President  
Vice President

### ACKNOWLEDGEMENT

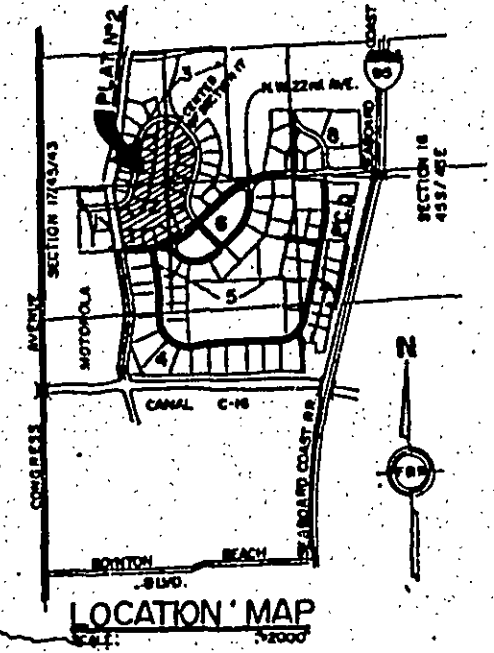
STATE OF NEW YORK  
COUNTY OF NEW YORK SS:  
BEFORE ME PERSONALLY APPEARED William F. Carmody, TO ME WELL KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT, AND HE ACKNOWLEDGED TO AND BEFORE ME THAT HE EXECUTED SAID INSTRUMENT AS VICE PRESIDENT OF SAID CORPORATION, AND THAT THE SEAL AFFIXED TO SAID INSTRUMENT IS THE CORPORATE SEAL OF SAID CORPORATION AND THAT IT WAS AFFIXED TO SAID INSTRUMENT BY DUE AND REGULAR CORPORATE AUTHORITY AND THAT SAID INSTRUMENT IS THE SAME ACT AND DEED OF SAID CORPORATION, SAID CORPORATION NOW KNOWN AS THE CHASE MANHATTAN BANK (N.A.).  
WITNESS MY HAND AND OFFICIAL SEAL THIS 9th DAY OF June, A.D. 1987.  
Shirley A. DeRosa  
NOTARY PUBLIC  
MY COMMISSION EXPIRES: 6/19/92

### TITLE CERTIFICATION

STATE OF FLORIDA  
COUNTY OF DADE SS:  
WE, SHEA AND GOLD, DULY LICENSED ATTORNEYS IN THE STATE OF FLORIDA, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE TO THE HEREON DESCRIBED PROPERTY THAT AS OF JUNE 5, 1987, AT 11:00 AM, APPARENT RECORD TITLE TO THE PROPERTY IS HELD IN QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, THAT THE REAL ESTATE TAXES FOR THE YEAR 1986 AND PRIOR YEARS HAVE BEEN PAID THAT THE PROPERTY IS ENCLUMBERED BY THE MORTGAGES SHOWN HEREON, AND THAT ALL RECORDED MORTGAGES NOT SATISFIED OR RELEASED OF RECORD, ARE SHOWN AND ARE TRUE AND CORRECT, AND THERE ARE NO OTHER MORTGAGE ENCUMBRANCES OF RECORD.  
DATE: JUNE 5, 1987  
SHEA AND GOLD  
Attorneys

### DEDICATION (CONT)

IN WITNESS WHEREOF, THE SAID QUANTUM ASSOCIATES, HAS CAUSED THESE PRESENTS TO BE SIGNED BY THE ONLY AUTHORIZED PARTNER OF SAID GENERAL PARTNERSHIP SIGNING BELOW THE DATE 9 YEAR INDICATED.  
QUANTUM ASSOCIATES  
EDWARD S. DEUTSCH  
PARTNER, QUANTUM ASSOCIATES  
A FLORIDA GENERAL PARTNERSHIP



STATE OF FLORIDA  
COUNTY OF PALM BEACH  
This Plat was filed for record in the Public Records of Palm Beach County, Florida, on this 18th day of June, 1987, at 1:25 P.M.  
JOHN R. DUNKLE, Clerk Circuit Court  
BY: [Signature]



CITY APPROVAL  
APPROVED June 16, A.D. 1987  
Nate Casanova  
MAYOR

BY: [Signature]  
CITY ENGINEER  
SURVEYOR'S NOTES:  
1. PERMANENT REFERENCE MONUMENTS ARE DESIGNATED THUSLY: (P.R.M.)  
2. PERMANENT CONTROL POINTS ARE DESIGNATED THUSLY: (P.C.P.)  
3. MINIMUM BUILDING SETBACK LINES SHALL BE AS REQUIRED BY THE P.I.D. ZONING REGULATIONS OF THE CITY OF BOYNTON BEACH AND THE GOVERNANTS.  
4. MINIMUM BUILDING SETBACK LINES FROM EASEMENTS SHOWN HEREON SHALL BE NO LESS THAN 11 FEET OR MORE RESTRICTIVE AS REQUIRED BY THE CITY OF BOYNTON BEACH.  
5. THERE SHALL BE NO BUILDINGS PLACED ON UTILITY EASEMENTS.  
6. IN INSTANCES WHERE DRAINAGE AND UTILITY EASEMENTS INTERSECT, THE AREAS OF INTERSECTION ARE DRAINAGE AND UTILITY EASEMENTS AND THE LINE, CONSTRUCTION AND MAINTENANCE OF EACH EASEMENT SHALL NOT INTERFERE WITH THE USE, CONSTRUCTION AND MAINTENANCE OF THE OTHER.  
7. BEARING DATUM: THE NORTH-SOUTH QUARTER SECTION LINE OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST IS ASSUMED TO BEAR NORTH 63° 33' 45" EAST AND ALL BEARINGS SHOWN HEREON ARE RELATIVE THERETO.

SURVEYOR'S CERTIFICATION  
STATE OF FLORIDA  
COUNTY OF PALM BEACH SS:  
I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY, MADE UNDER MY RESPONSIBLE DIRECTION AND SUPERVISION, AND THAT SAID SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THE (P.R.M.) PERMANENT REFERENCE MONUMENTS HAVE BEEN SET AND THAT THE (P.C.P.) PERMANENT CONTROL POINTS WILL BE SET UNDER THE GUARANTEES POSTED WITH THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA, FOR THE REQUIRED IMPROVEMENTS; AND FURTHER THAT THE SURVEY DATA COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AMENDED.  
DATE: June 29, 1987  
BY: [Signature]  
RAYALY BARRAGANS, PROFESSIONAL LAND SURVEYOR  
REGISTRATION NO. 2345  
STATE OF FLORIDA

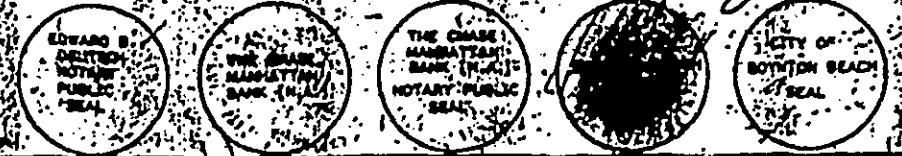
DATE: June 29, 1987  
BY: [Signature]  
RAYALY BARRAGANS, PROFESSIONAL LAND SURVEYOR  
REGISTRATION NO. 2345  
STATE OF FLORIDA

QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO 2  
Sheet 1 of 2 sheets

NAME: [Signature]	DATE: [Signature]
DATE: [Signature]	DATE: [Signature]

QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT NO 2  
Sheet 1 of 2 sheets

NO 19  
SHEET  
#1



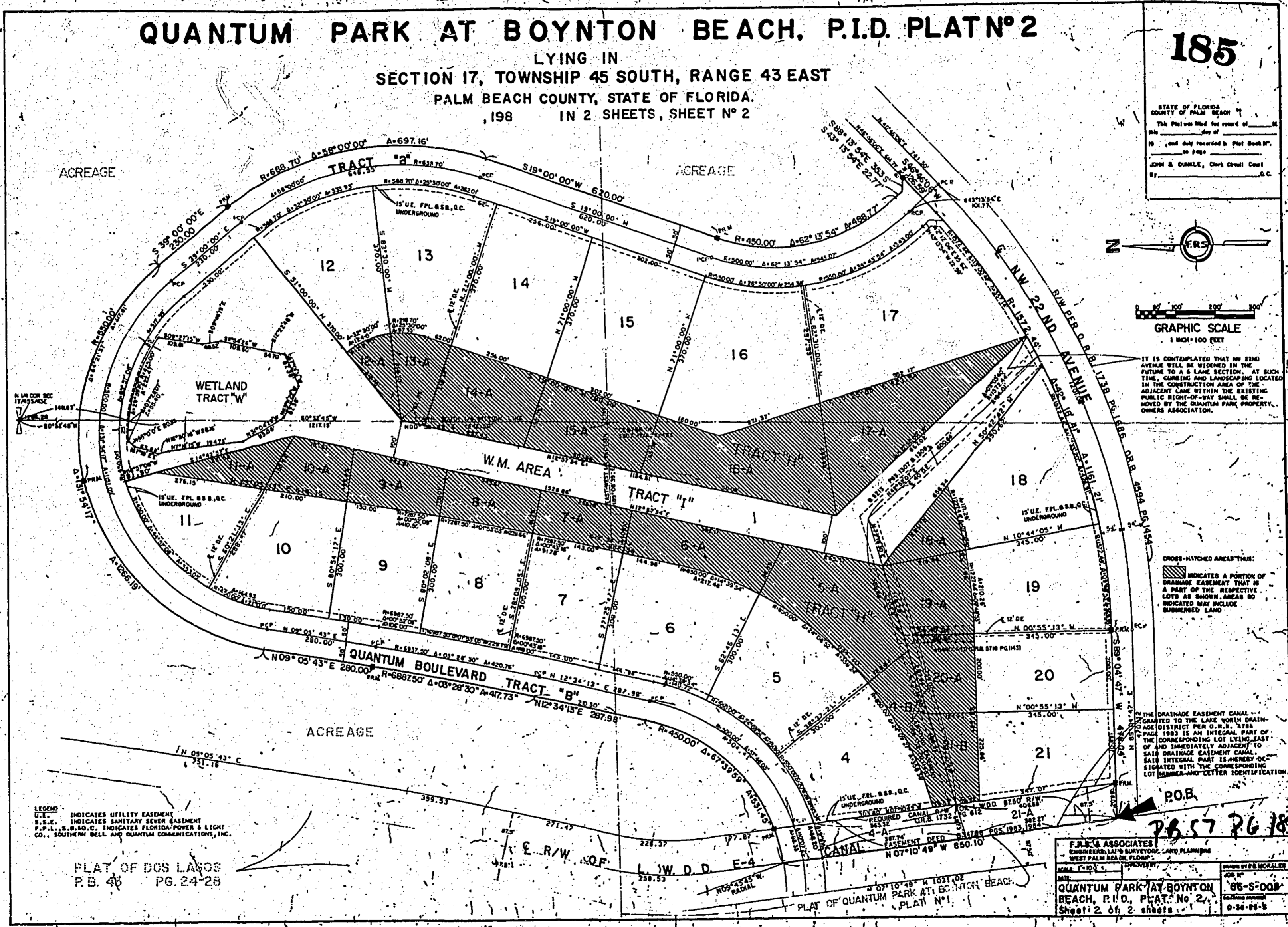
THIS INSTRUMENT PREPARED BY JONAS J. PERDOMO IN THE OFFICES OF J.R.S. AND ASSOCIATES, 1800 FOREST HILL BOULEVARD, SUITE 107, WEST PALM BEACH, FLORIDA, 33411, TELEPHONE: 969-8888

# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N° 2

LYING IN  
SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA.  
198 IN 2 SHEETS, SHEET N° 2

## 185

STATE OF FLORIDA  
COUNTY OF PALM BEACH  
This Plat was filed for record of \_\_\_\_\_  
this \_\_\_\_\_ day of \_\_\_\_\_  
19\_\_\_\_, and duly recorded in Plat Book N° \_\_\_\_\_  
in Page \_\_\_\_\_  
JOHN B. DUNKLE, Clerk Circuit Court  
By \_\_\_\_\_, C.C.



No 19  
Sheet  
#2

LEGEND  
--- INDICATES UTILITY EASEMENT  
--- INDICATES SANITARY SEWER EASEMENT  
--- INDICATES FLORIDA POWER & LIGHT CO., SOUTHERN BELL AND QUANTUM COMMUNICATIONS, INC.

PLAT OF DCS LAGOON  
P.B. 48 PG. 24-28

F.J.S. ASSOCIATES  
ENGINEERS, LAND SURVEYORS AND PLANNERS  
WEST PALM BEACH, FLORIDA  
DATE: 10/10/86  
BY: [Signature]  
PROJECT: QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N° 2  
SHEET: 2 of 2 sheets  
JOB N°: 86-S-008  
DATE: 8-28-86

IT IS CONTEMPLATED THAT NW 22ND AVENUE WILL BE WIDENED IN THE FUTURE TO A 6 LANE SECTION. AT SUCH TIME, CURBING AND LANDSCAPING LOCATED IN THE CONSTRUCTION AREA OF THE ADJACENT LANE WITHIN THE EXISTING PUBLIC RIGHT-OF-WAY SHALL BE REMOVED BY THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION.

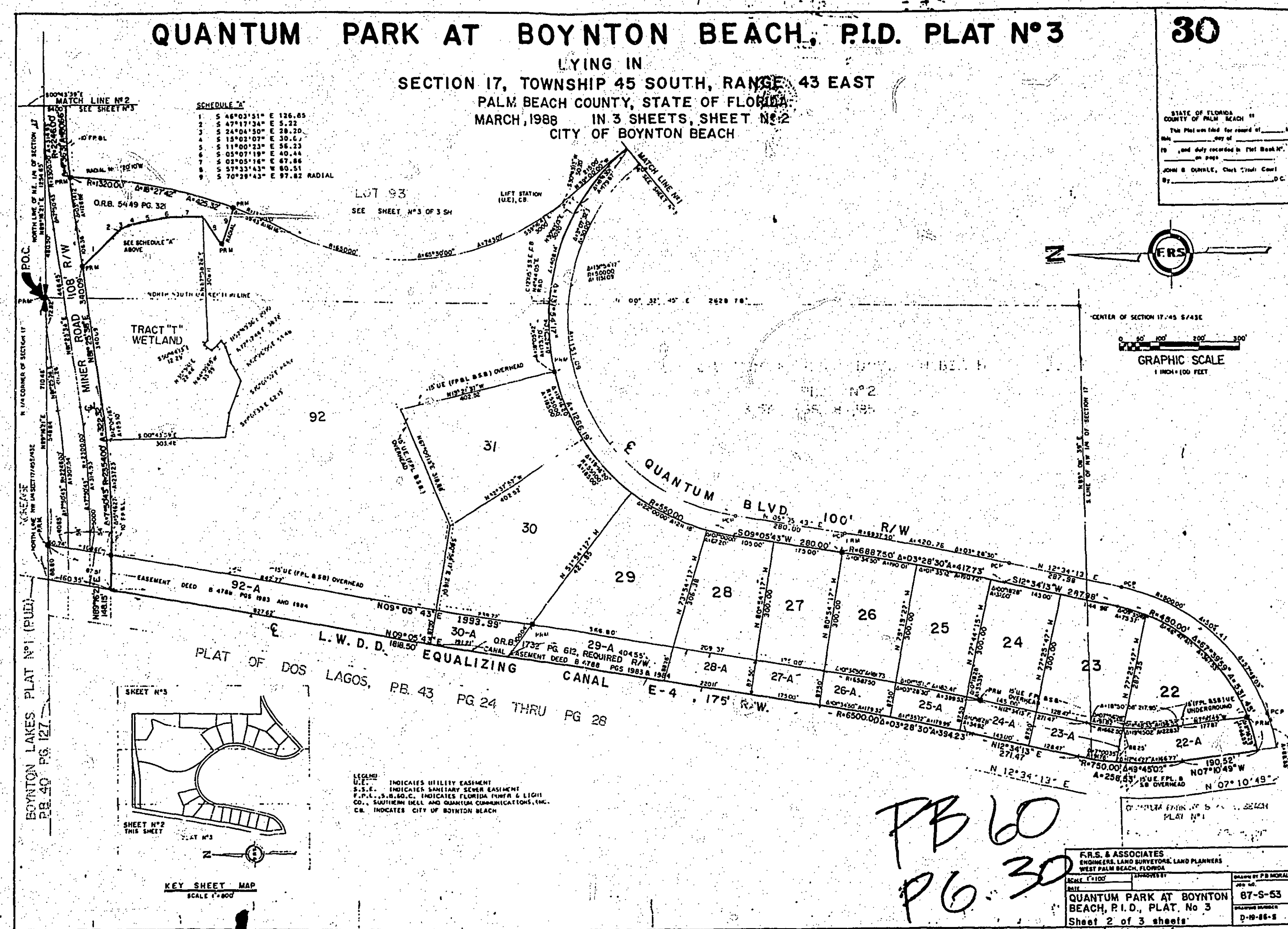
CROSS-HATCHED AREAS THAT:  
--- INDICATES A PORTION OF DRAINAGE EASEMENT THAT IS A PART OF THE RESPECTIVE LOTS AS SHOWN AREAS SO INDICATED MAY INCLUDE SUBMERGED LAND

IN THE DRAINAGE EASEMENT CANAL GRANTED TO THE LAKE NORTH DRAINAGE DISTRICT PER O.R.B. 8788 PAGE 1883 IS AN INTEGRAL PART OF THE CORRESPONDING LOT LYING EAST OF AND IMMEDIATELY ADJACENT TO SAID DRAINAGE EASEMENT CANAL. SAID INTEGRAL PART IS HEREBY DESIGNATED WITH THE CORRESPONDING LOT NUMBER AND LETTER IDENTIFICATION.

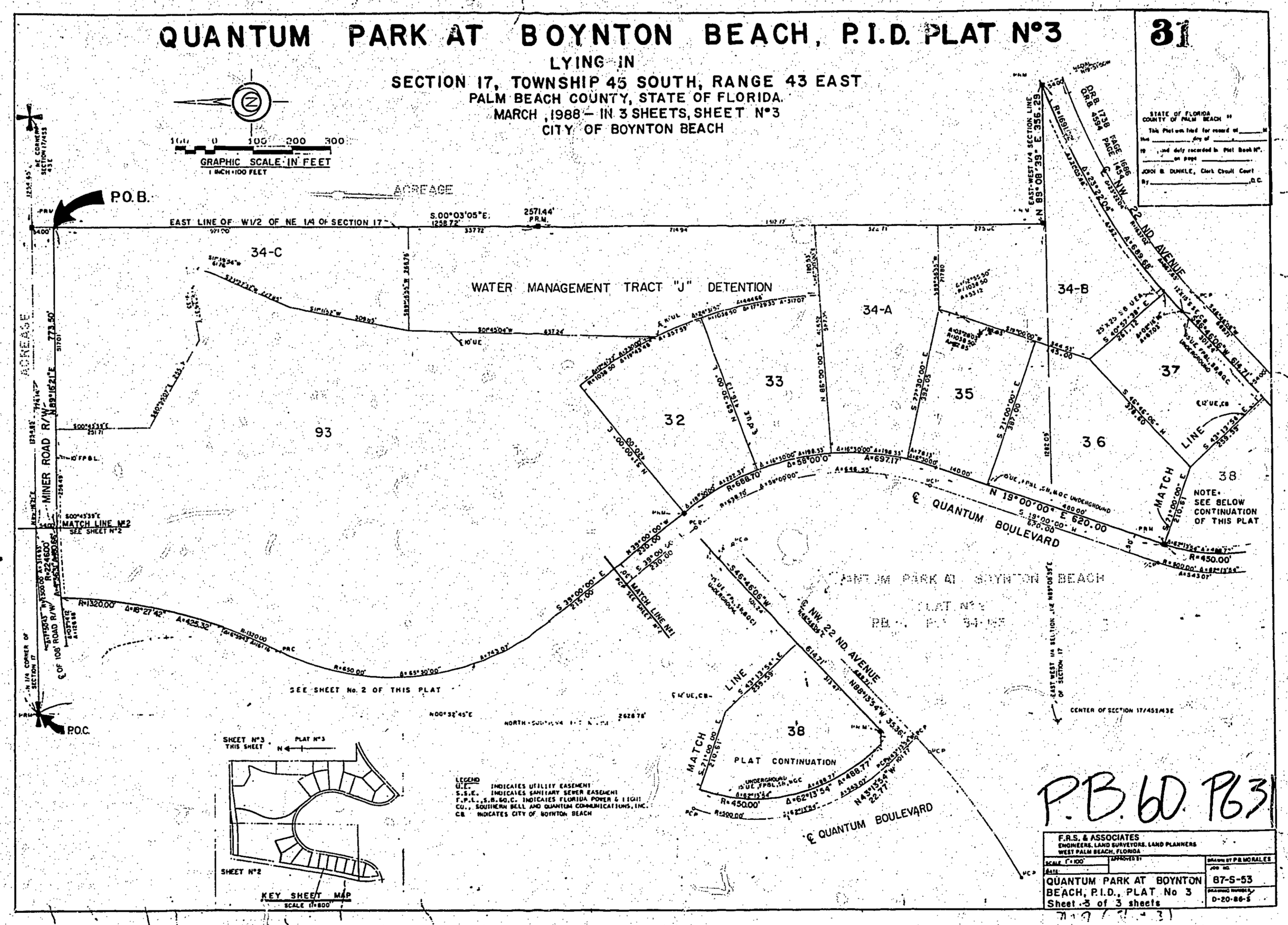
P.O.B.  
P.B. 57 PG. 185











No. 9  
Sheet  
#3

P.B. 60 P.3

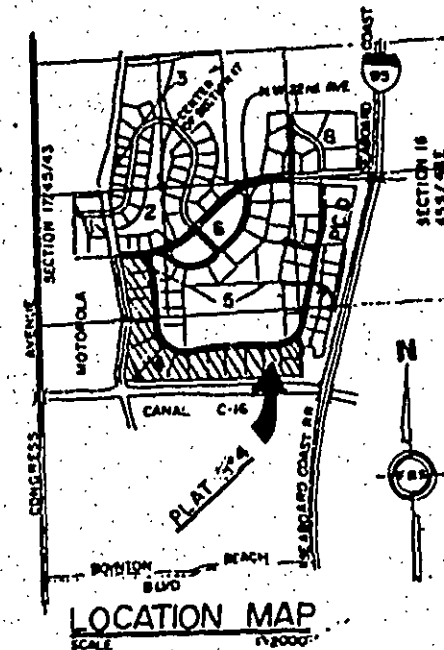
# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°4

LYING IN

SECTIONS 17 & 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH  
STATE OF FLORIDA, BEING IN PART A REPLAT OF A PORTION OF A SUBDIVISION OF  
SECTIONS 29 & 20, PB.7 PAGE 20  
PALM BEACH COUNTY STATE OF FLORIDA.  
198 IN 3 SHEETS, SHEET N° 1

## 186

STATE OF FLORIDA  
COUNTY OF PALM BEACH  
The Plat was filed for record on 11/11/87  
at 10:14 of Sept  
1987, and duly recorded in Plat Book N°  
85 on page 186-187  
JAMES B. SHARPLE, Clerk County Court  
By Debra M. ... P.C.



**DESCRIPTION:**

A PARCEL OF LAND LYING IN SECTIONS 17 AND 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH, STATE OF FLORIDA BEING IN PART A REPLAT OF ALL OF LOTS 36, THROUGH 41 INCLUSIVE, ALL OF LOTS 38 THROUGH 39 INCLUSIVE, AND A PORTION OF LOTS 42 AND 43 TOGETHER WITH A PORTION OF THE LAKE BOTTOM, FORMERLY SUBDIVIDED AND (FORMER LAKE JACKSON) AND THE 30.00 FOOT RIGHT-OF-WAY ARE IN SUBDIVISION OF SECTION 20 AND 19, TOWNSHIP 45 SOUTH, RANGE 43 EAST, AS RECORDED IN PLAT BOOK N° 7, PAGE 20 OF THE PUBLIC RECORDS OF SAID COUNTY, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 20; THENCE, SOUTH 00° 42' 01" EAST ALONG THE EAST LINE OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SAID SECTION 20 A DISTANCE OF 611.63 FEET TO A POINT ON A CURVE AND THE POINT IS BEGINNING (A RADIAL LINE PASSING THROUGH SAID POINT BEARS NORTH 69° 22' 12" EAST) CONVEY, SOUTHWESTERLY HAVING A RADIUS OF 172.38 FEET AND A CENTRAL ANGLE OF 39° 41' 44" THENCE, SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 119.83 FEET TO A LINE 40.00 FEET EAST OF (AS MEASURED AS RIGHT ANGLES) TO PARALLEL WITH THE EAST LINE OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SAID SECTION 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST; THENCE, SOUTH 00° 48' 02" EAST ALONG SAID PARALLEL LINE A DISTANCE OF 176.34 FEET; THENCE, NORTH 00° 41' 07" WEST A DISTANCE OF 48.03 FEET TO THE EAST LINE OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SAID SECTION 20; THENCE SOUTH 00° 48' 02" EAST ALONG SAID EAST LINE A DISTANCE IN 411.62 FEET TO THE NORTH RIGHT-OF-WAY LINE OF THE SOUTH EASEMENT WATER MANAGEMENT DISTRICT CANAL C-16 AS SAID EASEMENT RIGHT-OF-WAY IS DESCRIBED IN OFFICIAL RECORD BOOK 1864, PAGE 145 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE, CONTINUING SOUTH 00° 41' 07" EAST A DISTANCE OF 114.66 FEET TO THE SOUTH LINE OF SAID EASEMENT CANAL; THENCE, NORTH 89° 52' 14" WEST ALONG SAID SOUTH LINE A DISTANCE OF 2307.90 FEET; THENCE, CONTINUING ALONG SAID SOUTH LINE NORTH 81° 29' 48" WEST A DISTANCE OF 209.74 FEET TO THE EAST RIGHT-OF-WAY LINE OF THE LAKE NORTH DRAINAGE DISTRICT EQUALING CANAL C-16 AS SAID RIGHT-OF-WAY IS DESCRIBED IN DEED RECORDED IN OFFICIAL RECORD BOOK 3311, PAGE 641 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE, TRAVERSING ALONG SAID EAST RIGHT-OF-WAY LINE THROUGH THE FOLLOWING 5 MEASURED COURSES AND DISTANCES:

- 1) NORTH 12° 11' 38" WEST A DISTANCE OF 204.06 FEET TO THE BEGINNING OF A CURVE CONVEY TO THE EAST HAVING A RADIUS OF 218.19 FEET AND A CENTRAL ANGLE OF 22° 34' 28";
- 2) THENCE, NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 85.46 FEET TO A POINT OF TANGENCY;
- 3) THENCE, NORTH 18° 14' 49" EAST A DISTANCE OF 978.11 FEET TO THE BEGINNING OF A CURVE CONVEY TO THE WEST HAVING A RADIUS OF 573.07 FEET AND A CENTRAL ANGLE OF 17° 25' 38";
- 4) THENCE, NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 174.29 FEET TO A POINT OF TANGENCY;
- 5) THENCE, NORTH 07° 10' 49" WEST A DISTANCE OF 1152.73 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF NORTHWEST 22ND AVENUE AS SAID RIGHT-OF-WAY IS DESCRIBED IN DEEDS RECORDED IN OFFICIAL RECORD BOOK 1738, PAGE 1886 AND OFFICIAL RECORD BOOK 1991, PAGE 1456 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE, ALONG SAID SOUTH RIGHT-OF-WAY LINE NORTH 89° 04' 27" EAST A DISTANCE OF 378.17 FEET TO THE BEGINNING OF A CURVE CONVEY TO THE NORTH HAVING A RADIUS OF 188.44 FEET AND A CENTRAL ANGLE OF 08° 52' 38"; THENCE, EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 240.85 FEET; THENCE, DEPARTING FROM SAID SOUTH RIGHT-OF-WAY LINE SOUTH 35° 37' 32" WEST A DISTANCE OF 36.14 FEET; THENCE, SOUTH 07° 54' 34" EAST A DISTANCE OF 259.55 FEET TO THE BEGINNING OF A CURVE CONVEY TO THE WEST HAVING A RADIUS OF 928.40 FEET AND A CENTRAL ANGLE OF 8° 01' 30"; THENCE, SOUTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 818.19 FEET TO A TANGENT LINE; THENCE, SOUTH 00° 02' 36" WEST ALONG SAID TANGENT LINE A DISTANCE OF 200.00 FEET TO THE BEGINNING OF A CURVE CONVEY TO THE SOUTH HAVING A RADIUS OF 306.14 FEET AND A CENTRAL ANGLE OF 08° 01' 30"; THENCE, SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 138.91 FEET TO A RADIAL LINE; THENCE, SOUTH 47° 35' 07" EAST ALONG SAID RADIAL LINE A DISTANCE OF 100.00 FEET; THENCE, SOUTH 00° 45' 34" WEST A DISTANCE OF 33.22 FEET; THENCE, SOUTH 48° 11' 37" EAST A DISTANCE OF 18.09 FEET TO THE BEGINNING OF A CURVE CONVEY TO THE WEST HAVING A RADIUS OF 172.38 FEET AND A CENTRAL ANGLE OF 00° 13' 49"; THENCE, SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 0.69 FEET TO THE POINT OF BEGINNING.

CONTAINING IN TOTAL 90.8580 ACRES, MORE OR LESS.

**DEDICATION:**

AND ALL MEN BY THESE PRESENTS THAT QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, OWNER OF THE LAND SHOWN AND DESCRIBED HEREIN AS QUANTUM PARK AT BOYNTON BEACH, LYING AND BEING IN SECTIONS 17 & 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA HAS CAUSED THE SAME TO BE SURVEYED AND PLATED AS SHOWN HEREIN AND DOES HEREBY DEDICATE AS FOLLOWS:

1. WATER MANAGEMENT TRACT "A" (LAKE) AND WATER MANAGEMENT TRACT "B" (LAKE) AS SHOWN HEREIN ARE HEREBY DEDICATED FOR LAKE AND WATER DETENTION PURPOSES TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., ITS SUCCESSORS OR ASSIGNS, AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT REFERENCE TO THE CITY OF BOYNTON BEACH, TRACTS "C" AND "D" (LAKES) ARE ALSO DEDICATED EASEMENTS.
2. TRACT "E" (PARK RIDGE DRIVEWAY) AND TRACTS "F" AND "G" (PARK RIDGE ROAD) AS SHOWN HEREIN ARE HEREBY DEDICATED FOR PRIVATE ROAD PURPOSES TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., ITS SUCCESSORS OR ASSIGNS, AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT REFERENCE TO THE CITY OF BOYNTON BEACH.
3. TRACT "H" (PARK RIDGE DRIVEWAY) AND TRACTS "I" AND "J" (PARK RIDGE ROAD) AS SHOWN HEREIN ARE HEREBY DEDICATED TO THE CITY OF BOYNTON BEACH, FLORIDA UNDER EASEMENT, OPERATION AND MAINTENANCE OF UTILITIES ONLY.
4. THE UTILITY EASEMENTS AS SHOWN HEREIN ARE HEREBY DEDICATED IN PERPETUITY TO THE CITY OF BOYNTON BEACH, FLORIDA POWER & LIGHT CO., QUANTUM COMMUNICATIONS, INC. AND BOYNTON BELL, ITS SUCCESSORS AND ASSIGNS, UNLESS OTHERWISE SPECIFICALLY INDICATED FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES.
5. THE EASEMENTS AS SHOWN HEREIN ARE HEREBY DEDICATED IN PERPETUITY FOR CONSTRUCTION, OPERATION AND MAINTENANCE OF EASEMENTS AND ARE HEREBY DEDICATED TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC. (THE 12.00 FEET 5" X 12" DRAINAGE EASEMENT CONTAINED ALONG THE COMMON TO TRACT "K" AND THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT REFERENCE TO THE CITY OF BOYNTON BEACH.
6. TRACT "M" AS SHOWN HEREIN IS SOLELY A DRAINAGE EASEMENT BEING ALSO A PART OF THE LAKE. SAID TRACT "M" AS SHOWN IN SHEET 2 OF 3 SHEETS IS AN INTEGRAL PART OF LOTS 42 AND 43 AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION FOR WATER DETENTION PURPOSES.
7. TRACT "N" FOR R.W. 22ND AVENUE AS SHOWN HEREIN IS HEREBY DEDICATED TO USE OF THE PUBLIC FOR PROPER PUBLIC ROAD PURPOSES AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF SAID PALM BEACH COUNTY.

**ACKNOWLEDGMENT:**

STATE OF FLORIDA  
COUNTY OF PALM BEACH  
BEFORE ME, PERSONALLY APPEARING PHILIP B. DEUTSCH, A PARTNER OF QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, TO BE WELL KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT ON BEHALF OF THE PARTNERSHIP, AND HE ACKNOWLEDGED BEFORE ME THAT HE EXECUTED SAID INSTRUMENT FOR THE PURPOSES EXPRESSED THEREIN.

WITNESS MY HAND AND OFFICIAL SEAL THIS 9th DAY OF June, 1987.

BY COMMISSION EXPIRES: Feb. 21, 1991  
Lyella ...  
NOTARY PUBLIC

**MORTGAGEE'S COMMENT:**

STATE OF NEW YORK  
COUNTY OF NEW YORK

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE HOLDERS IN A WHOLE AND DATED AS OF OCTOBER 19, 1985, AND RECORDED IN OFFICIAL RECORD BOOK 469, AS PAGE 38 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, UPON THE RECORD DESCRIBED PROPERTY AND DO HEREBY JOIN IN THE CONSENT TO THE REFINANCING OF THE LANDS DESCRIBED IN THE DEDICATION HERETO, BY THE OWNER THEREIN.

IN WITNESS WHEREOF, THE SAID CORPORATION HAS CAUSED THESE PRESENTS TO BE SIGNED BY ITS Vice President AND ATTESTED BY ITS Vice President AND ITS CORPORATE SEAL TO BE AFFIXED HERETO BY AND WITH THE AUTHORITY OF ITS BOARD OF DIRECTORS, THIS 19th DAY OF May, 1987.

THE CHASE MANHATTAN BANK, (N.A.)  
ONE CHASE MANHATTAN PLAZA  
NEW YORK, NEW YORK 10001

ATTEST: William A. Ramos BY: William F. Carmody  
William A. Ramos William F. Carmody

**ALSO ACKNOWLEDGMENT:**

STATE OF NEW YORK  
COUNTY OF NEW YORK

BEFORE ME PERSONALLY APPEARING William F. Carmody TO BE WELL KNOWN AND KNOWN TO ME TO BE THE INDIVIDUAL DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AS A Witness AND THE ABOVE NAMED CHASE BANK, (N.A.) A CORPORATION, AND THE FOREGOING INSTRUMENT IS THE CORPORATE SEAL OF SAID CORPORATION AND THAT IT WAS AFFIXED TO SAID INSTRUMENT BY THE CORPORATE SEAL OF SAID CORPORATION AND THAT SAID INSTRUMENT IS THE INSTRUMENT BY WHICH SAID CORPORATION, SAID CORPORATION NOW KNOWN AS THE CHASE MANHATTAN BANK (N.A.)

WITNESS MY HAND AND OFFICIAL SEAL THIS 19th DAY OF May, A.D. 1987.

BY COMMISSION EXPIRES: 5/19/91  
William A. Ramos  
NOTARY PUBLIC

**TITLE CERTIFICATION:**

STATE OF FLORIDA  
COUNTY OF DADE

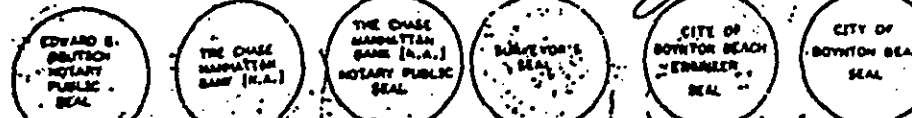
WE, SHEA AND GOULD, DULY LICENSED ATTORNEYS IN THE STATE OF FLORIDA, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE TO THE HEREIN DESCRIBED PROPERTY THAT IS OF 1987 AT 11:00 A.M. APPARENT RECORD TITLE TO THE PROPERTY IS HELD IN QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP; THAT THE REAL ESTATE TAXES FOR THE YEAR 1986 AND PRIOR YEARS HAVE BEEN PAID; THAT THE PROPERTY IS ENCUMBERED BY THE MORTGAGES SHOWN HEREIN; AND THAT ALL RECORDED MORTGAGES NOT SATISFIED OR RELEASED OF RECORD, ARE SHOWN AND ARE TRUE AND CORRECT, AND THERE ARE NO OTHER MORTGAGE ENCUMBRANCES OF RECORD.

DATE: JUNE 6, 1987 SHEA AND GOULD  
BY: Shea and Gould

**DEDICATION (CONT.):**

IN WITNESS WHEREOF, THE SAID QUANTUM ASSOCIATES, AS CAUSED THESE PRESENTS TO BE SIGNED BY THE ONLY AUTHORIZED PARTNER OF SAID GENERAL PARTNERSHIP, SIGNING BELOW THE DATE & YEAR INDICATED:

QUANTUM ASSOCIATES  
BY: Philip B. Deutsch ATTEST: Lyella ...  
PARTNER, QUANTUM ASSOCIATES  
A FLORIDA GENERAL PARTNERSHIP



**CITY APPROVAL:**  
BE IT RESOLVED THAT THOSE PORTIONS OF THE SUBDIVISION OF SECTIONS 20 AND 29 AND THE 30.00 FEET ROADWAY, RECORDED IN PLAT BOOK NO. 7, PAGE 20 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, LYING IN SECTION 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST AND NORTH OF THE C-16 CANAL (BOYNTON CANAL) ARE HEREBY VACATED AND ANNEXED PURSUANT TO CHAPTER 177.101 F.S.

APPROVED June 16 A.D. 1987  
BY: Mich. Cassada  
MAYOR

BY: Luigi ...  
CITY CLERK

BY: Thomas ...  
CITY ENGINEER

- SURVEYOR'S NOTES:**
1. PERMANENT REFERENCE MONUMENTS ARE DESIGNATED SHOWN BY (P.R.M.).
  2. PERMANENT CONTROL POINTS ARE IDENTIFIED HEREIN BY (P.C.P.).
  3. MINIMUM BUILDING SETBACK LINES SHALL BE AS REQUIRED BY THE P.I.D. ZONING REGULATIONS OF THE CITY OF BOYNTON BEACH AND THE GOVERNMENT.
  4. MINIMUM BUILDING SETBACK LINES FROM EASEMENTS SHOWN HEREIN SHALL BE NO LESS THAN 15 FEET OR MORE RESTRICTIVE AS REQUIRED BY THE CITY OF BOYNTON BEACH.
  5. THERE SHALL BE NO BUILDINGS PLACED ON UTILITY EASEMENTS.
  6. IN INSTANCES WHERE DRAINAGE AND UTILITY EASEMENTS INTERSECT, THE AREA OF INTERSECTION ARE UTILITY AND UTILITY EASEMENTS AND THE USE, CONSTRUCTION AND MAINTENANCE OF EACH EASEMENT SHALL BE DETERMINED WITH THE USE, CONSTRUCTION AND MAINTENANCE OF THE OTHER.
  7. BEARING DATUM: THE EAST LINE OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SECTION 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST IS ASSUMED TO BEAR NORTH 88° 04' 01" WEST AND ALL BEARINGS SHOWN HEREIN ARE RELATIVE THEREIN.

STATE OF FLORIDA  
COUNTY OF PALM BEACH

I HEREBY CERTIFY THAT THE PLAT SHOWN HEREIN IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY MADE UNDER MY RESPONSIBLE SUPERVISION AND THAT SAID SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT THE (P.C.P.'S) PERMANENT REFERENCE MONUMENTS HAVE BEEN SET AND THAT THE (P.C.P.'S) PERMANENT CONTROL POINTS WILL BE SET UNDER THE GUARANTEES POSTED WITH THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA, FOR THE (REQUIRED) IMPROVEMENTS; AND FURTHER THAT THE SURVEY DATA COMPLETES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, ANNEXED.

DATE: June 28, 1987 BY: Rafael ...  
RAFAEL ... PROFESSIONAL LAND SURVEYOR  
REGISTRATION NO. 2345  
STATE OF FLORIDA

**7.B.57 PG 186**

**F.R.S. & ASSOCIATES**  
ENGINEERS, LAND SURVEYORS, LAND PLANNERS  
WEST PALM BEACH, FLORIDA

SCALE: 1/4" = 100'-0"  
DATE: June 11, 1987  
BY: Lyella ...  
REGISTERED PROFESSIONAL SURVEYOR  
STATE OF FLORIDA

THIS INSTRUMENT PREPARED BY JAMES D. PERDUE IN THE OFFICES OF F.R.S. & ASSOCIATES, 1340 FOREST HILLS DRIVE, SUITE 107, WEST PALM BEACH, FLORIDA 33411, TELEPHONE 547-5000

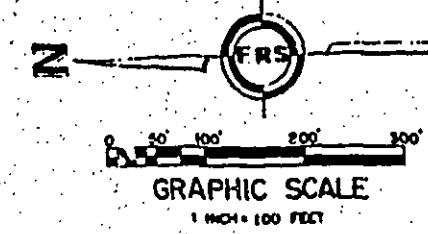
86-S-001  
D-21-86-S  
Sheet 1 of 3 sheets

No 18  
Sheet  
#1

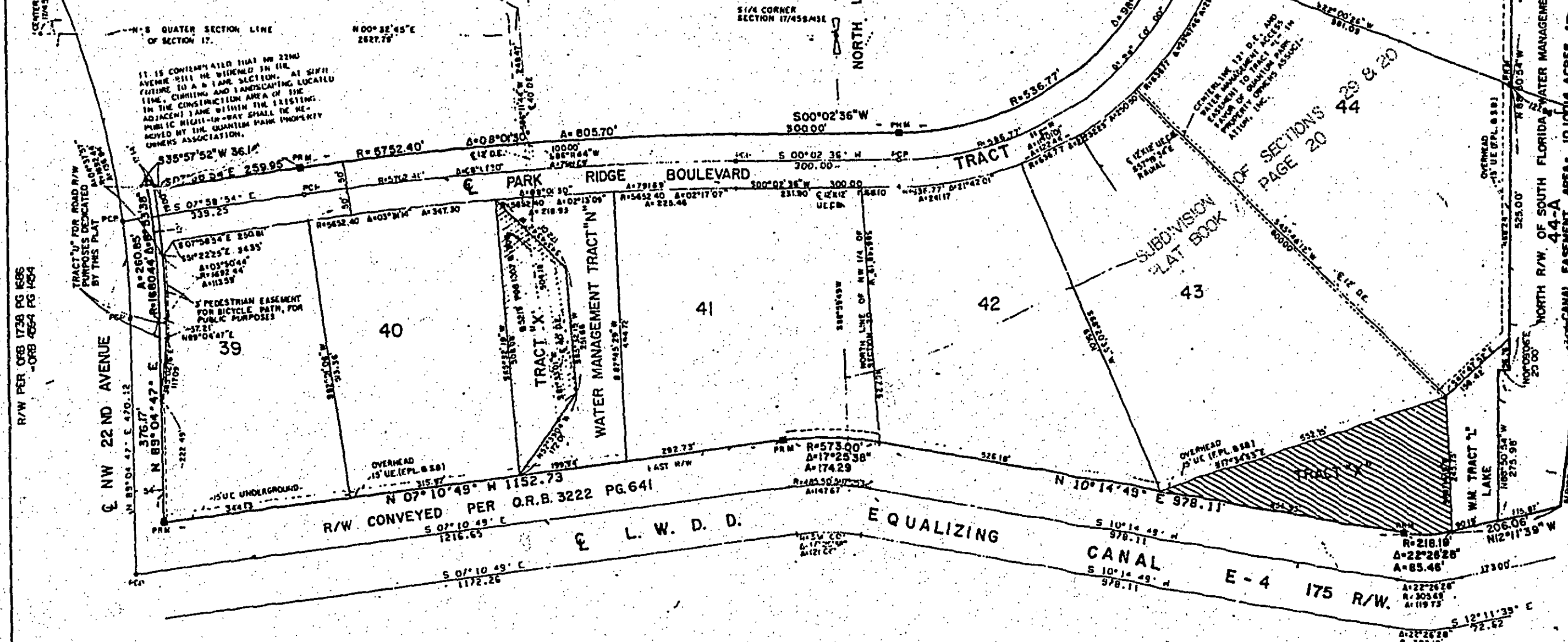
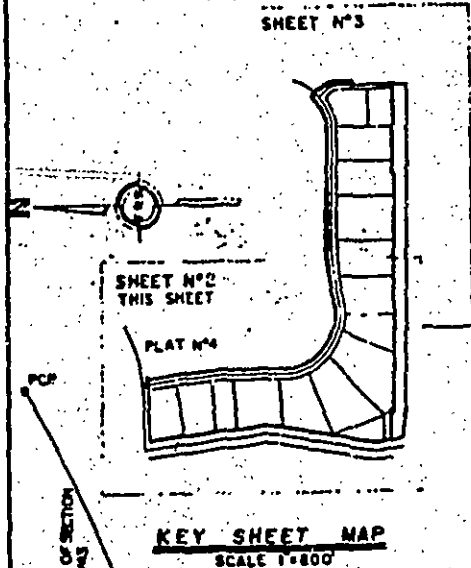
# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°4

LYING IN  
 SECTIONS 17 & 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH  
 STATE OF FLORIDA, BEING IN PART A REPLAT OF A PORTION OF A SUBDIVISION OF  
 SECTIONS 29 & 20, P.B.7 PAGE 20  
 PALM BEACH COUNTY STATE OF FLORIDA.  
 198 IN 3 SHEETS, SHEET N°2

187



STATE OF FLORIDA  
 COUNTY OF PALM BEACH  
 This Plat was filed for record at  
 this \_\_\_\_\_ day of \_\_\_\_\_  
 19\_\_\_\_ and duly recorded by Plat No. \_\_\_\_\_  
 on page \_\_\_\_\_  
 JOHN B. DANIEL, Clerk of the Court  
 By \_\_\_\_\_



R/W PER O.R.B. 1738 PG 1605  
 -O.R.B. 4694 PG 1604

NO 19  
 Sheet  
 2

**LEGEND**  
 U.E. INDICATES UTILITY EASEMENT  
 S.S.E. INDICATES SANITARY SEWER EASEMENT  
 F.P.A. INDICATES FLORIDA POWER & LIGHT CO., SOUTHERN BELL AND QUANTUM COMMUNICATIONS, INC.  
 CB INDICATES CITY OF BOYNTON BEACH

CROSS-HATCHED AREAS  
 INDICATE A PORTION OF A  
 DRAINAGE EASEMENT THAT IS  
 A PART OF THE RESPECTIVE  
 LOTS AS SHOWN. AREAS  
 INDICATED MAY INCLUDE  
 BURMESED LAND.

THE DRAINAGE EASEMENT CANAL  
 GRANTED TO SOUTH FLORIDA WATER  
 MANAGEMENT DISTRICT PER O.R.B.  
 1984, PG 45 IS AN INTEGRAL  
 PART OF THE CORRESPONDING LOT AREA  
 NORTH OF AND IMMEDIATELY ADJACENT  
 TO SAID DRAINAGE EASEMENT CANAL.  
 SAID INTEGRAL PART IS HEREBY  
 DESIGNATED WITH THE CORRESPONDING  
 LOT NUMBER AND LETTER IDENTIFI-  
 CATION.

PL. 8943 PGS 13940

2.B.57 PG 187

F.R.E. & ASSOCIATES ENGINEERS, LAND SURVEYORS, LAND PLANNERS WEST PALM BEACH, FLORIDA	
DATE: 12-1-00	APPROVED BY: [Signature]
QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT No 4	
Sheet 2 of 3 sheets	
DRAWN BY: [Signature]	206 N. [Address]
86-S-16	0-66-86

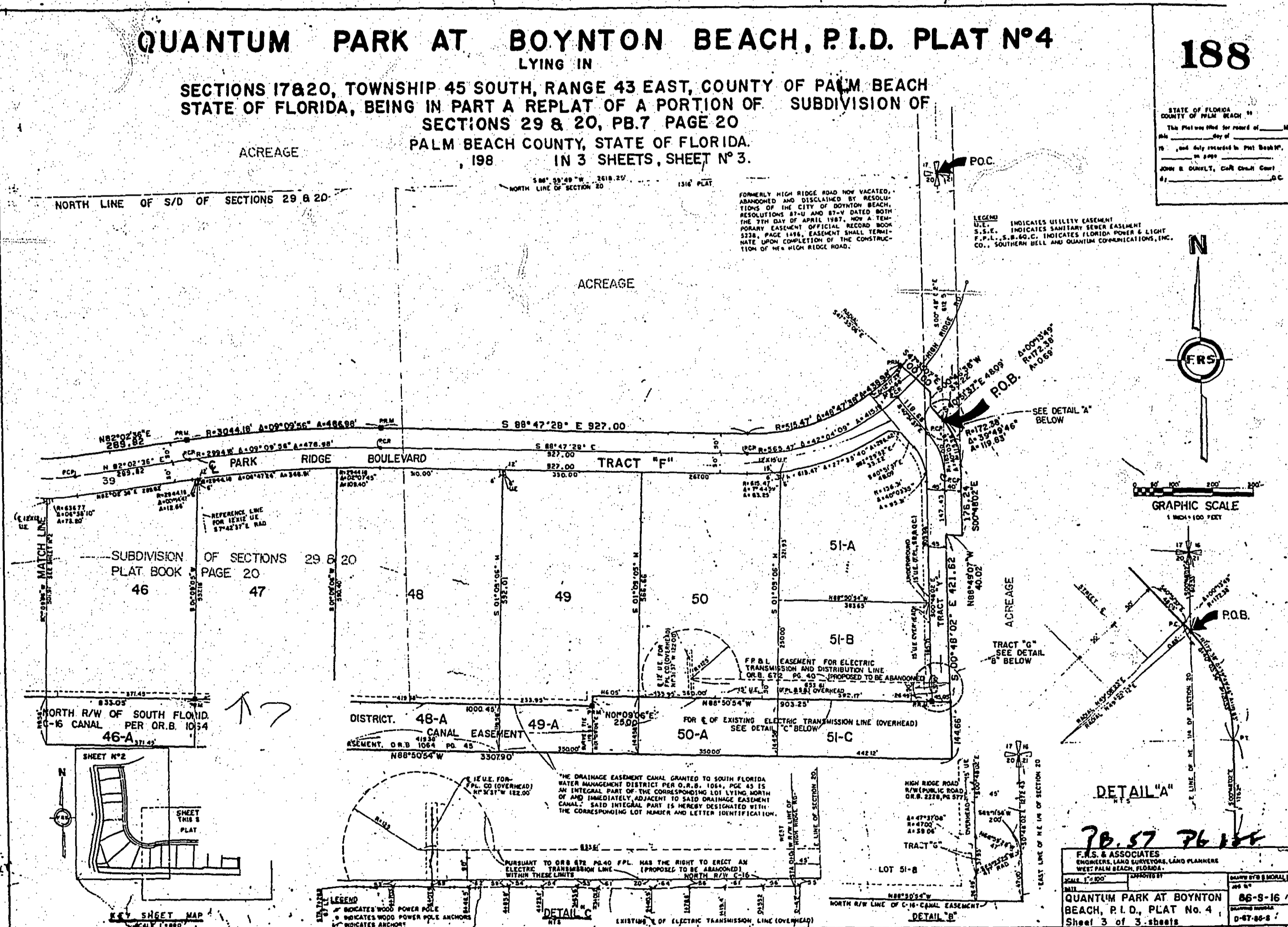


QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°4

LYING IN SECTIONS 17&20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH STATE OF FLORIDA, BEING IN PART A REPLAT OF A PORTION OF SUBDIVISION OF SECTIONS 29 & 20, P.B. 7 PAGE 20 PALM BEACH COUNTY, STATE OF FLORIDA, 1988 IN 3 SHEETS, SHEET N° 3.

188

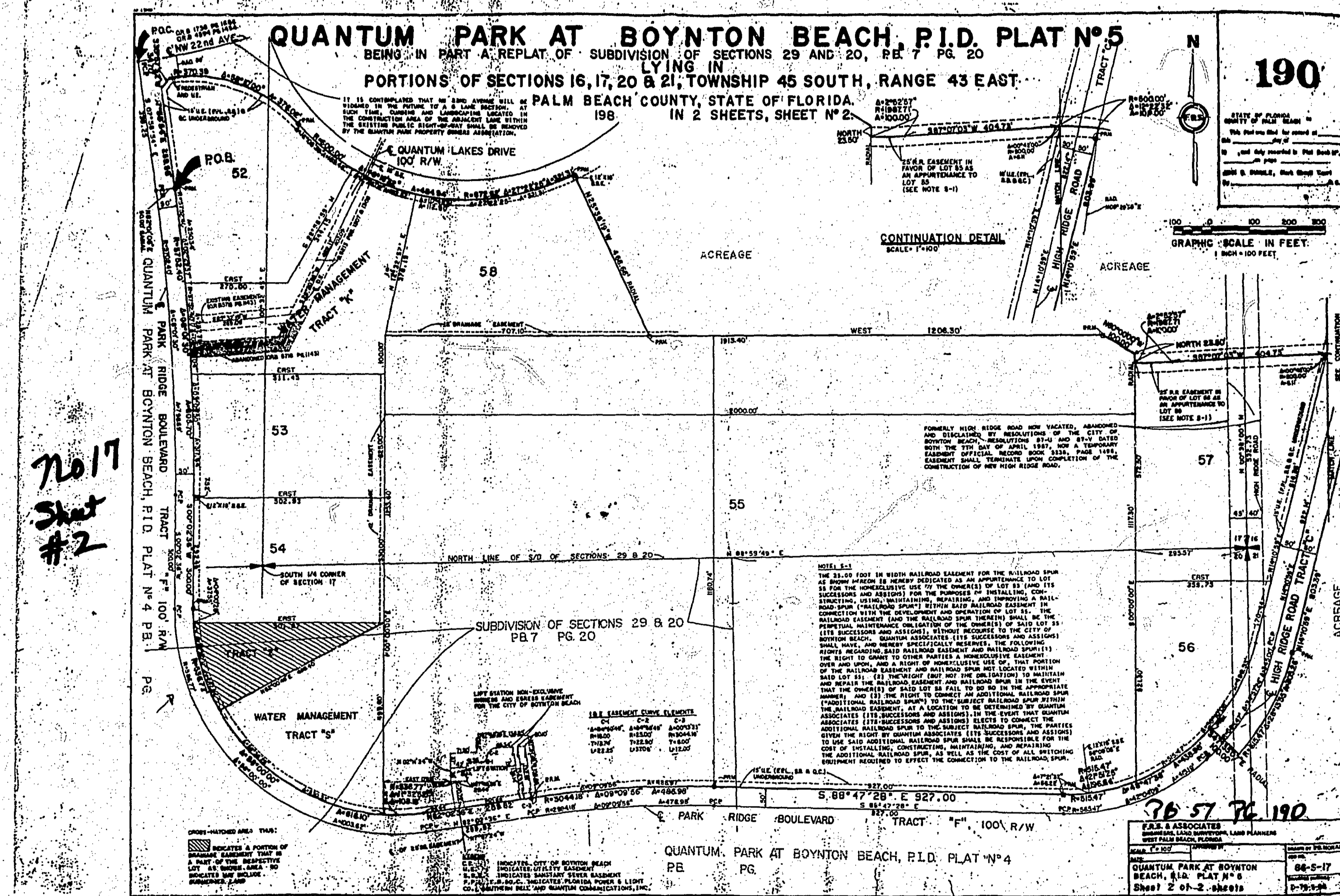
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DETAIL A  
78-57-76-112  
QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N° 4  
Sheet 3 of 3 SHEETS





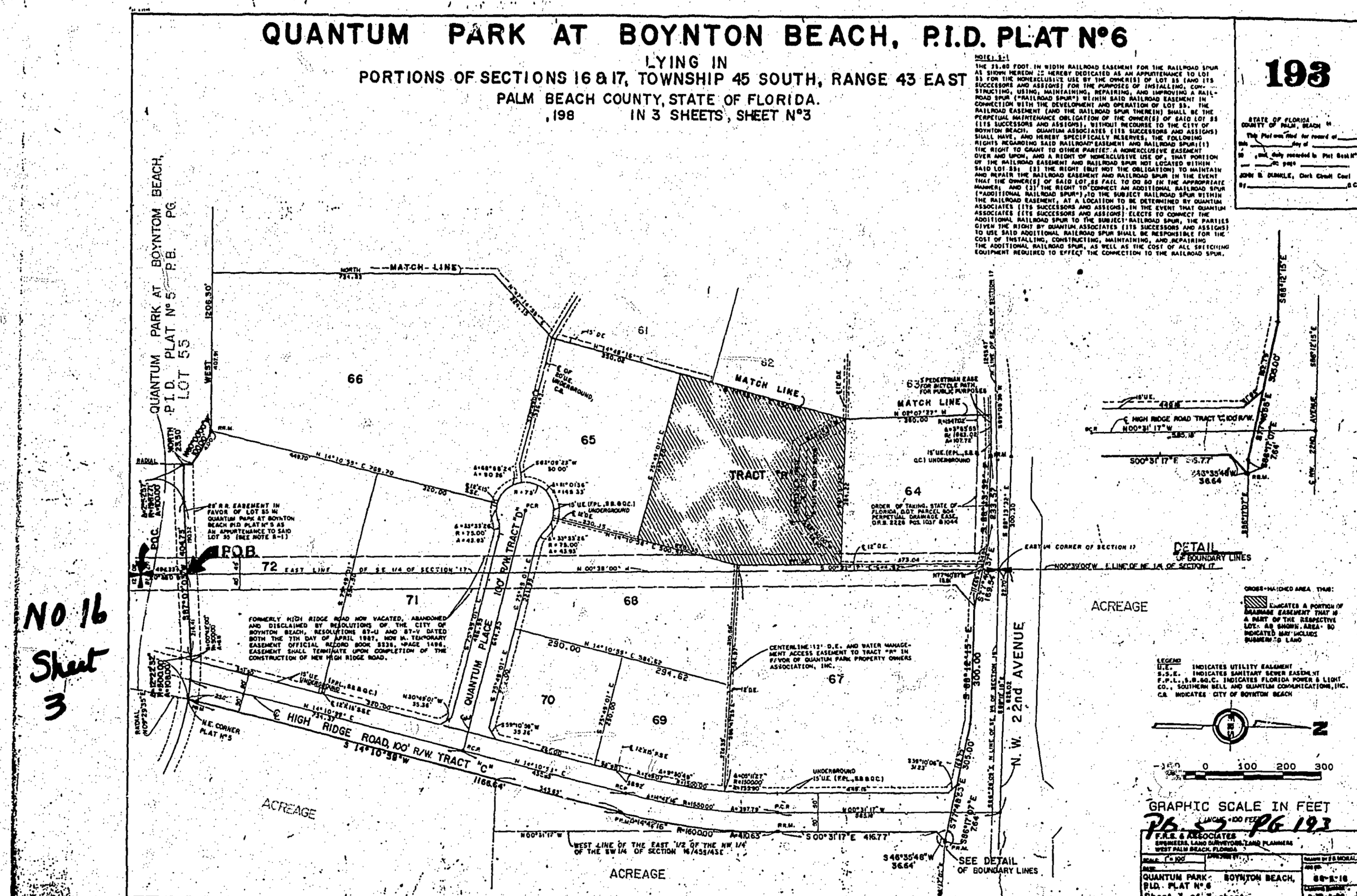




QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°6

LYING IN  
PORTIONS OF SECTIONS 16 & 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA.  
198 IN 3 SHEETS, SHEET N°3

193



# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°7

LYING IN  
PORTIONS OF SECTIONS 16, 20 & 21 TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA.  
IN 2 SHEETS, SHEET N° 1

DESCRIPTION:  
PARCEL OF LAND LYING IN SECTIONS 16, 20 AND 21, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH, STATE OF FLORIDA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 16; THENCE SOUTH 89° 04' 23" EAST ALONG THE SOUTH LINE OF SAID SECTION 16, A DISTANCE OF 188.93 FEET TO A POINT ON THE EASTERN RIGHT-OF-WAY LINE OF HIGH RIDGE ROAD, AS SAID RIGHT-OF-WAY IS SHOWN ON THE PLATS OF QUANTUM PARK AT BOYNTON BEACH, PLAT NO. 5 AND NO. 6 AND THE POINT OF BEGINNING; THENCE NORTH 16° 18' 59" EAST ALONG SAID EAST RIGHT-OF-WAY LINE, A DISTANCE OF 1383.45 FEET TO THE NORTH LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF SAID SECTION 16; THENCE SOUTH 89° 04' 23" EAST ALONG SAID NORTH LINE A DISTANCE OF 475.19 FEET TO THE WEST RIGHT-OF-WAY LINE OF THE SEABOARD ALL FLORIDA RAILWAY AS SAID RIGHT-OF-WAY LINE IS DESCRIBED IN FINAL JUDGMENT (TRACT ONE) OF THE CIRCUIT COURT OF THE FIFTEENTH JUDICIAL CIRCUIT OF FLORIDA, PALM BEACH COUNTY, RECORDED IN MINUTES CIRCUIT COURT, NO. 10 AT PAGE 470 AND DATED APRIL 18, 1926; THENCE ALONG SAID RIGHT-OF-WAY LINE SOUTH 16° 08' 00" WEST A DISTANCE OF 1188.81 FEET TO THE SOUTH LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF SAID SECTION 16; THENCE TRAVERSING ALONG SAID WEST RIGHT-OF-WAY LINE AS SAID RIGHT-OF-WAY IS SHOWN IN RIGHT-OF-WAY AND TRACK MAP OF THE SEABOARD ALL FLORIDA RAILWAY (S.I.A. 11218-98 TO S.I.A. 11438-028) FILES OF C&F TRANSPORTATION REAL ESTATE DEPARTMENT, DATED DECEMBER 31, 1937, THROUGH THE FOLLOWING 2 NUMBERED COURSES AND DISTANCES:

1. SOUTH 89° 04' 23" EAST ALONG A PORTION OF SAID SOUTH LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF SAID SECTION 16 A DISTANCE OF 11.70 FEET
2. SOUTH 14° 01' 37" WEST A DISTANCE OF 978.63 FEET; THENCE DEPARTING FROM SAID RIGHT-OF-WAY LINE NORTH 89° 49' 07" WEST A DISTANCE OF 169.88 FEET

THENCE NORTH 89° 49' 07" WEST A DISTANCE OF 100 FEET; THENCE NORTH 64° 49' 07" WEST A DISTANCE OF 218.63 FEET TO A LINE 48.00 FEET EAST OF, AS MEASURED AT RIGHT ANGLES TO, AND PARALLEL WITH THE WEST LINE OF THE NORTHWEST ONE-QUARTER (NW1/4) OF SAID SECTION 16; THENCE NORTH 00° 48' 00" WEST ALONG SAID PARALLEL LINE A DISTANCE OF 39.15 FEET TO THE BEGINNING OF A CURVE CONCAVE SOUTHWESTERLY HAVING A RADIUS OF 178.36 FEET AND A CENTRAL ANGLE OF 48° 53' 30"; THENCE TRAVERSING ALONG THE EAST RIGHT-OF-WAY LINE OF SAID HIGH RIDGE ROAD AS SAID ROAD IS SHOWN ON SAID PLATS NO. 5 AND NO. 6 OF QUANTUM PARK AT BOYNTON BEACH, P.I.D., THROUGH THE FOLLOWING COURSES AND DISTANCES TO THE POINT OF BEGINNING:

1. NORTHWEST ALONG THE ARC OF SAID CURVE A DISTANCE OF 136.51 FEET
2. NORTH 48° 51' 37" WEST A DISTANCE OF 48.00 FEET
3. NORTH 00° 48' 00" EAST A DISTANCE OF 23.82 FEET TO A POINT ON A CURVE (A RADIAL LINE PASSING THROUGH SAID POINT BEARS SOUTH 47° 33' 07" EAST) CONCAVE WESTERLY, HAVING A RADIUS OF 618.47 FEET AND A CENTRAL ANGLE OF 28° 13' 55"
4. NORTH ALONG THE ARC OF SAID CURVE A DISTANCE OF 303.26 FEET TO A POINT OF TANGENCY
5. NORTH 84° 10' 58" EAST A DISTANCE OF 283.61 FEET TO THE POINT OF BEGINNING.

CONTAINING 23.6398 ACRES, MORE OR LESS.

### DEDICATION:

KNOW ALL MEN BY THESE PRESENTS THAT QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, OWNER OF THE LAND SHOWN AND DESCRIBED HEREON AS QUANTUM PARK AT BOYNTON BEACH, LYING AND BEING IN SECTIONS 16, 20 AND 21, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA HAS CAUSED THE SAME TO BE SURVEYED AND PLATTED AS SHOWN HEREON AND DOES HEREBY DEDICATE AS FOLLOWS:

1. THE UTILITY EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO THE CITY OF BOYNTON BEACH, FLORIDA POWER AND LIGHT CO., QUANTUM COMMUNICATIONS, INC., AND SOUTHERN BELL, ITS SUCCESSORS AND ASSIGNS, UNLESS OTHERWISE SPECIFICALLY INDICATED, FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES.
2. THE 66.00 FEET IN WIDTH RAILROAD EASEMENT FOR RAILROAD SPUR AS SHOWN HEREON CENTERED ALONG THE COMMON LINE BETWEEN LOTS 78 AND 79 IS HEREBY DEDICATED IN ACCORDANCE WITH NOTE E-1 ON SHEET 2 OF 2 SHEETS AS AN APPURTENANCE TO LOT 85, AS SAID LOT 85 IS SHOWN IN THE PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT NO. 5 FOR ITS USE, AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF THE OWNER OF SAID LOT 85, ITS SUCCESSORS AND ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH.

IN WITNESS WHEREOF, THE SAID QUANTUM ASSOCIATES, HAS CAUSED THESE PRESENTS TO BE SIGNED BY THE DULY AUTHORIZED PARTNER OF SAID GENERAL PARTNERSHIP SIGNING BELOW THE DATE & YEAR INDICATED.

QUANTUM ASSOCIATES  
*[Signature]*  
EDWARD B. DEUTSCH  
PARTNER, QUANTUM ASSOCIATES  
A FLORIDA GENERAL PARTNERSHIP

ATTEST: *[Signature]*

### ACKNOWLEDGEMENT

STATE OF FLORIDA SS:  
COUNTY OF PALM BEACH  
BEFORE ME, PERSONALLY APPEARED EDWARD B. DEUTSCH, A PARTNER OF QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, TO ME WELL KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT ON BEHALF OF THE PARTNERSHIP, AND HE ACKNOWLEDGED BEFORE ME THAT HE EXECUTED SAID INSTRUMENT FOR THE PURPOSE EXPRESSED THEREIN.

WITNESS MY HAND AND OFFICIAL SEAL THIS 9th DAY OF June 1967.  
MY COMMISSION EXPIRES: July 25, 1971  
*[Signature]*  
NOTARY PUBLIC

### MORTGAGEE'S COMMENT

STATE OF NEW YORK SS:  
COUNTY OF NEW YORK

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE HOLDERS OF A MORTGAGE DATED AS OF OCTOBER 23, 1965 AND RECORDED IN OFFICIAL RECORD BOOK 4696 AT PAGE 88 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, UPON THE MERGON DESCRIBED PROPERTY AND DO HEREBY JOIN IN THE CONSENT TO THE DEDICATIONS OF THE LANDS DESCRIBED IN THE DEDICATION HERETO, BY THE OTHER THEREOF.

IN WITNESS WHEREOF, THE SAID CORPORATION HAS CAUSED THESE PRESENTS TO BE SIGNED BY ITS Vice President AND ATTESTED BY ITS Vice President AND ITS CORPORATE SEAL TO BE AFFIXED HERON BY AND WITH THE AUTHORITY OF ITS BOARD OF DIRECTORS, THIS 9th DAY OF June A.D., 1967.

ATTEST: *[Signature]* BY: *[Signature]*  
William A. Korman William F. Corrado  
THE CHASE MANHATTAN BANK, (N.A.)  
ONE CHASE MANHATTAN PLAZA  
NEW YORK, NEW YORK 10001

### ACKNOWLEDGEMENT

STATE OF NEW YORK SS:  
COUNTY OF NEW YORK

BEFORE ME PERSONALLY APPEARED *[Signature]* TO ME WELL KNOWN, AND KNOWN TO ME TO BE THE INDIVIDUAL DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AS *[Signature]* OF THE ABOVE NAMED CHASE MANHATTAN BANK, (N.A.), A CORPORATION, AND HE ACKNOWLEDGED TO AND BEFORE ME THAT HE EXECUTED SUCH INSTRUMENT AS *[Signature]* OF SAID CORPORATION, AND THAT THE SEAL AFFIXED TO THE FOREGOING INSTRUMENT IS THE CORPORATE SEAL OF SAID CORPORATION AND THAT IT WAS AFFIXED TO SAID INSTRUMENT BY DUE AND REGULAR CORPORATE AUTHORITY AND THAT SAID INSTRUMENT IS THE FREE ACT AND DEED OF SAID CORPORATION, SAID CORPORATION NOW KNOWN AS THE CHASE MANHATTAN BANK (N.A.).

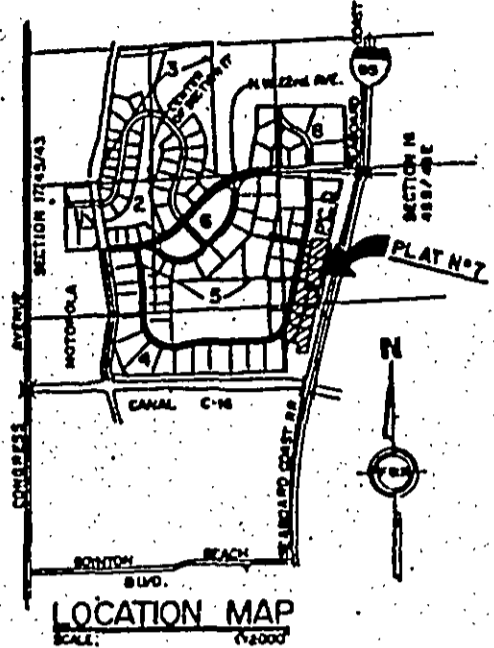
WITNESS MY HAND AND OFFICIAL SEAL THIS 9th DAY OF June A.D., 1967.  
*[Signature]*  
NOTARY PUBLIC

### TITLE CERTIFICATION

STATE OF FLORIDA SS:  
COUNTY OF DADE

WE, SHEA AND GOLD, JULY LICENSED ATTORNEYS IN THE STATE OF FLORIDA, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE TO THE HEREIN DESCRIBED PROPERTY THAT AS OF *[Signature]* 1967, AT 8:00 AM, APPARENT RECORD TITLE TO THE PROPERTY IS HELD BY QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP; THAT THE REAL ESTATE TAXES FOR THE YEAR 1966 AND PRIOR YEARS HAVE BEEN PAID; THAT THE PROPERTY IS ENCUMBERED BY THE MORTGAGES SHOWN HEREON; AND THAT ALL RECORDED MORTGAGES NOT SATISFIED OR RELEASED OF RECORD, ARE SHOWN AND ARE TRUE AND CORRECT, AND THERE ARE NO OTHER MORTGAGE ENCUMBRANCES OF RECORD.

DATE: June 8, 1967  
BY: *[Signature]*  
SHEA AND GOLD



1967  
STATE OF FLORIDA  
COUNTY OF PALM BEACH  
This Plat was filed for record at 11:14 A.M. on 10th day of June 1967, and duly recorded in Plat Book N° 82 on page 187-188.  
JOHN S. SHARPLE, Clerk Circuit Court  
BY: *[Signature]*



CITY APPROVAL  
APPROVED: June 16, 1967 A.D., 1967  
BY: *[Signature]*  
MAYOR

BY: *[Signature]*  
CITY CLERK

BY: *[Signature]*  
CITY ENGINEER

### SURVEYOR'S NOTES:

1. PERMANENT REFERENCE MONUMENTS ARE DESIGNATED THUSLY: — (P.R.M.)
2. PERMANENT CONTROL POINTS ARE DESIGNATED THUSLY: — (P.C.P.)
3. MINIMUM BUILDING SETBACK LINES SHALL BE AS REQUIRED BY THE P.I.D. ZONING REGULATIONS OF THE CITY OF BOYNTON BEACH AND THE COVENANTS.
4. MINIMUM BUILDING SETBACK LINES ON EASEMENTS SHOWN HEREON SHALL BE NO LESS THAN 15 FEET OR MORE RESTRICTIVE AS REQUIRED BY THE CITY OF BOYNTON BEACH.
5. THERE SHALL BE NO BUILDINGS PLACED ON UTILITY EASEMENTS.
6. IN INSTANCES WHERE DRAINAGE AND UTILITY EASEMENTS INTERSECT, THE AREAS OF INTERSECTION ARE DUA AGE AND UTILITY EASEMENTS AND THE USE, CONSTRUCTION AND MAINTENANCE OF EACH EASEMENT SHALL NOT INTERFERE WITH THE USE, CONSTRUCTION AND MAINTENANCE OF THE OTHER.
7. BEARING DATUM: THE WEST LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF SECTION 16, TOWNSHIP 45 SOUTH, RANGE 43 EAST IS ASSUMED TO BEAR NORTH 00° 34' 00" WEST AND ALL BEARINGS SHOWN HEREON ARE RELATIVE THERETO.

### SURVEYOR'S CERTIFICATION

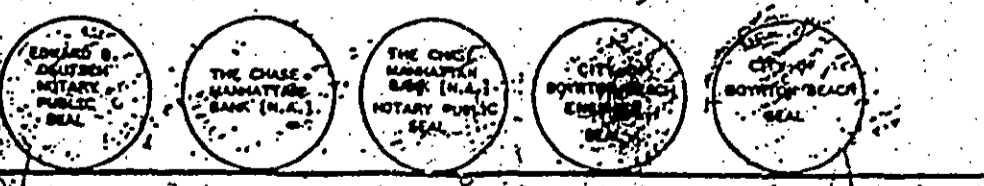
STATE OF FLORIDA SS:  
COUNTY OF PALM BEACH

I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY, MADE UNDER MY RESPONSIBLE DIRECTION AND SUPERVISION, AND THAT SAID SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THE (P.R.M.'S) PERMANENT REFERENCE MONUMENTS HAVE BEEN SET AND THAT THE (P.C.P.'S) PERMANENT CONTROL POINTS WILL BE SET UNDER THE GUARANTEES POSTED WITH THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA, FOR THE REQUIRED IMPROVEMENTS; AND FURTHER THAT THE SURVEY DATA COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AMENDED.

DATE: June 10, 1967  
BY: *[Signature]*  
RAFAEL S. ADAMS, PROFESSIONAL LAND SURVEYOR  
REGISTRATION NO. 2345  
STATE OF FLORIDA



F.R.S. & ASSOCIATES ENGINEERS AND SURVEYORS, LAND PLANNERS WEST PALM BEACH, FLORIDA	
SCALE: N/A	PROJECT: QUANTUM PARK AT BOYNTON BEACH P.I.D. PLAT N°7
DRAWN BY: S.M.O.A.S.	JOB N°: 86-S-019
DATE: 6-10-67	DATE: 6-10-67
Sheet 1 of 2 sheets	



THIS INSTRUMENT PREPARED BY JORGE O. PERDOMO IN THE OFFICES OF F.R.S. & ASSOCIATES, 1800 FOREST HILL BOULEVARD, SUITE 107, WEST PALM BEACH, FLORIDA, 33404. TELEPHONE: 947-5696

NO 15  
Sheet  
#1

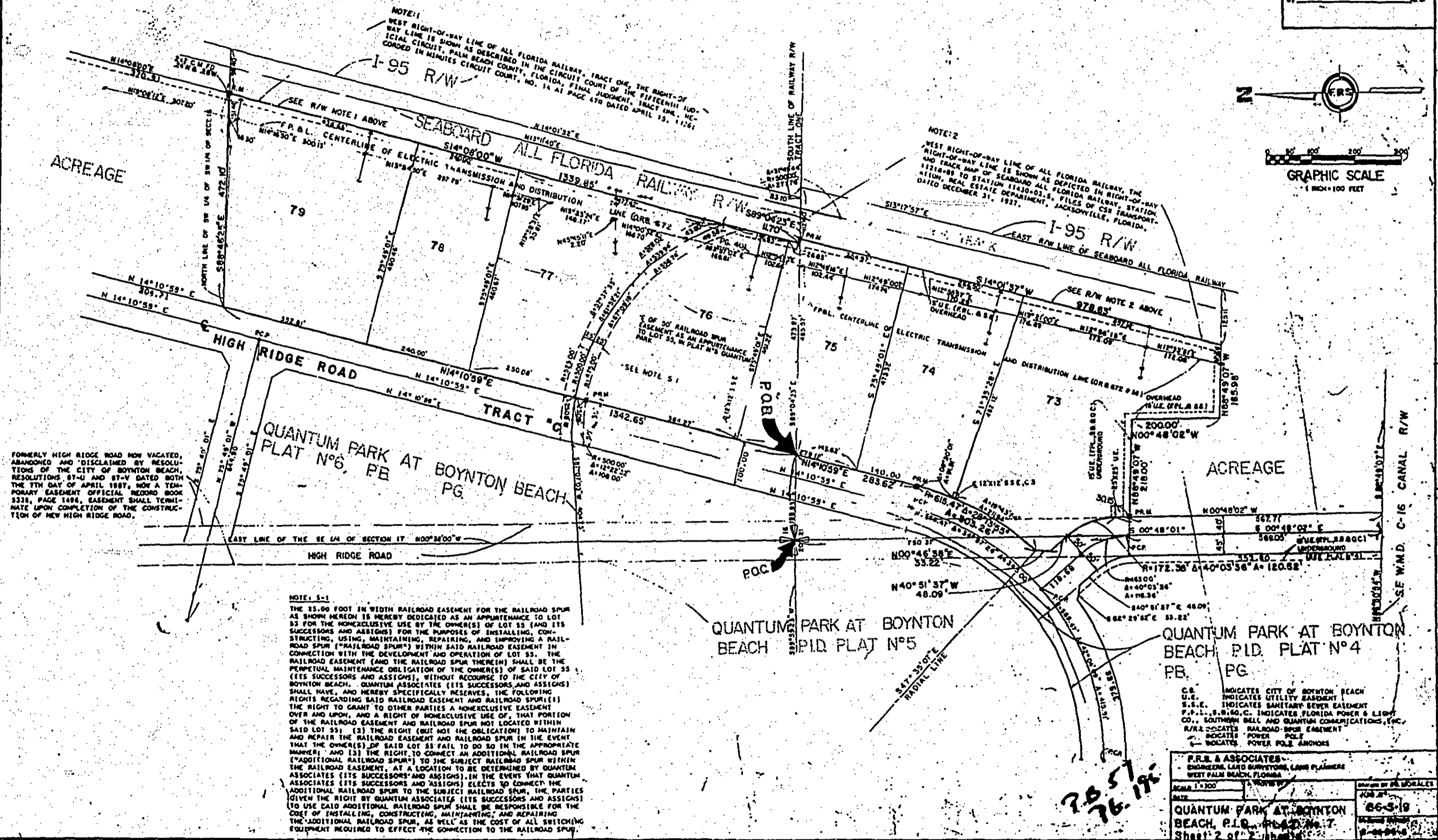
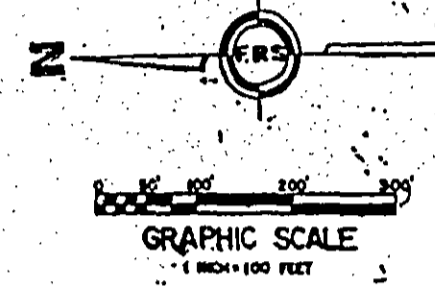


# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°7

LYING IN  
 PORTIONS OF SECTION 16, 20 & 21 TOWNSHIP 45 SOUTH, RANGE 43 EAST  
 PALM BEACH COUNTY, STATE OF FLORIDA.  
 198 IN 2 SHEETS, SHEET N° 2

## 195

STATE OF FLORIDA  
 COUNTY OF PALM BEACH  
 This Plat was filed for record at \_\_\_\_\_  
 on \_\_\_\_\_ day of \_\_\_\_\_  
 19\_\_\_\_, and duly recorded in Plat Book N° \_\_\_\_\_  
 on page \_\_\_\_\_  
 JOHN B. DANIEL, Clerk of Court  
 By \_\_\_\_\_, C.C.



FORMERLY HIGH RIDGE ROAD NOW VACATED, ABANDONED AND DISCLAIMED BY RESOLUTIONS OF THE CITY OF BOYNTON BEACH, RESOLUTIONS 87-11 AND 87-14 DATED BOTH THE 17TH DAY OF APRIL, 1987, NOW A TEMPORARY EASEMENT OFFICIAL RECORD BOOK 3218, PAGE 1496, EASEMENT SHALL TERMINATE UPON COMPLETION OF THE CONSTRUCTION OF NEW HIGH RIDGE ROAD.

**NOTE 5-1**  
 THE 25.00 FOOT IN WIDTH RAILROAD EASEMENT FOR THE RAILROAD SPUR AS SHOWN HEREON IS HEREBY DEDICATED AS AN APPURTENANCE TO LOT 53 FOR THE NONEXCLUSIVE USE BY THE OWNER(S) OF LOT 53 (AND ITS SUCCESSORS AND ASSIGNS) FOR THE PURPOSES OF INSTALLING, CONSTRUCTING, USING, MAINTAINING, REPAIRING, AND IMPROVING A RAILROAD SPUR ("RAILROAD SPUR") WITHIN SAID RAILROAD EASEMENT IN CONNECTION WITH THE DEVELOPMENT AND OPERATION OF LOT 53. THE RAILROAD EASEMENT (AND THE RAILROAD SPUR THEREIN) SHALL BE THE PERPETUAL MAINTENANCE OBLIGATION OF THE OWNER(S) OF SAID LOT 53 (ITS SUCCESSORS AND ASSIGNS), WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH. QUANTUM ASSOCIATES (ITS SUCCESSORS AND ASSIGNS) SHALL HAVE, AND HEREBY SPECIFICALLY RESERVES, THE FOLLOWING RIGHTS REGARDING SAID RAILROAD EASEMENT AND RAILROAD SPUR: (1) THE RIGHT TO GRANT TO OTHER PARTIES A NONEXCLUSIVE EASEMENT OVER AND UPON, AND A RIGHT OF NONEXCLUSIVE USE OF, THAT PORTION OF THE RAILROAD EASEMENT AND RAILROAD SPUR NOT LOCATED WITHIN SAID LOT 53; (2) THE RIGHT (BUT NOT THE OBLIGATION) TO MAINTAIN AND REPAIR THE RAILROAD EASEMENT AND RAILROAD SPUR IN THE EVENT THAT THE OWNER(S) OF SAID LOT 53 FAIL TO DO SO IN THE APPROPRIATE MANNER; AND (3) THE RIGHT TO CONNECT AN ADDITIONAL RAILROAD SPUR (AN ADDITIONAL RAILROAD SPUR) TO THE SUBJECT RAILROAD SPUR WITHIN THE RAILROAD EASEMENT, AT A LOCATION TO BE DETERMINED BY QUANTUM ASSOCIATES (ITS SUCCESSORS AND ASSIGNS), IN THE EVENT THAT QUANTUM ASSOCIATES (ITS SUCCESSORS AND ASSIGNS) ELECTS TO CONNECT THE ADDITIONAL RAILROAD SPUR TO THE SUBJECT RAILROAD SPUR, THE PARTIES GIVEN THE RIGHT BY QUANTUM ASSOCIATES (ITS SUCCESSORS AND ASSIGNS) TO USE SAID ADDITIONAL RAILROAD SPUR SHALL BE RESPONSIBLE FOR THE COST OF INSTALLING, CONSTRUCTING, MAINTAINING, AND REPAIRING THE ADDITIONAL RAILROAD SPUR, AS WELL AS THE COST OF ALL SWITCHING EQUIPMENT REQUIRED TO EFFECT THE CONNECTION TO THE RAILROAD SPUR.

C.B. INDICATES CITY OF BOYNTON BEACH  
 U.E. INDICATES UTILITY EASEMENT  
 S.S.E. INDICATES SANITARY SEWER EASEMENT  
 F.P.L. S.W.G.C. INDICATES FLORIDA POWER & LIGHT CO., SOUTHWEST BELL, AND QUANTUM COMMUNICATIONS, INC.  
 R/W INDICATES RAILROAD SPUR EASEMENT  
 P INDICATES POWER POLE  
 A INDICATES POWER POLE ANCHORS

**F.R.E. & ASSOCIATES**  
 ENGINEERS, LAND SURVEYORS, LAND PLANNERS  
 WEST PALM BEACH, FLORIDA

SCALE 1"=200'

QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°7  
 SHEET 2 OF 2

DATE 10-1-87  
 DRAWN BY P.B. BOGALLET  
 86-3-19

7615  
 Sheet  
 #2

76.51  
 76.18

# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°8

LYING IN  
SECTIONS 17 & 16 TOWNSHIP 45 SOUTH, RANGE 43 EAST  
PALM BEACH COUNTY, STATE OF FLORIDA.  
198 IN 2 SHEETS, SHEET N° 1

196

**DESCRIPTION:**

A PARCEL OF LAND LYING IN PORTIONS OF SECTIONS 16 AND 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST COUNTY OF PALM BEACH, STATE OF FLORIDA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE EAST ONE-QUARTER (E1/4) CORNER OF SAID SECTION 17; THENCE NORTH 89° 38' 00" WEST ALONG THE EAST LINE OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SAID SECTION 17 A DISTANCE OF 187.78 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF NORTHWEST 22ND AVENUE AS SAID RIGHT-OF-WAY IS DESCRIBED IN DEEDS RECORDED IN OFFICIAL RECORD BOOK 1983, PAGE 689; OFFICIAL RECORD BOOK 1974, PAGE 517 AND OFFICIAL RECORD BOOK 1953, PAGE 684 OF THE PUBLIC RECORDS OF SAID COUNTY; SAID POINT ALSO BEING THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID NORTH RIGHT-OF-WAY LINE SOUTH 89° 18' 00" EAST A DISTANCE OF 202.50 FEET; THENCE NORTH 81° 24' 25" EAST A DISTANCE OF 309.00 FEET; THENCE NORTH 89° 51' 03" EAST A DISTANCE OF 639.85 FEET TO THE WEST RIGHT-OF-WAY LINE OF THE SEABOARD ALL FLORIDA RAILWAY RIGHT-OF-WAY AS SAID RIGHT-OF-WAY LINE IS DESCRIBED IN FINAL JUDGMENT (TRACT ONE) OF THE CIRCUIT COURT OF THE FIFTEENTH JUDICIAL CIRCUIT OF FLORIDA, PALM BEACH COUNTY, RECORDED IN MINUTES' CIRCUIT COURT, NO. 14 AT PAGE 470, AND DATED APRIL 18, 1988; THENCE NORTH 00° 30' 17" WEST ALONG SAID WEST RIGHT-OF-WAY LINE A DISTANCE OF 1433.39 FEET TO THE NORTH LINE OF THE SOUTHWEST ONE-QUARTER (SW1/4) OF THE NORTHWEST ONE-QUARTER (NW1/4) OF SAID SECTION 16; THENCE NORTH 88° 34' 33" WEST ALONG SAID NORTH LINE A DISTANCE OF 1348.97 FEET TO THE EAST LINE OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SAID SECTION 17; THENCE SOUTH 89° 13' 27" WEST ALONG THE NORTH LINE OF THE SOUTH ONE-HALF (S1/2) OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SAID SECTION 17 A DISTANCE OF 414.61 FEET; THENCE SOUTH 00° 31' 11" WEST A DISTANCE OF 396.48 FEET; THENCE SOUTH 12° 02' 41" WEST A DISTANCE OF 861.38 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF NORTHWEST 22ND AVENUE AS SAID RIGHT-OF-WAY IS DESCRIBED IN DEEDS RECORDED IN OFFICIAL RECORD BOOK 1738, PAGE 1686 AND OFFICIAL RECORD BOOK 4384, PAGE 1484 OF THE PUBLIC RECORDS OF SAID COUNTY; SAID POINT BEING ON AN ARC OF A CURVE LOCATED TO THE SOUTH (A RADIAL LINE PASSING THROUGH SAID POINT BEARS NORTH 08° 52' 34" WEST) HAVING A RADIUS OF 1081.03 FEET AND A CENTRAL ANGLE OF 18° 39' 23"; THENCE, EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 318.80 FEET; THENCE CONTINUING ALONG SAID NORTH RIGHT-OF-WAY LINE SOUTH 89° 13' 27" EAST A DISTANCE OF 108.48 FEET; THENCE NORTH 89° 03' 27" EAST A DISTANCE OF 87.37 FEET; THENCE SOUTH 88° 13' 32" EAST A DISTANCE OF 140.03 FEET TO THE POINT OF BEGINNING.

CONTAINING 49.6325 ACRES, MORE OR LESS.

**DEDICATION:**

KNOW ALL MEN BY THESE PRESENTS THAT QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, OWNER OF THE LAND SHOWN AND DESCRIBED HEREON AS QUANTUM PARK AT BOYNTON BEACH, LYING AND BEING IN SECTIONS 17 & 16, TOWNSHIP 45 SOUTH, RANGE 43 EAST, PALM BEACH COUNTY, FLORIDA HAS CAUSED THE SAME TO BE SURVEYED AND PLATTED AS SHOWN HEREON AND DOES HEREBY DEDICATE AS FOLLOWS:

- TRACT "C" (HIGH RIDGE ROAD) AS SHOWN HEREON IS HEREBY DEDICATED TO THE CITY OF BOYNTON BEACH FOR PUBLIC ROAD PURPOSES.
- THE UTILITY EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO THE CITY OF BOYNTON BEACH, FLORIDA POWER LIGHT, QUANTUM COMMUNICATIONS, INC., AND SOUTHERN BELL, ITS SUCCESSORS AND ASSIGNS, UNLESS OTHERWISE SPECIFICALLY INDICATED, FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES.
- THE DRAINAGE EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY FOR CONSTRUCTION, OPERATION AND MAINTENANCE OF DRAINAGE EASEMENTS AND ARE HEREBY DEDICATED TO THE QUANTUM PARK PROPERTY OWNERS ASSOCIATION, INC., ITS SUCCESSORS OR ASSIGNS, AND IS THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS OR ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH.

IN WITNESS WHEREOF, THE SAID QUANTUM ASSOCIATES, HAS CAUSED THESE PRESENTS TO BE SIGNED BY THE ONLY AUTHORIZED PARTNER OF SAID GENERAL PARTNERSHIP SIGNING BELOW THE DATE & YEAR INDICATED.

QUANTUM ASSOCIATES  
EDWARD B. DEUTSCH  
PARTNER, QUANTUM ASSOCIATES  
A FLORIDA GENERAL PARTNERSHIP

ATTEST: *[Signature]*  
3

**ACKNOWLEDGEMENT**

STATE OF FLORIDA  
COUNTY OF PALM BEACH

BEFORE ME, PERSONALLY APPEARED EDWARD B. DEUTSCH, A PARTNER OF QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, TO ME WELL KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT ON BEHALF OF THE PARTNERSHIP AND HE ACKNOWLEDGED BEFORE ME THAT HE EXECUTED SAID INSTRUMENT FOR THE PURPOSE EXPRESSED THEREIN.

WITNESS MY HAND AND OFFICIAL SEAL THIS 9th DAY OF June 1987.

MY COMMISSION EXPIRES: Feb 26, 1991 *[Signature]*  
NOTARY PUBLIC

**MORTGAGEE'S CONSENT**

STATE OF NEW YORK  
COUNTY OF NEW YORK

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE HOLDERS OF A MORTGAGE DATED AS OF OCTOBER 29, 1985 AND RECORDED IN OFFICIAL RECORD BOOK 4896, AT PAGE 58 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, UPON THE HERON DESCRIBED PROPERTY AND DO HEREBY JOIN IN THE CONSENT TO THE DEDICATION OF THE LANDS DESCRIBED IN THE DEDICATION HERETO, BY THE OWNER THEREOF.

IN WITNESS WHEREOF, THE SAID CORPORATION HAS CAUSED THESE PRESENTS TO BE SIGNED BY ITS Vice President, AND ATTESTED BY ITS Vice President AND WITH THE AUTHORITY OF ITS BOARD OF DIRECTORS, THIS 19th DAY OF May, A.D., 1987.

THE CHASE MANHATTAN BANK, (N.A.)  
ONE CHASE MANHATTAN PLAZA  
NEW YORK, NEW YORK 10081

ATTEST: *[Signature]* BY: *[Signature]*  
William R. Ramos William A. Carmody

**ACKNOWLEDGEMENT**

STATE OF NEW YORK  
COUNTY OF NEW YORK

BEFORE ME PERSONALLY APPEARED William A. Carmody TO ME WELL KNOWN AND KNOWN TO ME TO BE THE INDIVIDUAL DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AS Vice President OF THE ABOVE NAMED CHASE MANHATTAN BANK, (N.A.), A CORPORATION, AND HE ACKNOWLEDGED TO AND BEFORE ME THAT HE EXECUTED SUCH INSTRUMENT AS Vice President OF SAID CORPORATION, AND THAT THE SEAL AFFIXED TO THE FOREGOING INSTRUMENT IS THE CORPORATE SEAL OF SAID CORPORATION AND THAT IT WAS AFFIXED TO SAID INSTRUMENT BY ONE AND HIS CLEAR CORPORATE AUTHORITY AND THAT SAID INSTRUMENT IS THE FREE ACT AND DEED OF SAID CORPORATION, SAID CORPORATION NOW KNOWN AS THE CHASE MANHATTAN BANK (N.A.).

WITNESS MY HAND AND OFFICIAL SEAL THIS 19th DAY OF May, A.D., 1987.

*[Signature]*  
NOTARY PUBLIC

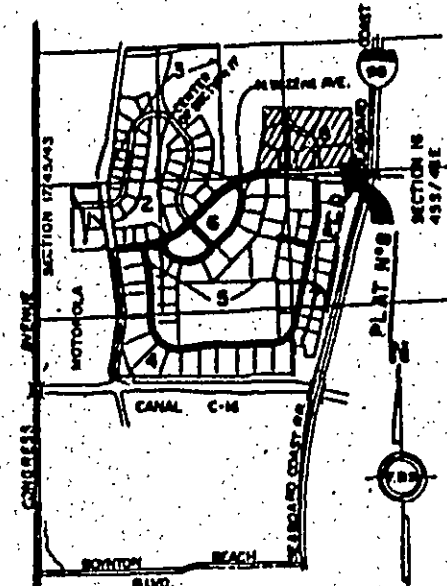
MY COMMISSION EXPIRES: 5/19/88

**TITLE CERTIFICATION**

STATE OF FLORIDA  
COUNTY OF DADE

WE, SHEA AND GOULD, DULY LICENSED ATTORNEYS IN THE STATE OF FLORIDA, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE TO THE HERON DESCRIBED PROPERTY; THAT AS OF June 5, 1987, AT 1:00 PM APPARENT RECORD TITLE TO THE PROPERTY IS VESTED IN QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP; THAT THE REAL ESTATE TAXES FOR THE YEAR 1986 AND PRIOR YEARS HAVE BEEN PAID; THAT THE PROPERTY IS ENCLUMBERED BY THE MORTGAGES SHOWN HEREON; AND THAT ALL RECORDED MORTGAGES NOT SATISFIED OR RELEASED OF RECORD, ARE SHOWN AND ARE TRUE AND CORRECT, AND THERE ARE NO OTHER MORTGAGE ENCUMBRANCES OF RECORD.

DATE: June 6, 1987 SHEA AND GOULD  
BY: *[Signature]*



LOCATION MAP

STATE OF FLORIDA  
COUNTY OF PALM BEACH  
This Plat was filed for record at 10:00 A.M. on June 18, 1987 and duly recorded in Plat Book No. 196 on page 196-197.  
JOHN B. BUNKLE, Clerk Circuit Court  
By: *[Signature]*



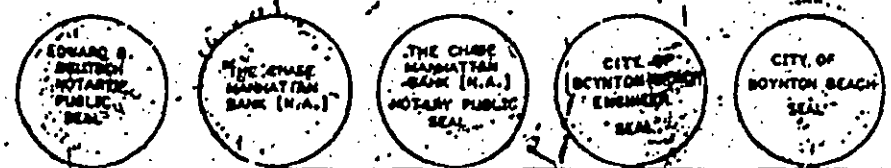
CITY APPROVAL  
APPROVED: June 16, A.D., 1987  
BY: *[Signature]* Mayor  
BY: *[Signature]* City Clerk  
BY: *[Signature]* City Engineer

- SURVEYOR'S NOTES:**
- PERMANENT REFERENCE MONUMENTS ARE DESIGNATED THUSLY:—(P.R.M.)
  - PERMANENT CONTROL POINTS ARE DESIGNATED THUSLY:—(P.C.P.)
  - MINIMUM BUILDING SETBACK LINES SHALL BE AS REQUIRED BY THE ZONING REGULATIONS OF THE CITY OF BOYNTON BEACH AND THE COVENANTS.
  - MINIMUM BUILDING SETBACK LINES FROM EASEMENTS SHOWN HEREON SHALL BE NO LESS THAN 15 FEET OR MORE RESTRICTIVE AS REQUIRED BY THE CITY OF BOYNTON BEACH.
  - THERE SHALL BE NO BUILDINGS PLACED ON UTILITY EASEMENTS.
  - IN INSTANCES WHERE DRAINAGE AND UTILITY EASEMENTS INTERSECT, THE ARTS OF INTERSECTION AND DRAINAGE AND UTILITY EASEMENTS AND THE USE, CONSTRUCTION AND MAINTENANCE OF EACH EASEMENT SHALL NOT INTERFERE WITH THE USE, CONSTRUCTION AND MAINTENANCE OF THE OTHER.
  - BEARING DATUM: THE EAST LINE OF THE NORTHEAST ONE-QUARTER (NE1/4) OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST IS ASSUMED TO BEAR NORTH 00° 39' 00" WEST AND ALL BEARINGS SHOWN HEREON ARE RELATIVE THERETO.

**SURVEYOR'S CERTIFICATION**  
STATE OF FLORIDA  
COUNTY OF PALM BEACH  
I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY, MADE UNDER MY RESPONSIBLE DIRECTION AND SUPERVISION, AND THAT SAID SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THE (P.R.M.'S) PERMANENT REFERENCE MONUMENTS HAVE BEEN SET AND THAT THE (P.C.P.'S) PERMANENT CONTROL POINTS WILL BE SET UNDER THE GUARANTEE OF THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA, FOR THE REQUIRED IMPROVEMENTS; AND FURTHER THAT THE SURVEY DATA COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AMENDED.  
DATE: June 20, 1987  
BY: *[Signature]*  
RICHARD SAUNDERS, PROFESSIONAL LAND SURVEYOR  
REGISTRATION NO. 1343  
STATE OF FLORIDA

70 57 76.196

F.R.S. & ASSOCIATES ENGINEERS, LAND SURVEYORS, LAND PLANNERS WEST PALM BEACH, FLORIDA		DRAWN BY: DE MORALIS
SCALE: N/A	DATE: 6/20/87	JOB NO. 86-S-025
QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT No. 8		DATE: 6-24-87
Sheet 1 of 2 sheets		



THIS INSTRUMENT PREPARED BY JORGE D. PERDOMI IN THE OFFICES OF F.R.S. & ASSOCIATES, 1840 FOREST HILL BOULEVARD, SUITE 107, WEST PALM BEACH, FLORIDA, 33409, TELEPHONE 1 947-9600

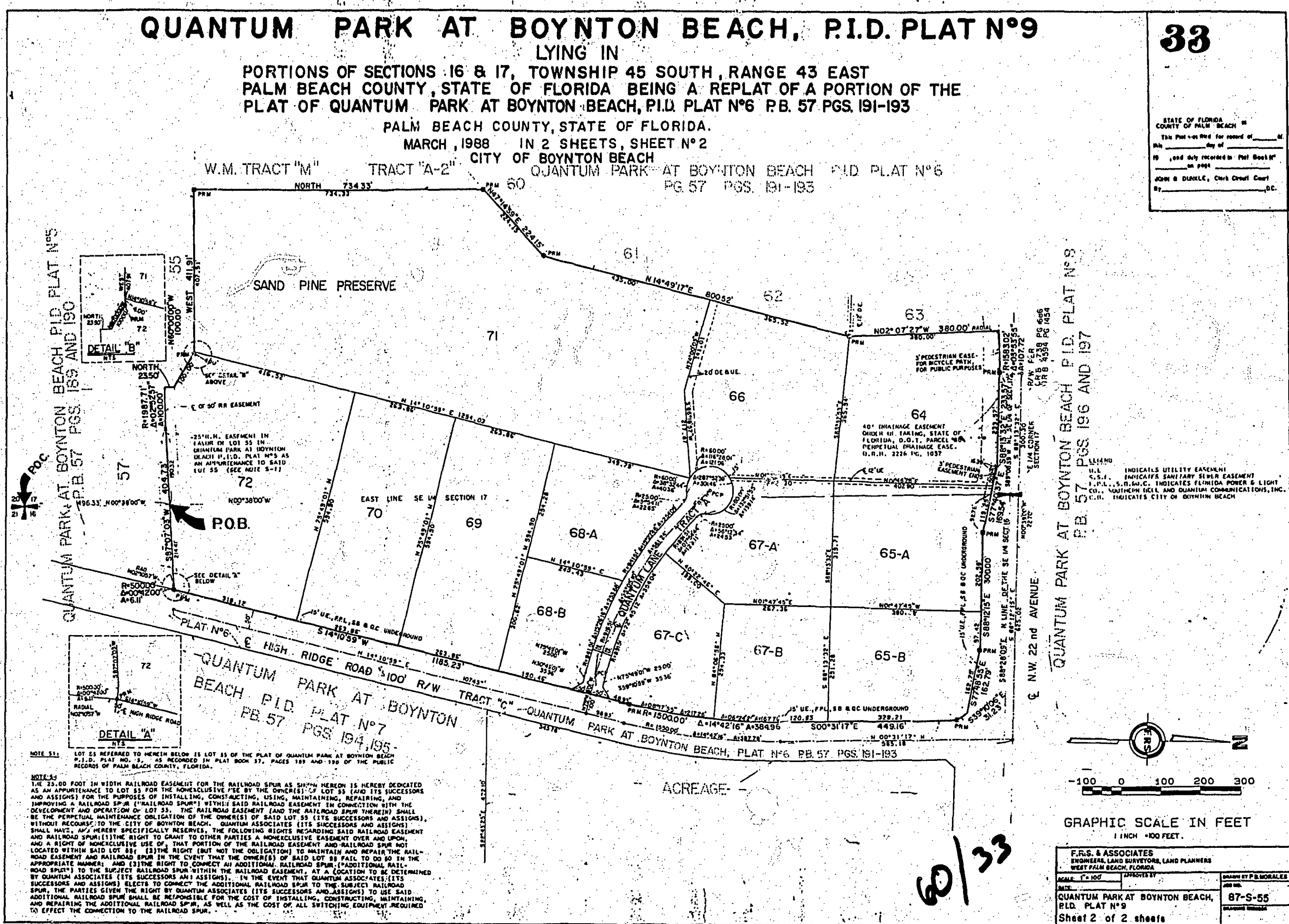
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# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N° 10

LYING IN

SECTIONS 17 & 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH  
STATE OF FLORIDA, BEING A REPLAT OF A PORTION OF THE PLAT OF QUANTUM  
PARK AT BOYNTON BEACH P.I.D. PLAT N° 4, PLAT BOOK 57 PAGES 186-188

PALM BEACH COUNTY, STATE OF FLORIDA.

MARCH, 1988 IN 3 SHEETS, SHEET N° 1

CITY OF BOYNTON BEACH

### DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, OWNER OF THE LAND SHOWN AND DESCRIBED HEREON AS QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT NO. 10, BEING A REPLAT OF LOTS 41, 42, 43, 44, 45, 46, 47, 48, 49, 50 AND 51-A TOGETHER WITH THE DRAINAGE EASEMENTS DESIGNATED AS TRACTS "L", "M" AND "N" AND TOGETHER WITH LOTS 44-A, 45-A, 47-A, 48-A, 49-A, AND 50-A, OF THE PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT NO. 4, RECORDED IN PLAT BOOK 57, PAGES 186-188, INCLUSIVE, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, SAID LANDS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PARCEL OF LAND LYING IN SECTIONS 17 & 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH, STATE OF FLORIDA AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST (SW) CORNER OF LOT 40 OF THE PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT NO. 4 AS SAID PLAT IS RECORDED IN PLAT BOOK 57, PAGES 186-188 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE, NORTH 83° 31' 19" EAST ALONG THE SOUTH LINE OF SAID LOT 40 A DISTANCE OF 308.00 FEET TO A POINT ON AN ARC OF A CURVE (A RADIAL LINE PASSING THROUGH SAID POINT BEARS NORTH 85° 31' 19" EAST) CURVING TO THE WEST, SAID CURVE BEING A PORTION OF THE WEST RIGHT-OF-WAY LINE OF HARRIOTT ROAD, BEING TRACT "M" OF SAID PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT NO. 4; THENCE, TRAVELING ALONG SAID WEST RIGHT-OF-WAY LINE THROUGH THE FOLLOWING 8 NUMBERED COURSES AND DISTANCES:

1. SOUTHERLY ALONG THE ARC OF SAID CURVE CONCAVE TO THE WEST, HAVING A RADIUS OF 1,632.00 FEET AND THROUGH A CENTRAL ANGLE OF 04° 30' 16" A DISTANCE OF 444.39 FEET TO A TANGENT LINE;
2. SOUTH 00° 02' 38" WEST ALONG SAID TANGENT LINE A DISTANCE OF 300.00 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHEAST, HAVING A RADIUS OF 836.77 FEET AND A CENTRAL ANGLE OF 98° 00' 00";
3. SOUTHERLY AND EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 1,089.15 FEET TO A TANGENT LINE;
4. NORTH 82° 02' 38" EAST ALONG SAID TANGENT LINE A DISTANCE OF 289.82 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTH, HAVING A RADIUS OF 1,864.18 FEET AND A CENTRAL ANGLE OF 02° 00' 00";
5. EASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 470.98 FEET TO A TANGENT LINE;
6. SOUTH 88° 07' 38" EAST ALONG SAID TANGENT LINE A DISTANCE OF 927.00 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 613.47 FEET AND A CENTRAL ANGLE OF 35° 20' 39";
7. NORTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 379.46 FEET;
8. SOUTH 82° 29' 32" EAST A DISTANCE OF 33.82 FEET TO THE WEST LINE OF TRACT "M" OF SAID PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT NO. 4;

THENCE, ALONG SAID WEST LINE THROUGH THE FOLLOWING 3 NUMBERED CURVES AND DISTANCES:

1. SOUTH 40° 51' 37" EAST A DISTANCE OF 48.09 FEET TO THE BEGINNING OF A CURVE CONCAVE WESTERLY, HAVING A RADIUS OF 136.31 FEET AND A CENTRAL ANGLE OF 40° 43' 35";
2. SOUTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 95.31 FEET TO A TANGENT LINE;
3. SOUTH 00° 48' 01" EAST ALONG SAID TANGENT LINE A DISTANCE OF 303.66 FEET TO THE NORTH LINE OF 5' 51"-B OF SAID PLAT OF QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT NO. 4;

THENCE, ALONG THE NORTH LINE AND THE WEST LINE OF SAID LOT 51-B THROUGH THE FOLLOWING 3 NUMBERED COURSES AND DISTANCES:

1. NORTH 88° 10' 54" WEST A DISTANCE OF 335.65 FEET;
2. SOUTH 07° 05' 03" WEST A DISTANCE OF 232.02 FEET TO THE NORTH LINE OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT C-16 CANAL, AS SAID NORTH LINE IS DESCRIBED IN DEED RECORDED IN OFFICIAL RECORD BOOK 1064, PAGE 45 OF THE PUBLIC RECORDS OF SAID COUNTY;

THENCE, SOUTH 01° 09' 05" WEST ALONG THE SOUTHERLY PROLONGATION OF THE WEST LINE OF SAID LOT 51-B A DISTANCE OF 144.38 FEET TO THE SOUTH LINE OF SAID C-16 CANAL; THENCE, NORTH 80° 34' WEST ALONG SAID SOUTH LINE A DISTANCE OF 2,653.77 FEET; THENCE, CONTINUING ALONG SAID SOUTH LINE ON A BEARING OF NORTH 81° 29' 48" WEST A DISTANCE OF 309.74 FEET TO THE EAST LINE OF THE LAKE MURKIN DRAINAGE DISTRICT (CANAL) CANAL, AS SAID CANAL IS DESCRIBED IN DEED RECORDED IN OFFICIAL RECORD BOOK 2322, PAGE 64 OF THE PUBLIC RECORDS OF SAID COUNTY; THENCE, TRAVELING ALONG SAID EAST LINE THROUGH THE FOLLOWING 5 NUMBERED COURSES AND DISTANCES, TO THE POINT OF BEGINNING:

1. NORTH 12° 11' 30" WEST A DISTANCE OF 204.06 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE EAST, HAVING A RADIUS OF 218.19 FEET AND A CENTRAL ANGLE OF 22° 16' 28";
2. NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 85.48 FEET TO A TANGENT LINE;
3. NORTH 10° 14' 49" EAST ALONG SAID TANGENT LINE A DISTANCE OF 978.11 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE WEST, HAVING A RADIUS OF 573.00 FEET AND A CENTRAL ANGLE OF 17° 25' 38";
4. NORTHERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 174.24 FEET TO A TANGENT LINE;
5. NORTH 07° 10' 49" WEST ALONG SAID TANGENT LINE A DISTANCE OF 492.68 FEET TO THE POINT OF BEGINNING.

CONTAINING 67.86877 ACRES, MORE OR LESS.

HAS CAUSED THE SAME TO BE SURVEYED AND PLATTED AS SHOWN HEREON, AND DOES HEREBY DEDICATE AS FOLLOWS:

1. TRACT "A" (ALPHA DRIVE) AND TRACT "B" (BETA DRIVE), AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO QUANTUM PARK PROPERTY OWNERS' ASSOCIATION, INC., ITS SUCCESSORS AND ASSIGNS FOR PRIVATE ROAD PURPOSES AND ARE THE PERPETUAL MAINTENANCE OBLIGATIONS OF SAID ASSOCIATION, ITS SUCCESSORS AND ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH.
2. TRACT "A" (ALPHA DRIVE) AND TRACT "B" (BETA DRIVE), AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO THE CITY OF BOYNTON BEACH, FLORIDA POWER AND LIGHT, QUANTUM COMMUNICATIONS, INC. AND SOUTHERN BELL FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF UTILITIES.
3. THE UTILITY EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO THE CITY OF BOYNTON BEACH, FLORIDA POWER AND LIGHT, QUANTUM COMMUNICATIONS, INC. AND SOUTHERN BELL, THEIR SUCCESSORS AND ASSIGNS, UNLESS OTHERWISE SPECIFICALLY INDICATED, FOR THE CONSTRUCTION, OPERATION, AND MAINTENANCE OF UTILITIES.
4. THE DRAINAGE EASEMENTS AS SHOWN HEREON ARE HEREBY DEDICATED IN PERPETUITY TO QUANTUM PARK PROPERTY OWNERS' ASSOCIATION, INC., ITS SUCCESSORS AND ASSIGNS FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF DRAINAGE FACILITIES AND ARE THE PERPETUAL MAINTENANCE OBLIGATION OF SAID ASSOCIATION, ITS SUCCESSORS AND ASSIGNS, WITHOUT RECOURSE TO THE CITY OF BOYNTON BEACH.

IN WITNESS WHEREOF, THE SAID QUANTUM ASSOCIATES, HAS CAUSED THESE PRESENTS TO BE SIGNED BY THE DULY AUTHORIZED GENERAL PARTNER OF SAID GENERAL PARTNERSHIP, SIGNING BELOW THE DATE AND YEAR INDICATED.

QUANTUM ASSOCIATES,  
A FLORIDA GENERAL PARTNERSHIP  
BY: EDWARD DEUTSCH,  
AS GENERAL PARTNER

ATTEST: *[Signature]*  
NOTARY PUBLIC

STATE OF FLORIDA

COUNTY OF BROWARD

BEFORE ME, PERSONALLY APPEARED EDWARD B. DEUTSCH, A GENERAL PARTNER OF QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP, TO ME WELL KNOWN AND KNOWN TO ME TO BE THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT ON BEHALF OF THE PARTNERSHIP; AND HE ACKNOWLEDGED BEFORE ME THAT HE EXECUTED SAID INSTRUMENT FOR THE PURPOSE EXPRESSED THEREIN.

WITNESS MY HAND AND OFFICIAL SEAL THIS 21<sup>ST</sup> DAY OF MARCH, A.D., 1988.

MY COMMISSION EXPIRES: *[Signature]*  
A.D. 1991

MORTGAGEE'S CONSENT

STATE OF NEW YORK

COUNTY OF NEW YORK

THE UNDERSIGNED HEREBY CERTIFIES THAT IT IS THE HOLDER OF A MORTGAGE DATED AS OF OCTOBER 29, 1985 AND RECORDED IN OFFICIAL RECORD BOOK 4696 AT PAGE 58 OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA, AS MAY BE AMENDED FROM TIME TO TIME, UPON THE HEREIN DESCRIBED PROPERTY AND DOES HEREBY JOIN IN AND CONSENT TO THE DEDICATIONS OF THE LANDS DESCRIBED IN THE DEDICATION HEREIN, BY THE OWNER THEREOF.

IN WITNESS WHEREOF, THE SAID CORPORATION HAS CAUSED THESE PRESENTS TO BE SIGNED BY ITS OFFICERS AND ATTESTED BY ITS OFFICERS AND ITS CORPORATE SEAL TO BE AFFIXED HEREBY BY AND WITH THE AUTHORITY OF ITS BOARD OF DIRECTORS, THIS 17<sup>TH</sup> DAY OF MARCH, A.D., 1988.

THE CHASE MANHATTAN BANK, [M.A.]

ATTEST: *[Signature]*

ACKNOWLEDGMENT

STATE OF NEW YORK

COUNTY OF NEW YORK

BEFORE ME, PERSONALLY APPEARED *[Signature]* TO ME WELL KNOWN AND KNOWN TO ME TO BE THE INDIVIDUAL DESCRIBED IN AND WHO EXECUTED THE FOREGOING INSTRUMENT AS *[Signature]* OF THE ABOVE NAMED CHASE MANHATTAN BANK, [M.A.] A CORPORATION, AND HE ACKNOWLEDGED TO AND BEFORE ME THAT HE EXECUTED SAID INSTRUMENT AS *[Signature]* OF SAID CORPORATION, AND THAT THE SEAL AFFIXED TO THE FOREGOING INSTRUMENT IS THE CORPORATE SEAL OF SAID CORPORATION AND THAT IT WAS AFFIXED TO SAID INSTRUMENT BY DULY AND REGULAR CORPORATE AUTHORITY AND THAT SAID INSTRUMENT IS THE FREE ACT AND DEED OF SAID CORPORATION, SAID CORPORATION KNOWN AS THE CHASE MANHATTAN BANK [M.A.].

WITNESS MY HAND AND OFFICIAL SEAL THIS 15<sup>TH</sup> DAY OF MARCH, A.D., 1988.

MY COMMISSION EXPIRES: *[Signature]*  
NOTARY PUBLIC

TITLE CERTIFICATION

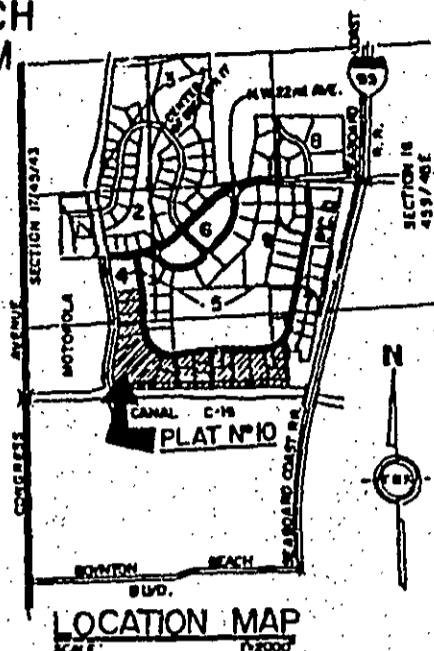
STATE OF FLORIDA

COUNTY OF PALM BEACH

WE, MOYLE, FLANIGAN, KATZ, FITZGERALD & SHEEHAN, P.A., DULY LICENSED ATTORNEYS IN THE STATE OF FLORIDA, DO HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE OF THE HEREIN DESCRIBED PROPERTY, THAT AS OF MARCH 4, 1988 AT 2:00 P.M., APPARENT RECORD TITLE TO THE PROPERTY AS DESCRIBED AND SHOWN ON THIS PLAT IS IN THE NAME OF QUANTUM ASSOCIATES, A FLORIDA GENERAL PARTNERSHIP; THAT THE REAL ESTATE TAXES FOR THE YEAR 1987 AND PRIOR YEARS HAVE BEEN PAID, AND THAT ALL RECORDED MORTGAGES NOT SATISFIED OR RELEASED OF RECORD ARE SHOWN AND ARE TRUE AND CORRECT AND THAT THERE ARE NO OTHER MORTGAGE ENCUMBRANCES OF RECORD.

DATE: *[Signature]* MOYLE, FLANIGAN, KATZ, FITZGERALD & SHEEHAN, P.A.

BY: *[Signature]*  
DAVID S. PRESSLEY



34

STATE OF FLORIDA  
COUNTY OF PALM BEACH  
This Plat was filed for record in P.B.C. No. 34 on the 21<sup>ST</sup> day of MARCH 1988 and duly recorded in Plat Book 60 on page 76-78 JOHN B. HINKLE, Civil Court Clerk By: *[Signature]* P.C.



CITY APPROVAL  
APPROVED: *[Signature]* A.D., 1988.

BY: *[Signature]*

BY: *[Signature]*

BY: *[Signature]*

SURVEYOR'S NOTES

1. PERMANENT REFERENCE MONUMENTS ARE DESIGNATED THUSLY: -P.R.M.-
2. PERMANENT CONTROL POINTS ARE DESIGNATED THUSLY: -P.C.P.-
3. MINIMUM BUILDING SETBACK LINES SHALL BE AS REQUIRED BY THE P.I.D. ZONING REGULATIONS OF THE CITY OF BOYNTON BEACH.
4. MINIMUM BUILDING SETBACK LINES FROM EASEMENTS SHOWN HEREON SHALL BE NO LESS THAN 15 FEET, OR NO LESS THAN REQUIRED BY THE CITY OF BOYNTON BEACH, WHICHEVER SETBACK IS GREATER.
5. THERE SHALL BE NO BUILDINGS PLACED ON UTILITY EASEMENTS.
6. IN INSTANCES WHERE DRAINAGE AND UTILITY EASEMENTS INTERSECT, THE AREAS OF INTERSECTION ARE DRAINAGE AND UTILITY EASEMENTS AND THE USE, CONSTRUCTION, AND MAINTENANCE OF EACH EASEMENT SHALL NOT INTERFERE WITH THE USE, CONSTRUCTION, AND MAINTENANCE OF THE OTHER.
7. BEARING DATUM: THE EAST LINE OF THE SOUTHEAST ONE-QUARTER (SE1/4) OF SECTION 17, TOWNSHIP 45 SOUTH, RANGE 43 EAST IS ASSUMED TO BEAR NORTH 00° 38' 00" WEST AND ALL BEARINGS SHOWN HEREON ARE RELATIVE THERETO.
8. NOTES: THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

STATE OF FLORIDA

COUNTY OF PALM BEACH

I HEREBY CERTIFY THAT THE PLAT SHOWN HEREON IS A TRUE AND CORRECT REPRESENTATION OF A SURVEY, MADE UNDER MY RESPONSIBLE DIRECTION AND SUPERVISION, AND THAT SAID SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THE (P.R.M.'S) PERMANENT REFERENCE MONUMENTS HAVE BEEN SET AND THAT THE (P.C.P.'S) PERMANENT CONTROL POINTS WILL BE SET UNDER THE GUARANTEE POSTED WITH THE CITY OF BOYNTON BEACH, PALM BEACH COUNTY, FLORIDA FOR THE REQUIRED IMPROVEMENTS, AND FURTHER THAT THE SURVEY DATA COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AMENDED.

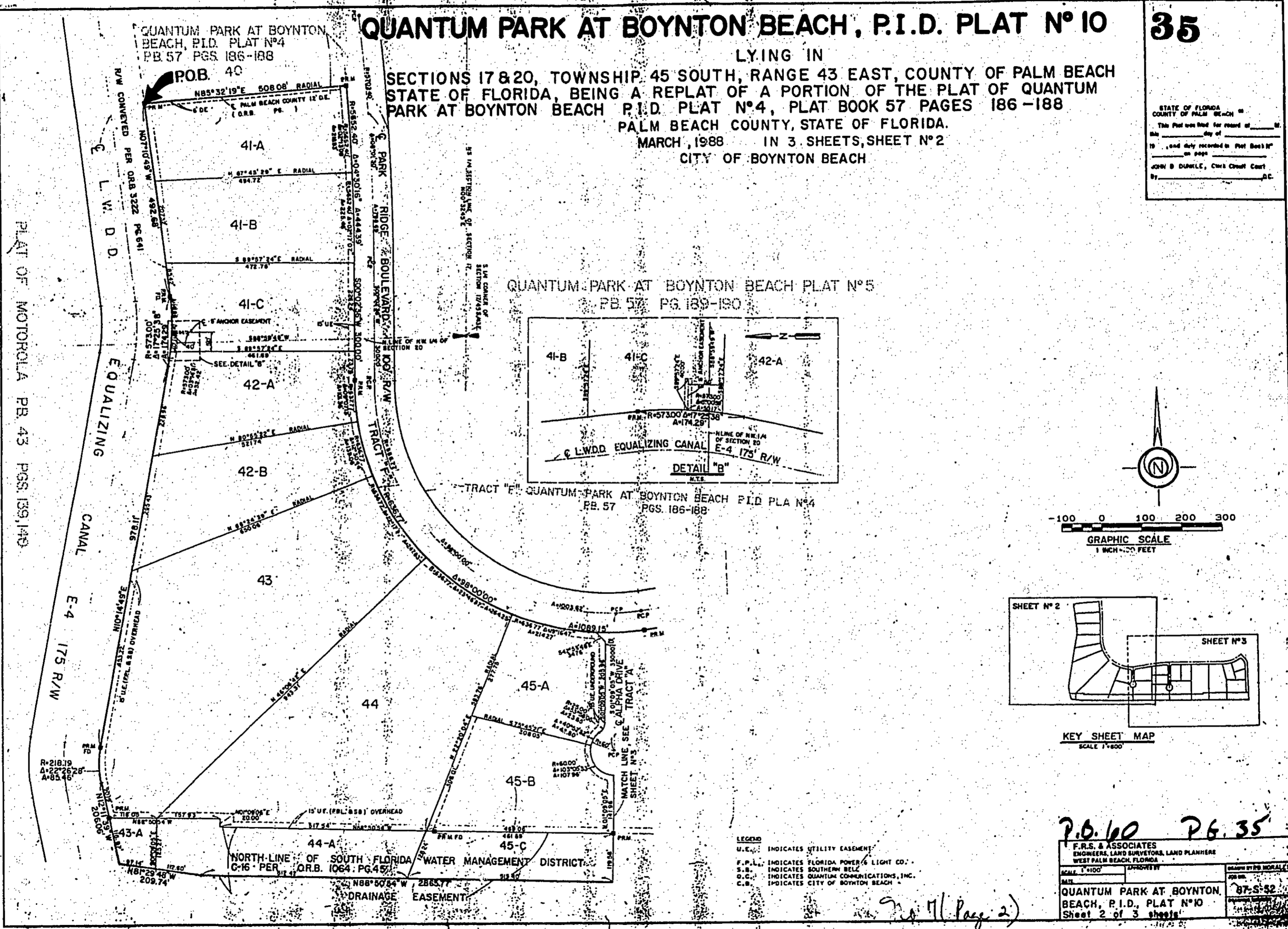
DATE: *[Signature]* BY: *[Signature]*  
RAYFEL SALAMITIGAS, PROFESSIONAL LAND SURVEYOR  
REGISTRATION NO. 2345  
STATE OF FLORIDA

P.B. 60 76.34

F.R.S. & ASSOCIATES - ENGINEERS, LAND SURVEYORS, LAND PLANNERS WEST PALM BEACH, FLORIDA	
APPROVED BY: <i>[Signature]</i>	DRAWN BY: MOYLES
DATE: <i>[Signature]</i>	ADD. NO.
QUANTUM PARK AT BOYNTON BEACH, P.I.D., PLAT N° 10	
Sheet 1 of 3 sheets	
87-S-52	

NO 7  
Sheet  
#1

THIS INSTRUMENT PREPARED BY JORGE D. PERDOMO IN THE OFFICES OF F.R.S. AND ASSOCIATES, 1860 FOREST HILL BOULEVARD, SUITE 107, WEST PALM BEACH, FLORIDA, 33406, TELEPHONE: 967-5644



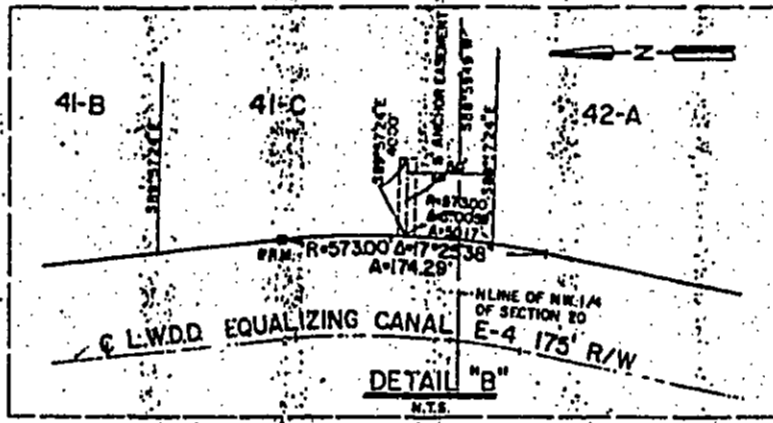
# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N° 10

LYING IN  
 SECTIONS 17 & 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH  
 STATE OF FLORIDA, BEING A REPLAT OF A PORTION OF THE PLAT OF QUANTUM  
 PARK AT BOYNTON BEACH P.I.D. PLAT N° 4, PLAT BOOK 57 PAGES 186-188  
 PALM BEACH COUNTY, STATE OF FLORIDA.  
 MARCH, 1988 IN 3 SHEETS, SHEET N° 2  
 CITY OF BOYNTON BEACH

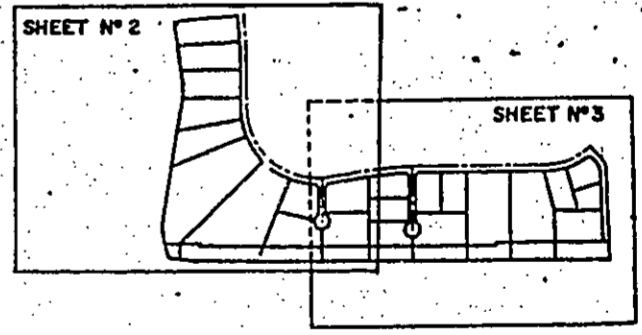
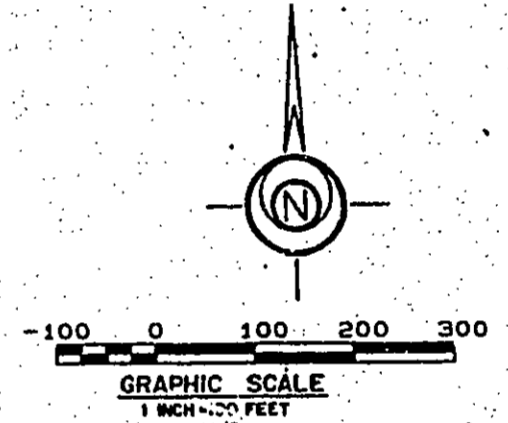
**35**

STATE OF FLORIDA  
 COUNTY OF PALM BEACH  
 This Plat was filed for record on \_\_\_\_\_  
 day of \_\_\_\_\_  
 19\_\_\_\_, and duly recorded in Plat Book N°  
 \_\_\_\_\_ on page \_\_\_\_\_  
 JOHN B. DUNKLE, Civil Court Clerk  
 By \_\_\_\_\_, C.C.

QUANTUM PARK AT BOYNTON BEACH PLAT N° 5  
 PB 57 PG. 189-190



TRACT "F" QUANTUM PARK AT BOYNTON BEACH P.I.D. PLA N° 4  
 PB 57 PGS. 186-188



KEY SHEET MAP  
 SCALE 1"=200'

- LEGEND**
- U.E. INDICATES UTILITY EASEMENT
  - F.P.L. INDICATES FLORIDA POWER & LIGHT CO.
  - S.B. INDICATES SOUTHERN BELL
  - Q.C. INDICATES QUANTUM COMMUNICATIONS, INC.
  - C.B. INDICATES CITY OF BOYNTON BEACH

P.B. 100 P.G. 35

F.R.S. & ASSOCIATES  
 ENGINEERS, LAND SURVEYORS, LAND PLANNERS  
 WEST PALM BEACH, FLORIDA

SCALE 1"=100'

APPROVED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N° 10  
 Sheet 2 of 3 sheets

87-S-52

No. 7  
 Sheet  
 #2

No. 7 (Page 2)

PLAT OF MOTOROLA PB 43 PGS. 159, 160

EQUALIZING CANAL E-4 175' R/W

NORTH LINE OF SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
 C-16 PER Q.R.B. 1064 PG. 45

DRAINAGE EASEMENT



# QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°10

LYING IN

SECTIONS 17 & 20, TOWNSHIP 45 SOUTH, RANGE 43 EAST, COUNTY OF PALM BEACH  
STATE OF FLORIDA, BEING A REPLAT OF A PORTION OF THE PLAT OF QUANTUM  
PARK AT BOYNTON BEACH P.I.D. PLAT N°4, PLAT BOOK 57 PAGES 186-188

PALM BEACH COUNTY, STATE OF FLORIDA.

MARCH, 1988 IN 3 SHEETS, SHEET N°3

CITY OF BOYNTON BEACH

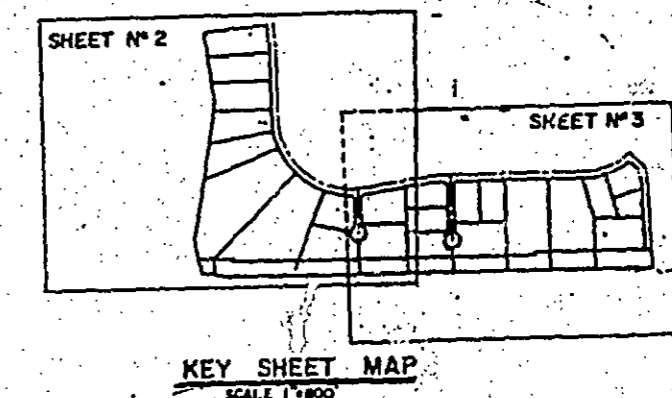
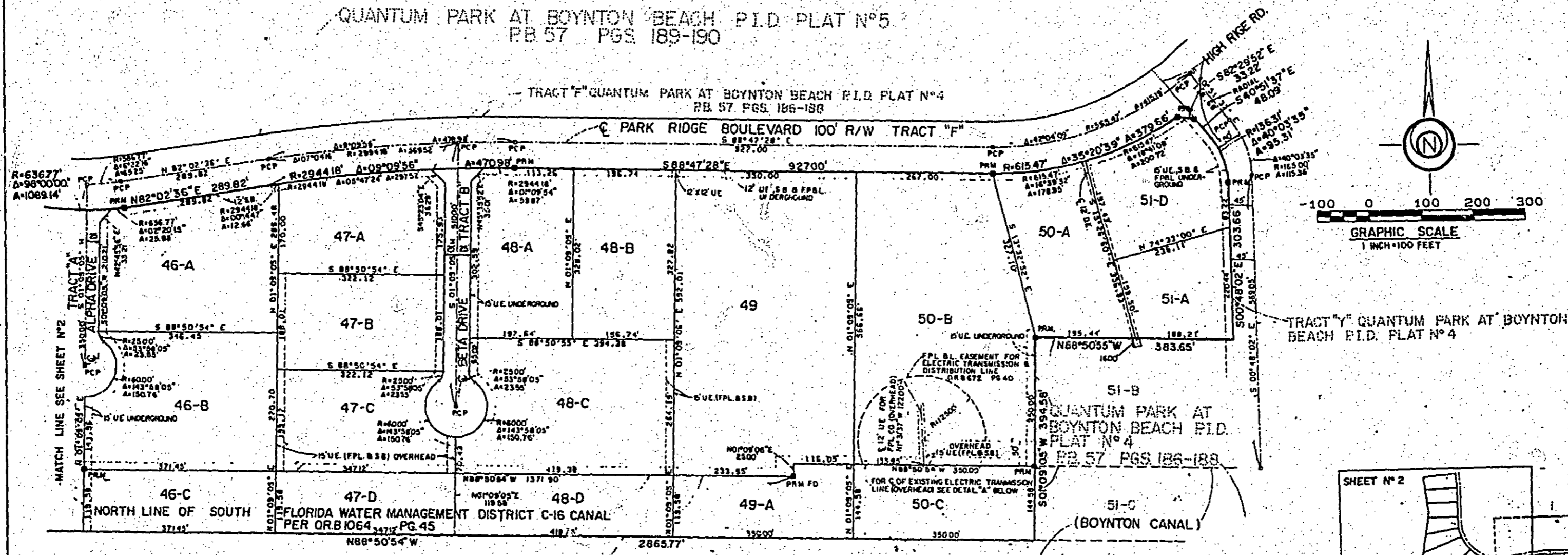
## 36

STATE OF FLORIDA  
COUNTY OF PALM BEACH  
This Plat was filed for record at \_\_\_\_\_  
this \_\_\_\_\_ day of \_\_\_\_\_  
1988, and duly recorded in Plat Book N° \_\_\_\_\_  
in page \_\_\_\_\_  
JOHN B. DUNKLE, Clerk Circuit Court  
By \_\_\_\_\_, C.C.

QUANTUM PARK AT BOYNTON BEACH P.I.D. PLAT N°5  
PB 57 PGS 189-190

TRACT "F" QUANTUM PARK AT BOYNTON BEACH P.I.D. PLAT N°4  
PB 57 PGS 186-188

PARK RIDGE BOULEVARD 100' R/W TRACT "F"



No. 7  
Sheet  
#3

LEGEND  
U.E. INDICATES UTILITY EASEMENT  
S.S.E. INDICATES SANITARY SEWER EASEMENT  
P.F.L. INDICATES FLORIDA POWER & LIGHT CO.  
S.B. INDICATES SOUTHERN BELL  
Q.C. INDICATES QUANTUM COMMUNICATIONS, INC.  
C.B. INDICATES CITY OF BOYNTON BEACH

LEGEND  
INDICATES WOOD POWER POLE  
INDICATES WOOD POWER POLE ANCHORS  
INDICATES ANCHORS

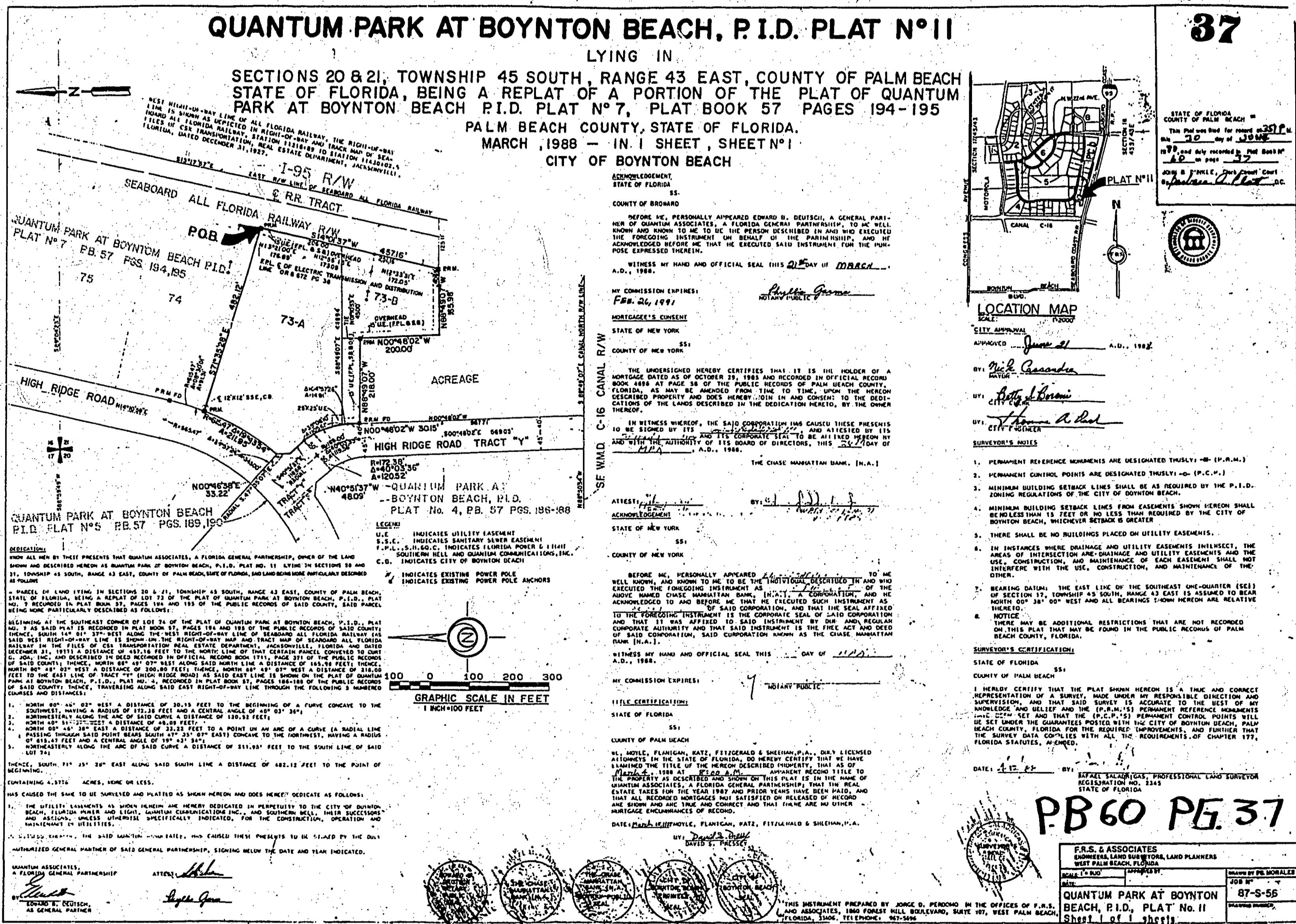
DETAIL A

EXISTING E OF ELECTRIC TRANSMISSION LINE (OVERHEAD)

7071 (Page 3)

P.B. 60 PG. 36

F.R.S. & ASSOCIATES ENGINEERS, LAND SURVEYORS, LAND PLANNERS WEST PALM BEACH, FLORIDA		DATE: _____	SCALE: 1"=100'	APPROVED: _____	DATE: _____
QUANTUM PARK AT BOYNTON BEACH, P.I.D. PLAT N°10		87-S-52		DRAWN BY: P. ORALEE	
Sheet 3 of 3 sheets					



No. 6  
Sheet  
#1

37

PB 60 PG 37

DATE	BY	REVISION
8-9-56		QUANTUM PARK AT BOYNTON BEACH P.I.D. PLAT NO. 11
		Sheet 1 of 1



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## **Appendix E**

**Pond Design Calculations  
Pre- and Post-Development Basin Maps**

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## **APPENDIX E, Part A**

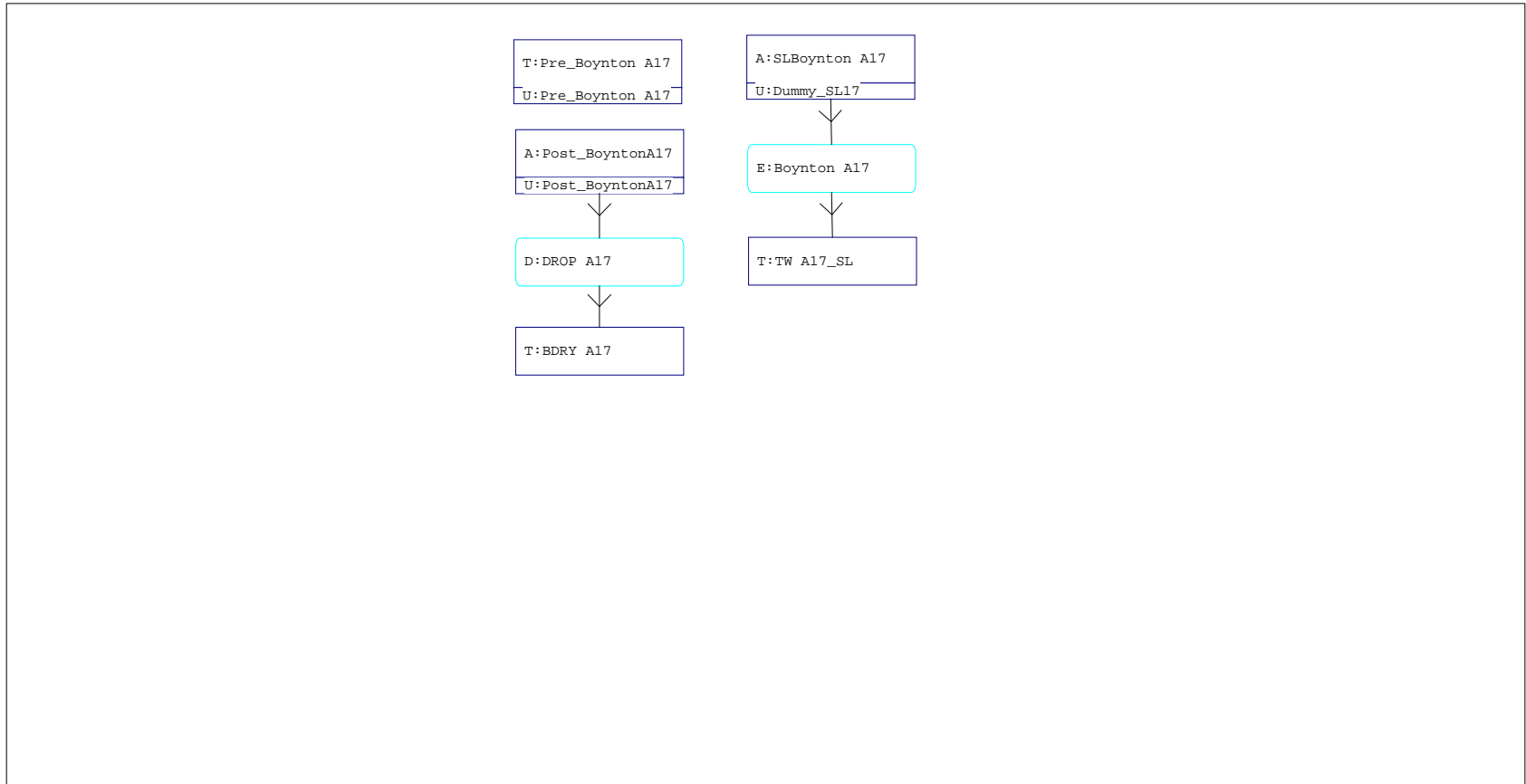
**Part A, Boynton Beach Boulevard**

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BOYNTON BEACH ALTERNATIVE 17 DRY DETENTION - BASIN SUMMARY

- 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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## DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

 Basin No: **Alt #17** Sub Basin No: **West**  
 Total Area (ac): **7.94**

 Station Limits **431+70.00** to **439+00.00**  
 Basin Length (ft) : **730.00** ft

### Compute Required Treatment Volume (On-line)

**1. 1" treatment**

 Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
 $TV = [(1 \text{ inch}) \times (7.94 \text{ ac})] / (12 \text{ in/ft})$   
 TV = **0.66 ac-ft**

or

**2. 2.5" x Percentage of Imperviousness**

 Site Area = Total project - (Lake + Roof)  
 = 7.94 ac - 1.09 ac  
 = 6.85 ac

 Impervious Area = Site area - Pervious area  
 = 6.85 ac - 0.83 ac - 0.44 ac - 1.44 ac  
 = 4.14 ac

 Percentage of imperviousness for water quality  
 = Impervious area / Site area  
 = 4.14 ac / 6.85 ac  
 = 0.60

 For 2.5in times the percentage impervious  
 = [(2.5 inch) x (0.60)]  
 = 1.51 in to be treated

 Compute volume required for quality detention  
 = inches to be treated x (total site - lake) x 1ft/12in  
 = **1.00 ac-ft**
**Treatment Volume, TV = 1.00 ac-ft** controls

**Treatment Volume Required for Dry Pond = 0.75 ac-ft** (75% of the amount computed for wet detention)

### Compute Provided Treatment Volume

	Depth (ft)	Elevation (ft)	Area (ac)	Area (ft <sup>2</sup> )	Volume (ac-ft)
Outside Top of Berm	7.00	18.00	1.443	62,865	6.47
Inside Top of Berm	6.00	17.00	1.127	49,077	5.18
Weir Elevation	1.20	12.20	0.701	30,535	0.79
Bottom Elevation	0.00	11.00	0.623	27,122	0.00

 Treatment Volume Elevation Required: **12.13**

 Treatment Volume Elevation Provided: **12.20**
**Treatment Volume Provided: 0.79 ac-ft** Treatment Volume Requirement met

### Geotechnical Data for Percolation Analysis

 Boring No: N/A  
 Soil No. : 6  
 Estimated SHWT: 8.5  
 Estimated Aquifer Base: 5.5

#### Fill Material Conductivity

 Measured Vertical Conductivity (ft/day): 20.0  
 Factor of Safety: 2  
 Estimated Vertical Conductivity, (K<sub>v</sub>)(ft/day): 10.00  
 Estimated Horizontal Conductivity, K<sub>h</sub> (1.5K<sub>v</sub>)(ft/day): 15.00





17.000 1.1300  
 18.000 1.4400

Name: Pre\_Boynton A17 Base Flow(cfs): 0.000 Init Stage(ft): 10.000  
 Group: Pre Warn Stage(ft): 16.000  
 Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	10.000
999.00	16.000

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

Name: DROP A17 From Node: Post\_BoyntonA17 Length(ft): 1000.00  
 Group: Post To Node: BDRY A17 Count: 1

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Automatic
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.000
Invert(ft): 9.000	8.000	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 dn
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 DROP A17 \*\*\*

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): 18.00	Invert(ft): 12.200	
Rise(in): 999.00	Control Elev(ft): 12.200	

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

Name: 003Y024H  
 Filename: G:\TRA\WF900273\ICPR\Boynton\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Boynton\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 72.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00

---

Name: SF100Y072H  
Filename: G:\TRA\WF900273\ICPR\Boynton\100YSF072H.R32

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

Rainfall Amount(in): 19.00

Time(hrs)	Print Inc(min)
73.000	5.00

Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Boynton\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                      Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: 010Y024H                      Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\10 YEAR.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): 24.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                            Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000
Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: 025Y024H                      Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Boynton\25 YEAR.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): 24.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                            Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000
Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: DRAWDOWN                      Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Boynton\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                            Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
72.000	30.000
Group	Run
-----	-----
PERC	Yes

-----

Name: SF100Y072H	Hydrology Sim: SF100Y072H
Filename: G:\TRA\WF900273\ICPR\Boynton\100YSF072H.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): 72.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
72.000	5.000
Group	Run
-----	-----
BASE	Yes
Post	Yes
Pre	Yes

-----

Name: SF25Y072H	Hydrology Sim: SF25Y072H
Filename: G:\TRA\WF900273\ICPR\Boynton\025YSF072H.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): 72.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
72.000	5.000



Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: Post\_BoyntonA17  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Post\_BoyntonA17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 7.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 87.070  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 22.564  
Runoff Volume (in): 4.869  
Runoff Volume (ft3): 140320.980

-----  
Basin Name: Pre\_Boynton A17  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Pre\_Boynton A17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.080  
Vol of Unit Hyd (in): 1.000  
Curve Number: 91.250  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 9.365  
Runoff Volume (in): 5.337  
Runoff Volume (ft3): 59664.502

Basin Name: Post\_BoyntonA17  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Post\_BoyntonA17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 7.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 87.070  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 33.800  
Runoff Volume (in): 7.432  
Runoff Volume (ft3): 214204.616

---

Basin Name: Pre\_Boynton A17  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Pre\_Boynton A17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.080  
Vol of Unit Hyd (in): 1.000  
Curve Number: 91.250  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 13.659  
Runoff Volume (in): 7.941  
Runoff Volume (ft3): 88781.071

-----  
Basin Name: Post\_BoyntonA17  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Post\_BoyntonA17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 7.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 87.070  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 40.553  
Runoff Volume (in): 9.002  
Runoff Volume (ft3): 259458.098

-----  
Basin Name: Pre\_Boynton A17  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Pre\_Boynton A17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.080  
Vol of Unit Hyd (in): 1.000  
Curve Number: 91.250  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 16.240

Runoff Volume (in): 9.527  
Runoff Volume (ft3): 106515.585

---

Basin Name: Post\_BoyntonA17  
Group Name: Post  
Simulation: SF100Y072H  
Node Name: Post\_BoyntonA17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 19.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 7.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 87.070  
DCIA (%): 0.000  
  
Time Max (hrs): 60.03  
Flow Max (cfs): 57.595  
Runoff Volume (in): 17.321  
Runoff Volume (ft3): 499234.889

---

Basin Name: Pre\_Boynton A17  
Group Name: Pre  
Simulation: SF100Y072H  
Node Name: Pre\_Boynton A17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 19.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.080  
Vol of Unit Hyd (in): 1.000  
Curve Number: 91.250  
DCIA (%): 0.000



Time Max (hrs): 60.03  
Flow Max (cfs): 22.506  
Runoff Volume (in): 17.890  
Runoff Volume (ft3): 200013.040

-----  
Basin Name: Post\_BoyntonA17  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Post\_BoyntonA17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 7.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 87.070  
DCIA (%): 0.000

Time Max (hrs): 60.07  
Flow Max (cfs): 42.037  
Runoff Volume (in): 12.359  
Runoff Volume (ft3): 356209.978

-----  
Basin Name: Pre\_Boynton A17  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Pre\_Boynton A17  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.080  
Vol of Unit Hyd (in): 1.000  
Curve Number: 91.250

DCIA (%): 0.000

Time Max (hrs): 60.03  
Flow Max (cfs): 16.509  
Runoff Volume (in): 12.907  
Runoff Volume (ft3): 144306.445

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## BOYNTON BEACH ALTERNATIVE 17 DRY DETENTION - DRAWDOWN

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	To Vol
DRAWDOWN	SLBoynton A17	PERC	0.00	12.200	12.300	30492	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	0.51	11.990	12.300	29882	0.000	3.459	
DRAWDOWN	SLBoynton A17	PERC	1.01	11.782	12.300	29277	0.000	3.389	
DRAWDOWN	SLBoynton A17	PERC	1.51	11.585	12.300	28705	0.000	0.932	
DRAWDOWN	SLBoynton A17	PERC	2.01	11.540	12.300	28575	0.000	0.538	
DRAWDOWN	SLBoynton A17	PERC	2.51	11.512	12.300	28494	0.000	0.366	
DRAWDOWN	SLBoynton A17	PERC	3.01	11.492	12.300	28435	0.000	0.283	
DRAWDOWN	SLBoynton A17	PERC	3.51	11.475	12.300	28387	0.000	0.237	
DRAWDOWN	SLBoynton A17	PERC	4.01	11.461	12.300	28347	0.000	0.207	
DRAWDOWN	SLBoynton A17	PERC	4.51	11.449	12.300	28310	0.000	0.186	
DRAWDOWN	SLBoynton A17	PERC	5.01	11.437	12.300	28277	0.000	0.170	
DRAWDOWN	SLBoynton A17	PERC	5.51	11.427	12.300	28247	0.000	0.158	
DRAWDOWN	SLBoynton A17	PERC	6.01	11.417	12.300	28219	0.000	0.148	
DRAWDOWN	SLBoynton A17	PERC	6.51	11.408	12.300	28192	0.000	0.139	
DRAWDOWN	SLBoynton A17	PERC	7.01	11.399	12.300	28167	0.000	0.132	
DRAWDOWN	SLBoynton A17	PERC	7.51	11.391	12.300	28143	0.000	0.126	
DRAWDOWN	SLBoynton A17	PERC	8.01	11.383	12.300	28120	0.000	0.120	
DRAWDOWN	SLBoynton A17	PERC	8.51	11.376	12.300	28098	0.000	0.115	
DRAWDOWN	SLBoynton A17	PERC	9.01	11.369	12.300	28077	0.000	0.111	
DRAWDOWN	SLBoynton A17	PERC	9.51	11.362	12.300	28057	0.000	0.107	
DRAWDOWN	SLBoynton A17	PERC	10.01	11.355	12.300	28038	0.000	0.103	
DRAWDOWN	SLBoynton A17	PERC	10.51	11.348	12.300	28019	0.000	0.100	
DRAWDOWN	SLBoynton A17	PERC	11.01	11.342	12.300	28000	0.000	0.097	
DRAWDOWN	SLBoynton A17	PERC	11.51	11.336	12.300	27982	0.000	0.094	
DRAWDOWN	SLBoynton A17	PERC	12.01	11.330	12.300	27965	0.000	0.092	
DRAWDOWN	SLBoynton A17	PERC	12.51	11.324	12.300	27948	0.000	0.089	
DRAWDOWN	SLBoynton A17	PERC	13.01	11.318	12.300	27931	0.000	0.087	
DRAWDOWN	SLBoynton A17	PERC	13.51	11.313	12.300	27915	0.000	0.085	
DRAWDOWN	SLBoynton A17	PERC	14.01	11.307	12.300	27900	0.000	0.083	
DRAWDOWN	SLBoynton A17	PERC	14.51	11.302	12.300	27884	0.000	0.081	
DRAWDOWN	SLBoynton A17	PERC	15.01	11.297	12.300	27869	0.000	0.080	
DRAWDOWN	SLBoynton A17	PERC	15.51	11.292	12.300	27854	0.000	0.078	
DRAWDOWN	SLBoynton A17	PERC	16.01	11.287	12.300	27840	0.000	0.077	
DRAWDOWN	SLBoynton A17	PERC	16.51	11.282	12.300	27825	0.000	0.075	
DRAWDOWN	SLBoynton A17	PERC	17.01	11.277	12.300	27811	0.000	0.074	
DRAWDOWN	SLBoynton A17	PERC	17.51	11.272	12.300	27798	0.000	0.072	
DRAWDOWN	SLBoynton A17	PERC	18.01	11.268	12.300	27784	0.000	0.071	
DRAWDOWN	SLBoynton A17	PERC	18.51	11.263	12.300	27771	0.000	0.070	
DRAWDOWN	SLBoynton A17	PERC	19.01	11.259	12.300	27758	0.000	0.069	
DRAWDOWN	SLBoynton A17	PERC	19.51	11.254	12.300	27745	0.000	0.068	
DRAWDOWN	SLBoynton A17	PERC	20.01	11.250	12.300	27732	0.000	0.067	
DRAWDOWN	SLBoynton A17	PERC	20.51	11.245	12.300	27720	0.000	0.066	
DRAWDOWN	SLBoynton A17	PERC	21.01	11.241	12.300	27708	0.000	0.065	
DRAWDOWN	SLBoynton A17	PERC	21.51	11.237	12.300	27696	0.000	0.064	
DRAWDOWN	SLBoynton A17	PERC	22.01	11.233	12.300	27684	0.000	0.063	
DRAWDOWN	SLBoynton A17	PERC	22.51	11.229	12.300	27672	0.000	0.062	
DRAWDOWN	SLBoynton A17	PERC	23.01	11.225	12.300	27660	0.000	0.061	
DRAWDOWN	SLBoynton A17	PERC	23.51	11.221	12.300	27649	0.000	0.060	
DRAWDOWN	SLBoynton A17	PERC	24.01	11.217	12.300	27637	0.000	0.060	
DRAWDOWN	SLBoynton A17	PERC	24.51	11.213	12.300	27626	0.000	0.059	
DRAWDOWN	SLBoynton A17	PERC	25.01	11.209	12.300	27615	0.000	0.058	
DRAWDOWN	SLBoynton A17	PERC	25.51	11.206	12.300	27604	0.000	0.057	
DRAWDOWN	SLBoynton A17	PERC	26.01	11.202	12.300	27593	0.000	0.057	
DRAWDOWN	SLBoynton A17	PERC	26.51	11.198	12.300	27583	0.000	0.056	
DRAWDOWN	SLBoynton A17	PERC	27.01	11.195	12.300	27572	0.000	0.055	
DRAWDOWN	SLBoynton A17	PERC	27.51	11.191	12.300	27562	0.000	0.055	
DRAWDOWN	SLBoynton A17	PERC	28.01	11.187	12.300	27551	0.000	0.054	
DRAWDOWN	SLBoynton A17	PERC	28.51	11.184	12.300	27541	0.000	0.054	
DRAWDOWN	SLBoynton A17	PERC	29.01	11.180	12.300	27531	0.000	0.053	
DRAWDOWN	SLBoynton A17	PERC	29.51	11.177	12.300	27521	0.000	0.052	
DRAWDOWN	SLBoynton A17	PERC	30.01	11.174	12.300	27511	0.000	0.052	
DRAWDOWN	SLBoynton A17	PERC	30.51	11.170	12.300	27501	0.000	0.051	
DRAWDOWN	SLBoynton A17	PERC	31.01	11.167	12.300	27492	0.000	0.051	
DRAWDOWN	SLBoynton A17	PERC	31.51	11.163	12.300	27482	0.000	0.050	
DRAWDOWN	SLBoynton A17	PERC	32.01	11.160	12.300	27472	0.000	0.050	
DRAWDOWN	SLBoynton A17	PERC	32.51	11.157	12.300	27463	0.000	0.049	
DRAWDOWN	SLBoynton A17	PERC	33.01	11.154	12.300	27454	0.000	0.049	
DRAWDOWN	SLBoynton A17	PERC	33.51	11.151	12.300	27444	0.000	0.049	
DRAWDOWN	SLBoynton A17	PERC	34.01	11.147	12.300	27435	0.000	0.048	
DRAWDOWN	SLBoynton A17	PERC	34.51	11.144	12.300	27426	0.000	0.048	
DRAWDOWN	SLBoynton A17	PERC	35.01	11.141	12.300	27417	0.000	0.047	
DRAWDOWN	SLBoynton A17	PERC	35.51	11.138	12.300	27408	0.000	0.047	
DRAWDOWN	SLBoynton A17	PERC	36.01	11.135	12.300	27399	0.000	0.046	
DRAWDOWN	SLBoynton A17	PERC	36.51	11.132	12.300	27390	0.000	0.046	

## BOYNTON BEACH ALTERNATIVE 17 DRY DETENTION - DRAWDOWN

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	To Vol
DRAWDOWN	SLBoynton A17	PERC	37.01	11.129	12.300	27382	0.000	0.046	
DRAWDOWN	SLBoynton A17	PERC	37.51	11.126	12.300	27373	0.000	0.045	
DRAWDOWN	SLBoynton A17	PERC	38.01	11.123	12.300	27364	0.000	0.045	
DRAWDOWN	SLBoynton A17	PERC	38.51	11.120	12.300	27356	0.000	0.045	
DRAWDOWN	SLBoynton A17	PERC	39.01	11.117	12.300	27347	0.000	0.044	
DRAWDOWN	SLBoynton A17	PERC	39.51	11.114	12.300	27339	0.000	0.044	
DRAWDOWN	SLBoynton A17	PERC	40.01	11.111	12.300	27331	0.000	0.043	
DRAWDOWN	SLBoynton A17	PERC	40.51	11.108	12.300	27322	0.000	0.043	
DRAWDOWN	SLBoynton A17	PERC	41.01	11.106	12.300	27314	0.000	0.043	
DRAWDOWN	SLBoynton A17	PERC	41.51	11.103	12.300	27306	0.000	0.042	
DRAWDOWN	SLBoynton A17	PERC	42.01	11.100	12.300	27298	0.000	0.042	
DRAWDOWN	SLBoynton A17	PERC	42.51	11.097	12.300	27290	0.000	0.042	
DRAWDOWN	SLBoynton A17	PERC	43.01	11.095	12.300	27282	0.000	0.042	
DRAWDOWN	SLBoynton A17	PERC	43.51	11.092	12.300	27274	0.000	0.041	
DRAWDOWN	SLBoynton A17	PERC	44.01	11.089	12.300	27266	0.000	0.041	
DRAWDOWN	SLBoynton A17	PERC	44.51	11.086	12.300	27258	0.000	0.041	
DRAWDOWN	SLBoynton A17	PERC	45.01	11.084	12.300	27250	0.000	0.040	
DRAWDOWN	SLBoynton A17	PERC	45.51	11.081	12.300	27243	0.000	0.040	
DRAWDOWN	SLBoynton A17	PERC	46.01	11.078	12.300	27235	0.000	0.040	
DRAWDOWN	SLBoynton A17	PERC	46.51	11.076	12.300	27227	0.000	0.040	
DRAWDOWN	SLBoynton A17	PERC	47.01	11.073	12.300	27220	0.000	0.039	
DRAWDOWN	SLBoynton A17	PERC	47.51	11.071	12.300	27212	0.000	0.039	
DRAWDOWN	SLBoynton A17	PERC	48.01	11.068	12.300	27205	0.000	0.039	
DRAWDOWN	SLBoynton A17	PERC	48.51	11.065	12.300	27197	0.000	0.039	
DRAWDOWN	SLBoynton A17	PERC	49.01	11.063	12.300	27190	0.000	0.038	
DRAWDOWN	SLBoynton A17	PERC	49.51	11.060	12.300	27183	0.000	0.038	
DRAWDOWN	SLBoynton A17	PERC	50.01	11.058	12.300	27175	0.000	0.038	
DRAWDOWN	SLBoynton A17	PERC	50.51	11.055	12.300	27168	0.000	0.038	
DRAWDOWN	SLBoynton A17	PERC	51.01	11.053	12.300	27161	0.000	0.037	
DRAWDOWN	SLBoynton A17	PERC	51.51	11.050	12.300	27154	0.000	0.037	
DRAWDOWN	SLBoynton A17	PERC	52.01	11.048	12.300	27147	0.000	0.037	
DRAWDOWN	SLBoynton A17	PERC	52.51	11.046	12.300	27139	0.000	0.037	
DRAWDOWN	SLBoynton A17	PERC	53.01	11.043	12.300	27132	0.000	0.036	
DRAWDOWN	SLBoynton A17	PERC	53.51	11.041	12.300	27125	0.000	0.036	
DRAWDOWN	SLBoynton A17	PERC	54.01	11.038	12.300	27118	0.000	0.036	
DRAWDOWN	SLBoynton A17	PERC	54.51	11.036	12.300	27112	0.000	0.036	
DRAWDOWN	SLBoynton A17	PERC	55.01	11.034	12.300	27105	0.000	0.036	
DRAWDOWN	SLBoynton A17	PERC	55.51	11.031	12.300	27098	0.000	0.035	
DRAWDOWN	SLBoynton A17	PERC	56.01	11.029	12.300	27091	0.000	0.035	
DRAWDOWN	SLBoynton A17	PERC	56.51	11.027	12.300	27084	0.000	0.035	
DRAWDOWN	SLBoynton A17	PERC	57.01	11.024	12.300	27078	0.000	0.035	
DRAWDOWN	SLBoynton A17	PERC	57.51	11.022	12.300	27071	0.000	0.035	
DRAWDOWN	SLBoynton A17	PERC	58.01	11.020	12.300	27064	0.000	0.034	
DRAWDOWN	SLBoynton A17	PERC	58.51	11.017	12.300	27058	0.000	0.034	
DRAWDOWN	SLBoynton A17	PERC	59.01	11.015	12.300	27051	0.000	0.034	
DRAWDOWN	SLBoynton A17	PERC	59.51	11.013	12.300	27044	0.000	0.034	
DRAWDOWN	SLBoynton A17	PERC	60.01	11.011	12.300	27038	0.000	0.034	
DRAWDOWN	SLBoynton A17	PERC	60.51	11.008	12.300	27031	0.000	0.033	
DRAWDOWN	SLBoynton A17	PERC	61.01	11.006	12.300	27025	0.000	0.033	
DRAWDOWN	SLBoynton A17	PERC	61.51	11.004	12.300	27019	0.000	0.033	
DRAWDOWN	SLBoynton A17	PERC	62.01	11.002	12.300	27012	0.000	0.033	
DRAWDOWN	SLBoynton A17	PERC	62.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	63.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	63.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	64.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	64.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	65.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	65.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	66.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	66.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	67.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	67.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	68.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	68.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	69.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	69.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	70.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	70.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	71.01	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	71.51	11.000	12.300	27007	0.000	0.000	
DRAWDOWN	SLBoynton A17	PERC	72.00	11.000	12.300	27007	0.000	0.000	



BOYNTON BEACH ALTERNATIVE 17 DRY DETENTION - PRE\_POST

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
Post_BoyntonA17	Post	003Y024H	12.90	13.739	17.000	0.0100	36497	12.08	22.493	12.89	7.441
Pre_Boynton A17	Pre	003Y024H	23.99	10.144	16.000	0.0001	0	12.08	9.346	0.00	0.000
Post_BoyntonA17	Post	010Y024H	12.82	14.471	17.000	0.0100	39355	12.08	33.750	12.81	12.541
Pre_Boynton A17	Pre	010Y024H	24.00	10.144	16.000	0.0001	0	12.08	13.649	0.00	0.000
Post_BoyntonA17	Post	025Y024H	12.81	14.876	17.000	0.0100	40934	12.08	40.492	12.80	15.142
Pre_Boynton A17	Pre	025Y024H	23.99	10.144	16.000	0.0001	0	12.08	16.225	0.00	0.000
Post_BoyntonA17	Post	SF100Y072H	60.81	17.663	17.000	0.0100	58174	60.08	56.782	60.78	18.402
Pre_Boynton A17	Pre	SF100Y072H	72.00	10.432	16.000	0.0001	0	60.08	22.183	0.00	0.000
Post_BoyntonA17	Post	SF25Y072H	60.74	16.964	17.000	0.0100	49083	60.08	41.451	60.71	15.030
Pre_Boynton A17	Pre	SF25Y072H	72.00	10.432	16.000	0.0001	0	60.08	16.275	0.00	0.000





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ARCADIS  
 1650 Prudential Drive, Suite 400  
 Jacksonville, Florida 32207  
 T: 904 721 2991 | F: 904 861 2450  
 Certificate of Authorization No. 7917  
 Vendor No. 570373224

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	435804-1-22-01

**POST-DEVELOPMENT-ALTERNATIVE 17  
 DRAINAGE MAP  
 SR9 / I-95 AT BOYNTON BEACH BLVD.**

SHEET NO.





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ARCADIS  
 1650 Prudential Drive, Suite 400  
 Jacksonville, Florida 32207  
 T: 904 721 2991 | F: 904 861 2450  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	435804-1-22-01

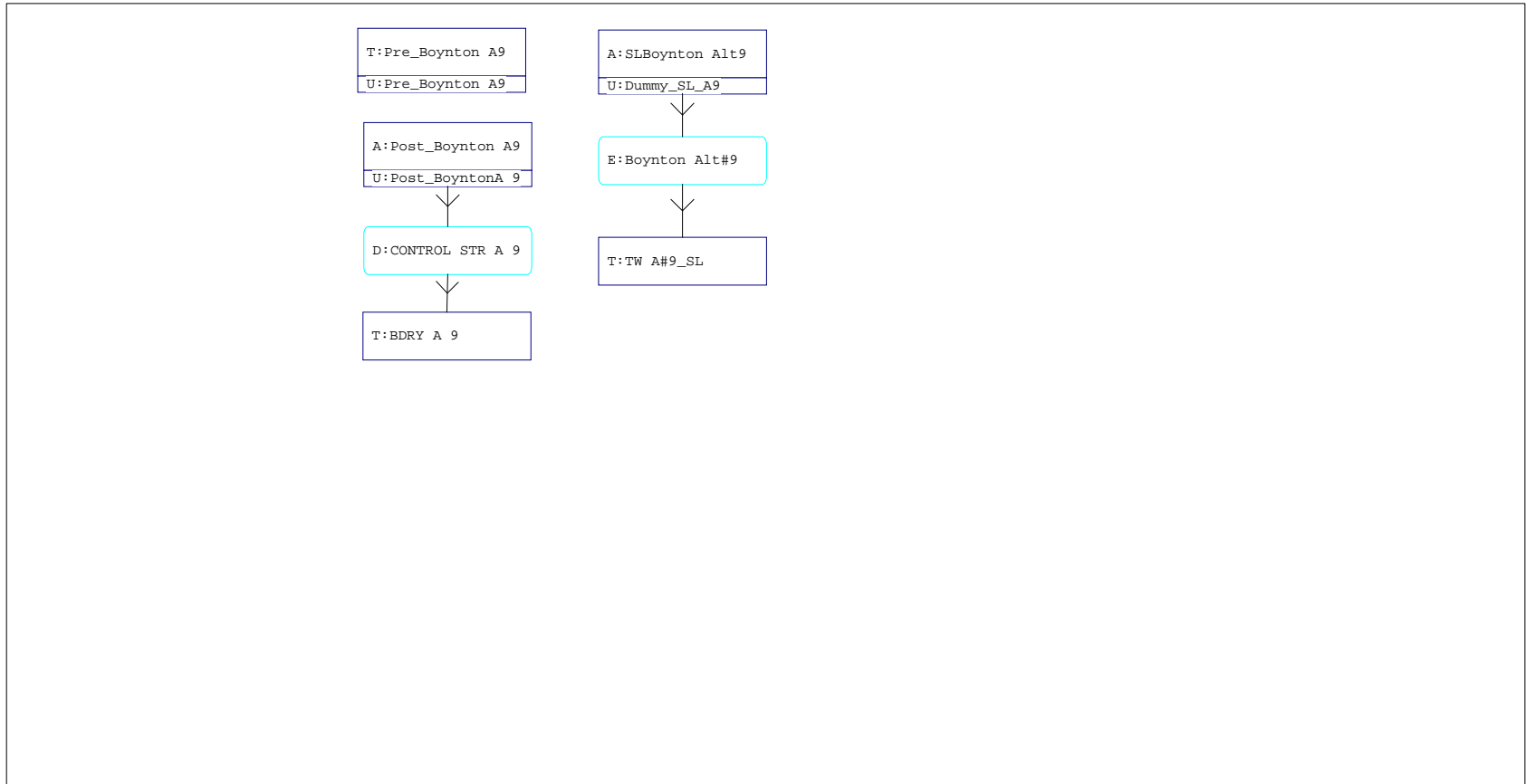
**PRE-DEVELOPMENT-ALTERNATIVE 17  
 DRAINAGE MAP  
 SR9 / I-95 AT BOYNTON BEACH BLVD.**

SHEET NO.



ALTERNATIVE 9 - DRY DETENTION AREA - COVER SHEET

- 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







## DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

Basin No: **Alt #9** Sub Basin No: **East** Station Limits **15+50.00** to **23+00.00**  
 Total Area (ac): **3.37** Basin Length (ft) : **750.00** ft

### Compute Required Treatment Volume (On-line)

**1. 1" treatment**

Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
 TV = [(1 inch) x (3.37 ac)] x (1ft/12 in)  
 TV = **0.28 ac-ft**

or

**2. 2.5" x Percentage of Imperviousness**

Site Area = Total project - (Lake + Roof)  
 = 3.37 ac - 0.00 ac  
 = 3.37 ac

Impervious Area = Site area - Pervious area  
 = 3.37 ac - 1.00 ac  
 = 2.37 ac

Percentage of imperviousness for water quality  
 = Impervious area / Site area  
 = 2.37 ac / 3.37 ac  
 = 0.70

For 2.5in times the percentage impervious  
 = [(2.5 inch) x (0.70)]  
 = 1.76 in to be treated

Compute volume required for quality detention  
 = inches to be treated x (total site - lake) x 1ft/12in  
 = **0.49 ac-ft**

Treatment Volume, TV = **0.49 ac-ft** controls

Treatment Volume Required for Dry Pond = **0.37** ac-ft (75% of the amount computed for wet detention)

### Compute Provided Treatment Volume

	Depth (ft)	Elevation (ft)	Area (ac)	Area (ft <sup>2</sup> )	Volume (ac-ft)
Outside Top of Berm	5.00	18.00	0.995	43,355	3.04
Inside Top of Berm	4.00	17.00	0.695	30,290	2.20
Weir Elevation	1.50	14.50	0.511	22,249	0.69
Bottom Elevation	0.00	13.00	0.408	17,784	0

Treatment Volume Elevation Required: 13.81 ft  
 Treatment Volume Elevation Provided: **14.50 ft**

Treatment Volume Provided: **0.69** ac-ft Treatment Volume Requirement met

### Geotechnical Data for Percolation Analysis

Boring No: N/A  
 Soil No. : 41  
 Estimated SHWT: 10.5  
 Estimated Aquifer Base: 7.5

#### Fill Material Conductivity

Measured Vertical Conductivity (ft/day): 20.0  
 Factor of Safety: 2  
 Estimated Vertical Conductivity, (K<sub>v</sub>),(ft/day): 10.00  
 Estimated Horizontal Conductivity, K<sub>h</sub> (1.5K<sub>v</sub>),(ft/day): 15.00





Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Boynton\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 72.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00

-----  
Name: SF100Y072H  
Filename: G:\TRA\WF900273\ICPR\Boynton\100YSF072H.R32

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

Rainfall Amount(in): 19.00

Time(hrs)	Print Inc(min)
73.000	5.00

Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Boynton\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                      Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: 010Y024H                      Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Boynton\10 YEAR.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): 24.00  
 Min Calc Time(sec): 1.0000                  Max Calc Time(sec): 60.0000  
 Boundary Stages:                              Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000
Group	Run
-----	-----
BASE	Yes
Post	Yes
Pre	Yes

Name: 025Y024H                      Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Boynton\25 YEAR.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): 24.00  
 Min Calc Time(sec): 1.0000                  Max Calc Time(sec): 60.0000  
 Boundary Stages:                              Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000
Group	Run
-----	-----
BASE	Yes
Post	Yes
Pre	Yes

Name: DRAWDOWN                      Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Boynton\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000                  Max Calc Time(sec): 60.0000  
 Boundary Stages:                              Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
72.000	30.000
Group	Run
-----	-----
PERC	Yes

-----

Name: SF100Y072H	Hydrology Sim: SF100Y072H
Filename: G:\TRA\WF900273\ICPR\Boynton\100YSF072H.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): 72.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
72.000	5.000
Group	Run
-----	-----
BASE	Yes
Post	Yes
Pre	Yes

-----

Name: SF25Y072H	Hydrology Sim: SF25Y072H
Filename: G:\TRA\WF900273\ICPR\Boynton\025YSF072H.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): 72.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----	-----
72.000	5.000

Group	Run
-----	-----
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: Post\_BoyntonA 9  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Post\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.370  
Vol of Unit Hyd (in): 1.000  
Curve Number: 83.800  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 10.610  
Runoff Volume (in): 4.511  
Runoff Volume (ft3): 55187.557

-----  
Basin Name: Pre\_Boynton A9  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Pre\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.383  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 43094.215

Basin Name: Post\_BoyntonA 9  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Post\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.370  
Vol of Unit Hyd (in): 1.000  
Curve Number: 83.800  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 16.240  
Runoff Volume (in): 7.032  
Runoff Volume (ft3): 86025.152

---

Basin Name: Pre\_Boynton A9  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Pre\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 10.469  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 61666.416



-----  
Basin Name: Post\_BoyntonA 9  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Post\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.370  
Vol of Unit Hyd (in): 1.000  
Curve Number: 83.800  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 19.632  
Runoff Volume (in): 8.585  
Runoff Volume (ft3): 105020.711

-----  
Basin Name: Pre\_Boynton A9  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Pre\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 12.337

Runoff Volume (in): 10.355  
Runoff Volume (ft3): 72925.387

---

Basin Name: Post\_BoyntonA 9  
Group Name: Post  
Simulation: SF100Y072H  
Node Name: Post\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 19.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.370  
Vol of Unit Hyd (in): 1.000  
Curve Number: 83.800  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 27.874  
Runoff Volume (in): 16.856  
Runoff Volume (ft3): 206203.638

---

Basin Name: Pre\_Boynton A9  
Group Name: Pre  
Simulation: SF100Y072H  
Node Name: Pre\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 19.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 16.365  
Runoff Volume (in): 18.751  
Runoff Volume (ft3): 132046.689

-----  
Basin Name: Post\_BoyntonA 9  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Post\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.370  
Vol of Unit Hyd (in): 1.000  
Curve Number: 83.800  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 20.249  
Runoff Volume (in): 11.916  
Runoff Volume (ft3): 145774.714

-----  
Basin Name: Pre\_Boynton A9  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Pre\_Boynton A9  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.940  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000

DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 12.056  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 96853.291

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## BOYNTON BEACH ALTERNATIVE 9-DRY DETENTION - DRAWDOWN

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	To Vol
DRAWDOWN	SLBoynton	Alt9	PERC	0.00	14.500	14.600	22259	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	0.51	14.290	14.600	21631	0.000	2.504
DRAWDOWN	SLBoynton	Alt9	PERC	1.01	14.082	14.600	21008	0.000	2.431
DRAWDOWN	SLBoynton	Alt9	PERC	1.51	13.881	14.600	20407	0.000	1.100
DRAWDOWN	SLBoynton	Alt9	PERC	2.00	13.808	14.600	20190	0.000	0.617
DRAWDOWN	SLBoynton	Alt9	PERC	2.50	13.763	14.600	20056	0.000	0.411
DRAWDOWN	SLBoynton	Alt9	PERC	3.00	13.731	14.600	19959	0.000	0.315
DRAWDOWN	SLBoynton	Alt9	PERC	3.50	13.705	14.600	19882	0.000	0.262
DRAWDOWN	SLBoynton	Alt9	PERC	4.00	13.683	14.600	19816	0.000	0.228
DRAWDOWN	SLBoynton	Alt9	PERC	4.50	13.663	14.600	19757	0.000	0.205
DRAWDOWN	SLBoynton	Alt9	PERC	5.00	13.646	14.600	19704	0.000	0.187
DRAWDOWN	SLBoynton	Alt9	PERC	5.50	13.629	14.600	19655	0.000	0.172
DRAWDOWN	SLBoynton	Alt9	PERC	6.00	13.614	14.600	19609	0.000	0.161
DRAWDOWN	SLBoynton	Alt9	PERC	6.50	13.600	14.600	19566	0.000	0.151
DRAWDOWN	SLBoynton	Alt9	PERC	7.00	13.586	14.600	19526	0.000	0.143
DRAWDOWN	SLBoynton	Alt9	PERC	7.50	13.573	14.600	19487	0.000	0.135
DRAWDOWN	SLBoynton	Alt9	PERC	8.00	13.561	14.600	19451	0.000	0.129
DRAWDOWN	SLBoynton	Alt9	PERC	8.50	13.549	14.600	19416	0.000	0.124
DRAWDOWN	SLBoynton	Alt9	PERC	9.00	13.538	14.600	19382	0.000	0.119
DRAWDOWN	SLBoynton	Alt9	PERC	9.50	13.527	14.600	19350	0.000	0.114
DRAWDOWN	SLBoynton	Alt9	PERC	10.00	13.517	14.600	19318	0.000	0.110
DRAWDOWN	SLBoynton	Alt9	PERC	10.50	13.507	14.600	19288	0.000	0.106
DRAWDOWN	SLBoynton	Alt9	PERC	11.00	13.497	14.600	19259	0.000	0.103
DRAWDOWN	SLBoynton	Alt9	PERC	11.50	13.487	14.600	19231	0.000	0.100
DRAWDOWN	SLBoynton	Alt9	PERC	12.00	13.478	14.600	19203	0.000	0.097
DRAWDOWN	SLBoynton	Alt9	PERC	12.50	13.469	14.600	19176	0.000	0.094
DRAWDOWN	SLBoynton	Alt9	PERC	13.00	13.461	14.600	19150	0.000	0.092
DRAWDOWN	SLBoynton	Alt9	PERC	13.50	13.452	14.600	19125	0.000	0.090
DRAWDOWN	SLBoynton	Alt9	PERC	14.00	13.444	14.600	19100	0.000	0.087
DRAWDOWN	SLBoynton	Alt9	PERC	14.50	13.436	14.600	19075	0.000	0.085
DRAWDOWN	SLBoynton	Alt9	PERC	15.00	13.428	14.600	19051	0.000	0.083
DRAWDOWN	SLBoynton	Alt9	PERC	15.50	13.420	14.600	19028	0.000	0.081
DRAWDOWN	SLBoynton	Alt9	PERC	16.00	13.412	14.600	19005	0.000	0.080
DRAWDOWN	SLBoynton	Alt9	PERC	16.50	13.405	14.600	18983	0.000	0.078
DRAWDOWN	SLBoynton	Alt9	PERC	17.00	13.397	14.600	18961	0.000	0.077
DRAWDOWN	SLBoynton	Alt9	PERC	17.50	13.390	14.600	18939	0.000	0.075
DRAWDOWN	SLBoynton	Alt9	PERC	18.00	13.383	14.600	18918	0.000	0.074
DRAWDOWN	SLBoynton	Alt9	PERC	18.50	13.376	14.600	18898	0.000	0.072
DRAWDOWN	SLBoynton	Alt9	PERC	19.00	13.369	14.600	18877	0.000	0.071
DRAWDOWN	SLBoynton	Alt9	PERC	19.50	13.363	14.600	18857	0.000	0.070
DRAWDOWN	SLBoynton	Alt9	PERC	20.00	13.356	14.600	18837	0.000	0.069
DRAWDOWN	SLBoynton	Alt9	PERC	20.50	13.349	14.600	18818	0.000	0.067
DRAWDOWN	SLBoynton	Alt9	PERC	21.00	13.343	14.600	18799	0.000	0.066
DRAWDOWN	SLBoynton	Alt9	PERC	21.50	13.337	14.600	18780	0.000	0.065
DRAWDOWN	SLBoynton	Alt9	PERC	22.00	13.331	14.600	18761	0.000	0.064
DRAWDOWN	SLBoynton	Alt9	PERC	22.50	13.324	14.600	18743	0.000	0.063
DRAWDOWN	SLBoynton	Alt9	PERC	23.00	13.318	14.600	18725	0.000	0.062
DRAWDOWN	SLBoynton	Alt9	PERC	23.50	13.312	14.600	18707	0.000	0.062
DRAWDOWN	SLBoynton	Alt9	PERC	24.00	13.307	14.600	18689	0.000	0.061
DRAWDOWN	SLBoynton	Alt9	PERC	24.50	13.301	14.600	18672	0.000	0.060
DRAWDOWN	SLBoynton	Alt9	PERC	25.00	13.295	14.600	18655	0.000	0.059
DRAWDOWN	SLBoynton	Alt9	PERC	25.50	13.289	14.600	18638	0.000	0.058
DRAWDOWN	SLBoynton	Alt9	PERC	26.00	13.284	14.600	18621	0.000	0.057
DRAWDOWN	SLBoynton	Alt9	PERC	26.50	13.278	14.600	18605	0.000	0.057
DRAWDOWN	SLBoynton	Alt9	PERC	27.00	13.273	14.600	18588	0.000	0.056
DRAWDOWN	SLBoynton	Alt9	PERC	27.50	13.267	14.600	18572	0.000	0.055
DRAWDOWN	SLBoynton	Alt9	PERC	28.00	13.262	14.600	18556	0.000	0.055
DRAWDOWN	SLBoynton	Alt9	PERC	28.50	13.257	14.600	18540	0.000	0.054
DRAWDOWN	SLBoynton	Alt9	PERC	29.00	13.252	14.600	18525	0.000	0.053
DRAWDOWN	SLBoynton	Alt9	PERC	29.50	13.246	14.600	18509	0.000	0.053
DRAWDOWN	SLBoynton	Alt9	PERC	30.00	13.241	14.600	18494	0.000	0.052
DRAWDOWN	SLBoynton	Alt9	PERC	30.50	13.236	14.600	18479	0.000	0.052
DRAWDOWN	SLBoynton	Alt9	PERC	31.00	13.231	14.600	18464	0.000	0.051
DRAWDOWN	SLBoynton	Alt9	PERC	31.50	13.226	14.600	18449	0.000	0.050
DRAWDOWN	SLBoynton	Alt9	PERC	32.00	13.221	14.600	18435	0.000	0.050
DRAWDOWN	SLBoynton	Alt9	PERC	32.50	13.217	14.600	18420	0.000	0.049
DRAWDOWN	SLBoynton	Alt9	PERC	33.00	13.212	14.600	18406	0.000	0.049
DRAWDOWN	SLBoynton	Alt9	PERC	33.50	13.207	14.600	18392	0.000	0.048
DRAWDOWN	SLBoynton	Alt9	PERC	34.00	13.202	14.600	18378	0.000	0.048
DRAWDOWN	SLBoynton	Alt9	PERC	34.50	13.198	14.600	18364	0.000	0.047
DRAWDOWN	SLBoynton	Alt9	PERC	35.00	13.193	14.600	18350	0.000	0.047
DRAWDOWN	SLBoynton	Alt9	PERC	35.50	13.188	14.600	18336	0.000	0.046
DRAWDOWN	SLBoynton	Alt9	PERC	36.00	13.184	14.600	18323	0.000	0.046
DRAWDOWN	SLBoynton	Alt9	PERC	36.50	13.179	14.600	18309	0.000	0.046

## BOYNTON BEACH ALTERNATIVE 9-DRY DETENTION - DRAWDOWN

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	To Vol
DRAWDOWN	SLBoynton	Alt9	PERC	37.00	13.175	14.600	18296	0.000	0.045
DRAWDOWN	SLBoynton	Alt9	PERC	37.50	13.171	14.600	18283	0.000	0.045
DRAWDOWN	SLBoynton	Alt9	PERC	38.00	13.166	14.600	18269	0.000	0.044
DRAWDOWN	SLBoynton	Alt9	PERC	38.50	13.162	14.600	18256	0.000	0.044
DRAWDOWN	SLBoynton	Alt9	PERC	39.00	13.158	14.600	18244	0.000	0.043
DRAWDOWN	SLBoynton	Alt9	PERC	39.50	13.153	14.600	18231	0.000	0.043
DRAWDOWN	SLBoynton	Alt9	PERC	40.00	13.149	14.600	18218	0.000	0.043
DRAWDOWN	SLBoynton	Alt9	PERC	40.50	13.145	14.600	18206	0.000	0.042
DRAWDOWN	SLBoynton	Alt9	PERC	41.00	13.141	14.600	18193	0.000	0.042
DRAWDOWN	SLBoynton	Alt9	PERC	41.50	13.136	14.600	18181	0.000	0.042
DRAWDOWN	SLBoynton	Alt9	PERC	42.00	13.132	14.600	18168	0.000	0.041
DRAWDOWN	SLBoynton	Alt9	PERC	42.50	13.128	14.600	18156	0.000	0.041
DRAWDOWN	SLBoynton	Alt9	PERC	43.00	13.124	14.600	18144	0.000	0.041
DRAWDOWN	SLBoynton	Alt9	PERC	43.50	13.120	14.600	18132	0.000	0.040
DRAWDOWN	SLBoynton	Alt9	PERC	44.00	13.116	14.600	18120	0.000	0.040
DRAWDOWN	SLBoynton	Alt9	PERC	44.50	13.112	14.600	18108	0.000	0.040
DRAWDOWN	SLBoynton	Alt9	PERC	45.00	13.108	14.600	18097	0.000	0.039
DRAWDOWN	SLBoynton	Alt9	PERC	45.50	13.104	14.600	18085	0.000	0.039
DRAWDOWN	SLBoynton	Alt9	PERC	46.00	13.101	14.600	18073	0.000	0.039
DRAWDOWN	SLBoynton	Alt9	PERC	46.50	13.097	14.600	18062	0.000	0.038
DRAWDOWN	SLBoynton	Alt9	PERC	47.00	13.093	14.600	18051	0.000	0.038
DRAWDOWN	SLBoynton	Alt9	PERC	47.50	13.089	14.600	18039	0.000	0.038
DRAWDOWN	SLBoynton	Alt9	PERC	48.00	13.085	14.600	18028	0.000	0.038
DRAWDOWN	SLBoynton	Alt9	PERC	48.50	13.082	14.600	18017	0.000	0.037
DRAWDOWN	SLBoynton	Alt9	PERC	49.00	13.078	14.600	18006	0.000	0.037
DRAWDOWN	SLBoynton	Alt9	PERC	49.50	13.074	14.600	17995	0.000	0.037
DRAWDOWN	SLBoynton	Alt9	PERC	50.00	13.071	14.600	17984	0.000	0.036
DRAWDOWN	SLBoynton	Alt9	PERC	50.50	13.067	14.600	17973	0.000	0.036
DRAWDOWN	SLBoynton	Alt9	PERC	51.00	13.063	14.600	17962	0.000	0.036
DRAWDOWN	SLBoynton	Alt9	PERC	51.50	13.060	14.600	17951	0.000	0.036
DRAWDOWN	SLBoynton	Alt9	PERC	52.00	13.056	14.600	17941	0.000	0.035
DRAWDOWN	SLBoynton	Alt9	PERC	52.50	13.053	14.600	17930	0.000	0.035
DRAWDOWN	SLBoynton	Alt9	PERC	53.00	13.049	14.600	17919	0.000	0.035
DRAWDOWN	SLBoynton	Alt9	PERC	53.50	13.046	14.600	17909	0.000	0.035
DRAWDOWN	SLBoynton	Alt9	PERC	54.00	13.042	14.600	17899	0.000	0.034
DRAWDOWN	SLBoynton	Alt9	PERC	54.50	13.039	14.600	17888	0.000	0.034
DRAWDOWN	SLBoynton	Alt9	PERC	55.00	13.035	14.600	17878	0.000	0.034
DRAWDOWN	SLBoynton	Alt9	PERC	55.50	13.032	14.600	17868	0.000	0.034
DRAWDOWN	SLBoynton	Alt9	PERC	56.00	13.028	14.600	17858	0.000	0.034
DRAWDOWN	SLBoynton	Alt9	PERC	56.50	13.025	14.600	17847	0.000	0.033
DRAWDOWN	SLBoynton	Alt9	PERC	57.00	13.022	14.600	17837	0.000	0.033
DRAWDOWN	SLBoynton	Alt9	PERC	57.50	13.018	14.600	17827	0.000	0.033
DRAWDOWN	SLBoynton	Alt9	PERC	58.00	13.015	14.600	17818	0.000	0.033
DRAWDOWN	SLBoynton	Alt9	PERC	58.50	13.012	14.600	17808	0.000	0.033
DRAWDOWN	SLBoynton	Alt9	PERC	59.00	13.008	14.600	17798	0.000	0.032
DRAWDOWN	SLBoynton	Alt9	PERC	59.50	13.005	14.600	17788	0.000	0.032
DRAWDOWN	SLBoynton	Alt9	PERC	60.00	13.002	14.600	17778	0.000	0.032
DRAWDOWN	SLBoynton	Alt9	PERC	60.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	61.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	61.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	62.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	62.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	63.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	63.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	64.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	64.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	65.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	65.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	66.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	66.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	67.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	67.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	68.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	68.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	69.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	69.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	70.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	70.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	71.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	71.50	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	72.00	13.000	14.600	17772	0.000	0.000
DRAWDOWN	SLBoynton	Alt9	PERC	72.01	13.000	14.600	17772	0.000	0.000

BOYNTON BEACH ALTERNATIVE 9-DRY DETENTION - PRE\_POST

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
Post_Boynton A9	Post	003Y024H	13.21	14.718	16.000	0.0100	22956	12.08	10.269	13.21	1.298
Pre_Boynton A9	Pre	003Y024H	24.00	16.700	17.000	0.0008	0	12.00	7.207	0.00	0.000
Post_Boynton A9	Post	010Y024H	12.58	15.118	16.000	0.0100	24241	12.00	15.739	12.58	6.184
Pre_Boynton A9	Pre	010Y024H	23.99	16.700	17.000	0.0008	0	12.00	10.219	0.00	0.000
Post_Boynton A9	Post	025Y024H	12.52	15.362	16.000	0.0100	25023	12.00	19.057	12.52	8.454
Pre_Boynton A9	Pre	025Y024H	24.01	16.700	17.000	0.0008	0	12.00	12.046	0.00	0.000
Post_Boynton A9	Post	SF100Y072H	60.40	16.165	16.000	0.0100	27599	60.00	27.790	60.40	11.912
Pre_Boynton A9	Pre	SF100Y072H	30.00	17.000	17.000	0.0008	0	60.00	16.322	0.00	0.000
Post_Boynton A9	Post	SF25Y072H	60.32	15.680	16.000	0.0099	26042	60.00	20.163	60.32	9.949
Pre_Boynton A9	Pre	SF25Y072H	30.00	17.000	17.000	0.0008	0	60.00	12.014	0.00	0.000





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

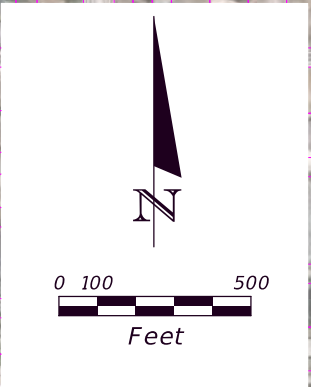
ARCADIS  
 1650 Prudential Drive, Suite 400  
 Jacksonville, Florida 32207  
 T: 904 721 2991 | F: 904 861 2450  
 Certificate of Authorization No. 7917  
 Vendor No. 570373224

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	435804-1-22-01

**POST-DEVELOPMENT-ALTERNATIVE 9  
 DRAINAGE MAP  
 SR9 / I-95 AT BOYNTON BEACH BLVD.**

SHEET NO.





ALTERNATIVE 9

ALTERNATIVE 9  
WDA

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ARCADIS  
1650 Prudential Drive, Suite 400  
Jacksonville, Florida 32207  
T: 904 721 2991 | F: 904 861 2450  
Certificate of Authorization No. 7917  
Vendor No. 570373224

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	435804-1-22-01

**PRE-DEVELOPMENT-ALTERNATIVE 9  
DRAINAGE MAP  
SR9 / I-95 AT BOYNTON BEACH BLVD.**

SHEET  
NO.



Boynton Beach Blvd Southbound On-Ramp - COVER

Nodes

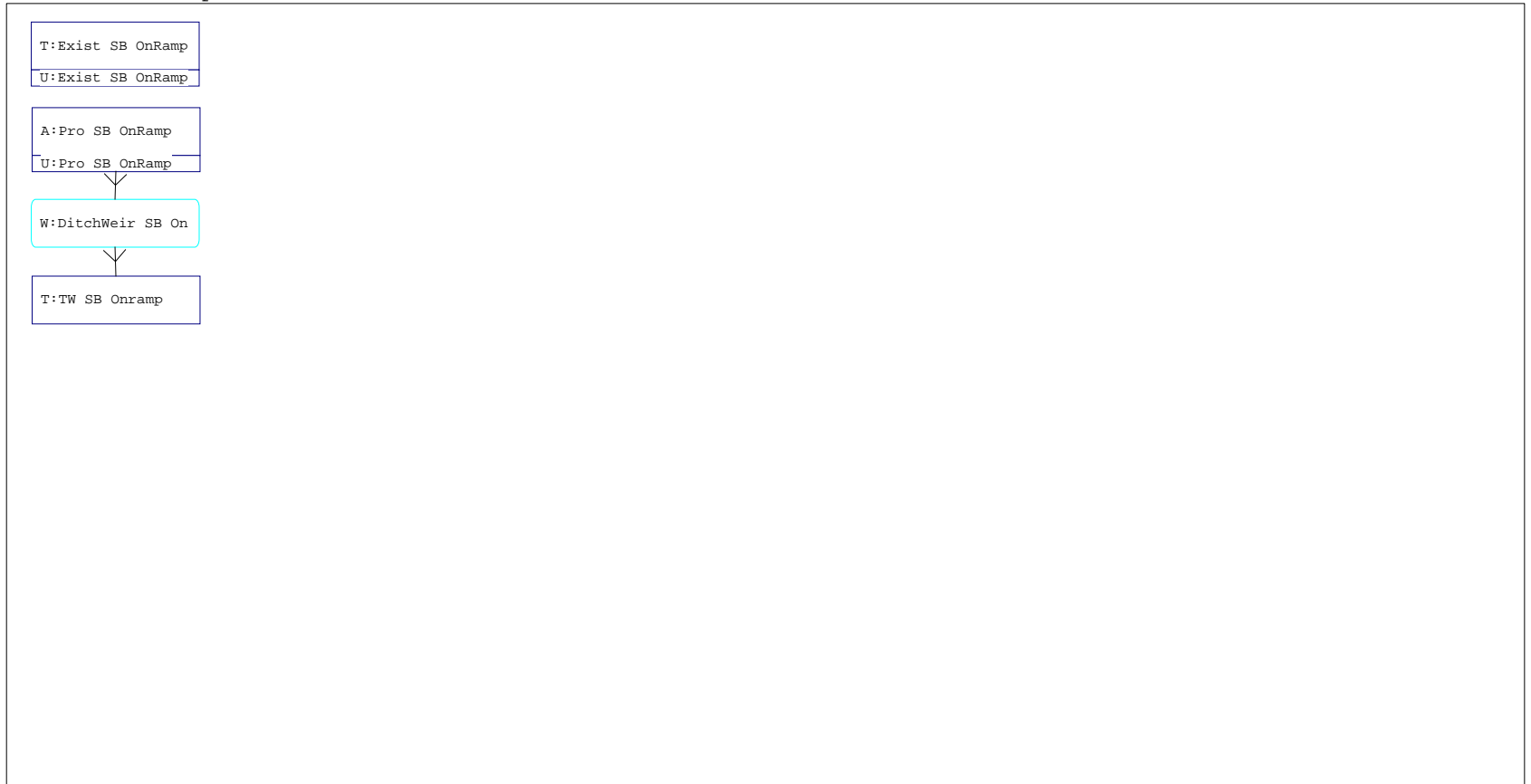
- A Stage/Area
- V Stage/Volume
- T Time/Stage
- M Manhole

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





### DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

Basin No: **SB ON-RAMP** Sub Basin No: **West** Station Limits **777+00.00** to **786+30.00**  
 Total Area (ac): **1.30** Basin Length (ft) : **930.00** ft

#### Compute Required Treatment Volume

##### 2.5" x Percentage of Imperviousness

Site Area = Total project - (Lake + Roof)  
 = 1.30 ac - 0.00 ac  
 = 1.30 ac  
 Impervious Area= Site area - Pervious area  
 = 1.30 ac - 0.00 ac  
 = 1.30 ac  
 Percentage of imperviousness for water quality  
 = Impervious area / Site area  
 = 1.30 ac / 1.30 ac  
 = 1.00  
 For 2.5in times the percentage impervious  
 = [(2.5 inch) x (1.00)]  
 = 2.50 in to be treated  
 Compute volume required for quality detention  
 = inches to be treated x (total site - lake) x 1ft/12in  
 = **0.27 ac-ft**

**Treatment Volume, TV = 0.27 ac-ft**

#### Compute Provided Treatment Volume

	Depth (ft)	Elevation (ft)	Area (ac)	Area (ft <sup>2</sup> )	Volume (ac-ft)
Weir Elevation	4.00	21.00	0.300	18,355	0.86
Bottom Elevation	0.00	17.00	0.130	15,625	0

=====  
 Basins  
 =====

```

Name: Exist SB OnRamp      Node: Exist SB OnRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72         Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000     Time of Conc(min): 10.00
Area(ac): 1.100               Time Shift(hrs): 0.00
Curve Number: 98.00           Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. SOUTHBOUND ON-RAMP

```

Name: Pro SB OnRamp        Node: Pro SB OnRamp        Status: Onsite
Group: Post                Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72         Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000     Time of Conc(min): 10.00
Area(ac): 1.300               Time Shift(hrs): 0.00
Curve Number: 98.00           Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. SOUTHBOUND ON-RAMP

=====  
 Nodes  
 =====

```

Name: Exist SB OnRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre                 Warn Stage(ft): 22.000
Type: Time/Stage
  
```

BOYNTON BEACH BLVD. SOUTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro SB OnRamp        Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post                Warn Stage(ft): 21.000
Type: Stage/Area
  
```

BOYNTON BEACH BLVD. SOUTHBOUND ON-RAMP

Stage(ft)	Area(ac)
17.000	0.1300
21.000	0.3000

-----  
Name: TW SB Onramp      Base Flow(cfs): 0.000      Init Stage(ft): 18.000  
Group: Post              Warn Stage(ft): 19.000  
Type: Time/Stage

BOYNTON BEACH BLVD. SOUTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	18.000
999.00	19.000

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

Name: DitchWeir SB On      From Node: Pro SB OnRamp  
Group: Post              To Node: TW SB Onramp  
Flow: Both              Count: 1  
Type: Vertical: Mavis      Geometry: Trapezoidal

Bottom Width(ft): 0.50  
Left Side Slope(h/v): 4.00  
Right Side Slope(h/v): 4.00  
    Invert(ft): 20.000  
Control Elevation(ft): 20.000  
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

BOYNTON BEACH BLVD. SOUTHBOUND ON-RAMP

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

Name: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
    Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32



Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                      Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
-----	
BASE	Yes
Post	Yes
Pre	Yes

-----  
Name: 010Y024H                    Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----	
25.000	5.000

Group	Run
-----	
BASE	Yes
Post	Yes
Pre	Yes

-----  
Name: 025Y024H                    Hydrology Sim: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
-----	
72.000	5.000

Group	Run
-----	
BASE	Yes

---

Post            Yes  
Pre            Yes

-----  
Name: SF25Y072H            Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000        Max Calc Time(sec): 60.0000  
Boundary Stages:            Boundary Flows:

Time(hrs)            Print Inc(min)  
-----  
72.000            5.000

Group            Run  
-----  
BASE            Yes  
Post            Yes  
Pre            Yes

Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.100  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 4.186  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 24434.864

-----  
Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.300  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 4.947  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 28877.567

Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.100  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 5.936  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 34965.493

---

Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.300  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.015  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 41322.856



-----  
Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.100  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 6.995  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 41349.446

-----  
Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.300  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 8.267

Runoff Volume (in): 10.355  
Runoff Volume (ft3): 48867.527

---

Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.100  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 6.836  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 54916.815

---

Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.300  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 8.079  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 64901.690

Boynton Beach Blvd Southbound On-Ramp - PRE\_POST

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
Exist SB OnRamp	Pre	003Y024H	24.01	17.012	22.000	0.0000	0	12.00	4.087	0.00	0.000
Pro SB OnRamp	Post	003Y024H	22.57	20.118	21.000	0.0100	11436	12.00	4.830	22.57	0.114
Exist SB OnRamp	Pre	010Y024H	24.00	17.012	22.000	0.0000	0	12.00	5.796	0.00	0.000
Pro SB OnRamp	Post	010Y024H	13.10	20.323	21.000	0.0100	11815	12.00	6.849	13.10	0.897
Exist SB OnRamp	Pre	025Y024H	72.00	17.036	22.000	0.0000	0	12.00	6.830	0.00	0.000
Pro SB OnRamp	Post	025Y024H	12.67	20.503	21.000	0.0100	12147	12.00	8.071	12.67	2.390
Exist SB OnRamp	Pre	SF25Y072H	72.00	17.036	22.000	0.0000	0	60.00	6.799	0.00	0.000
Pro SB OnRamp	Post	SF25Y072H	60.13	20.775	21.000	0.0098	12651	60.00	8.036	60.13	6.454

Boynton Beach Southbound Off-ramp

Nodes

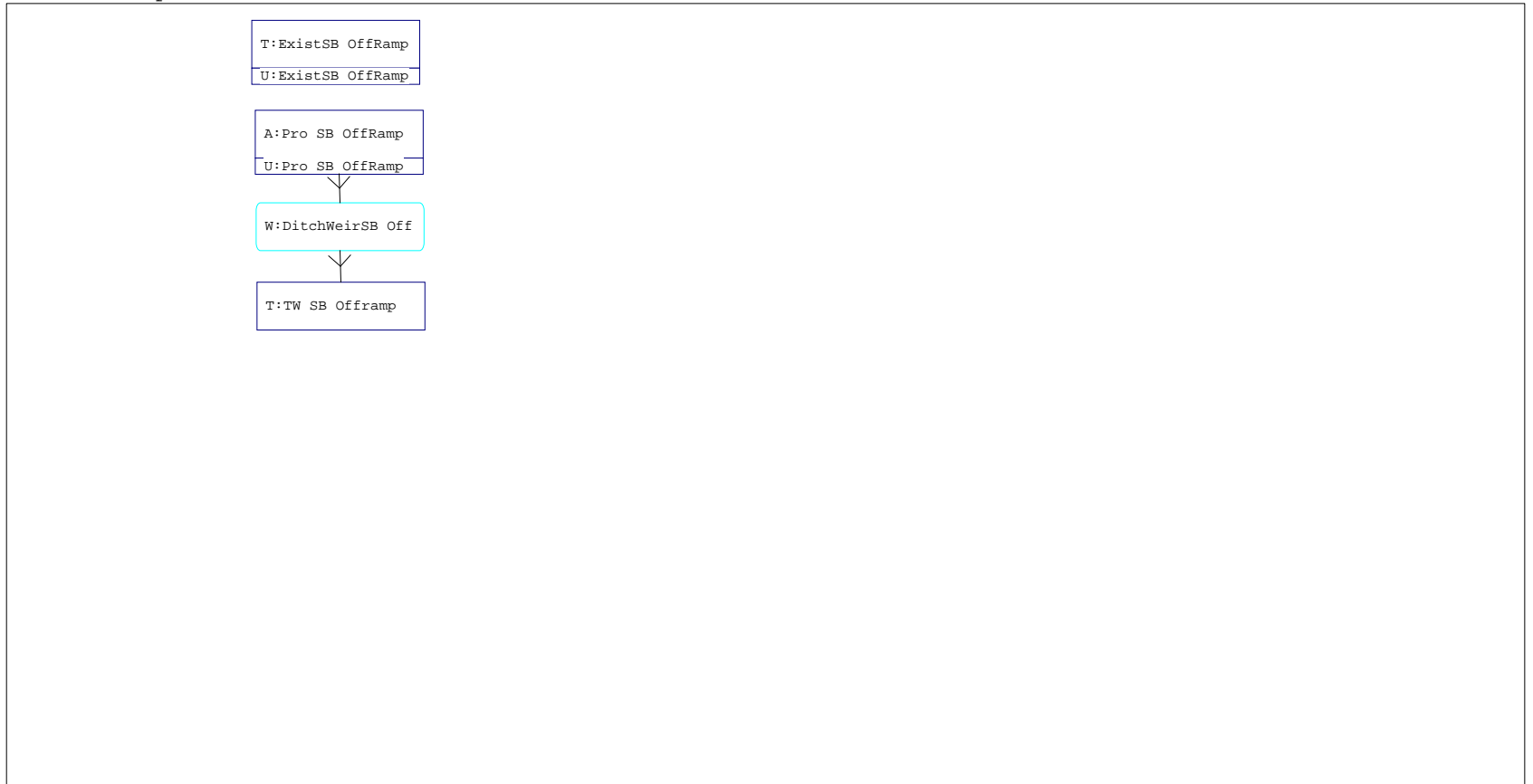
A Stage/Area  
V Stage/Volume  
T Time/Stage  
M Manhole

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







### DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

Basin No: SB OFF-RAMP Sub Basin No: West Station Limits 786+30.00 to 796+50.00  
 Total Area (ac): 1.70 Basin Length (ft): 1020.00 ft

#### Compute Required Treatment Volume

**2.5" x Percentage of Imperviousness**

Site Area = Total project - (Lake + Roof)  
 = 1.70 ac - 0.00 ac  
 = 1.70 ac  
 Impervious Area = Site area - Pervious area  
 = 1.70 ac - 0.00 ac  
 = 1.70 ac  
 Percentage of imperviousness for water quality  
 = Impervious area / Site area  
 = 1.70 ac / 1.70 ac  
 = 1.00  
 For 2.5in times the percentage impervious  
 = [(2.5 inch) x (1.00)]  
 = 2.50 in to be treated  
 Compute volume required for quality detention  
 = inches to be treated x (total site - lake) x 1ft/12in  
 = **0.35 ac-ft**

**Treatment Volume, TV = 0.35 ac-ft**

#### Compute Provided Treatment Volume

	Depth (ft)	Elevation (ft)	Area (ac)	Area (ft <sup>2</sup> )	Volume (ac-ft)
Top Elevation	4.00	22.00	0.560	18,355	1.54
Bottom Elevation	0.00	18.00	0.210	15,625	0

=====  
 Basins  
 =====

```

Name: ExistSB OffRamp      Node: ExistSB OffRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     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: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. SOUTHBOUND OFF-RAMP

```

Name: Pro SB OffRamp      Node: Pro SB OffRamp      Status: Onsite
Group: Post               Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     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: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. SOUTHBOUND OFF-RAMP

=====  
 Nodes  
 =====

```

Name: ExistSB OffRamp    Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre               Warn Stage(ft): 22.000
Type: Time/Stage
  
```

BOYNTON BEACH BLVD. SOUTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro SB OffRamp    Base Flow(cfs): 0.000      Init Stage(ft): 18.000
Group: Post             Warn Stage(ft): 21.000
Type: Stage/Area
  
```

BOYNTON BEACH BLVD. SOUTHBOUND OFF-RAMP

Stage(ft)	Area(ac)
18.000	0.2100
22.000	0.5600

```

-----
Name: TW SB Offramp      Base Flow(cfs): 0.000      Init Stage(ft): 18.000
Group: Post              Warn Stage(ft): 19.000
Type: Time/Stage
    
```

BOYNTON BEACH BLVD. SOUTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	18.000
999.00	19.000

==== Weirs =====

```

Name: DitchWeirSB Off   From Node: Pro SB OffRamp
Group: Post              To Node: TW SB Offramp
Flow: Both               Count: 1
Type: Vertical: Mavis    Geometry: Trapezoidal

Bottom Width(ft): 1.00
Left Side Slope(h/v): 4.00
Right Side Slope(h/v): 4.00
Invert(ft): 20.000
Control Elevation(ft): 20.000
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
    
```

BOYNTON BEACH BLVD. SOUTHBOUND OFF-RAMP

==== Hydrology Simulations =====

```

Name: 003Y024H
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 6.36
    
```

Time(hrs)	Print Inc(min)
25.000	5.00

```

-----
Name: 010Y024H
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32
    
```

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)      Print Inc(min)  
-----  
25.000          5.00

-----  
Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)      Print Inc(min)  
-----  
25.000          5.00

-----  
Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)      Print Inc(min)  
-----  
73.000          5.00

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

Name: 003Y024H                      Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)      Print Inc(min)  
-----  
25.000          5.000



Group Run  
-----  
BASE Yes  
Post Yes  
Pre Yes

-----  
Name: 010Y024H Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)  
-----  
25.000 5.000

Group Run  
-----  
BASE Yes  
Post Yes  
Pre Yes

-----  
Name: 025Y024H Hydrology Sim: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)  
-----  
72.000 5.000

Group Run  
-----  
BASE Yes

---

Post            Yes  
Pre             Yes

-----  
Name: SF25Y072H            Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000        Max Calc Time(sec): 60.0000  
Boundary Stages:            Boundary Flows:

Time(hrs)            Print Inc(min)  
-----  
72.000            5.000

Group            Run  
-----  
BASE            Yes  
Post            Yes  
Pre             Yes

Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.310  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 4.985  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 29099.702

-----  
Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.700  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 6.470  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 37762.972

Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.310  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.069  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 41640.724

---

Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.700  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 9.174  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 54037.581

-----  
Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.310  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 8.331  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 49243.431

-----  
Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.700  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 10.811



Runoff Volume (in): 10.355  
Runoff Volume (ft3): 63903.689

---

Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.310  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 8.141  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 65400.934

---

Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.700  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000

---

Time Max (hrs): 60.02  
Flow Max (cfs): 10.565  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 84871.441

Boynton Beach Southbound Off-ramp - PRE\_POST

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
ExistSB OffRamp	Pre	003Y024H	24.00	17.012	22.000	0.0000	0	12.00	4.865	0.00	0.000
Pro SB OffRamp	Post	003Y024H	14.72	20.180	21.000	0.0100	17455	12.00	6.313	14.72	0.382
ExistSB OffRamp	Pre	010Y024H	24.00	17.012	22.000	0.0000	0	12.00	6.899	0.00	0.000
Pro SB OffRamp	Post	010Y024H	12.69	20.467	21.000	0.0100	18552	12.00	8.953	12.69	2.539
ExistSB OffRamp	Pre	025Y024H	72.00	17.036	22.000	0.0000	0	12.00	8.135	0.00	0.000
Pro SB OffRamp	Post	025Y024H	12.52	20.611	21.000	0.0100	19100	12.00	10.557	12.52	4.493
ExistSB OffRamp	Pre	SF25Y072H	71.99	17.036	22.000	0.0000	0	60.00	8.119	0.00	0.000
Pro SB OffRamp	Post	SF25Y072H	60.17	20.777	21.000	0.0097	19733	60.00	10.536	60.17	7.601

Boynton Beach Blvd. NorthBound On-Ramp

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



**NORTHBOUND ON-RAMP**
**Curve Number Calculations**

 Basin No: **NB ON-RAMP** Sub Basin No: **East** Station Limits **786+30.00** to **811+30.00**  
 Total Area (ac): **2.90** Basin Length (ft) : 2500.00 ft

Pre-Development Conditions  
 Total Area (ac): 1.88  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 1.88

Post-Development Conditions  
 Total Area (ac): 2.90  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 2.90

Land Use Description	CN	Area	CN*A
Northbound On-Ramp	98	1.88	184.24
Total Area:		1.88	184.24
Pre Comp. Curve Number:			98.00

Land Use Description	CN	Area	CN*A
Northbound On-Ramp	98	2.90	284.20
Total Area:		2.90	284.20
Post Comp. Curve Number:			98.00

**NOTES:**  
 Post-Development Peaking factor is 256 for developed area with drainage works.



### DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

Basin No: NB ON-RAMP Sub Basin No: East Station Limits 786+30.00 to 811+30.00  
 Total Area (ac): 2.90 Basin Length (ft): 2500.00 ft

#### Compute Required Treatment Volume

##### 2.5" x Percentage of Imperviousness

Site Area = Total project - (Lake + Roof)  
 = 2.90 ac - 0.00 ac  
 = 2.90 ac

Impervious Area = Site area - Pervious area  
 = 2.90 ac - 0.00 ac  
 = 2.90 ac

Percentage of imperviousness for water quality  
 = Impervious area / Site area  
 = 2.90 ac / 2.90 ac  
 = 1.00

For 2.5in times the percentage impervious  
 = [(2.5 inch) x (1.00)]  
 = 2.50 in to be treated

Compute volume required for quality detention  
 = inches to be treated x (total site - lake) x 1ft/12in  
 = **0.60 ac-ft**

**Treatment Volume, TV = 0.60 ac-ft**

#### Compute Provided Treatment Volume

	Depth (ft)	Elevation (ft)	Area (ac)	Area (ft <sup>2</sup> )	Volume (ac-ft)
Weir Elevation	2.00	20.00	1.600	18,355	2.20
Bottom Elevation	0.00	18.00	0.600	15,625	0

=====  
 Basins  
 =====

```

Name: Exist NB OnRamp      Node: Exist NB OnRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 10.00
Area(ac): 1.880           Time Shift(hrs): 0.00
Curve Number: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. NORTHBOUND ON-RAMP

```

Name: Pro NB OnRamp      Node: Pro NB OnRamp      Status: Onsite
Group: Post              Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000  Time of Conc(min): 10.00
Area(ac): 2.900           Time Shift(hrs): 0.00
Curve Number: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. NORTHBOUND ON-RAMP

=====  
 Nodes  
 =====

```

Name: Exist NB OnRamp    Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre               Warn Stage(ft): 22.000
Type: Time/Stage
  
```

BOYNTON BEACH BLVD. NORTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro NB OnRamp      Base Flow(cfs): 0.000      Init Stage(ft): 18.000
Group: Post              Warn Stage(ft): 20.000
Type: Stage/Area
  
```

BOYNTON BEACH BLVD. NORTHBOUND ON-RAMP

Stage(ft)	Area(ac)
18.000	0.6000
20.000	1.6000

-----  
Name: TW NB ONramp      Base Flow(cfs): 0.000      Init Stage(ft): 19.000  
Group: Post              Warn Stage(ft): 19.000  
Type: Time/Stage

BOYNTON BEACH BLVD. NORTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	19.000
999.00	19.000

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

Name: DitchWeirNB ON      From Node: Pro NB OnRamp  
Group: Post              To Node: TW NB ONramp  
Flow: Both              Count: 1  
Type: Vertical: Mavis      Geometry: Trapezoidal

Bottom Width(ft): 1.00  
Left Side Slope(h/v): 4.00  
Right Side Slope(h/v): 4.00  
    Invert(ft): 19.500  
Control Elevation(ft): 19.500  
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

BOYNTON BEACH BLVD. NORTHBOUND ON-RAMP

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

Name: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
    Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                      Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group Run  
-----  
BASE Yes  
Post Yes  
Pre Yes

-----  
Name: 010Y024H Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)  
-----  
25.000 5.000

Group Run  
-----  
BASE Yes  
Post Yes  
Pre Yes

-----  
Name: 025Y024H Hydrology Sim: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)  
-----  
72.000 5.000

Group Run  
-----  
BASE Yes



Post            Yes  
Pre            Yes

-----  
Name: SF25Y072H            Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000        Max Calc Time(sec): 60.0000  
Boundary Stages:            Boundary Flows:

Time(hrs)            Print Inc(min)  
-----  
72.000            5.000

Group            Run  
-----  
BASE            Yes  
Post            Yes  
Pre            Yes

Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.155  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 41761.404

-----  
Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 11.037  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 64419.187

Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 10.145  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 59759.207

---

Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 15.649  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 92181.755

-----  
Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 11.955  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 70669.962

-----  
Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 18.442

Runoff Volume (in): 10.355  
Runoff Volume (ft3): 109012.176

---

Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 11.683  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 93857.828

---

Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000



Time Max (hrs): 60.02  
Flow Max (cfs): 18.022  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 144780.693

Boynton Beach Blvd. NorthBound On-Ramp - PRE\_POST

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
Exist NB OnRamp	Pre	003Y024H	24.01	17.012	22.000	0.0000	0	12.00	6.984	0.00	0.000
Pro NB OnRamp	Post	003Y024H	24.01	19.510	20.000	0.0100	59017	12.00	10.773	24.01	0.003
Exist NB OnRamp	Pre	010Y024H	23.99	17.012	22.000	0.0000	0	12.00	9.903	0.00	0.000
Pro NB OnRamp	Post	010Y024H	17.73	19.711	20.000	0.0100	63408	12.00	15.275	17.73	0.519
Exist NB OnRamp	Pre	025Y024H	71.99	17.036	22.000	0.0000	0	12.00	11.667	0.00	0.000
Pro NB OnRamp	Post	025Y024H	14.78	19.805	20.000	0.0100	65454	12.00	17.997	14.78	1.062
Exist NB OnRamp	Pre	SF25Y072H	72.01	17.036	22.000	0.0000	0	60.00	11.625	0.00	0.000
Pro NB OnRamp	Post	SF25Y072H	60.66	20.109	20.000	0.0097	72075	60.00	17.932	60.66	4.463

Boynton Beach Blvd. NorthBound OFF-Ramp

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

T:ExistNB OffRamp

U:ExistNB OffRamp

T:Pro NB OffRamp

U:Pro NB OffRamp

**NORTHBOUND OFF-RAMP**
**Curve Number Calculations**

 Basin No: **NB OFF-RAMP** Sub Basin No: **East** Station Limits **776+30.00** to **786+30.00**  
 Total Area (ac): **2.20** Basin Length (ft): 1000.00 ft

Pre-Development Conditions  
 Total Area (ac): 1.40  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 1.40

Post-Development Conditions  
 Total Area (ac): 2.20  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 2.20

Land Use Description	CN	Area	CN*A
Northbound Off-Ramp	98	1.40	137.20
Total Area:		1.40	137.20
Pre Comp. Curve Number:			98.00

Land Use Description	CN	Area	CN*A
Northbound Off-Ramp	98	2.20	215.60
Total Area:		2.20	215.60
Post Comp. Curve Number:			98.00

**NOTES:**  
 Post-Development Peaking factor is 256 for developed area with drainage works.

## DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

Basin No: NB OFF-RAMP Sub Basin No: East Station Limits 776+30.00 to 786+30.00  
Total Area (ac): 2.20 Basin Length (ft): 1000.00 ft

### Compute Required Treatment Volume

#### 2.5" x Percentage of Imperviousness

Site Area = Total project - (Lake + Roof)  
= 2.20 ac - 0.00 ac  
= 2.20 ac

Impervious Area = Site area - Pervious area  
= 2.20 ac - 0.00 ac  
= 2.20 ac

Percentage of imperviousness for water quality  
= Impervious area / Site area  
= 2.20 ac / 2.20 ac  
= 1.00

For 2.5in times the percentage impervious  
= [(2.5 inch) x (1.00)]  
= 2.50 in to be treated

Compute volume required for quality detention  
= inches to be treated x (total site - lake) x 1ft/12in  
= **0.46 ac-ft**

**Treatment Volume, TV = 0.46 ac-ft**

**Note: Runoff is treated in Exfiltration Trench System**



=====  
 Basins  
 =====

```

Name: ExistNB OffRamp      Node: ExistNB OffRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.400           Time Shift(hrs): 0.00
Curve Number: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. NORTHBOUND OFF-RAMP

```

Name: Pro NB OffRamp      Node: Pro NB OffRamp      Status: Onsite
Group: Post               Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 2.200           Time Shift(hrs): 0.00
Curve Number: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

BOYNTON BEACH BLVD. NORTHBOUND OFF-RAMP

=====  
 Nodes  
 =====

```

Name: ExistNB OffRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre                 Warn Stage(ft): 22.000
Type: Time/Stage
  
```

BOYNTON BEACH BLVD. NORTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro NB OffRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post               Warn Stage(ft): 21.000
Type: Time/Stage
  
```

BOYNTON BEACH BLVD. NORTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	21.000

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

Name: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                    Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                        Boundary Flows:

Time(hrs)                    Print Inc(min)  
-----  
25.000                    5.000

Group                    Run  
-----  
BASE                    Yes  
Post                    Yes  
Pre                    Yes

-----  
Name: 010Y024H                    Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                        Boundary Flows:

Time(hrs)                    Print Inc(min)  
-----  
25.000                    5.000

Group                    Run  
-----  
BASE                    Yes  
Post                    Yes  
Pre                    Yes

---

Name: 025Y024H                      Hydrology Sim: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000
Group	Run
BASE	Yes
Post	Yes
Pre	Yes

---

Name: SF25Y072H                      Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000
Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 5.328  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 31098.918

-----  
Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 8.373  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 48869.728

Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.555  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 44501.537

---

Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 11.872  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 69930.987



-----  
Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 8.903  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 52626.568

-----  
Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 13.990

Runoff Volume (in): 10.355  
Runoff Volume (ft3): 82698.892

---

Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 8.700  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 69894.128

---

Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 13.672  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 109833.629

Boynton Beach Blvd. NorthBound OFF-Ramp - PRE\_POST

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
ExistNB OffRamp	Pre	003Y024H	24.00	17.012	22.000	0.0000	0	12.00	5.198	0.00	0.000
Pro NB OffRamp	Post	003Y024H	24.00	17.010	21.000	0.0000	0	12.00	8.168	0.00	0.000
ExistNB OffRamp	Pre	010Y024H	24.00	17.012	22.000	0.0000	0	12.00	7.372	0.00	0.000
Pro NB OffRamp	Post	010Y024H	24.00	17.010	21.000	0.0000	0	12.00	11.584	0.00	0.000
ExistNB OffRamp	Pre	025Y024H	72.00	17.036	22.000	0.0000	0	12.00	8.688	0.00	0.000
Pro NB OffRamp	Post	025Y024H	72.00	17.029	21.000	0.0000	0	12.00	13.652	0.00	0.000
ExistNB OffRamp	Pre	SF25Y072H	72.00	17.036	22.000	0.0000	0	60.00	8.645	0.00	0.000
Pro NB OffRamp	Post	SF25Y072H	72.00	17.029	21.000	0.0000	0	60.00	13.585	0.00	0.000

**PD&E STUDY AT BOYNTON BEACH AND GATEWAY BLVD. INTERCHANGES**

Project No. WF900273

FPN: 435804-1-22-01

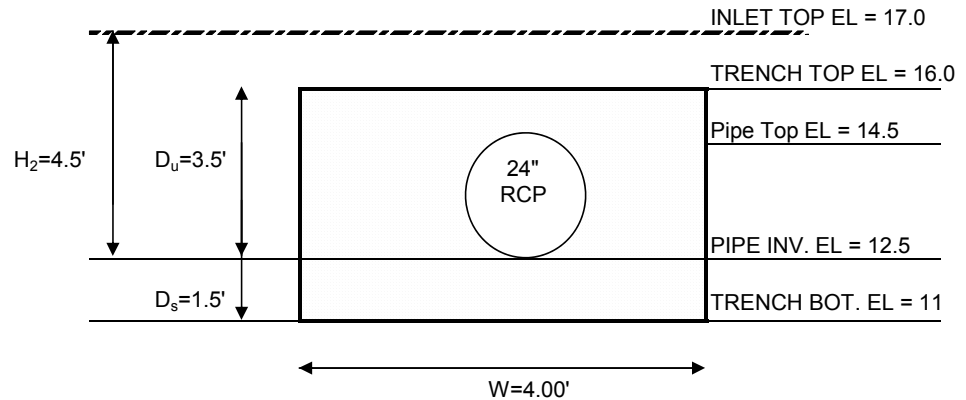
BOYNTON BEACH NORTHBOUND OFF-RAMP

**AREA**

EXIST. DRAINAGE AREA (ac)	WIDENING (ac)	TOTAL (ac)	REQUIRED VOLUME (Ac-in)
1.40	0.80	2.20	5.50

Volume = 2.5 in x Impervious area

**REQUIRED TRENCH LENGTH**



WATER TABLE = 9

$$L = \frac{FS[(\%WQ)(V_{wq}) + V_{add}]}{K[(H_2 \times W) + (2 \times H_2 \times D_u) - (D_u^2) + (2 \times H_2 \times D_s)] + (1.39 \times 10^{-4})(W \times D_u)}$$

FS =	2		factor of safety, no less than 2
%WQ =	0.5		50% for wet/dry retention
K =	3.00E-04	cfs/ft <sup>2</sup> -ft. head	Hydraulic conductivity
D <sub>u</sub> =	3.5	ft.	Non-saturated trench depth
D <sub>s</sub> =	1.5	ft.	Saturated trench depth
H <sub>2</sub> =	4.5	ft.	Depth to water table
W =	4	ft.	Trench width
V <sub>wq</sub> =	5.50	ac.-in.	Volume to be exfiltrated
V <sub>add</sub> =	0.00	ac.-in.	Additional Volume to be exfiltrated
L =	Length of trench required		

$$L = \frac{2 \times [(0.5) \times (5.5 \text{ ac-in})]}{(0.0003 \text{ cfs/ft}^2\text{-ft.head})((4.5' \times 4') + (2 \times 4.5' \times 3.5') - (3.5')^2 + (2 \times 4.5' \times 1.5')) + (0.000139)(4' \times 3.5')}$$

L = 320.31 feet

**L = 320 feet OF TRENCH REQUIRED**

**TRENCH LENGTH PROVIDED = 350.00 feet      VOLUME TREATED = 6.01 ac-in**

## **APPENDIX E, Part B**

**Part B, Gateway Boulevard**



Gateway Blvd. Alternative 8 - Cover

- 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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## DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

 Basin No: Alt #8 Sub Basin No: West  
 Total Area (ac): 4.89

 Station Limits 104+50 to 114+00  
 Basin Length (ft): 950.00 ft

### Compute Required Treatment Volume

**1. 1" treatment**

 Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
 $TV = [(1 \text{ inch}) \times (4.89 \text{ ac})] \times (1\text{ft}/12 \text{ in})$   
 TV = **0.41 ac-ft**

or

**2. 2.5" x Percentage of Imperviousness**

 Site Area = Total project - (Lake + Roof)  
 = 4.89 ac - 0.00 ac  
 = 4.89 ac

 Impervious Area = Site area - Pervious area  
 = 4.89 ac - 1.09 ac  
 = 3.80 ac

 Percentage of imperviousness for water quality  
 = Impervious area / Site area  
 = 3.80 ac / 4.89 ac  
 = 0.78

 For 2.5in times the percentage impervious  
 = [(2.5 inch) x (0.78)]  
 = 1.94 in to be treated

 Compute volume required for quality detention  
 = inches to be treated x (total site - lake) x 1ft/12in  
 = **0.79 ac-ft**

 Treatment Volume, TV = **0.79 ac-ft** controls

 Treatment Volume Required for Dry Pond = **0.59 ac-ft** (75% of the amount computed for wet detention)

### Compute Provided Treatment Volume

	Depth (ft)	Elevation (ft)	Area (ac)	Area (ft <sup>2</sup> )	Volume (ac-ft)
Outside Top of Berm	5.00	22.00	1.089	47,417	3.60
Inside Top of Berm	4.00	21.00	0.823	35,867	2.64
Weir Elevation	1.10	18.10	0.582	25,354	0.61
Bottom Elevation	0.00	17.00	0.520	22,665	0

Treatment Volume Elevation Required: 18.08

 Treatment Volume Elevation Provided: **18.10**

 Treatment Volume Provided: **0.61 ac-ft** Treatment Volume Requirement met

### Geotechnical Data for Percolation Analysis

 Boring No: N/A  
 Soil No.: 41  
 Estimated SHWT: 14.5  
 Estimated Aquifer Base: 11.5

#### Fill Material Conductivity

 Measured Vertical Conductivity (ft/day): 20.0  
 Factor of Safety: 2  
 Estimated Vertical Conductivity, (K<sub>v</sub>)(ft/day): 10.00  
 Estimated Horizontal Conductivity, K<sub>h</sub> (1.5K<sub>v</sub>(ft/day)): 15.00

=====  
 Basins  
 =====

```

Name: Pre_Gateway A8      Node: Pre_Gateway A8      Status: Onsite
Group: Pre                Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 3.400           Time Shift(hrs): 0.00
Curve Number: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

```

Name: Pro Gateway A8      Node: Pro Gateway A8      Status: Onsite
Group: Post               Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 4.980           Time Shift(hrs): 0.00
Curve Number: 86.65       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

=====  
 Nodes  
 =====

```

Name: BDRY A8            Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post              Type: Time/Stage           Warn Stage(ft): 20.000
  
```

Time(hrs)	Stage(ft)
0.00	17.000
999.00	20.000

```

Name: Pre_Gateway A8      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre                Type: Time/Stage           Warn Stage(ft): 22.000
  
```

Time(hrs)	Stage(ft)
0.00	17.000
30.00	22.000

```
-----
Name: Pro Gateway A8      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post              Warn Stage(ft): 21.000
Type: Stage/Area
```

Stage(ft)	Area(ac)
17.000	0.5200
18.100	0.5800
21.000	0.8200
22.000	1.0900

```
=====
=== Drop Structures =====
=====
```

```
Name: DROP W 8          From Node: Pro Gateway A8      Length(ft): 100.00
Group: Post            To Node: BDRY A8              Count: 1
```

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Automatic
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.000
Invert(ft): 17.000	16.500	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 dn
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 DROP W 8 \*\*\*

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): 48.00	Invert(ft): 18.100	
Rise(in): 999.00	Control Elev(ft): 18.100	

```
=====
=== Hydrology Simulations =====
=====
```

```
Name: 003Y024H
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32
```



Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 1.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00

---

Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

-----  
Name: 010Y024H Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
-----	-----

BASE Yes  
 Post Yes  
 Pre Yes

Name: 025Y024H Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
 Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: DRAWDOWN Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	30.000

Group	Run
PERC	Yes

Name: SF25Y072H                      Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000
Group	Run
-----	-----
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: Pre\_Gateway A8  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Pre\_Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 12.939  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 75525.944

-----  
Basin Name: Pro Gateway A8  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 4.980  
Vol of Unit Hyd (in): 1.000  
Curve Number: 86.650  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 16.569  
Runoff Volume (in): 4.822  
Runoff Volume (ft3): 87172.603

Basin Name: Pre\_Gateway A8  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Pre\_Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 18.347  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 108075.161

---

Basin Name: Pro Gateway A8  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 4.980  
Vol of Unit Hyd (in): 1.000  
Curve Number: 86.650  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 24.844  
Runoff Volume (in): 7.381  
Runoff Volume (ft3): 133423.229



-----  
Basin Name: Pre\_Gateway A8  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Pre\_Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 21.622  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 127807.379

-----  
Basin Name: Pro Gateway A8  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 4.980  
Vol of Unit Hyd (in): 1.000  
Curve Number: 86.650  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 29.816

Runoff Volume (in): 8.949  
Runoff Volume (ft3): 161770.471

---

Basin Name: Pre\_Gateway A8  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Pre\_Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 3.400  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 21.129  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 169742.881

---

Basin Name: Pro Gateway A8  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro Gateway A8  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 4.980  
Vol of Unit Hyd (in): 1.000  
Curve Number: 86.650  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 30.260  
Runoff Volume (in): 12.303  
Runoff Volume (ft3): 222401.275

GATEWAY BLVD - ALTERNATIVE 8-DRY DETENTION - DRAWDOWN

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
DRAWDOWN	SLGateway A8	PERC	0.00	18.100	18.200	25265	0.000	0.000	0.0	0.0
DRAWDOWN	SLGateway A8	PERC	0.51	17.890	18.200	24766	0.000	2.866	0.0	0.1
DRAWDOWN	SLGateway A8	PERC	1.01	17.682	18.200	24271	0.000	2.809	0.0	0.2
DRAWDOWN	SLGateway A8	PERC	1.51	17.485	18.200	23805	0.000	0.659	0.0	0.2
DRAWDOWN	SLGateway A8	PERC	2.01	17.447	18.200	23713	0.000	0.386	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	2.51	17.423	18.200	23655	0.000	0.264	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	3.01	17.405	18.200	23614	0.000	0.205	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	3.51	17.391	18.200	23580	0.000	0.172	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	4.01	17.378	18.200	23550	0.000	0.151	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	4.51	17.368	18.200	23524	0.000	0.136	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	5.01	17.358	18.200	23501	0.000	0.124	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	5.51	17.348	18.200	23479	0.000	0.115	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	6.01	17.340	18.200	23459	0.000	0.108	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	6.51	17.332	18.200	23439	0.000	0.102	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	7.01	17.324	18.200	23421	0.000	0.097	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	7.51	17.317	18.200	23404	0.000	0.092	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	8.01	17.310	18.200	23388	0.000	0.088	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	8.51	17.303	18.200	23372	0.000	0.085	0.0	0.3
DRAWDOWN	SLGateway A8	PERC	9.01	17.297	18.200	23356	0.000	0.082	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	9.51	17.291	18.200	23342	0.000	0.079	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	10.01	17.285	18.200	23327	0.000	0.076	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	10.51	17.279	18.200	23314	0.000	0.074	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	11.01	17.273	18.200	23300	0.000	0.072	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	11.51	17.268	18.200	23287	0.000	0.070	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	12.01	17.262	18.200	23275	0.000	0.068	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	12.51	17.257	18.200	23262	0.000	0.066	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	13.01	17.252	18.200	23250	0.000	0.065	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	13.51	17.247	18.200	23238	0.000	0.063	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	14.01	17.242	18.200	23227	0.000	0.062	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	14.51	17.238	18.200	23216	0.000	0.061	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	15.01	17.233	18.200	23205	0.000	0.059	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	15.51	17.228	18.200	23194	0.000	0.058	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	16.01	17.224	18.200	23183	0.000	0.057	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	16.51	17.219	18.200	23173	0.000	0.056	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	17.01	17.215	18.200	23162	0.000	0.055	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	17.51	17.211	18.200	23152	0.000	0.054	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	18.01	17.207	18.200	23142	0.000	0.053	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	18.51	17.203	18.200	23133	0.000	0.052	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	19.01	17.199	18.200	23123	0.000	0.052	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	19.51	17.195	18.200	23114	0.000	0.051	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	20.01	17.191	18.200	23104	0.000	0.050	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	20.51	17.187	18.200	23095	0.000	0.049	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	21.01	17.183	18.200	23086	0.000	0.049	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	21.51	17.179	18.200	23077	0.000	0.048	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	22.01	17.176	18.200	23068	0.000	0.047	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	22.51	17.172	18.200	23060	0.000	0.047	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	23.01	17.168	18.200	23051	0.000	0.046	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	23.51	17.165	18.200	23042	0.000	0.045	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	24.01	17.161	18.200	23034	0.000	0.045	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	24.51	17.158	18.200	23026	0.000	0.044	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	25.01	17.154	18.200	23018	0.000	0.044	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	25.51	17.151	18.200	23010	0.000	0.043	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	26.01	17.147	18.200	23002	0.000	0.043	0.0	0.4

GATEWAY BLVD - ALTERNATIVE 8-DRY DETENTION - DRAWDOWN

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
DRAWDOWN	SLGateway A8	PERC	26.51	17.144	18.200	22994	0.000	0.042	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	27.01	17.141	18.200	22986	0.000	0.042	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	27.51	17.138	18.200	22978	0.000	0.041	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	28.01	17.134	18.200	22970	0.000	0.041	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	28.51	17.131	18.200	22963	0.000	0.041	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	29.01	17.128	18.200	22955	0.000	0.040	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	29.51	17.125	18.200	22948	0.000	0.040	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	30.01	17.122	18.200	22940	0.000	0.039	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	30.51	17.119	18.200	22933	0.000	0.039	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	31.01	17.116	18.200	22926	0.000	0.039	0.0	0.4
DRAWDOWN	SLGateway A8	PERC	31.51	17.113	18.200	22919	0.000	0.038	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	32.01	17.110	18.200	22912	0.000	0.038	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	32.51	17.107	18.200	22905	0.000	0.038	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	33.01	17.104	18.200	22898	0.000	0.037	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	33.51	17.101	18.200	22891	0.000	0.037	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	34.01	17.098	18.200	22884	0.000	0.037	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	34.51	17.095	18.200	22877	0.000	0.036	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	35.01	17.092	18.200	22870	0.000	0.036	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	35.51	17.089	18.200	22864	0.000	0.036	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	36.01	17.087	18.200	22857	0.000	0.035	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	36.51	17.084	18.200	22850	0.000	0.035	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	37.01	17.081	18.200	22844	0.000	0.035	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	37.51	17.078	18.200	22837	0.000	0.035	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	38.01	17.076	18.200	22831	0.000	0.034	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	38.51	17.073	18.200	22824	0.000	0.034	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	39.01	17.070	18.200	22818	0.000	0.034	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	39.51	17.068	18.200	22812	0.000	0.033	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	40.01	17.065	18.200	22806	0.000	0.033	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	40.51	17.062	18.200	22799	0.000	0.033	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	41.01	17.060	18.200	22793	0.000	0.033	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	41.51	17.057	18.200	22787	0.000	0.032	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	42.01	17.055	18.200	22781	0.000	0.032	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	42.51	17.052	18.200	22775	0.000	0.032	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	43.01	17.050	18.200	22769	0.000	0.032	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	43.51	17.047	18.200	22763	0.000	0.032	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	44.01	17.045	18.200	22757	0.000	0.031	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	44.51	17.042	18.200	22751	0.000	0.031	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	45.01	17.040	18.200	22745	0.000	0.031	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	45.51	17.037	18.200	22740	0.000	0.031	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	46.01	17.035	18.200	22734	0.000	0.031	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	46.51	17.032	18.200	22728	0.000	0.030	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	47.01	17.030	18.200	22722	0.000	0.030	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	47.51	17.028	18.200	22717	0.000	0.030	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	48.01	17.025	18.200	22711	0.000	0.030	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	48.51	17.023	18.200	22706	0.000	0.030	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	49.01	17.021	18.200	22700	0.000	0.029	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	49.51	17.018	18.200	22694	0.000	0.029	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	50.01	17.016	18.200	22689	0.000	0.029	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	50.51	17.014	18.200	22683	0.000	0.029	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	51.01	17.011	18.200	22678	0.000	0.029	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	51.51	17.009	18.200	22673	0.000	0.029	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	52.01	17.007	18.200	22667	0.000	0.028	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	52.51	17.005	18.200	22662	0.000	0.028	0.0	0.5

GATEWAY BLVD - ALTERNATIVE 8-DRY DETENTION - DRAWDOWN

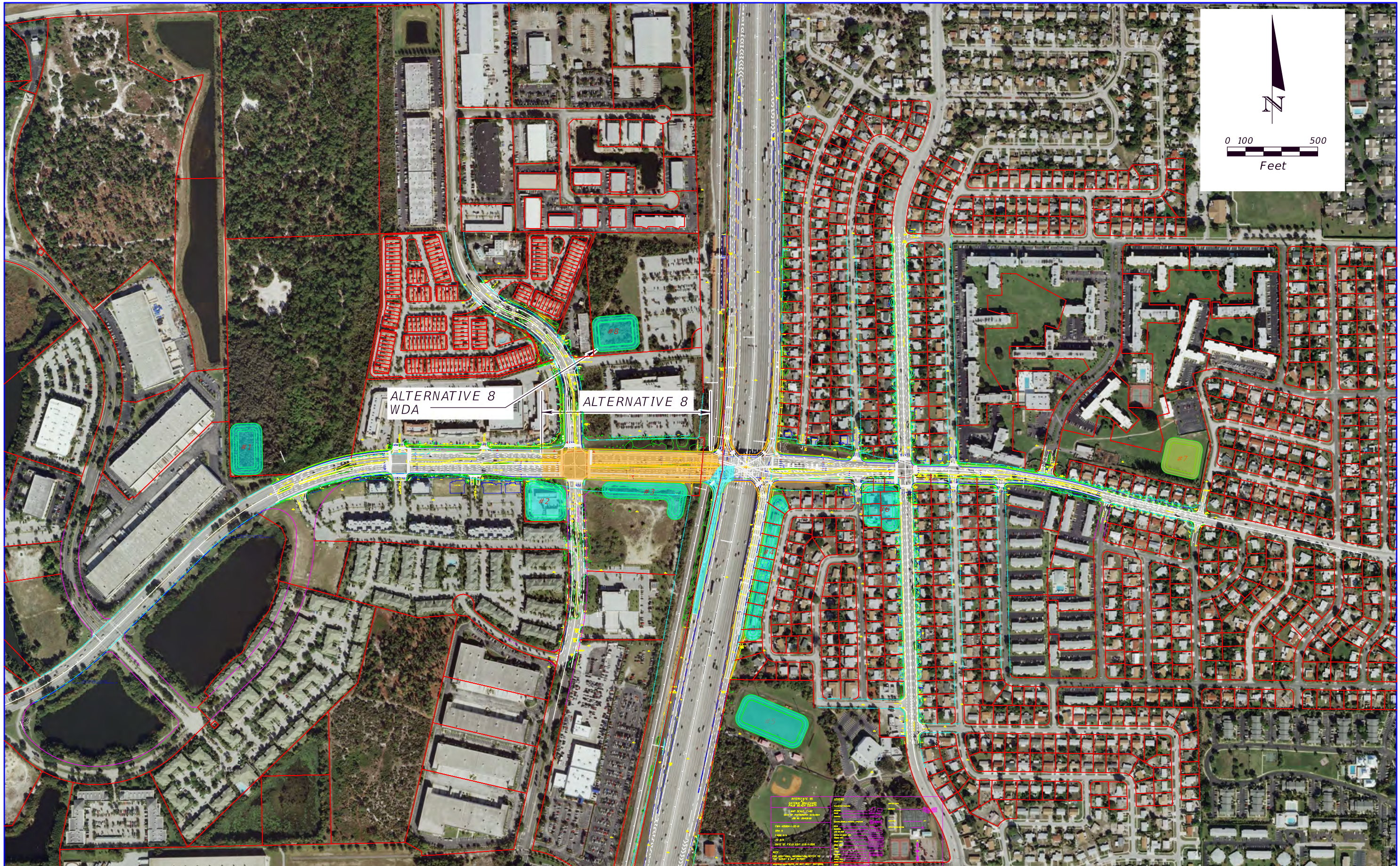
Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
DRAWDOWN	SLGateway A8	PERC	53.01	17.002	18.200	22657	0.000	0.028	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	53.51	17.000	18.200	22651	0.000	0.028	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	54.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	54.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	55.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	55.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	56.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	56.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	57.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	57.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	58.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	58.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	59.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	59.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	60.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	60.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	61.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	61.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	62.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	62.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	63.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	63.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	64.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	64.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	65.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	65.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	66.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	66.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	67.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	67.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	68.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	68.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	69.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	69.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	70.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	70.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	71.01	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	71.51	17.000	18.200	22651	0.000	0.000	0.0	0.5
DRAWDOWN	SLGateway A8	PERC	72.00	17.000	18.200	22651	0.000	0.000	0.0	0.5



GATEWAY BLVD - ALTERNATIVE 8-DRY DETENTION - PRE\_POST

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
Pre_Gateway A8	Pre	003Y024H	24.00	21.000	22.000	0.0028	0	12.00	12.628	0.00	0.000
Pro_Gateway A8	Post	003Y024H	12.61	18.765	21.000	0.0099	27662	12.00	16.037	12.61	5.811
Pre_Gateway A8	Pre	010Y024H	24.01	21.001	22.000	0.0028	0	12.00	17.907	0.00	0.000
Pro_Gateway A8	Post	010Y024H	12.57	19.386	21.000	0.0100	29900	12.00	24.124	12.57	9.644
Pre_Gateway A8	Pre	025Y024H	30.01	22.000	22.000	0.0028	0	12.00	21.108	0.00	0.000
Pro_Gateway A8	Post	025Y024H	12.57	19.764	21.000	0.0100	31263	12.00	28.990	12.57	11.203
Pre_Gateway A8	Pre	SF25Y072H	30.00	22.000	22.000	0.0028	0	60.00	21.052	0.00	0.000
Pro_Gateway A8	Post	SF25Y072H	60.48	19.853	21.000	0.0100	31583	60.00	30.135	60.48	11.508





REVISIONS	
DATE	DESCRIPTION

ARCADIS  
 1650 Prudential Drive, Suite 400  
 Jacksonville, Florida 32207  
 T: 904 721 2991 | F: 904 861 2450  
 Certificate of Authorization No. 7917  
 Vendor No. 570373224

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	231932-1-22-01

**POST-DEVELOPMENT-ALTERNATIVE 8  
 DRAINAGE MAP  
 SR9 / I-95 AT GATEWAY BLVD.**

SHEET NO.





REVISIONS	
DATE	DESCRIPTION

ARCADIS  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	231932-1-22-01

**PRE-DEVELOPMENT-ALTERNATIVE 8  
 DRAINAGE MAP  
 SR9 / I-95 AT GATEWAY BLVD.**

SHEET NO.



Gateway Blvd. Alternative 4 - Cover

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



**GATEWAY BLVD. ALTERNATIVE 4**
**Curve Number Calculations**

 Basin No: **Alt #4** Sub Basin No: **East**  
 Total Area (ac): **5.78**

 Station Limits **116+60** to **124+00**  
 Basin Length (ft): 740.00 ft

Pre-Development Conditions

 Total Area (ac): 4.71  
 Pervious Area (ac): 1.51  
 Impervious Area (ac): 3.20

Post-Development Conditions

 Total Area (ac): 5.78  
 Pervious Area (ac): 1.51  
 Impervious Area (ac): 4.27

Land Use Description	CN	Area	CN*A
Pond Site			
St Lucie-Paola			
Urban Land	50	1.51	75.7
Soild no. 41			
HSG A			
Roadway	98	3.20	313.60
Total Area:		4.71	389.28
Pre Comp. Curve Number:			82.59

Land Use Description	CN	Area	CN*A
Pond Site			
St Lucie-Paola			
Urban Land	50	1.51	75.7
Soild no. 41			
HSG A			
Paved	98	4.27	418.46
Total Area:		5.78	494.14
Post Comp. Curve Number:			85.44

**NOTES:**

Post-Development Peaking factor is 256 for developed area with drainage works.

### DRY DETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

Basin No: Alt #4 Sub Basin No: East Station Limits 116+60 to 124+00  
 Total Area (ac): 5.78 Basin Length (ft) : 740.00 ft

#### Compute Required Treatment Volume

**1. 1" treatment**

Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
 TV = [(1 inch) x (5.78 ac)] x (1ft/12 in)  
 TV = **0.48 ac-ft**

or

**2. 2.5" x Percentage of Imperviousness**

Site Area = Total project - (Lake + Roof)  
 = 5.78 ac - 0.00 ac - 0.00 ac  
 = 5.78 ac  
 Impervious Area = Site area - Pervious area  
 = 5.78 ac - 1.51 ac  
 = 4.27 ac  
 Percentage of imperviousness for water quality  
 = Impervious area / Site area  
 = 4.27 ac / 5.78 ac  
 = 0.74  
 For 2.5in times the percentage impervious  
 = [(2.5 inch) x (0.74)]  
 = 1.85 in to be treated  
 Compute volume required for quality detention  
 = inches to be treated x (total site - lake) x 1ft/12in  
 = **0.89 ac-ft**

Treatment Volume, TV = **0.89 ac-ft** controls

Treatment Volume Required for Dry Pond = **0.67 ac-ft** (75% of the amount computed for wet detention)

#### Compute Provided Treatment Volume

	Depth (ft)	Elevation (ft)	Area (ac)	Area (ft <sup>2</sup> )	Volume (ac-ft)
Outside Top of Berm	5.00	19.00	1.514	65,932	3.75
Inside Top of Berm	4.00	18.00	0.929	40,479	2.53
Weir Elevation	1.50	15.50	0.558	24,296	0.67
Bottom Elevation	0.00	14.00	0.342	14,887	0

Treatment Volume Elevation Required: 15.48  
 Treatment Volume Elevation Provided: **15.50**

Treatment Volume Provided: **0.67 ac-ft** Treatment Volume Requirement met

#### Geotechnical Data for Percolation Analysis

Boring No: N/A  
 Soil No. : 41  
 Estimated SHWT: 15.5  
 Estimated Aquifer Base: 12.5

#### Fill Material Conductivity

Measured Vertical Conductivity (ft/day): 20.0  
 Factor of Safety: 2  
 Estimated Vertical Conductivity, (K<sub>v</sub>)(ft/day): 10.00  
 Estimated Horizontal Conductivity, K<sub>h</sub> (1.5K<sub>v</sub>)(ft/day): 15.00



=====  
 Basins  
 =====

```

Name: Pre_Gateway A4      Node: Pre_Gateway A4      Status: Onsite
Group: Pre                Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 15.00
Area(ac): 3.900           Time Shift(hrs): 0.00
Curve Number: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

```

Name: Pro Gateway A4      Node: Pro Gateway A4      Status: Onsite
Group: Post               Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 15.00
Area(ac): 5.780           Time Shift(hrs): 0.00
Curve Number: 85.44       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

=====  
 Nodes  
 =====

```

Name: BDRY GatewayA4     Base Flow(cfs): 0.000     Init Stage(ft): 12.000
Group: Post              Warn Stage(ft): 16.000
Type: Time/Stage
  
```

Time(hrs)	Stage(ft)
0.00	12.000
999.00	16.000

```

Name: Pre_Gateway A4     Base Flow(cfs): 0.000     Init Stage(ft): 14.000
Group: Pre               Warn Stage(ft): 17.000
Type: Time/Stage
  
```

Time(hrs)	Stage(ft)
0.00	14.000
30.00	17.000

```
-----
Name: Pro Gateway A4      Base Flow(cfs): 0.000      Init Stage(ft): 14.000
Group: Post              Warn Stage(ft): 18.000
Type: Stage/Area
```

Stage(ft)	Area(ac)
14.000	0.3420
15.500	0.5580
18.000	0.9300
19.000	1.5100

```
=====
=== Drop Structures =====
=====
```

```
Name: DROP GatewayA4      From Node: Pro Gateway A4      Length(ft): 100.00
Group: Post              To Node: BDRY GatewayA4      Count: 1
```

UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Automatic
Span(in): 30.00	30.00	Flow: Both
Rise(in): 30.00	30.00	Entrance Loss Coef: 0.000
Invert(ft): 13.000	12.500	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 dn
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 DROP GatewayA4 \*\*\*

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): 36.00	Invert(ft): 15.500
Rise(in): 999.00	Control Elev(ft): 15.500

TABLE

```
=====
=== Hydrology Simulations =====
=====
```

```
Name: 003Y024H
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32
```

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

---

Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 1.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00

---

Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Rainfall Amount(in): 14.00

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                      Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

-----  
Name: 010Y024H                      Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
-----	-----

BASE Yes  
 Post Yes  
 Pre Yes

-----  
 Name: 025Y024H Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
 Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

-----  
 Name: DRAWDOWN Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000 Max Calc Time(sec): 60.0000  
 Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	30.000

Group	Run
PERC	Yes

Name: SF25Y072H                    Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                    Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000
Group	Run
BASE	Yes
Post	Yes
Pre	Yes



Basin Name: Pre\_Gateway A4  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Pre\_Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.07  
Flow Max (cfs): 12.652  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 86632.700

-----  
Basin Name: Pro Gateway A4  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 5.780  
Vol of Unit Hyd (in): 1.000  
Curve Number: 85.440  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 15.924  
Runoff Volume (in): 4.689  
Runoff Volume (ft3): 98391.804

Basin Name: Pre\_Gateway A4  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Pre\_Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.07  
Flow Max (cfs): 17.944  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 123968.567

---

Basin Name: Pro Gateway A4  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 5.780  
Vol of Unit Hyd (in): 1.000  
Curve Number: 85.440  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 24.133  
Runoff Volume (in): 7.233  
Runoff Volume (ft3): 151754.981

-----  
Basin Name: Pre\_Gateway A4  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Pre\_Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.07  
Flow Max (cfs): 21.147  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 146602.581

-----  
Basin Name: Pro Gateway A4  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 5.780  
Vol of Unit Hyd (in): 1.000  
Curve Number: 85.440  
DCIA (%): 0.000  
  
Time Max (hrs): 12.10  
Flow Max (cfs): 29.073

Runoff Volume (in): 8.795  
Runoff Volume (ft3): 184527.847

---

Basin Name: Pre\_Gateway A4  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Pre\_Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 3.900  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.03  
Flow Max (cfs): 21.111  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 194705.070

---

Basin Name: Pro Gateway A4  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro Gateway A4  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 2.00  
Comp Time Inc (min): 2.00  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 15.00  
Time Shift (hrs): 0.00  
Area (ac): 5.780  
Vol of Unit Hyd (in): 1.000  
Curve Number: 85.440  
DCIA (%): 0.000

---

Time Max (hrs): 60.07  
Flow Max (cfs): 30.414  
Runoff Volume (in): 12.140  
Runoff Volume (ft3): 254710.946

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GATEWAY BLVD - ALTERNATIVE 4- DRY DETENTION - DRAWDOWN

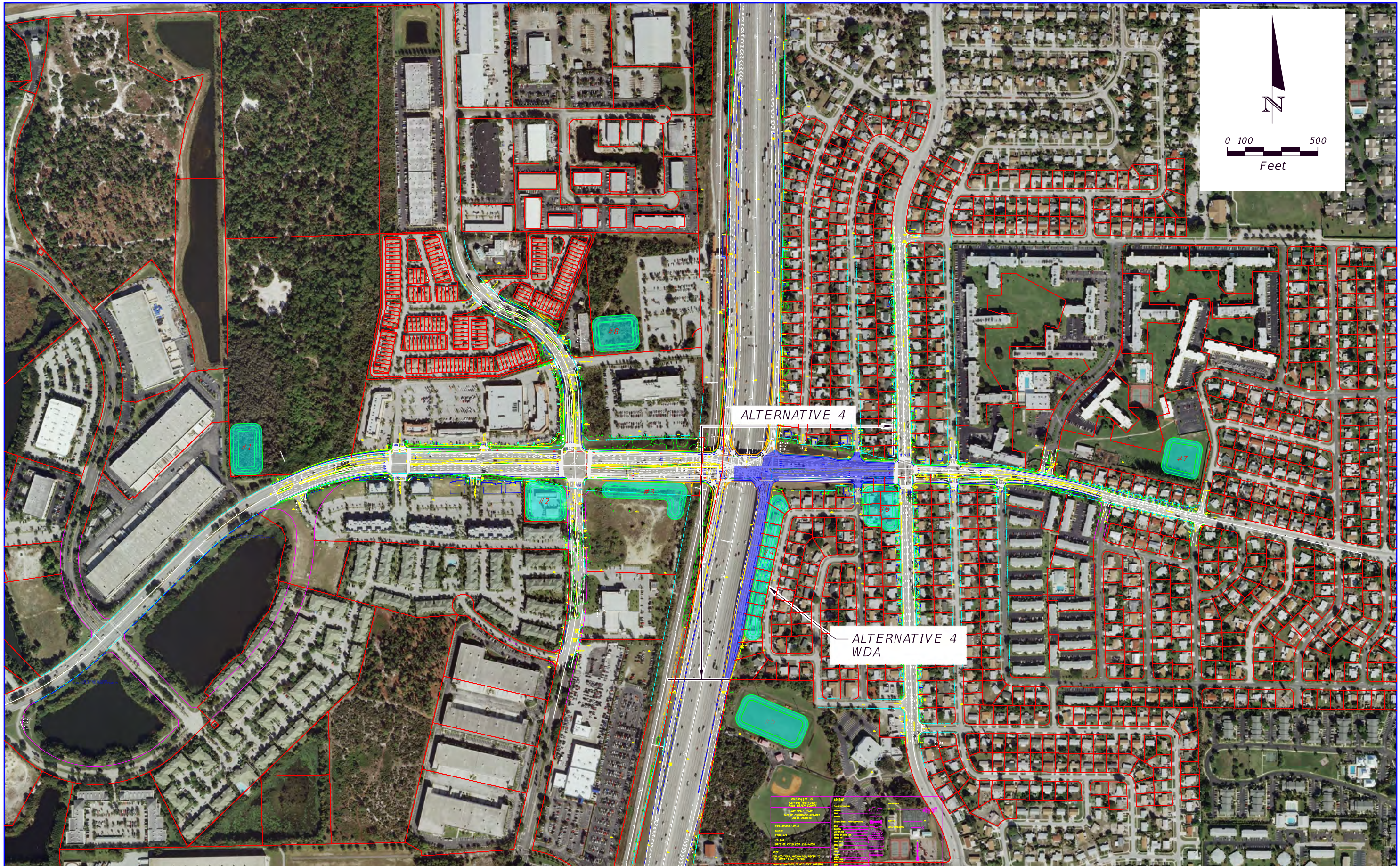
Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	To Vol
DRAWDOWN	SLGateway	A4	PERC	0.00	15.500	15.600	24306	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	0.51	15.290	15.600	22989	0.000	2.661
DRAWDOWN	SLGateway	A4	PERC	1.01	15.082	15.600	21683	0.000	2.510
DRAWDOWN	SLGateway	A4	PERC	1.50	14.915	15.600	20636	0.000	1.354
DRAWDOWN	SLGateway	A4	PERC	2.00	14.822	15.600	20051	0.000	0.819
DRAWDOWN	SLGateway	A4	PERC	2.50	14.759	15.600	19661	0.000	0.581
DRAWDOWN	SLGateway	A4	PERC	3.00	14.712	15.600	19364	0.000	0.458
DRAWDOWN	SLGateway	A4	PERC	3.50	14.673	15.600	19118	0.000	0.385
DRAWDOWN	SLGateway	A4	PERC	4.00	14.639	15.600	18905	0.000	0.335
DRAWDOWN	SLGateway	A4	PERC	4.50	14.609	15.600	18715	0.000	0.299
DRAWDOWN	SLGateway	A4	PERC	5.00	14.581	15.600	18542	0.000	0.272
DRAWDOWN	SLGateway	A4	PERC	5.50	14.556	15.600	18383	0.000	0.249
DRAWDOWN	SLGateway	A4	PERC	6.00	14.532	15.600	18235	0.000	0.231
DRAWDOWN	SLGateway	A4	PERC	6.50	14.510	15.600	18096	0.000	0.216
DRAWDOWN	SLGateway	A4	PERC	7.00	14.489	15.600	17965	0.000	0.202
DRAWDOWN	SLGateway	A4	PERC	7.50	14.469	15.600	17841	0.000	0.191
DRAWDOWN	SLGateway	A4	PERC	8.00	14.450	15.600	17723	0.000	0.181
DRAWDOWN	SLGateway	A4	PERC	8.50	14.432	15.600	17610	0.000	0.172
DRAWDOWN	SLGateway	A4	PERC	9.00	14.415	15.600	17502	0.000	0.164
DRAWDOWN	SLGateway	A4	PERC	9.50	14.399	15.600	17399	0.000	0.157
DRAWDOWN	SLGateway	A4	PERC	10.00	14.383	15.600	17299	0.000	0.150
DRAWDOWN	SLGateway	A4	PERC	10.50	14.367	15.600	17202	0.000	0.144
DRAWDOWN	SLGateway	A4	PERC	11.00	14.353	15.600	17109	0.000	0.139
DRAWDOWN	SLGateway	A4	PERC	11.50	14.338	15.600	17019	0.000	0.134
DRAWDOWN	SLGateway	A4	PERC	12.00	14.324	15.600	16932	0.000	0.129
DRAWDOWN	SLGateway	A4	PERC	12.50	14.311	15.600	16847	0.000	0.125
DRAWDOWN	SLGateway	A4	PERC	13.00	14.298	15.600	16764	0.000	0.121
DRAWDOWN	SLGateway	A4	PERC	13.50	14.285	15.600	16684	0.000	0.117
DRAWDOWN	SLGateway	A4	PERC	14.00	14.272	15.600	16606	0.000	0.113
DRAWDOWN	SLGateway	A4	PERC	14.50	14.260	15.600	16530	0.000	0.110
DRAWDOWN	SLGateway	A4	PERC	15.00	14.248	15.600	16456	0.000	0.107
DRAWDOWN	SLGateway	A4	PERC	15.50	14.237	15.600	16383	0.000	0.104
DRAWDOWN	SLGateway	A4	PERC	16.00	14.225	15.600	16312	0.000	0.101
DRAWDOWN	SLGateway	A4	PERC	16.50	14.214	15.600	16243	0.000	0.099
DRAWDOWN	SLGateway	A4	PERC	17.00	14.204	15.600	16175	0.000	0.096
DRAWDOWN	SLGateway	A4	PERC	17.50	14.193	15.600	16108	0.000	0.094
DRAWDOWN	SLGateway	A4	PERC	18.00	14.183	15.600	16043	0.000	0.092
DRAWDOWN	SLGateway	A4	PERC	18.50	14.172	15.600	15979	0.000	0.089
DRAWDOWN	SLGateway	A4	PERC	19.00	14.162	15.600	15917	0.000	0.087
DRAWDOWN	SLGateway	A4	PERC	19.50	14.153	15.600	15855	0.000	0.085
DRAWDOWN	SLGateway	A4	PERC	20.00	14.143	15.600	15795	0.000	0.084
DRAWDOWN	SLGateway	A4	PERC	20.50	14.134	15.600	15736	0.000	0.082
DRAWDOWN	SLGateway	A4	PERC	21.00	14.124	15.600	15678	0.000	0.080
DRAWDOWN	SLGateway	A4	PERC	21.50	14.115	15.600	15620	0.000	0.078
DRAWDOWN	SLGateway	A4	PERC	22.00	14.106	15.600	15564	0.000	0.077
DRAWDOWN	SLGateway	A4	PERC	22.50	14.097	15.600	15509	0.000	0.075
DRAWDOWN	SLGateway	A4	PERC	23.00	14.089	15.600	15454	0.000	0.074
DRAWDOWN	SLGateway	A4	PERC	23.50	14.080	15.600	15401	0.000	0.072
DRAWDOWN	SLGateway	A4	PERC	24.00	14.072	15.600	15348	0.000	0.071
DRAWDOWN	SLGateway	A4	PERC	24.50	14.064	15.600	15296	0.000	0.070
DRAWDOWN	SLGateway	A4	PERC	25.00	14.055	15.600	15245	0.000	0.069
DRAWDOWN	SLGateway	A4	PERC	25.50	14.047	15.600	15194	0.000	0.067
DRAWDOWN	SLGateway	A4	PERC	26.00	14.039	15.600	15145	0.000	0.066
DRAWDOWN	SLGateway	A4	PERC	26.50	14.032	15.600	15096	0.000	0.065
DRAWDOWN	SLGateway	A4	PERC	27.00	14.024	15.600	15047	0.000	0.064
DRAWDOWN	SLGateway	A4	PERC	27.50	14.016	15.600	15000	0.000	0.063
DRAWDOWN	SLGateway	A4	PERC	28.00	14.009	15.600	14953	0.000	0.062
DRAWDOWN	SLGateway	A4	PERC	28.50	14.001	15.600	14906	0.000	0.061
DRAWDOWN	SLGateway	A4	PERC	29.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	29.50	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	30.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	30.50	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	31.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	31.50	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	32.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	32.50	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	33.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	33.50	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	34.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	34.50	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	35.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	35.50	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	36.00	14.000	15.600	14898	0.000	0.000
DRAWDOWN	SLGateway	A4	PERC	36.50	14.000	15.600	14898	0.000	0.000



GATEWAY BLVD - ALTERNATIVE 4- DRY DETENTION - PRE\_POST

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
Pre_Gateway A4	Pre	003Y024H	24.00	16.400	17.000	0.0017	0	12.08	12.639	0.00	0.000
Pro_Gateway A4	Post	003Y024H	12.82	16.229	18.000	0.0100	29032	12.08	15.865	12.82	5.976
Pre_Gateway A4	Pre	010Y024H	24.00	16.400	17.000	0.0017	0	12.08	17.923	0.00	0.000
Pro_Gateway A4	Post	010Y024H	12.59	16.711	18.000	0.0100	32158	12.08	24.071	12.59	12.798
Pre_Gateway A4	Pre	025Y024H	30.00	17.000	17.000	0.0017	0	12.08	21.126	0.00	0.000
Pro_Gateway A4	Post	025Y024H	12.53	16.957	18.000	0.0100	33748	12.08	29.016	12.53	16.876
Pre_Gateway A4	Pre	SF25Y072H	30.00	17.000	17.000	0.0017	0	60.08	20.804	0.00	0.000
Pro_Gateway A4	Post	SF25Y072H	60.36	17.035	18.000	0.0099	34254	60.08	29.989	60.36	18.253





REVISIONS	
DATE	DESCRIPTION

ARCADIS  
 1650 Prudential Drive, Suite 400  
 Jacksonville, Florida 32207  
 T: 904 721 2991 | F: 904 861 2450  
 Certificate of Authorization No. 7917  
 Vendor No. 570373224

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	231932-1-22-01

**POST-DEVELOPMENT-ALTERNATIVE 4  
 DRAINAGE MAP  
 SR9 / I-95 AT GATEWAY BLVD.**

SHEET NO.





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ARCADIS  
 1650 Prudential Drive, Suite 400  
 Jacksonville, Florida 32207  
 T: 904 721 2991 | F: 904 861 2450  
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR9/I-9	PALM BEACH	231932-1-22-01

**PRE-DEVELOPMENT-ALTERNATIVE 4  
 DRAINAGE MAP  
 SR9 / I-95 AT GATEWAY BLVD.**

SHEET NO.



Gateway Blvd. Southbound On-Ramp

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

T:Exist SB OnRamp

U:Exist SB OnRamp

T:Pro SB OnRamp

U:Pro SB OnRamp





**DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA**Basin No: SB OnRamp Sub Basin No: West  
Total Area (ac): 1.20Station Limits 857+66 to 866+20  
Basin Length (ft) : 854.00 ft**Compute Required Treatment Volume****1. 1" treatment**

Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
TV = [(1 inch) x (1.20 ac)] x (1ft/12 in)  
TV = **0.10 ac-ft**

or

**2. 2.5" x Percentage of Imperviousness**

Site Area = Total project - (Lake + Roof)  
= 1.20 ac - 0.00 ac  
= 1.20 ac  
Impervious Area = Site area - Pervious area  
= 1.20 ac - 0.00 ac  
= 1.20 ac

Percentage of imperviousness for water quality  
= Impervious area / Site area  
= 1.20 ac / 1.20 ac  
= 1.00

For 2.5in times the percentage impervious  
= [(2.5 inch) x (1.00)]  
= 2.50 in to be treated

Compute volume required for quality detention  
= inches to be treated x (total site - lake) x 1ft/12in  
= **0.25 ac-ft**

Treatment Volume, TV = 0.25 ac-ft controls

**Note: Runoff is treated in Exfiltration Trench System**

=====  
 Basins  
 =====

```

Name: Exist SB OnRamp      Node: Exist SB OnRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     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: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. SOUTHBOUND ON-RAMP

```

Name: Pro SB OnRamp      Node: Pro SB OnRamp      Status: Onsite
Group: Post              Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256      Peaking Factor: 256.0
Rainfall File: Sfwmd72     Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000 Time of Conc(min): 10.00
Area(ac): 1.200           Time Shift(hrs): 0.00
Curve Number: 98.00       Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. SOUTHBOUND ON-RAMP

=====  
 Nodes  
 =====

```

Name: Exist SB OnRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre                 Warn Stage(ft): 22.000
Type: Time/Stage
  
```

GATEWAY BLVD. SOUTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro SB OnRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post              Warn Stage(ft): 21.000
Type: Time/Stage
  
```

GATEWAY BLVD. SOUTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	21.000

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

Name: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 1.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00

Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                    Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                          Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: 010Y024H                    Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                          Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 25.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre             Yes

Name: 025Y024H                    Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                          Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre             Yes

Name: DRAWDOWN                    Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                          Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        30.000



Group	Run
PERC	Yes

-----  
Name: SF25Y072H                      Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000                      Max Calc Time(sec): 60.0000  
Boundary Stages:                      Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.930  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 3.539  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 20658.567

-----  
Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 4.567  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 26656.215

Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.930  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 5.019  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 29561.735

---

Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 6.476  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 38144.175

-----  
Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.930  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 5.914  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 34959.077

-----  
Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.631

Runoff Volume (in): 10.355  
Runoff Volume (ft3): 45108.487

---

Basin Name: Exist SB OnRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Exist SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.930  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 5.779  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 46429.670

---

Basin Name: Pro SB OnRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro SB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.200  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000



Time Max (hrs): 60.02  
Flow Max (cfs): 7.457  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 59909.252

Gateway Blvd. Southbound On-Ramp - PRE\_POST

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
Exist SB OnRamp	Pre	003Y024H	24.00	17.012	22.000	0.0000	0	12.00	3.453	0.00	0.000
Pro SB OnRamp	Post	003Y024H	24.00	17.010	21.000	0.0000	0	12.00	4.456	0.00	0.000
Exist SB OnRamp	Pre	010Y024H	24.00	17.012	22.000	0.0000	0	12.00	4.897	0.00	0.000
Pro SB OnRamp	Post	010Y024H	24.00	17.010	21.000	0.0000	0	12.00	6.319	0.00	0.000
Exist SB OnRamp	Pre	025Y024H	72.00	17.036	22.000	0.0000	0	12.00	5.771	0.00	0.000
Pro SB OnRamp	Post	025Y024H	72.00	17.029	21.000	0.0000	0	12.00	7.447	0.00	0.000
Exist SB OnRamp	Pre	SF25Y072H	72.00	17.036	22.000	0.0000	0	60.00	5.743	0.00	0.000
Pro SB OnRamp	Post	SF25Y072H	72.00	17.029	21.000	0.0000	0	60.00	7.410	0.00	0.000

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**PD&E STUDY AT BOYNTON BEACH AND GATEWAY BLVD. INTERCHANGES**

Project No. WF900273

FPN: 231932-1-22-01

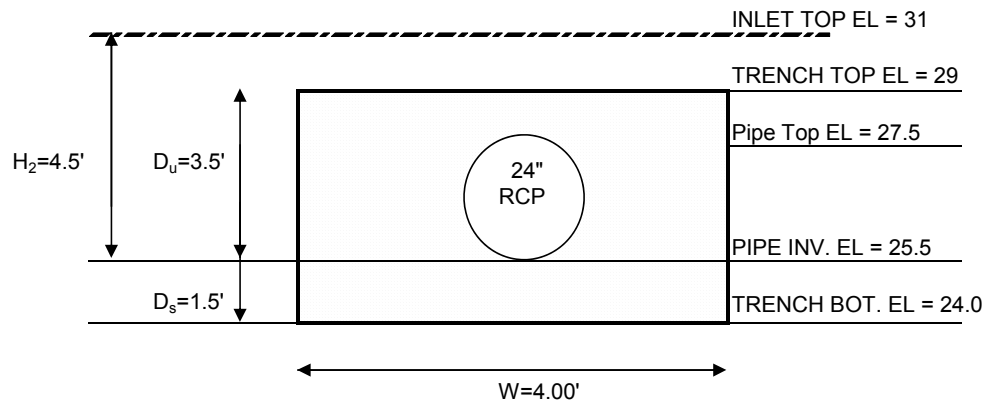
GATEWAY SOUTHBOUND ON-RAMP

**AREA**

EXIST. DRAINAGE AREA (ac)	WIDENING (ac)	TOTAL (ac)	REQUIRED VOLUME (Ac-in)
0.93	0.27	1.20	3.00

Volume = 2.5 in x Impervious area

**REQUIRED TRENCH LENGTH**



WATER TABLE = 14

$$L = \frac{FS[(\%WQ)(V_{wq}) + V_{add}]}{K[(H_2 \times W) + (2 \times H_2 \times D_u) - (D_u^2) + (2 \times H_2 \times D_s)] + (1.39 \times 10^{-4})(W \times D_u)}$$

FS =	2		factor of safety, no less than 2
%WQ =	0.5		50% for wet/dry retention
K =	3.00E-04	cfs/ft <sup>2</sup> -ft. head	Hydraulic conductivity
D <sub>u</sub> =	3.5	ft.	Non-saturated trench depth
D <sub>s</sub> =	1.5	ft.	Saturated trench depth
H <sub>2</sub> =	4.5	ft.	Depth to water table
W =	4	ft.	Trench width
V <sub>wq</sub> =	3.00	ac.-in.	Volume to be exfiltrated
V <sub>add</sub> =	0.00	ac.-in.	Additional Volume to be exfiltrated
L =	Length of trench required		

$$L = \frac{2 \times [(0.5) \times (3 \text{ ac-in})]}{(0.0003 \text{ cfs/ft}^2\text{-ft.head})[(4.5' \times 4') + (2 \times 4.5' \times 3.5') - (3.5')^2 + (2 \times 4.5' \times 1.5')] + (0.000139)(4' \times 3.5')}$$

L = 174.71 feet

**L = 175 feet OF TRENCH REQUIRED**

**TRENCH LENGTH PROVIDED = 200.00 feet      VOLUME TREATED = 3.43 ac-in**

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Gateway Blvd. Southbound Off-Ramp

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

T:ExistSB OffRamp

U:ExistSB OffRamp

T:Pro SB OffRamp

U:Pro SB OffRamp

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**GATEWAY BLVD. SOUTHBOUND OFF-RAMP**
**Curve Number Calculations**

 Basin No: **SB OffRamp** Sub Basin No: **West**  
 Total Area (ac): **1.45**

 Station Limits **866+20** to **874+50**  
 Basin Length (ft) : 830.00 ft

Pre-Development Conditions

 Total Area (ac): 1.13  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 1.13

Land Use Description	CN	Area	CN*A
Southbound OFF-Ramp	98	1.13	110.74
Total Area:		1.13	110.74
Pre Comp. Curve Number:			98.00

Post-Development Conditions

 Total Area (ac): 1.45  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 1.45

Land Use Description	CN	Area	CN*A
Southbound OFF-Ramp	98	1.45	142.10
Total Area:		1.45	142.10
Post Comp. Curve Number:			98.00

**NOTES:**

Post-Development Peaking factor is 256 for developed area with drainage works.

**DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA**Basin No: SB OffRamp Sub Basin No: West  
Total Area (ac): 1.45Station Limits 866+20 to 874+50  
Basin Length (ft) : 830.00 ft**Compute Required Treatment Volume****1. 1" treatment**

Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
TV = [(1 inch) x (1.45 ac)] x (1ft/12 in)  
TV = **0.12 ac-ft**

or

**2. 2.5" x Percentage of Imperviousness**

Site Area = Total project - (Lake + Roof)  
= 1.45 ac - 0.00 ac  
= 1.45 ac  
Impervious Area = Site area - Pervious area  
= 1.45 ac - 0.00 ac  
= 1.45 ac

Percentage of imperviousness for water quality  
= Impervious area / Site area  
= 1.45 ac / 1.45 ac  
= 1.00

For 2.5in times the percentage impervious  
= [(2.5 inch) x (1.00)]  
= 2.50 in to be treated

Compute volume required for quality detention  
= inches to be treated x (total site - lake) x 1ft/12in  
= **0.30 ac-ft**

Treatment Volume, TV = 0.30 ac-ft controls

**Note: Runoff is treated in Exfiltration Trench System**

=====  
 Basins  
 =====

```

Name: ExistSB OffRamp      Node: ExistSB OffRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72        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: 98.00          Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. SOUTHBOUND OFF-RAMP

```

Name: Pro SB OffRamp      Node: Pro SB OffRamp      Status: Onsite
Group: Post               Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72        Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000     Time of Conc(min): 10.00
Area(ac): 1.450               Time Shift(hrs): 0.00
Curve Number: 98.00          Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. SOUTHBOUND OFF-RAMP

=====  
 Nodes  
 =====

```

Name: ExistSB OffRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre                 Warn Stage(ft): 22.000
Type: Time/Stage
  
```

GATEWAY BLVD. SOUTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro SB OffRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post               Warn Stage(ft): 21.000
Type: Time/Stage
  
```

GATEWAY BLVD. SOUTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	21.000

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

Name: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 1.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00



-----  
Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                    Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

-----  
Name: 010Y024H                    Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00
Min Calc Time(sec): 1.0000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 25.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre             Yes

-----  
 Name: 025Y024H            Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
 Min Calc Time(sec): 1.0000        Max Calc Time(sec): 60.0000  
 Boundary Stages:                  Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre             Yes

-----  
 Name: DRAWDOWN            Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000        Max Calc Time(sec): 60.0000  
 Boundary Stages:                  Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        30.000

Group	Run
PERC	Yes

-----  
Name: SF25Y072H                    Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                    Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.130  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 4.300  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 25101.270

-----  
Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.450  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 5.518  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 32209.594

Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.130  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 6.098  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 35919.098

---

Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.450  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.825  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 46090.878

-----  
Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.130  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.186  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 42477.158

-----  
Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.450  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 9.221



Runoff Volume (in): 10.355  
Runoff Volume (ft3): 54506.088

-----  
Basin Name: ExistSB OffRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: ExistSB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.130  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 7.022  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 56414.546

-----  
Basin Name: Pro SB OffRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro SB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.450  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 9.011  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 72390.346

Gateway Blvd. Southbound Off-Ramp - PRE\_POST

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
ExistSB OffRamp	Pre	003Y024H	24.00	17.012	22.000	0.0000	0	12.00	4.196	0.00	0.000
Pro SB OffRamp	Post	003Y024H	24.00	17.010	21.000	0.0000	0	12.00	5.384	0.00	0.000
ExistSB OffRamp	Pre	010Y024H	24.00	17.012	22.000	0.0000	0	12.00	5.950	0.00	0.000
Pro SB OffRamp	Post	010Y024H	24.00	17.010	21.000	0.0000	0	12.00	7.635	0.00	0.000
ExistSB OffRamp	Pre	025Y024H	72.00	17.036	22.000	0.0000	0	12.00	7.012	0.00	0.000
Pro SB OffRamp	Post	025Y024H	72.00	17.029	21.000	0.0000	0	12.00	8.998	0.00	0.000
ExistSB OffRamp	Pre	SF25Y072H	72.00	17.036	22.000	0.0000	0	60.00	6.978	0.00	0.000
Pro SB OffRamp	Post	SF25Y072H	72.00	17.029	21.000	0.0000	0	60.00	8.954	0.00	0.000

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**PD&E STUDY AT BOYNTON BEACH AND GATEWAY BLVD. INTERCHANGES**

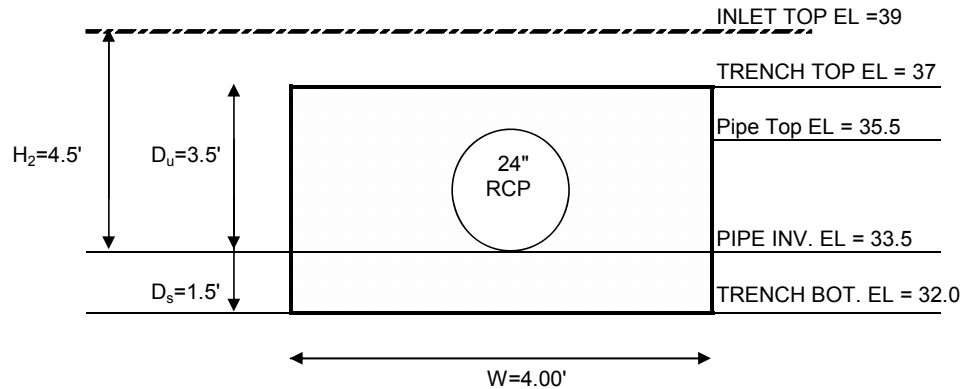
Project No. WF900273  
 FPN: 231932-1-22-01  
 GATEWAY SOUTHBOUND OFF-RAMP

**AREA**

EXIST. DRAINAGE AREA (ac)	WIDENING (ac)	TOTAL (ac)	REQUIRED VOLUME (Ac-in)
1.13	0.32	1.45	3.63

Volume = 2.5 in x Impervious area

**REQUIRED TRENCH LENGTH**



WATER TABLE = 14

$$L = \frac{FS[(\%WQ)(V_{wq}) + V_{add}]}{K[(H_2 \times W) + (2 \times H_2 \times D_u) - (D_u^2) + (2 \times H_2 \times D_s)] + (1.39 \times 10^{-4})(W \times D_u)}$$

FS =	2		factor of safety, no less than 2
%WQ =	0.5		50% for wet/dry retention
K =	3.00E-04	cfs/ft <sup>2</sup> -ft. head	Hydraulic conductivity
D <sub>u</sub> =	3.5	ft.	Non-saturated trench depth
D <sub>s</sub> =	1.5	ft.	Saturated trench depth
H <sub>2</sub> =	4.5	ft.	Depth to water table
W =	4	ft.	Trench width
V <sub>wq</sub> =	3.63	ac.-in.	Volume to be exfiltrated
V <sub>add</sub> =	0.00	ac.-in.	Additional Volume to be exfiltrated
L =	Length of trench required		

$$L = \frac{2 \times [(0.5) \times (3.63 \text{ ac-in})]}{(0.0003 \text{ cfs/ft}^2\text{-ft. head})((4.5' \times 4') + (2 \times 4.5' \times 3.5') - (3.5')^2 + (2 \times 4.5' \times 1.5')) + (0.000139)(4' \times 3.5')}$$

L = 211.40 feet

**L = 211 feet OF TRENCH REQUIRED**

**TRENCH LENGTH PROVIDED = 220.00 feet      VOLUME TREATED = 3.78 ac-in**

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Gateway Blvd. Northbound On-Ramp

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

T:Exist NB OnRamp

U:Exist NB OnRamp

T:Pro NB OnRamp

U:Pro NB OnRamp

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**DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA**Basin No: NB OnRamp Sub Basin No: EAST  
Total Area (ac): 0.88Station Limits 866+20 to 872+60  
Basin Length (ft) : 640.00 ft**Compute Required Treatment Volume****1. 1" treatment**

Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
TV = [(1 inch) x (0.88 ac)] x (1ft/12 in)  
TV = **0.07 ac-ft**

or

**2. 2.5" x Percentage of Imperviousness**

Site Area = Total project - (Lake + Roof)  
= 0.88 ac - 0.00 ac  
= 0.88 ac  
Impervious Area = Site area - Pervious area  
= 0.88 ac - 0.00 ac  
= 0.88 ac

Percentage of imperviousness for water quality  
= Impervious area / Site area  
= 0.88 ac / 0.88 ac  
= 1.00

For 2.5in times the percentage impervious  
= [(2.5 inch) x (1.00)]  
= 2.50 in to be treated

Compute volume required for quality detention  
= inches to be treated x (total site - lake) x 1ft/12in  
= **0.18 ac-ft**

**Treatment Volume, TV = 0.18 ac-ft controls****Note: Runoff is treated in Exfiltration Trench System**

=====  
 Basins  
 =====

```

Name: Exist NB OnRamp      Node: Exist NB OnRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72        Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000     Time of Conc(min): 10.00
Area(ac): 0.730               Time Shift(hrs): 0.00
Curve Number: 98.00           Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. NORTHBOUND ON-RAMP

```

Name: Pro NB OnRamp        Node: Pro NB OnRamp        Status: Onsite
Group: Post                Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72        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: 98.00           Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. NORTHBOUND ON-RAMP

=====  
 Nodes  
 =====

```

Name: Exist NB OnRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre                 Warn Stage(ft): 22.000
Type: Time/Stage
  
```

GATEWAY BLVD. NORTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro NB OnRamp        Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post                 Warn Stage(ft): 21.000
Type: Time/Stage
  
```

GATEWAY BLVD. NORTHBOUND ON-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	21.000

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

Name: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 1.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00



Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                    Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                        Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: 010Y024H                    Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                        Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 25.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre             Yes

Name: 025Y024H                    Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                          Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre             Yes

Name: DRAWDOWN                    Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                          Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        30.000

Group	Run
PERC	Yes

-----  
Name: SF25Y072H                    Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                    Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.730  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 2.778  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 16215.864

-----  
Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 3.349  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 19547.891

Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.730  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 3.939  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 23204.373

---

Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 4.749  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 27972.395

-----  
Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.730  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 4.642  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 27440.996

-----  
Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 5.596



Runoff Volume (in): 10.355  
Runoff Volume (ft3): 33079.557

---

Basin Name: Exist NB OnRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: Exist NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.730  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 4.537  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 36444.795

---

Basin Name: Pro NB OnRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro NB OnRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 0.880  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 5.469  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 43933.452

Gateway Blvd. Northbound On-Ramp - PRE\_POST

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
Exist NB OnRamp	Pre	003Y024H	24.00	17.012	22.000	0.0000	0	12.00	2.710	0.00	0.000
Pro NB OnRamp	Post	003Y024H	24.00	17.010	21.000	0.0000	0	12.00	3.267	0.00	0.000
Exist NB OnRamp	Pre	010Y024H	24.00	17.012	22.000	0.0000	0	12.00	3.844	0.00	0.000
Pro NB OnRamp	Post	010Y024H	24.00	17.010	21.000	0.0000	0	12.00	4.634	0.00	0.000
Exist NB OnRamp	Pre	025Y024H	72.00	17.036	22.000	0.0000	0	12.00	4.530	0.00	0.000
Pro NB OnRamp	Post	025Y024H	72.00	17.029	21.000	0.0000	0	12.00	5.461	0.00	0.000
Exist NB OnRamp	Pre	SF25Y072H	72.00	17.036	22.000	0.0000	0	60.00	4.508	0.00	0.000
Pro NB OnRamp	Post	SF25Y072H	72.00	17.029	21.000	0.0000	0	60.00	5.434	0.00	0.000

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**Design & Consultancy**  
for natural and  
built assets

Comp. By: Hoa Nguyen  
Date: 7/24/2017  
Chk. By: Henry W. Deibel  
Job No: WF900273

**PD&E STUDY AT BOYNTON BEACH AND GATEWAY BLVD. INTERCHANGES**

Project No. WF900273

FPN: 231932-1-22-01

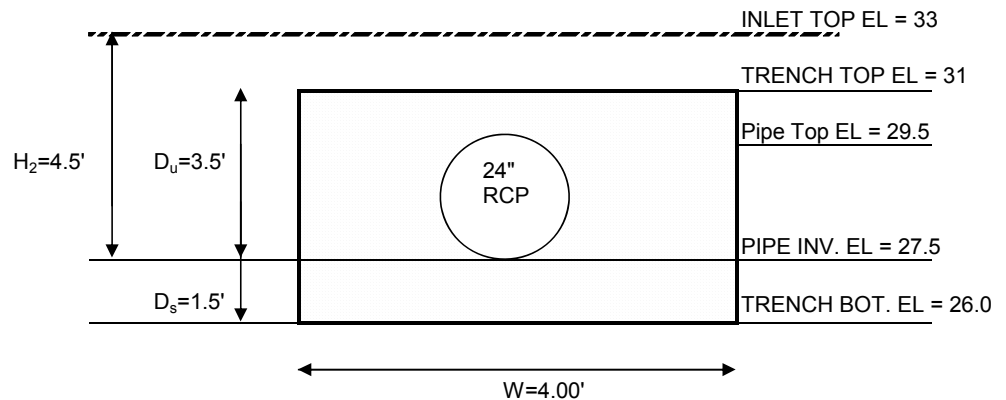
GATEWAY NORTHBOUND ON-RAMP

**AREA**

EXIST. DRAINAGE AREA (ac)	WIDENING (ac)	TOTAL (ac)	REQUIRED VOLUME (Ac-in)
0.73	0.15	0.88	2.20

Volume = 2.5 in x Impervious area

**REQUIRED TRENCH LENGTH**



WATER TABLE = 14

$$L = \frac{FS[(\%WQ)(V_{wq})+V_{add}]}{K[(H_2 \times W) + (2 \times H_2 \times D_u) - (D_u^2) + (2 \times H_2 \times D_s)] + (1.39 \times 10^{-4})(W \times D_u)}$$

FS =	2		factor of safety, no less than 2
%WQ =	0.5		50% for wet/dry retention
K =	3.00E-04	cfs/ft <sup>2</sup> -ft. head	Hydraulic conductivity
D <sub>u</sub> =	3.5	ft.	Non-saturated trench depth
D <sub>s</sub> =	1.5	ft.	Saturated trench depth
H <sub>2</sub> =	4.5	ft.	Depth to water table
W =	4	ft.	Trench width
V <sub>wq</sub> =	2.20	ac.-in.	Volume to be exfiltrated
V <sub>add</sub> =	0.00	ac.-in.	Additional Volume to be exfiltrated
L =	Length of trench required		

$$L = \frac{2 \times [(0.5) \times (2.2 \text{ ac-in})]}{(0.0003 \text{ cfs/ft}^2\text{-ft. head})[(4.5 \times 4') + (2 \times 4.5 \times 3.5') - (3.5')^2 + (2 \times 4.5 \times 1.5')] + (0.000139)(4 \times 3.5')}$$

L = 128.12 feet

**L = 128 feet OF TRENCH REQUIRED**

**TRENCH LENGTH PROVIDED = 140.00 feet      VOLUME TREATED = 2.40 ac-in**

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Gateway Blvd. Northbound Off-Ramp

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

T:ExistNB OffRamp

U:ExistNB OffRamp

T:Pro NB OffRamp

U:Pro NB OffRamp

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**GATEWAY BLVD. NORTHBOUND OFF-RAMP**
**Curve Number Calculations**

 Basin No: **NB OFFRamp** Sub Basin No: **EAST**  
 Total Area (ac): **2.00**

 Station Limits **854+50** to **866+20**  
 Basin Length (ft): **1170.00** ft

Pre-Development Conditions

 Total Area (ac): 1.48  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 1.48

Land Use Description	CN	Area	CN*A
Northbound OFF-Ramp	98	1.48	145.04
Total Area:		1.48	145.04
Pre Comp. Curve Number:			98.00

Post-Development Conditions

 Total Area (ac): 2.00  
 Pervious Area (ac): 0.00  
 Impervious Area (ac): 2.00

Land Use Description	CN	Area	CN*A
Northbound OFF-Ramp	98	2.00	196.00
Total Area:		2.00	196.00
Post Comp. Curve Number:			98.00

**NOTES:**

Post-Development Peaking factor is 256 for developed area with drainage works.

## DRY RETENTION POND DESIGN CALCULATIONS BASED ON SFWMD CRITERIA

Basin No: NB OFFRamp Sub Basin No: EAST  
Total Area (ac): 2.00

Station Limits 854+50 to 866+20  
Basin Length (ft): 1170.00 ft

### Compute Required Treatment Volume

#### 1. 1" treatment

Treatment Volume, TV = (1" of runoff) x (Total Drainage Area)  
TV = [(1 inch) x (2.00 ac)] x (1ft/12 in)  
TV = **0.17 ac-ft**

or

#### 2. 2.5" x Percentage of Imperviousness

Site Area = Total project - (Lake + Roof)  
= 2.00 ac - 0.00 ac  
= 2.00 ac  
Impervious Area = Site area - Pervious area  
= 2.00 ac - 0.00 ac  
= 2.00 ac  
Percentage of imperviousness for water quality  
= Impervious area / Site area  
= 2.00 ac / 2.00 ac  
= 1.00  
For 2.5in times the percentage impervious  
= [(2.5 inch) x (1.00)]  
= 2.50 in to be treated  
Compute volume required for quality detention  
= inches to be treated x (total site - lake) x 1ft/12in  
= **0.42 ac-ft**

Treatment Volume, TV = **0.42 ac-ft** controls

**Note: Runoff is treated in Exfiltration Trench System**

=====  
 Basins  
 =====

```

Name: ExistNB OffRamp      Node: ExistNB OffRamp      Status: Onsite
Group: Pre                 Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72        Storm Duration(hrs): 0.00
Rainfall Amount(in): 0.000     Time of Conc(min): 10.00
Area(ac): 1.480               Time Shift(hrs): 0.00
Curve Number: 98.00          Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. NORTHBOUND OFF-RAMP

```

Name: Pro NB OffRamp      Node: Pro NB OffRamp      Status: Onsite
Group: Post               Type: SCS Unit Hydrograph CN

Unit Hydrograph: Uh256          Peaking Factor: 256.0
Rainfall File: Sfwmd72        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: 98.00          Max Allowable Q(cfs): 999999.000
DCIA(%): 0.00
  
```

GATEWAY BLVD. NORTHBOUND OFF-RAMP

=====  
 Nodes  
 =====

```

Name: ExistNB OffRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Pre                 Warn Stage(ft): 22.000
Type: Time/Stage
  
```

GATEWAY BLVD. NORTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	22.000

```

Name: Pro NB OffRamp      Base Flow(cfs): 0.000      Init Stage(ft): 17.000
Group: Post               Warn Stage(ft): 21.000
Type: Time/Stage
  
```

GATEWAY BLVD. NORTHBOUND OFF-RAMP

Time(hrs)	Stage(ft)
0.00	17.000
9999.00	21.000

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

Name: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 6.36

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 9.00

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: 025Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\25YEAR.R32

Override Defaults: Yes  
Storm Duration(hrs): 24.00  
Rainfall File: Flmod  
Rainfall Amount(in): 10.60

Time(hrs)	Print Inc(min)
25.000	5.00

-----  
Name: DRAWDOWN  
Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.R32

Override Defaults: Yes  
Storm Duration(hrs): 1.00  
Rainfall File: Sfwmd72  
Rainfall Amount(in): 0.00

Time(hrs)	Print Inc(min)
72.000	30.00



Name: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.R32

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

Time(hrs)	Print Inc(min)
73.000	5.00

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

Name: 003Y024H                    Hydrology Sim: 003Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\3 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                        Boundary Flows:

Time(hrs)	Print Inc(min)
25.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Name: 010Y024H                    Hydrology Sim: 010Y024H  
Filename: G:\TRA\WF900273\ICPR\Gateway\10 YEAR.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): 24.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                        Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 25.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre              Yes

Name: 025Y024H                    Hydrology Sim: 025Y024H  
 Filename: G:\TRA\WF900273\ICPR\Gateway\25 YEAR.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): 72.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                          Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        5.000

Group            Run  
 -----  
 BASE            Yes  
 Post            Yes  
 Pre              Yes

Name: DRAWDOWN                    Hydrology Sim: DRAWDOWN  
 Filename: G:\TRA\WF900273\ICPR\Gateway\DRAWDOWN.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): 72.00  
 Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
 Boundary Stages:                          Boundary Flows:

Time(hrs)      Print Inc(min)  
 -----  
 72.000        30.000

Group	Run
PERC	Yes

-----  
Name: SF25Y072H                    Hydrology Sim: SF25Y072H  
Filename: G:\TRA\WF900273\ICPR\Gateway\025YSF072H.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): 72.00  
Min Calc Time(sec): 1.0000                Max Calc Time(sec): 60.0000  
Boundary Stages:                    Boundary Flows:

Time(hrs)	Print Inc(min)
72.000	5.000

Group	Run
BASE	Yes
Post	Yes
Pre	Yes

Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: 003Y024H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.480  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 5.632  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 32875.999

-----  
Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: 003Y024H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 6.360  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.000  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.611  
Runoff Volume (in): 6.119  
Runoff Volume (ft3): 44427.026

Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: 010Y024H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.480  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 7.986  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 47044.482

---

Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: 010Y024H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 9.000  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.000  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 10.793  
Runoff Volume (in): 8.757  
Runoff Volume (ft3): 63573.624

-----  
Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: 025Y024H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.480  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 9.412  
Runoff Volume (in): 10.355  
Runoff Volume (ft3): 55633.800

-----  
Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: 025Y024H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Flmod  
Rainfall Amount (in): 10.600  
Storm Duration (hrs): 24.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.000  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 12.04  
Flow Max (cfs): 12.719



Runoff Volume (in): 10.355  
Runoff Volume (ft3): 75180.811

---

Basin Name: ExistNB OffRamp  
Group Name: Pre  
Simulation: SF25Y072H  
Node Name: ExistNB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 1.480  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000  
  
Time Max (hrs): 60.02  
Flow Max (cfs): 9.197  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 73888.078

---

Basin Name: Pro NB OffRamp  
Group Name: Post  
Simulation: SF25Y072H  
Node Name: Pro NB OffRamp  
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256  
Peaking Fator: 256.0  
Spec Time Inc (min): 1.33  
Comp Time Inc (min): 1.33  
Rainfall File: Sfwmd72  
Rainfall Amount (in): 14.000  
Storm Duration (hrs): 72.00  
Status: Onsite  
Time of Conc (min): 10.00  
Time Shift (hrs): 0.00  
Area (ac): 2.000  
Vol of Unit Hyd (in): 1.000  
Curve Number: 98.000  
DCIA (%): 0.000

Time Max (hrs): 60.02  
Flow Max (cfs): 12.429  
Runoff Volume (in): 13.753  
Runoff Volume (ft3): 99848.754

Gateway Blvd. Northbound Off-Ramp - PRE\_POST

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
ExistNB OffRamp	Pre	003Y024H	24.00	17.012	22.000	0.0000	0	12.00	5.495	0.00	0.000
Pro NB OffRamp	Post	003Y024H	24.00	17.010	21.000	0.0000	0	12.00	7.426	0.00	0.000
ExistNB OffRamp	Pre	010Y024H	24.00	17.012	22.000	0.0000	0	12.00	7.793	0.00	0.000
Pro NB OffRamp	Post	010Y024H	24.00	17.010	21.000	0.0000	0	12.00	10.531	0.00	0.000
ExistNB OffRamp	Pre	025Y024H	72.00	17.036	22.000	0.0000	0	12.00	9.184	0.00	0.000
Pro NB OffRamp	Post	025Y024H	72.00	17.029	21.000	0.0000	0	12.00	12.411	0.00	0.000
ExistNB OffRamp	Pre	SF25Y072H	72.00	17.036	22.000	0.0000	0	60.00	9.139	0.00	0.000
Pro NB OffRamp	Post	SF25Y072H	72.00	17.029	21.000	0.0000	0	60.00	12.350	0.00	0.000

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**PD&E STUDY AT BOYNTON BEACH AND GATEWAY BLVD. INTERCHANGES**

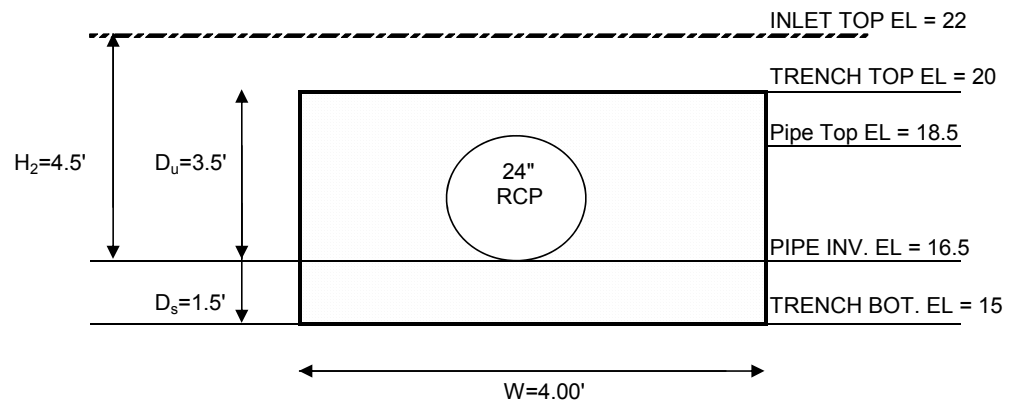
Project No. WF900273  
 FPN: 231932-1-22-01  
 GATEWAY NORTHBOUND OFF-RAMP

**AREA**

EXIST. DRAINAGE AREA (ac)	WIDENING (ac)	TOTAL (ac)	REQUIRED VOLUME (Ac-in)
1.48	0.52	2.00	5.00

Volume = 2.5 in x Impervious area

**REQUIRED TRENCH LENGTH**



WATER TABLE = 14

$$L = \frac{FS[(\%WQ)(V_{wq}) + V_{add}]}{K[(H_2 \times W) + (2 \times H_2 \times D_u) - (D_u^2) + (2 \times H_2 \times D_s)] + (1.39 \times 10^{-4})(W \times D_u)}$$

FS =	2		factor of safety, no less than 2
%WQ =	0.5		50% for wet/dry retention
K =	3.00E-04	cfs/ft <sup>2</sup> -ft. head	Hydraulic conductivity
D <sub>u</sub> =	3.5	ft.	Non-saturated trench depth
D <sub>s</sub> =	1.5	ft.	Saturated trench depth
H <sub>2</sub> =	4.5	ft.	Depth to water table
W =	4	ft.	Trench width
V <sub>wq</sub> =	5.00	ac.-in.	Volume to be exfiltrated
V <sub>add</sub> =	0.00	ac.-in.	Additional Volume to be exfiltrated
L =	Length of trench required		

$$L = \frac{2 \times [(0.5) \times (5 \text{ ac-in})]}{(0.0003 \text{ cfs/ft}^2\text{-ft.head})((4.5 \times 4) + (2 \times 4.5 \times 3.5) - (3.5)^2 + (2 \times 4.5 \times 1.5)) + (0.000139)(4 \times 3.5)}$$

L = 291.19 feet

**L = 291 feet OF TRENCH REQUIRED**

**TRENCH LENGTH PROVIDED = 300.00 feet      VOLUME TREATED = 5.15 ac-in**

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