

# GreenspoonMarder<sup>LLP</sup>

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January 29, 2024

Curt A. Keyser, P.E., Director  
City of Margate  
Dept. of Environmental & Engineering Services  
901 NW 66<sup>th</sup> Ave., Suite A  
Margate, Florida 33063

RE: Forest Apartments – Water/Sewer Capacity Credits and Off-Site Drainage  
DRC Application #s 23-00400045, 23-00400047, 23-00400043, 23-00400046, 23-00400044

Dear Mr. Keyser:

The undersigned attorney represents Rez SE Land, LLC, applicant for a proposed multifamily project to be developed on the site commonly known as the “Shooster Property” which is located on the west side of US 441, 1 block south of SW 7<sup>th</sup> Street. This letter aims to provide brief explanations regarding the property’s water and sewer capacity reservations and status of drainage permitting with Broward County.

With regard to the water and sewer capacity reservations, the recorded documents allocating “ERCs” to the Shooster Property have been uploaded with the most recent application submittals. In summary, in 1983 a prior owner of the property entered into a developer agreement with the City for ERCs for water and sewer treatment plant capacity. These ERCs were transferred and assigned to different owners of the subject property over the years, with the latest assignment occurring in 2001 to the current property owner, 777 Properties, Inc. This latest assignment identifies 109.58 ERCs allocated to the property.

As for the status of the drainage permitting with Broward County, the Surface Water Management Permit from 1985 was uploaded with the most recent application submittals. This permit authorizes the subject property to drain into the conservation area directly west of the property. In mid-January 2024, Applicant and its agents attended a virtual meeting with County staff from the Surface Water Management Department and Property Management Department. The participants at the meeting acknowledged Applicant’s entitlement to drain into the conservation area. The Surface Water Management Department asked for updating drawings allowing the County to confirm 100% of the water draining into the conservation area will be pre-treated prior to entering the conservation area. Applicant’s engineer is in the process of submitting drawings to the County to allow them to complete their review.

Please feel free to contact the undersigned should you have any questions.

Sincerely,



Matthew H. Scott, Esq.

Atlanta Boca Raton Chicago Denver Ft. Lauderdale Las Vegas Los Angeles Miami  
New York Newark Orlando Scottsdale Tallahassee West Palm Beach

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August 6, 2024

*Revised:*

*Margate Parking Development  
777 S State Rd 7  
Margate, FL 33068*

*Drainage Report  
KHA PN: 143660000*

***Prepared for:***

*REZ SE LAND, LLC  
1000 Brickell Plaza #4104  
Miami, FL 33131-383*

***Prepared by:***

*Kimley-Horn & Associates, Inc.  
8201 Peters Road, Suite 2200  
Plantation, FL 33324*

**Kimley»»Horn**

DRAINAGE REPORT  
FOR  
MARGATE PARKING DEVELOPMENT

KHA Project No.: 143660000

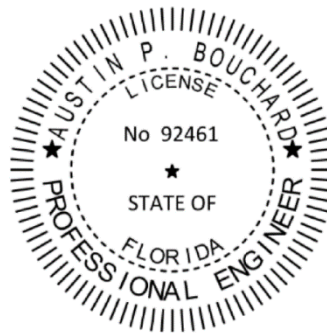
August 6, 2024

Prepared For:

***REZ SE LAND, LLC***

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SEALED BY AUSTIN P. BOUCHARD, P.E., ON 8/6/24  
USING A DIGITAL SIGNATURE

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## PROJECT DESCRIPTION

The subject site is located on ±19.96 acres within Township 49S, Range 41E, Section 01 in the City of Margate, Florida under Master ERP Permit No. 06-00688-S. The project consists of four (4) parcels, the folio number(s) are as follows: 4941-01-33-0010, 4941-01-31-0020, 4941-01-31-0010, and 4941-01-31-0011. The site is bound to the south by a commercial site, to the east by State Road 7, to the north by mixed-use and SW 7<sup>th</sup> street, and to the west by a nature preserve (see Appendix A-1, Location Maps). The project site includes two existing office buildings with associated parking spaces that will remain as well as a proposed development that includes a parking lot for the commercial site and residential buildings.

## EXISTING CONDITIONS

The existing site is comprised of two one-story commercial buildings and parking lots alongside an undeveloped landscaping area. The existing developed area has a storm system that has a discharge point in a swale that discharges to the Shooster Nature Preserve area in the nature preserve to the west. Based on readily available information the ultimate catch basin structure discharging into the preserve does not have any form of control for discharge of water. The project site holds a master permit (Permit No. 06-00688-S) encompassing a set of special conditions that must be adhered. The master permit allows for a total discharge of 23 cfs, however as discussion with the preserve, an agreement was made that the project site can discharge 11 cfs into the preserve. As a summary the conditions include:

1. Parking Lot Criteria (5 Year – 1 hour storm) 10.8 feet NGVD (9.2 feet NAVD)
2. Local road Criteria (10 Year – 24 Hour) 11.5 feet NGVD (9.9 feet NAVD)
3. Basin Design Frequency (25 Year – 72 Hour) 11.9 feet NGVD (10.3 feet NAVD)
4. 100 Year Minimum Floor Elevation - 14.5 feet NGVD (12.9 NAVD)

A Soil Resource Report has been compiled using the NRCS Web Soil Survey Tool (see Appendix A-2, NRCS Soil Resource Report).

A Phase I Environmental Site Assessment has been completed (08/07/2022) by Hydrologic Associates U.S.A., Inc (see Appendix A-3, Phase I Environmental Site Assessment). All opinions and findings provided are for the two southern parcels (Parcel #494101310020 and Parcel #494101330010). No underground or aboveground storage tanks, large quantities of solid waste, surface staining, stressed vegetation, pits, unnatural fill areas, vapor-phase contaminants, ponds, lagoons, or unidentified materials were observed on the subject property. HAI did not observe the presence of sumps, floor drains, or other underground structures. No soil or groundwater contamination within a one-mile radius of the subject property is considered a recognized environmental condition. Although a wetlands survey was not conducted as part of this assessment, no obvious wetland or low-lying areas were noted during the site visit.

A Subsurface Soil Exploration and Geotechnical Engineering Evaluation has been completed (09/21/2022) by Ardaman & Associates, Inc. The site consists of a layer of sand (white to brown, upper 4” to 6” topsoil) from a depth of 0.0’-4.0’. This is followed by a layer of sand (silty, black, dense to medium dense) from a depth of 4.0’-12.0’. This is then followed by a layer of sand (medium dense to dense) from a depth of 12.0’-60.0’. Groundwater was encountered at depths that ranged from 3.5-4.5’ with the normal high seasonal groundwater from August-September.

## OBJECTIVE

The objective of this design is to provide a stormwater management system which will provide adequate flood protection for the proposed project and meet the environmental and regulatory requirements set forth by the federal, state, county, and local governmental agencies. These agencies include: The City of Margate, Broward County Environmental Protection Growth Management Department (BCEPGMD), and South Florida Water Management District (SFWMD).

## REQUIREMENTS

The proposed stormwater management system modifications were developed following the standard methods of the Broward County Environmental Protection and Growth Management Department (BCEPGMD), the South Florida Water Management District (SFWMD), and the City of Margate. The site is not within a Special Drainage District (see Appendix A-4, Special Drainage District Map). The system must also comply with the requirements from the master permit (Permit No. 06-00688-S). The design criteria are as follows:

### *Water Quality Criteria – Treatment Required*

SFWMD water quality criteria requires that a treatment 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 impervious, whichever is greater. The required water quality will be met in the proposed exfiltration trench (See Appendix B for detailed calculations). Water quality calculations are also detailed in a section below.

### *Water Quantity Criteria – Design Storm Events*

#### **5-Year, 1-Hour Design Storm Event**

The post-development runoff from a storm event with duration of 1-hour and 5-year return frequency should be completely retained by the proposed stormwater management system and not stage above the proposed minimum inlet elevation. This retention will be achieved through the proposed stormwater pipes, and exfiltration trench. Based on the master permit, the post-development runoff from this storm event, will dictate the minimum parking lot grade and will be at elevation 9.2 feet NAVD.

#### **10-Year, 1-Day Design Storm Event**

Based on the master permit, the post-development runoff from a storm event with duration of 1-day and 10-year return will dictate the local road criteria and will be at elevation 9.9 feet NAVD. This storm event is not applicable to this design as no adjacent local roads are being constructed.

#### **25-Year, 3-Day Design Storm Event**

The post-development runoff from a storm event with duration of 3-days and 25-year return frequency should be completely retained within the proposed stormwater management system and within the property's limits. For projects where the post-maximum stage is lower than the pre-maximum stage, no perimeter berm shall be required for the property. For projects where the post-maximum stage is higher than the pre-maximum stage, a perimeter berm shall be required at or higher than the 25- Year, 3-Day storm Event for the property. Based on the master permit, the post-development runoff from this storm event, will be at elevation 10.3 feet NAVD.

## 100-Year, 3-Day Design Storm Event

The building finish floor elevation must be set at or above the peak stage of a storm event with duration of 3-day and 100-year return frequency. Based on the master permit, the post-development runoff from this storm event, will be at elevation 12.9 feet NAVD.

### *Water Table*

The design water table elevation of 5.5 feet NAVD 1988 was obtained from the Broward County 'Future Conditions Average Wet Season Groundwater Level' map (see Appendix A-5, Future Conditions Average Wet Season Groundwater Elevation Map).

## FEMA FLOOD ELEVATION

The project is in Community Panel Number 12011C0355H of the Flood Insurance Rate Map (FIRM), revised August 18, 2014. According to the National Flood Insurance Program the project is located outside of the 100-year flood zone (Flood Zone 'X') (see Appendix A-6, Flood Zone Map).

## BROWARD COUNTY FUTURE CONDITIONS 100-YEAR FLOOD MAP REVIEW

Broward County has established a Future Conditions 100-Year Flood Elevation Map identifying flood elevations predicted in 2060-2069 under conditions of compounded flooding. This Future Conditions 100-Year Flood Elevation Map has recently been adopted by Broward County providing for its application in establishing the lowest habitable Finished Floor Elevation. After reviewing Broward County's recently adopted 100-Year Flood Elevation Map, plate WM 13.1 – Future Conditions, the project site falls within FL EL 2060 = 10.0 feet NAVD (see Appendix A-7, 100-Year Flood Elevation).

## EXISTING MASTER PERMIT AND PRE-APPLICATION SUMMARY

The project site holds a master permit (Permit No. 06-00688-S) encompassing a set of special conditions that must be adhered. The special conditions include the following:

1. Minimum building floor elevation 14.5 feet NGVD (12.9 feet NAVD).
2. Minimum parking lot elevation 10.8 feet NGVD (9.2 feet NAVD).
3. Discharge Facilities:  
Description: 1-27" wide weir with a crest at elevation 10.6 NGVD (9.0 NAVD), 1-47-degree v-notch weir with an invert at elevation 8.0 NGVD (6.5 NAVD), and approximately 120 LF of 24" diameter CMP culvert.  
Receiving water: C-14 via City of Margate Canal System

Under the application No. 0225-A there was a surface water management evaluation. This evaluation includes the control structure mentioned above with an allowable discharge of 23 CFS for the entire master permit. With this discharge the following flood protection items are allowed.

5. Parking Lot Criteria (5 Year – 1 hour storm) 10.8 feet NGVD (9.2 feet NAVD)
6. Local road Criteria (10 Year – 24 Hour) 11.5 feet NGVD (9.9 feet NAVD) (**Not Applicable**)
7. Basin Design Frequency (25 Year – 72 Hour) 11.9 feet NGVD (10.3 feet NAVD)
8. 100 Year Minimum Floor Elevation - 14.5 feet NGVD (12.9 NAVD)
9. 100 Year Flood Contour (100 Year Flood) – 13 feet NGVD (11.4 NAVD)

A pre-application meeting was held with the county on January 31, 2024, for this project. Based on the discussion of the master permit there were additional items the county agreed on.

1. The control structure was not built as intended; however, Broward County will allow for a control structure to be placed on the toe of slope on the swale located between this project area and the nature preserve area. Also, the allowable discharge would be prorated to the size of the project being evaluated, therefore allowing 11 cfs to be discharged to the Shooster Nature Preserve portion of the master permit area.
2. The county confirmed that although the Broward County 100-Year Flood Map requires that the site falls within 10 feet NAVD, the master permit would supersede this requirement and therefore the 13 feet NAVD governs.
3. The permit for the site will be a permit modification to the master permit. The post development stages will be compared to the approved stages by the master permit set under the special conditions.

## PROPOSED STORMWATER MANAGEMENT SYSTEM

The proposed 19.96-acre project features a comprehensive stormwater management system that includes a combination of detention areas and exfiltration trenches. The proposed site is divided into two basins: the northern half is designated as Basin 1, and the southern half as Basin 2 (see Appendix A-13). Each basin is equipped with its own control structure—storm manhole MH-04 for Basin 1, and storm manhole MH-03 for Basin 2. Detailed information can be found in the civil plans. These control structures are connected to storm manhole MH-01, which links via a 24” HDPE pipe to a proposed catch basin situated within an existing ditch in the Herman and Dorothy Shooster Nature Preserve. Coordination with the Preserve has been completed for this connection point.

## STORM ANALYSIS

The storm analysis will consist of determining the rainfall amounts for the following storm events and executing an ICPR model to determine the stage and runoff of each event. The analysis will be completed for the following storm events and rainfall depths:

Table 1: SFWMD Rainfall Return by Design Storm Event

Design Storm Event	Rainfall Depth (inches)
5-Year, 1-Hour Return Period (Appendix A-8)	3.2
10-Year, 1-Day Return Period (Appendix A-9)	9
25-Year, 3-Day Return Period (Appendix A-10)	15
100-Year, 3-Day Return Period (Appendix A-11)	19



The land use breakdown is as shown below for the post development (see Appendix 15).

Table 2: Land Use – Basin 1

Land Use	Pre-Development	Post-Development
Building	1.67	1.67
Impervious (Asphalt/Sidewalk)	3.98	5.80
Existing Detention Bottom	0.19	0.05
Existing Detention Bank	0.39	0.08
Proposed Detention Bottom	-	0.08
Proposed Detention Bank	-	0.43
Pervious	4.50	2.62
<b>Total</b>	<b>10.73</b>	<b>10.73</b>

Table 3: Land Use – Basin 2

Land Use	Pre-Development	Post-Development
Building	-	2.01
Impervious (Asphalt/Sidewalk)	0.16	4.99
Detention Bottom	0.13	-
Detention Bank	0.35	-
Pervious	8.59	2.23
Total	9.23	9.23

Stormwater captured in the drainage system will receive pre-treatment within the proposed exfiltration trenches prior to discharging from the control structure.

### ***Water Quality***

As per South Florida Water Management District Standards, water quality standards shall be provided for the greater of either the first inch of runoff from the entire project site, or the amount of 2.5 inches times the percent impervious for the project site. In addition, dry detention will need to be provided for at least ½ inch over the entire site.

### Water Quality Treatment Required Calculations

#### *Basin 1*

Total required treatment (1" over entire site) = 1" x 1 ft/ 12" x 10.73 ac = 0.894 ac-ft

Total required treatment (2.5" x % impervious) = 2.5" x 64.02% x (10.73 ac) x (1 ft/12") = 1.43 ac-ft

The two and a half inches (2.5") times the percent impervious for the developed site governs, 1.43 ac-ft is required. Water quality will be provided by 1,755 LF of 9' Width x 4.5' Depth exfiltration trench, which will provide 2.932 ac-ft of total water quality treatment volume.

Basin 2

Total required treatment (1" over entire site) = 1" x 1 ft/ 12" x 9.23 ac = 0.77 ac-ft

Total required treatment (2.5" x % impervious) = 2.5" x 69.11% x (9.23 ac) x (1 ft/12") = 1.33 ac-ft

The two and a half inches (2.5") times the percent impervious for the developed site governs, 1.43 ac-ft is required. Water quality will be provided by 918 LF of 8' Width x 4' Depth exfiltration trench, which will provide 2.549 ac-ft of total water quality treatment volume.

Land Use and Coverage Criteria (Dry Detention)

As per South Florida Management District Standards, commercial or industrial zoned projects shall provide at least one-half inch of dry detention or retention pretreatment as part of the required retention/detention.

Total required treatment (1/2" over entire site) = 1/2" x 1 ft/ 12" x 19.96 ac = 0.83 ac-ft

Table 4: Discharge

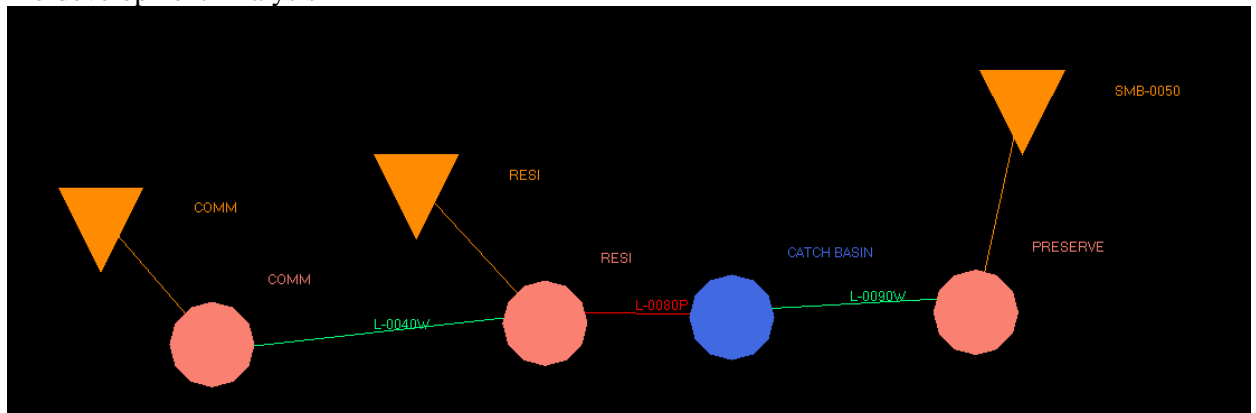
<b>Existing Detention Area To Remain (ac-ft)</b>	<b>Proposed Detention Area (ac-ft)</b>	<b>Total Provided (ac-ft)</b>	<b>Total Required (ac-ft)</b>
0.235	1.180	1.415	0.83

The project proposes two detention areas and will be maintaining two existing detention areas located within the commercial site. Refer to appendix A-15 for an exhibit of the areas. The proposed detention areas have a bottom at 6.5 NAVD and top of bank of +/-10.50 NAVD. The detention basin will be able to treat 1.415 ac-ft of treatment at full capacity. The required pre-treatment will be met.

## STORM MODELING

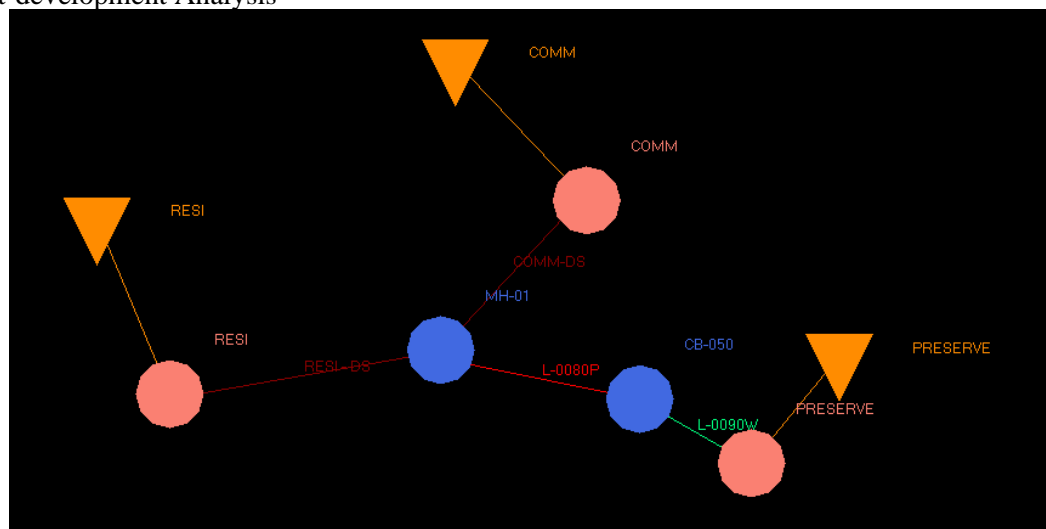
As requested by the county, an analysis was conducted to assess the impact of the proposed design on water levels within the Shooster Nature Preserve parcel. The modeling involved three basins: Basin one, encompassing the office area, and Basin two, encompassing the residential area. Each basin is equipped with its own control structure (MH-04 for basin one, and MH-03 for basin two), which connects to a single ultimate manhole (MH-01) that is located inside the site. This manhole then connects to the catch basin (CB-50) which is in Basin three. The two scenarios were set up as follows:

- Pre-development Analysis



- Basin 1: Existing stages and areas for the existing commercial parcel were used.
- Basin 2: Existing stages and areas for the existing residential parcel were used.
- Basin 3: Existing stages and areas for the Shooster Nature Preserve parcel were used.
- Control Structure: Based on the survey provided there is an existing 16" PVC pipe that connects basin 2 and basin 3. Based on the readily available information this connection is a regular catch basin with no interior weir or bleeder. An overland weir was assumed between basin 1 and basin 2.

- Post-development Analysis



- Basin 1: A combination of stages and areas of the existing to remain office spaces and proposed areas were used.
- Basin 2: Proposed development stages and areas for the proposed residential parcel were used.
- Basin 3: Existing stages and areas for the Shooster Nature Preserve parcel were used.

- Control Structure: Two proposed control structure were used for this analysis as shown on the ICPR4 model.

Table 4: Shooster Nature Preserve Analysis - Staging

	Stage Events	Pre Development	Post Development	Staging Changes
Office + Residential	5 Year – 1 Hour	9.43 <sup>1</sup>	7.81 <sup>1</sup>	(-)1.62
		9.43 <sup>2</sup>	7.81 <sup>2</sup>	(-)1.62
	25 Year – 72 Hour	10.57 <sup>1</sup>	10.82 <sup>1</sup>	(+)0.25
		10.56 <sup>2</sup>	12.20 <sup>2</sup>	(+)1.64
	100 Year – 72 Hour	11.39 <sup>1</sup>	11.79 <sup>1</sup>	(+)0.40
		11.93 <sup>2</sup>	12.82 <sup>2</sup>	(+)0.89
Shooster Nature Preserve	5 Year – 1 Hour	8.33	8.07	(-)0.26
	25 Year – 24 Hour	10.43	10.29	(-)0.14
	100 Year – 72 Hour	10.20	10.20	0.00
<sup>1</sup> – Data for commercial area (Proposed Basin 1)				
<sup>2</sup> – Data for residential area (Proposed Basin 2)				

As shown above, the staging at the Shooster Nature Preserve has decreased in the post-condition scenario. The added control structures have effectively managed and maintained staging on the preserve, mitigating the impact of any site improvements.

### Discharge Control

Table 4: Discharge

	Design Criteria (per SFWMD 06-0068-S)	Post Development
Discharge (cfs)	11	7.70

As mentioned above, the storm system is broken up into two basins with their own control structure. The control structure for Basin one (MH-03) has a 6-foot-wide weir plate where the top elevation of the weir is set at elevation 10.05 feet NAVD. The control structure for Basin two (MH-04) has a 6-foot-wide weir plate where the top elevation of the weir is set at elevation 12 feet NAVD.

Based on the ICPR model, the discharge inflow into the preserve is 7.70 cfs. This is below the allowed threshold of 11 cfs which was agreed upon by the preserve as a portion of the total master permit allowed discharge of 23 cfs.

**CONCLUSION AND RECOMMENDATIONS**

The finalized drainage analysis and site design will indicate that the proposed stormwater management system has been designed to prevent the site from flooding and prevent off-site discharge for the 25-year, 3-day and 100-year, 3-day design storm events. The perimeter berm of the site is at or above the peak stage of the 25-year,3-day event per the results of the post analysis. In addition, the minimum floor elevations of all buildings are at 13.00 NAVD meeting the SFWMD permit No. 06-0068-S.

Table 5: Peak Stages

Storm Event	PEAK STAGES		
	<b>Design Criteria (per SFWMD 06-0068-S)</b>	<b>ICPR4 Analysis Proposed Design (NAVD) – W/ 11 CFS</b>	<b>Proposed Minimum Site Design (Per Civil Plans)</b>
5 Year – 1 Hour	Minimum Road Grade (9.20 NAVD)	7.81 <sup>1</sup>	9.50
		7.81 <sup>2</sup>	9.50
25 Year – 3 Day	Basin Design Frequency (10.30 NAVD)	10.82 <sup>1</sup>	10.82
		12.20 <sup>2</sup>	12.20
100 Year – 3 Day*	Minimum Floor Elevation (12.90 NAVD)	11.79 <sup>1</sup>	12.93 <sup>3</sup>
		12.82 <sup>2</sup>	13.00
Discharge	11 CFS	7.30 CFS	7.30 CFS
<p>* No discharge in this storm event.</p> <p><sup>1</sup> – Data for commercial area (Proposed Basin 1)</p> <p><sup>2</sup> – Data for residential area (Proposed Basin 2)</p> <p><sup>3</sup> – Elevation of existing building in Basin 1</p>			

Although the 25-year storm event stage (10.82 NAVD for Basin 1 and 12.20 for Basin 2) in the proposed conditions exceeds the permitted allowable (10.30 NAVD), the proposed berm on the perimeter of the site is above the 10.82 NAVD elevation in Basin 1 and 12.20 NAVD elevation in Basin 2 to prevent discharge up to the 25-year storm event.

## REFERENCES

South Florida Water Management District. 2023. Environmental Resource Permit Applicant's Handbook  
Volume II. West Palm Beach, Florida

State of Florida Department of Transportation 2023. Drainage Design Guide.  
Office of Design, Drainage Section, Tallahassee, Florida.

State of Florida Department of Transportation. 2023. FDOT Design Manual. Roadway Design Office.  
Tallahassee, Florida.

**APPENDIX A: MAPS**

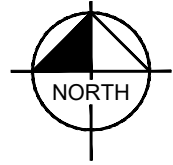
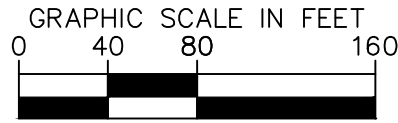
**APPENDIX A-1**

**LOCATION MAPS**



**LEGEND**

PROJECT LOCATION 



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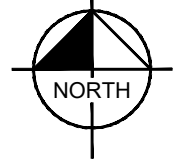
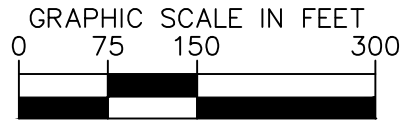
**AERIAL MAP  
 777 PROPERTIES**

DESIGN ENGINEER:
FLORIDA P.E. LICENSE NUMBER:
DATE:

SHEET NUMBER
A-1

**LEGEND**

PROJECT LOCATION 



Drawing name: K:\MIB\_URG\143660000 - Margate\CIVIL\Design\CADD\Exhibits\2024.02.06 - Location Maps\Margate Location Map.dwg LOCATION Aug 02, 2024 8:45am by: nicole.nelson  
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SCALE
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**Kimley»Horn**

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DATE
PROJECT NO.

**LOCATION MAP  
777 PROPERTIES**

DESIGN ENGINEER:
FLORIDA P.E. LICENSE NUMBER:
DATE:

SHEET NUMBER
A-2

**APPENDIX A-2**

**NRCS SOIL RESOURCE REPORT**



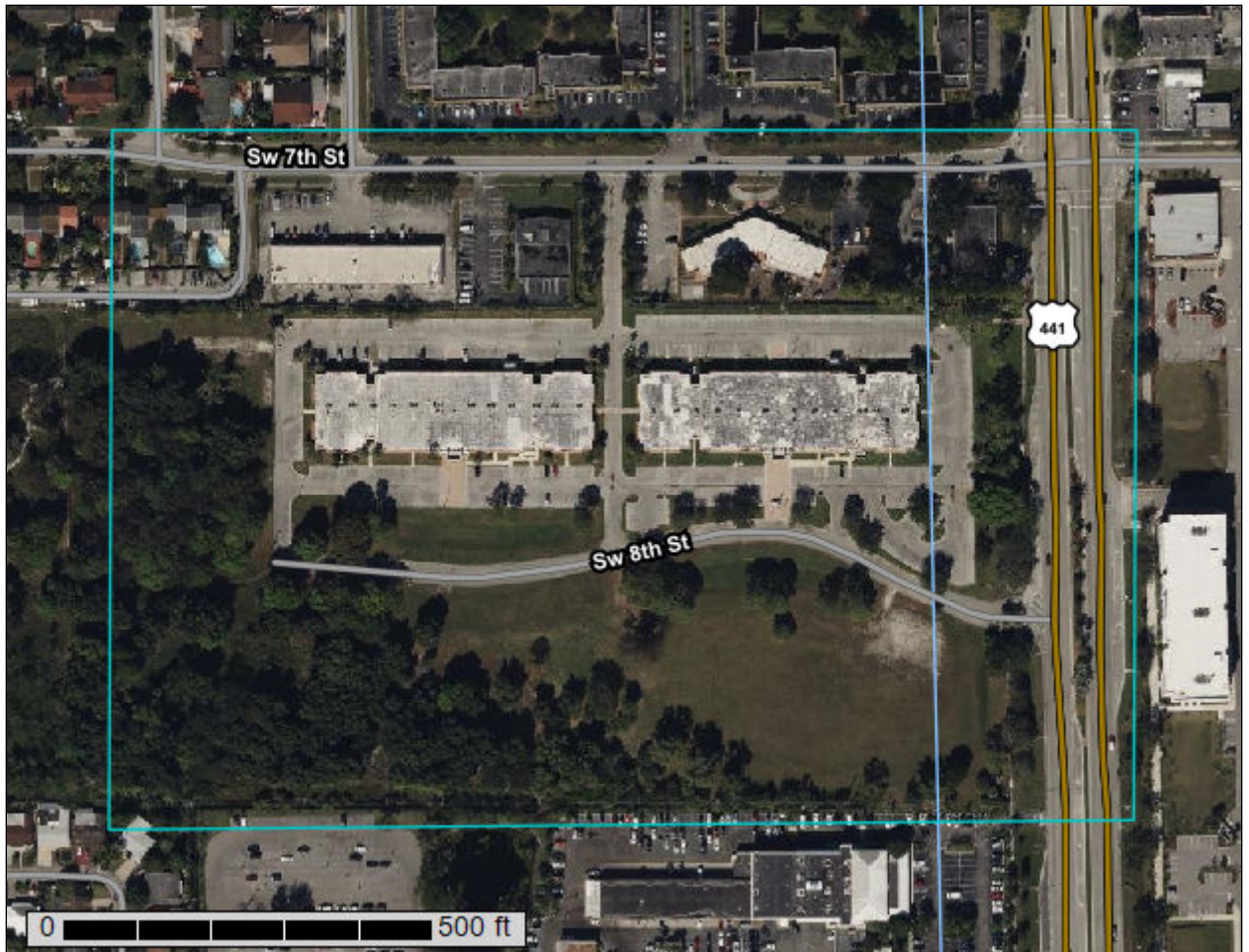
United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

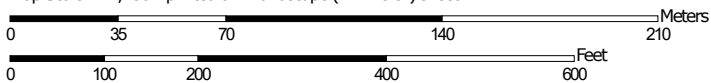
# Custom Soil Resource Report for **Broward County, Florida, East Part**



# Custom Soil Resource Report Soil Map




Map Scale: 1:2,450 if printed on A landscape (11" x 8.5") sheet.



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

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broward County, Florida, East Part  
 Survey Area Data: Version 19, Aug 28, 2023

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

Date(s) aerial images were photographed: Jan 14, 2022—Jan 24, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
15	Immokalee fine sand, 0 to 2 percent slopes	25.7	85.1%
17	Immokalee-Urban land complex	1.5	5.0%
18	Lauderhill muck, frequently ponded, 0 to 1 percent slopes	3.0	10.0%
<b>Totals for Area of Interest</b>		<b>30.2</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

## Custom Soil Resource Report

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Broward County, Florida, East Part

### 15—Immokalee fine sand, 0 to 2 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2s3lk  
*Elevation:* 0 to 130 feet  
*Mean annual precipitation:* 42 to 68 inches  
*Mean annual air temperature:* 68 to 77 degrees F  
*Frost-free period:* 350 to 365 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

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

#### Description of Immokalee

##### Setting

*Landform:* Flatwoods on marine terraces  
*Landform position (three-dimensional):* Riser, talf  
*Down-slope shape:* Linear  
*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:* fine sand

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 4.0  
*Available water supply, 0 to 60 inches:* Low (about 5.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* B/D  
*Ecological site:* F155XY120FL - Sandy Flatwoods and Hammocks  
*Forage suitability group:* Sandy soils on flats of mesic or hydric lowlands  
(G155XB141FL)  
*Other vegetative classification:* Sandy soils on flats of mesic or hydric lowlands  
(G155XB141FL), South Florida Flatwoods (R155XY003FL)

## Custom Soil Resource Report

*Hydric soil rating:* No

### Minor Components

#### **Basinger**

*Percent of map unit:* 4 percent

*Landform:* Depressions on marine terraces

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

*Down-slope shape:* Linear, concave

*Across-slope shape:* Linear, concave

*Ecological site:* R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps

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

*Hydric soil rating:* Yes

#### **Pomello**

*Percent of map unit:* 2 percent

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

*Landform position (two-dimensional):* Summit, backslope

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

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear

*Ecological site:* F155XY150FL - Sandy Upland Mesic Flatwoods and Hammocks on Rises and Knolls

*Other vegetative classification:* Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)

*Hydric soil rating:* No

#### **Wabasso**

*Percent of map unit:* 2 percent

*Landform:* Flatwoods on marine terraces

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

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear

*Ecological site:* F155XY120FL - Sandy Flatwoods and Hammocks

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

*Hydric soil rating:* No

#### **Placid**

*Percent of map unit:* 1 percent

*Landform:* Depressions on marine terraces, drainageways on marine terraces

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

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Ecological site:* R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps

*Other vegetative classification:* Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)

*Hydric soil rating:* Yes

#### **Jenada**

*Percent of map unit:* 1 percent

*Landform:* Flats on marine terraces

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

*Down-slope shape:* Linear

*Across-slope shape:* Linear, concave

## Custom Soil Resource Report

*Ecological site:* R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps  
*Other vegetative classification:* Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Slough (R155XY011FL)  
*Hydric soil rating:* Yes

### 17—Immokalee-Urban land complex

#### Map Unit Setting

*National map unit symbol:* 1hn8x  
*Elevation:* 0 to 100 feet  
*Mean annual precipitation:* 60 to 68 inches  
*Mean annual air temperature:* 72 to 79 degrees F  
*Frost-free period:* 358 to 365 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Immokalee and similar soils:* 46 percent  
*Urban land:* 44 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Immokalee

##### Setting

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

##### Typical profile

*A - 0 to 6 inches:* fine sand  
*E - 6 to 35 inches:* fine sand  
*Bh - 35 to 54 inches:* fine sand  
*BC - 54 to 72 inches:* fine sand

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 4.0  
*Available water supply, 0 to 60 inches:* Low (about 5.3 inches)

## Custom Soil Resource Report

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* B/D  
*Ecological site:* F155XY120FL - Sandy Flatwoods and Hammocks  
*Forage suitability group:* Forage suitability group not assigned (G156AC999FL)  
*Other vegetative classification:* Forage suitability group not assigned (G156AC999FL)  
*Hydric soil rating:* No

### Description of Urban Land

#### Setting

*Landform:* Marine terraces  
*Landform position (three-dimensional):* Interfluve, talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Ecological site:* F155XY120FL - Sandy Flatwoods and Hammocks  
*Forage suitability group:* Forage suitability group not assigned (G156AC999FL)  
*Other vegetative classification:* Forage suitability group not assigned (G156AC999FL)  
*Hydric soil rating:* Unranked

### Minor Components

#### Basinger

*Percent of map unit:* 3 percent  
*Landform:* Drainageways on marine terraces  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Ecological site:* R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps  
*Other vegetative classification:* Forage suitability group not assigned (G156AC999FL)  
*Hydric soil rating:* Yes

#### Hallandale

*Percent of map unit:* 3 percent  
*Landform:* Flats on marine terraces  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Ecological site:* R156AY320FL - Subtropical Freshwater Non-Forested Wetlands of Miami Ridge/ Atlantic Coastal Strip  
*Other vegetative classification:* Forage suitability group not assigned (G156AC999FL)  
*Hydric soil rating:* Yes

#### Pompano

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

## Custom Soil Resource Report

*Across-slope shape:* Concave  
*Ecological site:* F155XY120FL - Sandy Flatwoods and Hammocks  
*Other vegetative classification:* Forage suitability group not assigned  
(G156AC999FL)  
*Hydric soil rating:* Yes

### **Margate**

*Percent of map unit:* 2 percent  
*Landform:* Drainageways on marine terraces  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Ecological site:* F156AY340FL - Subtropical Pine Flatwoods and Palmetto Prairie  
of Miami Ridge / Atlantic Coastal Strip  
*Other vegetative classification:* Forage suitability group not assigned  
(G156AC999FL)  
*Hydric soil rating:* Yes

## **18—Lauderhill muck, frequently ponded, 0 to 1 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2sw03  
*Elevation:* 0 to 30 feet  
*Mean annual precipitation:* 60 to 70 inches  
*Mean annual air temperature:* 70 to 79 degrees F  
*Frost-free period:* 360 to 365 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

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

### **Description of Lauderhill**

#### **Setting**

*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Tread, dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Herbaceous organic material over residuum weathered from  
limestone

#### **Typical profile**

*Oa - 0 to 31 inches:* muck  
*2R - 31 to 41 inches:* bedrock

#### **Properties and qualities**

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* 16 to 36 inches to lithic bedrock

## Custom Soil Resource Report

*Drainage class:* Very poorly drained  
*Runoff class:* Negligible  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (1.98 to 19.98 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 4.0  
*Available water supply, 0 to 60 inches:* Very high (about 12.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7w  
*Hydrologic Soil Group:* A/D  
*Forage suitability group:* Organic soils in depressions and on flood plains (G156AC645FL)  
*Other vegetative classification:* Organic soils in depressions and on flood plains (G156AC645FL)  
*Hydric soil rating:* Yes

### Minor Components

#### Terra ceia

*Percent of map unit:* 4 percent  
*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Tread, dip  
*Down-slope shape:* Concave, convex  
*Across-slope shape:* Concave, linear  
*Other vegetative classification:* Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)  
*Hydric soil rating:* Yes

#### Okeelanta

*Percent of map unit:* 3 percent  
*Landform:* Depressions on marine terraces  
*Landform position (three-dimensional):* Tread, dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Other vegetative classification:* Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)  
*Hydric soil rating:* Yes

#### Margate

*Percent of map unit:* 2 percent  
*Landform:* Drainageways on marine terraces  
*Landform position (three-dimensional):* Tread, dip  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Other vegetative classification:* Forage suitability group not assigned (G156AC999FL)  
*Hydric soil rating:* Yes

#### Plantation

*Percent of map unit:* 2 percent  
*Landform:* Depressions on marine terraces, flatwoods on marine terraces  
*Landform position (three-dimensional):* Tread, dip, talf

## Custom Soil Resource Report

*Down-slope shape:* Linear

*Across-slope shape:* Concave

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

*Hydric soil rating:* Yes

### **Biscayne**

*Percent of map unit:* 2 percent

*Landform:* Marshes on marine terraces

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

*Down-slope shape:* Concave

*Across-slope shape:* Linear, concave

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

*Hydric soil rating:* Yes

### **Tamiami**

*Percent of map unit:* 2 percent

*Landform:* Depressions on marine terraces, marshes on marine terraces

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

*Down-slope shape:* Concave

*Across-slope shape:* Concave

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

*Hydric soil rating:* Yes

# **Soil Information for All Uses**

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## **Soil Properties and Qualities**

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

## **Soil Physical Properties**

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

### **Saturated Hydraulic Conductivity (Ksat), Standard Classes**

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits. The classes are:

Very low: 0.00 to 0.01

Low: 0.01 to 0.1



## Custom Soil Resource Report

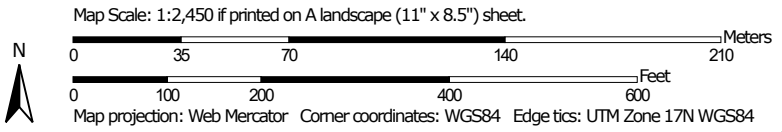
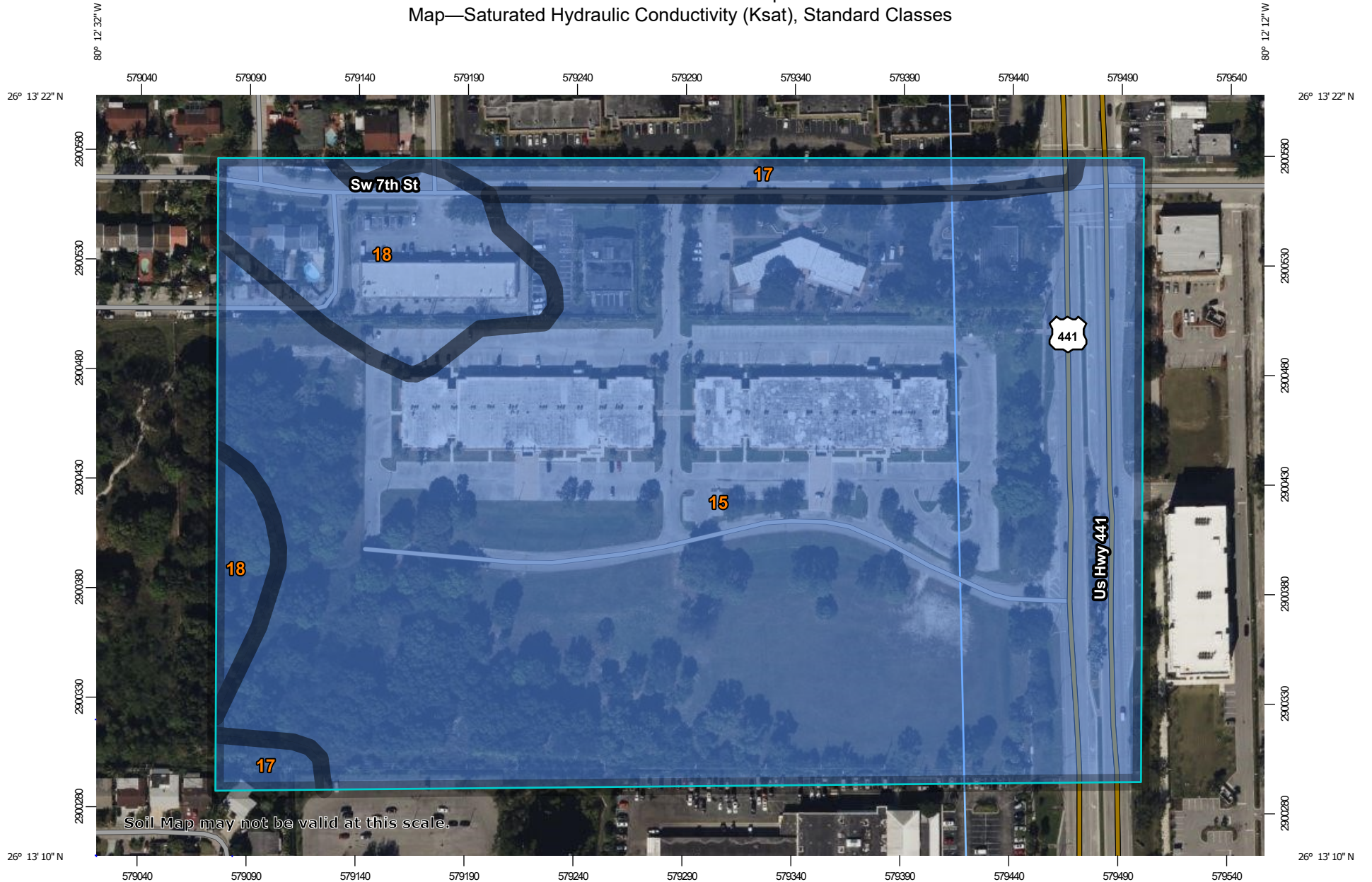
Moderately low: 0.1 to 1.0

Moderately high: 1 to 10


























High: 10 to 100

Very high: 100 to 705

Custom Soil Resource Report  
 Map—Saturated Hydraulic Conductivity (Ksat), Standard Classes



### MAP LEGEND

- Area of Interest (AOI)**
  -  Area of Interest (AOI)
- Soils**
  - Soil Rating Polygons**
    -  Very Low (0.0 - 0.01)
    -  Low (0.01 - 0.1)
    -  Moderately Low (0.1 - 1)
    -  Moderately High (1 - 10)
    -  High (10 - 100)
    -  Very High (100 - 705)
    -  Not rated or not available
  - Soil Rating Lines**
    -  Very Low (0.0 - 0.01)
    -  Low (0.01 - 0.1)
    -  Moderately Low (0.1 - 1)
    -  Moderately High (1 - 10)
    -  High (10 - 100)
    -  Very High (100 - 705)
    -  Not rated or not available
  - Soil Rating Points**
    -  Very Low (0.0 - 0.01)
    -  Low (0.01 - 0.1)
    -  Moderately Low (0.1 - 1)
    -  Moderately High (1 - 10)
    -  High (10 - 100)
    -  Very High (100 - 705)
- Water Features**
  -  Streams and Canals
- Transportation**
  -  Rails
  -  Interstate Highways
  -  US Routes
  -  Major Roads
  -  Local Roads
- Background**
  -  Aerial Photography
-  Not rated or not available

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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 Web Soil Survey URL:  
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 Survey Area Data: Version 19, Aug 28, 2023

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

Date(s) aerial images were photographed: Jan 14, 2022—Jan 24, 2022

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**Table—Saturated Hydraulic Conductivity (Ksat), Standard Classes**

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
15	Immokalee fine sand, 0 to 2 percent slopes	92.0000	25.7	85.1%
17	Immokalee-Urban land complex	92.0000	1.5	5.0%
18	Lauderhill muck, frequently ponded, 0 to 1 percent slopes	92.0000	3.0	10.0%
<b>Totals for Area of Interest</b>			<b>30.2</b>	<b>100.0%</b>

**Rating Options—Saturated Hydraulic Conductivity (Ksat), Standard Classes**

*Units of Measure:* micrometers per second

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Fastest

*Interpret Nulls as Zero:* No

*Layer Options (Horizon Aggregation Method):* Surface Layer (Not applicable)

**Soil Qualities and Features**

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

**AASHTO Group Index**

The AASHTO Group Index is a refinement to the seven major groups of the AASHTO soil classification system. According to

this system, soil is classified into seven major groups: A-1 through A-7. Soils classified into groups A-1, A-2, and A-3 are granular materials of which 35% or less of the particles pass through the No. 200 sieve. Soils of which more than 35% pass through the No. 200 sieve are classified into groups A-4, A-5, A-6, and A-7. These soils are mostly silt and clay-type materials.

## Custom Soil Resource Report

The classifications system is based on the following criteria:

1. Grain size

a. Gravel ; fraction passing the 75-mm( 3-in.) sieve and retained on the No. 10 (2-mm) U.S. sieve

b. sand: fraction passing the No. 10 (2-mm) U.S. sieve and retained on the No.200 (0.075-mm) U.S. sieve

c. Silt and clay: fraction passing the No. 200 U.S. sieve

2. Plasticity The term silty is applied when the fine fractions of the soil have a plasticity index of 10 or less. The term clayey is applied when the fine fractions have a plasticity index of 11 or more.

3. If cobbles and boulders (size larger than 75 mm) are encountered, they are excluded from the portion of the soil sample from which classification is made.

To evaluate the quality of a soil as a highway subgrade material, one must also incorporate a number called the group index (GI) with the groups and subgroups of the soil. This index is written in parentheses after the group or subgroup designation.

The group index is given by the equation:

$$GI = (F_{200}-35)[0.2 + 0.005(LL - 40)] + 0.01(F_{200}-15)(PI - 10)$$

where:

F<sub>200</sub> = percentage passing through the No. 200 sieve

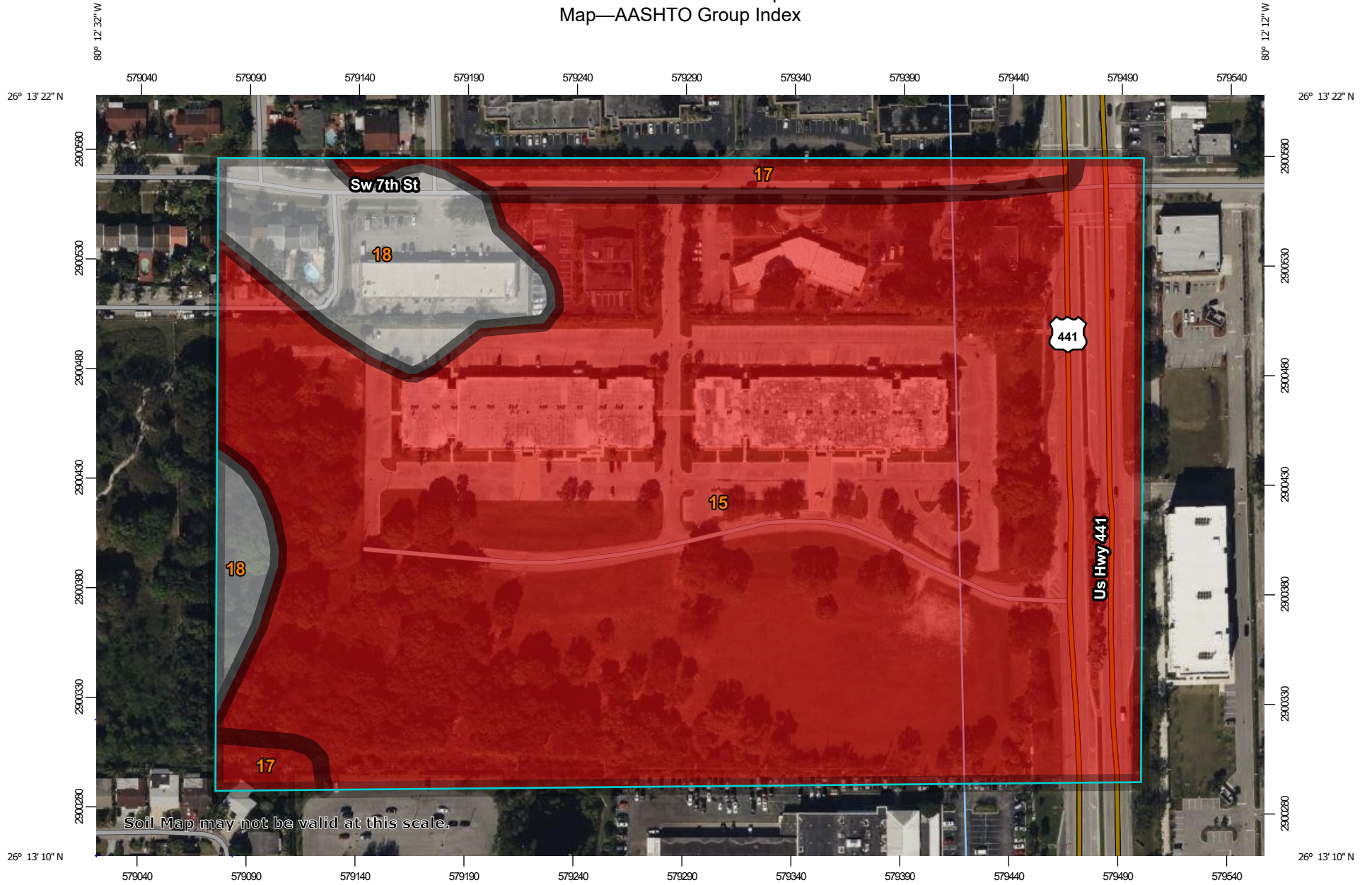
LL — liquid limit

PI : plasticity index

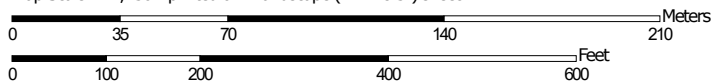
The group index is used typically to refine an AASHTO class but in the soil survey database is often used as a standalone soil attribute.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

# Custom Soil Resource Report Map—AASHTO Group Index




Map Scale: 1:2,450 if printed on A landscape (11" x 8.5") sheet.



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

### MAP LEGEND


**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**

 = 0

 Not rated or not available

**Soil Rating Lines**

 = 0


 Not rated or not available

**Soil Rating Points**

 = 0

 Not rated or not available

**Water Features**

 Streams and Canals


**Transportation**

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Broward County, Florida, East Part  
 Survey Area Data: Version 19, Aug 28, 2023

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

Date(s) aerial images were photographed: Jan 14, 2022—Jan 24, 2022

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.

**Table—AASHTO Group Index**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
15	Immokalee fine sand, 0 to 2 percent slopes	0	25.7	85.1%
17	Immokalee-Urban land complex	0	1.5	5.0%
18	Lauderhill muck, frequently ponded, 0 to 1 percent slopes		3.0	10.0%
<b>Totals for Area of Interest</b>			<b>30.2</b>	<b>100.0%</b>

**Rating Options—AASHTO Group Index**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

*Interpret Nulls as Zero:* No

*Layer Options (Horizon Aggregation Method):* All Layers (Weighted Average)



## Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

## Water Features

This folder contains tabular reports that present soil hydrology information. The reports (tables) include all selected map units and components for each map unit. Water Features include ponding frequency, flooding frequency, and depth to water table.

## Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*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 claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

## Custom Soil Resource Report

*Surface runoff* refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

### Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff—Broward County, Florida, East Part			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
15—Immokalee fine sand, 0 to 2 percent slopes			
Immokalee	90	Very high	B/D
17—Immokalee-Urban land complex			
Immokalee	46	High	B/D
Urban land	44	—	—
18—Lauderhill muck, frequently ponded, 0 to 1 percent slopes			
Lauderhill	85	Negligible	A/D

# References

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- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
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- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

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**APPENDIX A-3**

**PHASE I ENVIRONMENTAL SITE ASSESSMENT**



# HYDROLOGIC ASSOCIATES U.S.A., INC.

ENVIRONMENTAL CONSULTANTS • HYDROGEOLOGIC TESTING  
WELL DRILLING SERVICES • PETROLEUM CONTRACTOR

## PHASE I ENVIRONMENTAL SITE ASSESSMENT

of the property identified as

Vacant Lot  
South of 777 State Road 7  
Margate, Florida 33063

Prepared for:

REZ SE Land, LLC  
100 Brickell Plaza, Suite 4104  
Miami, FL 33131

Prepared by

**Hydrologic Associates U.S.A., Inc.**  
10406 Southwest 186th Terrace  
Miami, Florida 33157

Project Number HA22-6389

August 7, 2022

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# HYDROLOGIC ASSOCIATES U.S.A., INC.

ENVIRONMENTAL CONSULTANTS • HYDROGEOLOGIC TESTING  
WELL DRILLING SERVICES • PETROLEUM CONTRACTOR

August 7, 2022

Mr. Saul Perez  
REZ SE Land, LLC  
100 Brickell Plaza, Suite 4104  
Miami, FL 33131

RE: **Report of Phase I Environmental Site Assessment**  
Vacant Lot  
South of 777 State Road 7  
Margate, Florida 33068

Dear Mr. Perez,

As authorized, Hydrologic Associates U.S.A., Inc., (HAI) has completed the Phase I Environmental Site Assessment (ESA) at the above referenced subject property. The attached report documents the results of the assessment and our recommendations. This report is intended for the use of REZ SE Land, LLC and should not be relied upon by any other parties without the express written consent of HAI. The report is based on the dates of the site work and should not be relied upon at substantially later dates. The discovery of any additional information concerning the environmental conditions at the site should be reported to us for our review so that we can reassess potential environmental impacts and modify our recommendations, if necessary. We appreciate the opportunity of assisting you with this assessment.

Sincerely,

Hydrologic Associates USA, Inc.

James T. Miller, P.E.  
Project Manager

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## **5.0 INFORMATION FROM SITE RECONNAISSANCE**

### **5.1 Hazardous Substances in Connection with Identified Uses**

No quantities of hazardous substances or petroleum products are generated or stored on the subject property. No hazardous wastes were stored on the subject property.

### **5.2 Hazardous Substance Containers and Unidentified Substance Containers**

No hazardous substance or petroleum product containers and/or unidentified substance containers (i.e., drums) were located on the subject property.

### **5.3 Storage Tanks**

No indications of underground storage tanks (UST), aboveground storage tanks (ASTs) or other mechanical structures that would be considered a recognized environmental condition were noted on the subject property.

### **5.4 Indication of PCB's**

No electrical or hydraulic equipment were noted on-site during the site visit.

### **5.5 Indication of Solid Waste Disposal**

No large quantities of solid waste were observed on the subject property.

### **5.6 Source of Potable Water**

Information obtained during this assessment indicated that potable water services are provided by the local utility.

### **5.7 Sewage Disposal System**

Information obtained during this assessment indicated that sanitary sewer services are provided by the local utility.



## **5.8 Storm Water Runoff**

Storm water catch basins were not observed on the subject site. It appeared that storm water runoff at the subject property is diverted into onsite and offsite storm drains which then allow stormwater to infiltrate into the subsurface. It is anticipated that storm water from the adjacent properties would infiltrate into the subsurface in unpaved areas and/or move as sheet flow across paved and other impervious surfaces into their on-site storm drains. Ground surface at adjacent properties was relatively flat and storm water runoff from these properties appeared to have a low potential to impact the subject property.

## **5.9 Spills, Incidents, or Violations**

No spills, incidents, or violations were noted for the subject property.

## **5.10 Source of Fuel for Heating and Cooling**

No sources of fuel for heating or cooling were noted onsite. Heating and cooling are accomplished by the Heating, ventilation, and air conditioning (HVAC) units.

## **5.11 Floor Drains, Sumps, or Suspect Odors**

No sumps were observed at the subject property. No suspect odors indicating hazardous wastes and/or petroleum products had been discharged at the subject property were noticed during the site visit.

## **5.12 Stains, Corrosion, or Stressed Vegetation**

No obvious indications of stains on surfaces (i.e., pavement, grassed areas, etc.) or corrosion of piping were observed during the site visit to indicate the subject property had been impacted by hazardous materials or petroleum products. No obvious signs of the presence of stressed vegetation were observed during the site visit to indicate the subject property had been impacted by hazardous materials or petroleum products.

### **5.13 Pits or Lagoons**

No pits (used for the disposal of hazardous wastes) or lagoons were observed on the subject property.

### **5.14 Oil/Water Separators**

No evidence of oil/water separators was observed at the subject property.

### **5.15 Evidence of Landfill, Dumping, Disturbed Soils, Direct Burial Activity, Injection Wells, or other Disposal Activities**

No evidence of landfill, dumping, disturbed soils, direct burial activity, injection wells, or other disposal activities was observed at the subject property.

### **5.16 Evidence of Surface Impoundments or Holding Ponds**

No evidence of surface impoundments or holding ponds (used to temporally store hazardous waste) was observed at the subject property.

### **5.17 Evidence of Air Emissions or Wastewater Discharges**

No evidence of air emissions or wastewater discharges was observed at the subject property.

### **5.18 Evidence of Monitoring Wells, Piezometers, or other Surface Monitoring Devices**

No evidence of monitoring wells, piezometer, or other monitoring devices were observed at the subject property during our inspection.

### **5.19 Evidence of Environmental Assessment or Remedial Activities**

No evidence of environmental assessment or remediation activities was observed at the subject property.

#### **5.20 Evidence of Leachate or Seeps**

No evidence of leachate or seeps was observed at the subject property.

#### **5.21 Evidence of Areas of Chemically Distressed, Discolored, or Stained Vegetation**

No evidence of areas of chemically distressed, discolored, or stained vegetation was observed at the subject property.

#### **5.22 Evidence of Chemical Spills or Releases**

No evidence of chemical spills or releases was observed at the subject property.

#### **5.23 Evidence of Groundwater or Surface Water Contamination**

No evidence of groundwater or surface water contamination was observed at the subject property.

#### **5.24 Evidence of Oil or Gas Well Exploration, Abstraction, or Refinery Activities**

No evidence of oil or gas well exploration, abstraction, or refinery activities was observed at the subject property.

#### **5.25 Evidence of Farm Waste Concerns such as Feed Lot Spoils or Manure Stockpiles**

No evidence of farm waste concerns such as feed lot spoils or manure stockpiles was observed at the subject property.

#### **5.26 Evidence of Prolonged Use or Misapplication of Pesticides, Herbicides, Soil Conditioners, or Fertilizers**

No evidence of prolonged use or misapplication of pesticides, herbicides, soil conditioners, or fertilizers was observed at the subject property.

### **5.27 Evidence of Discharges, Leachate, Migration, or Runoff of Potential Contaminants from an Off-Site Source onto the Subject property**

No evidence of discharges, leachate, migration, or runoff potential contaminants from an off-site source onto the subject property was observed at the subject property.

### **5.28 Evidence of On-Site Railroad Activity**

No evidence of railroad activity was observed within close proximity of the subject property.

### **5.29 Evidence of Potential Vapor Migration**

No evidence for the potential of vapor-phase contaminants from on-site or off-site sources to migrate and possibly intrude into the subject property buildings was observed during the site visit.

### **5.30 Other Conditions of Concern**

#### **5.30.1 Asbestos**

An asbestos survey was not conducted as part of this ESA as the subject property contains no buildings.

#### **5.30.2 Radon**

A radon survey was not conducted as part of this assessment. Due to the geology of Broward County, the subject property is located in Zone 3 (Low Potential (less than 2 pCi/L)) of the EPA Radon Map.

#### **5.30.3 Lead Paint**

A lead-based paint survey was not conducted as part of this assessment as the subject property contains no buildings.

#### **5.30.4 Wetlands**

A wetlands survey was not conducted as part of this assessment. No obvious wetland or low lying areas were noted during the site visit. The western portions of the subject site are identified on the National Wetlands Inventory Map. However, the Broward County Environmental Engineering and Permitting division issued correspondence dated March 3, 2021 indicating that there are no County jurisdictional wetlands on-site. A copy of the Broward County letter is included in Appendix 8.7.

#### **5.30.5 Rock mining**

The subject property has not been utilized as a rock mining operation. In addition, no rock mining operations were identified within a quarter-mile radius of the site.

#### **5.30.6 Previously Conducted Phase I ESA Report**

HAI was not provided with a previously conducted Phase I ESA.

#### **5.30.7 Interview with Property Key Site Contact**

HAI interviewed Mr. Saul Perez regarding the on-site operations and history of the subject property.

- Mr. Perez was unaware of chemicals or hazardous substances spilled at the subject property.
- Mr. Perez was unaware of any current past notices of violation regarding the subject property.
- Mr. Perez was unaware of any recognized environmental conditions associated with the subject property, adjoining or surrounding properties.
- Mr. Perez was unaware of any existing USTs on the subject property

#### **5.30.8 Documentation of Data Gaps**

A data gap was encountered when reviewing the aerial photographs between 1940-1957 and 1959-1967. However, HAI provided sufficient information to meet the objective of developing the history of previous uses for the subject property and surrounding areas.

In accordance with ASTM E 1527-13, 1527-21 and EPA “AAI Rule”, a reasonable attempt was made to interview at least one staff member of any one of the following types of local government agencies.

- The Fire Department (emergency services) was contacted by James T. Miller. However, no relevant information regarding environmental conditions was available.
- The Health Department was contacted and confirmed that the Broward County Development and Environmental Regulation Division (DERD) regulates industrial and commercial sites in this area of South Florida.
- The South Florida Water Management District (SFWMD) was contacted and confirmed that no surface water bodies were present on or adjacent to the site.
- City of Pompano Beach Utilities was contacted. It was documented that this area of Fort Lauderdale is supplied by water and sewer services.

Based on the above information, no recognized environmental conditions were noted. Therefore, no additional research is warranted.

#### **5.30.9 Environmental Liens, Activity and Use Limitations (AUL)**

AULs are one indication of a past or present release of a hazardous substance or petroleum products. AULs are legal or physical description on the use of, or access to, a site or facility: to reduce and/or eliminate potential exposure to hazardous substances or petroleum products to soil or groundwater on the subject property to prevent activities that could interfere with the effectiveness of a response action or cleanup activity.

Based on the review of the FDEP Institutional Controls/Engineering Controls (IC/EC) Registry, no evidence of AULs was found for the subject property. However, please note that the scope of services did not include a title records search, which under ASTM 1527-13 and 1527-21 is the responsibility of the User. The Client was not aware of any environmental liens or AULs associated with the subject property.

#### **5.30.10 Deviations & Additional Services**

No deviations from the ASTM Designation E 1527-13, 1527-21 or the EPA’s All Appropriate Inquiry Rule “AAI Rule” (40 CFR 312) were required to complete this Phase I ESA.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

Hydrologic Associates USA, Inc. (HAI) was contracted by Mr. Saul Perez of REZ SE Land, LLC to conduct a Phase I Environmental Site Assessment (ESA) of the property (subject property), located immediately north of 777 State Road 7, Margate, Florida 33068. Parcel ID Nos: 4941 01 33 0010 and 4941 01 31 0020 (Section 01 Township 49S Range 41E). Refer to Appendix 8.1, Figure 1 attached to this report for the Site Location Plan. The subject property is located along the commercial corridor of South SR 7 in a generally residential area of Pompano Beach; please refer to the recent aerial photograph (Appendix 8.2, Figure 2). The assessment included visual observations of the subject property and adjacent properties, reviews of historical land use and regulatory records/database listings. The ESA was performed in accordance with the ASTM standard E-1527-13 and the Environmental Protection Agency's (EPA) All Appropriate Inquiry Rule "AAI Rule" (40 CFR 312). This report also incorporates the requirements outlined in the ASTM standard E-1527-21. Any exceptions to or deletions from the Standard Practice are described and itemized in the following section of this Report.

### 6.1 Opinions and Findings

The site visit was conducted on August 5, 2022, to assess the environmental conditions of the subject property. The subject property consists of two vacant parcels. The eastern parcel (4941 01 33 0010) is 178,396.00 square feet in size. The western parcel (4941 01 31 0020) is of 362,511.00 square feet in size. No storm drains were observed at the subject property. No pad mounted electric transformers were noted onsite. No large quantities of solid waste were noted at the subject property.

No indications of Underground Storage Tanks (UST), Aboveground Storage Tanks (AST), surface staining, stressed vegetation or unidentified materials were not observed on the subject property. Furthermore, no pits, unnatural fill areas, ponds, lagoons, or stressed vegetation were observed on the subject property. Additionally, HAI did not observe the presence of sumps, floor drains or other underground structures that would be considered a concern. No obvious signs of contamination were noted in the subject property structures. Furthermore, no evidence for the potential of vapor-phase contaminants from on-site or off-site sources was observed during the site visit. No large quantities of solid waste were observed on the subject property.

HAI contracted Environmental Data Resources, Inc. (EDR) to compile regulatory information for the subject property and vicinity. Additionally, HAI visited the Broward County Environmental Protection and Growth Management Department (EPGMD) online database and the Florida Department of Environmental Protection (FDEP) online database to obtain and review the regulatory files for the subject property and off-site facilities identified as Recognized Environmental Conditions (REC). The subject property and abutting properties are listed in the EDR report, the Broward County EPGMG or FDEP files as a Historical Auto site, AST facility, Financial Assurance, TIER 2, and BROWARD CO. HM. For clarity these listings are for the commercial building located to the north of the subject site which has the same address (777 State Road 7). The subject site is not listed.

There are off-site facilities identified with soil and/or groundwater contamination within a one-mile radius of the subject property. Based on the regulatory information reviewed; and the distance and/or direction of these listed facilities from the subject property, they are not considered a recognized environmental condition (REC). Additionally, no evidence for the potential of vapor-phase contaminants from off-site sources to intrude into the subject property buildings was observed during the site visit.

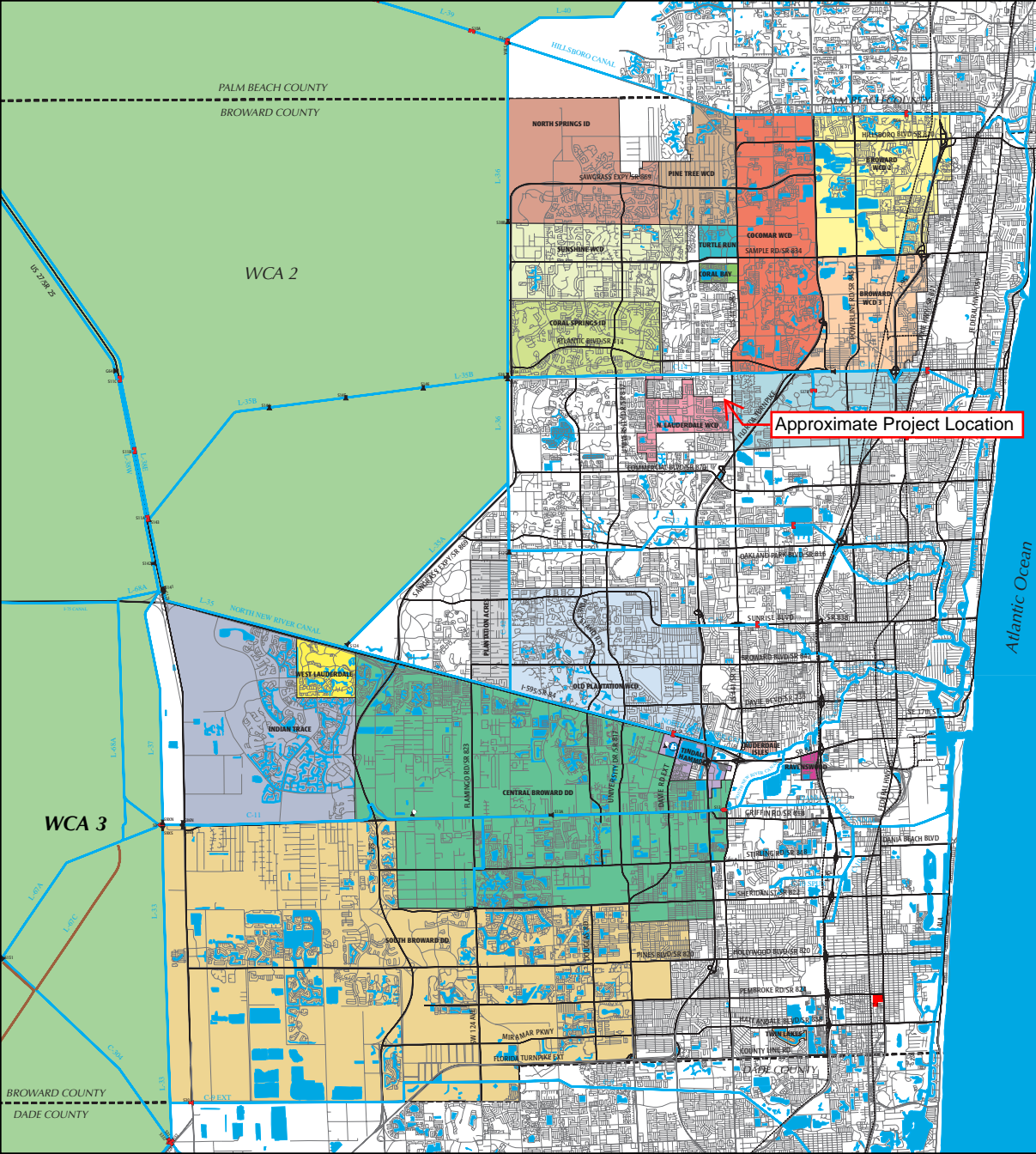
A wetlands survey was not conducted as part of this assessment. No obvious wetland or low lying areas were noted during the site visit. The western portions of the subject site are identified on the National Wetlands Inventory Map. However, the Broward County Environmental Engineering and Permitting division issued correspondence dated March 3, 2021 indicating that there are no County jurisdictional wetlands on-site. A copy of the Broward County letter is included in Appendix 8.7.

**This assessment revealed no recognized environmental conditions (RECs) in connection with the historical or current usage of the subject property. Therefore, no further assessment is warranted at this time.**



**APPENDIX A-4**

**SPECIAL DRAINAGE DISTRICT MAP**



**SPECIAL DRAINAGE DISTRICTS**

- Broward County Water Control District #2 (954) 831-0767
- Broward County Water Control District #3 (954) 831-0767
- Broward County Water Control District #4 (954) 831-0767
- Central Broward Drainage District (954) 432-5110
- Cocomar Water Control District (954) 831-0767
- Coral Bay Community Development District (954) 724-2001
- Coral Springs Improvement District (954) 753-0380
- Indian Trace Community Development District (954) 753-5841
- Lauderdale Isles Water Control District (954) 584-7591
- North Lauderdale Water Control District (954) 771-0880
- North Springs Improvement District (954) 753-0380
- Old Plantation Water Control District (954) 472-5596
- Pine Tree Water Control District (954) 753-0380
- Plantation Acres Improvement District (954) 474-3092
- Ravenswood Water Control District (954) 831-0767
- South Broward Drainage District (954) 680-3337
- Sunshine Water Control District (954) 753-0380
- Tindall Hammock Irrigation & Soil Conservation District (954) 566-8341
- Turtle Run Community Development District (954) 753-0380
- Twin Lakes Water Control District (954) 831-0767
- West Lauderdale Water Control District (954) 753-0380

Approximate Project Location



**SPECIAL DRAINAGE DISTRICTS WITHIN BROWARD COUNTY**



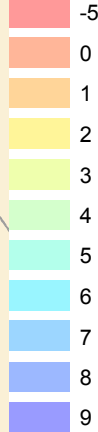
Water Resources Operations

**APPENDIX A-5**

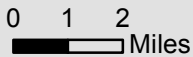
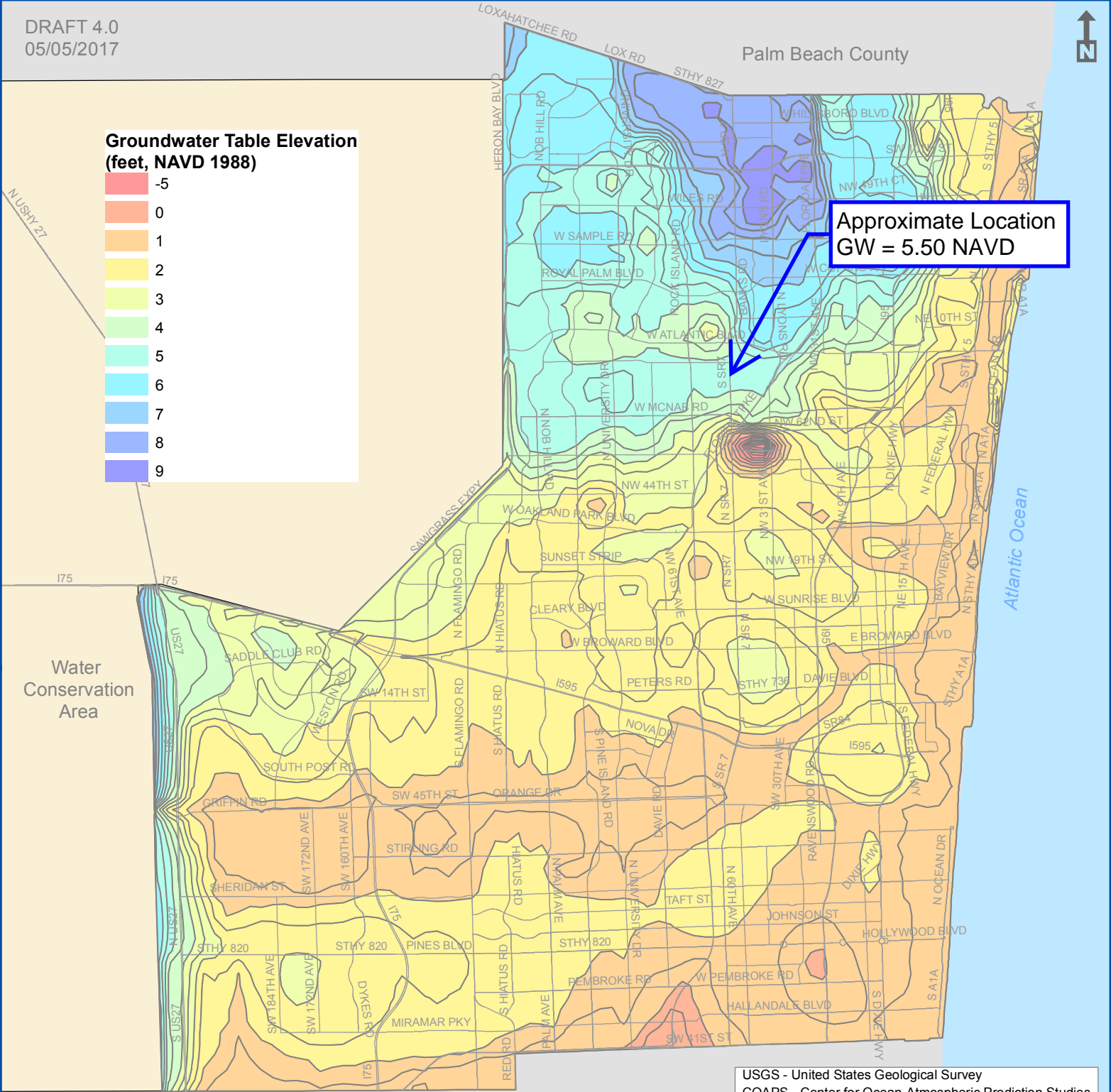
**FUTURE CONDITIONS AVERAGE WET SEASON GROUNDWATER  
ELEVATION MAP**

DRAFT 4.0  
05/05/2017

**Groundwater Table Elevation (feet, NAVD 1988)**



Approximate Location  
GW = 5.50 NAVD



Miami-Dade County

USGS - United States Geological Survey  
 COAPS - Center for Ocean-Atmospheric Prediction Studies  
 CCSM - Community Climate System Model  
 USACE - United States Army Corps of Engineers  
 NRC3 - National Research Council Curve 3  
 NAVD 88 - 1988 North American Vertical Datum

Division Name: Environmental Planning and Community Resilience  
 Department Name: Environmental Protection and Growth Management

The map represents the expected future average wet season groundwater elevations for Broward County. The average is based on model outputs for the months of May through October over the period of 2060-2069. The models used are The Broward County Inundation Model and the Broward County Northern Variable Density model, both developed by the USGS and MODFLOW based. The future conditions that are modified in the models are both precipitation and sea level rise. The future precipitation pattern is based on the COAPS downscaled CCSM global model and represents an increase of 9.1% rainfall from the base case of 1990-1999 (53.4 in/yr to 58.2 in/yr). Sea level rise was based on the USACE NRC3 curve which equates to an increase of 26.6 to 33.9 inches to the future period from 1992 levels. Final results are presented in NAVD 88.

This map is for planning purposes and should not be used for legal boundary determinations.

**APPENDIX A-6**  
**FLOOD ZONE MAP**

Prelim Zone AH  
(EL 11 Feet)

**PANEL**  
**12011C0355H**  
eff. **12011C0355H**  
**8/18/2014**

CITY OF  
MARGATE  
120047

0.2 PCT ANNUAL  
CHANCE FLOOD HAZARD  
Prelim Zone X

Search result

777 S State Road 7, Margate, FL, 33068, USA

[Zoom to](#)

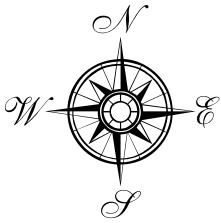
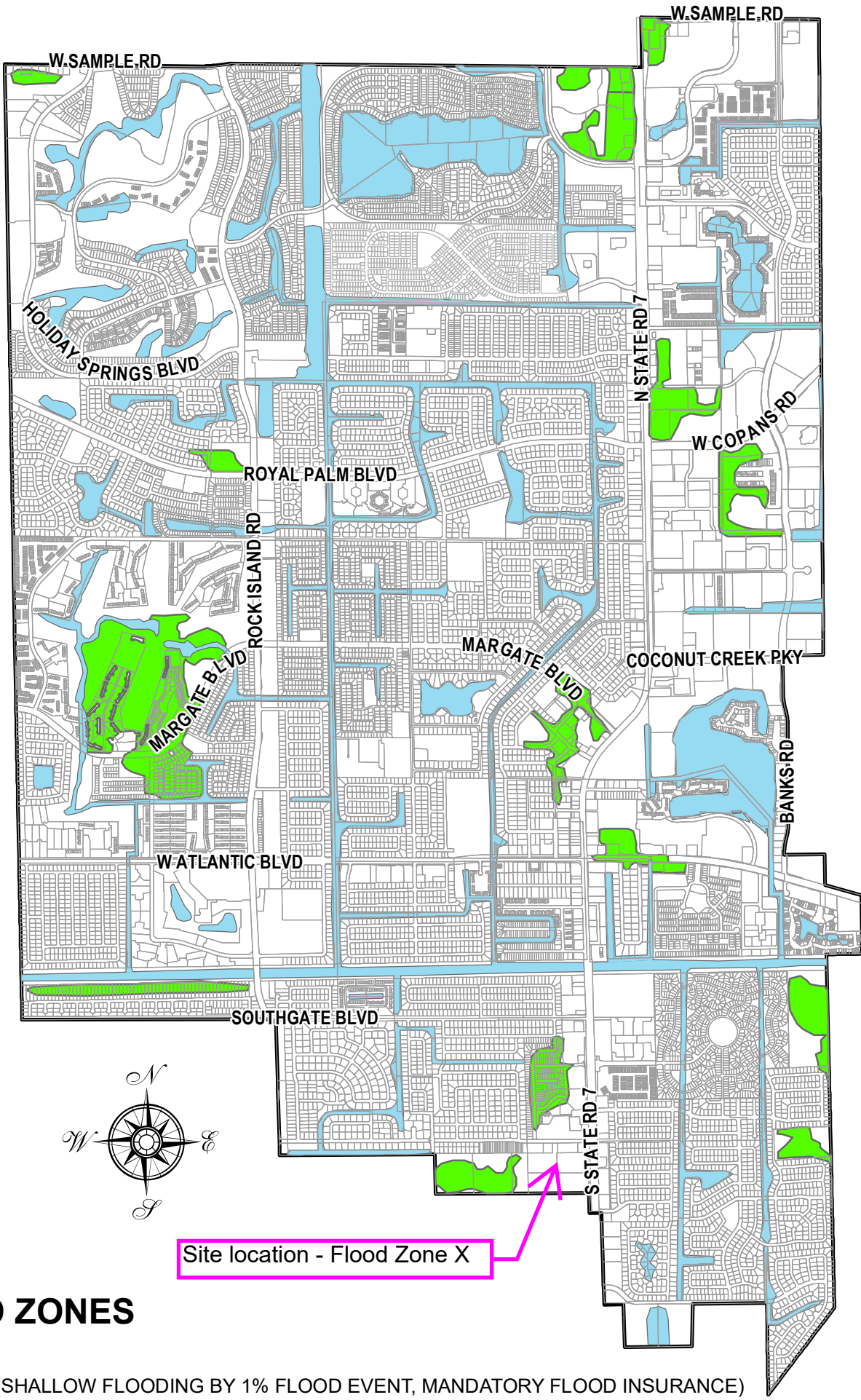
Zone AH  
(EL 10 Feet)  
Prelim Zone AH  
(EL 10 Feet)

Zone AE  
(EL 10)

OF NORTH  
DERDALE  
20049

**PANEL**  
**12011C0354H**  
eff. **8/18/2014**

**PRELIM PANEL**  
**12011C0355H**



Site location - Flood Zone X

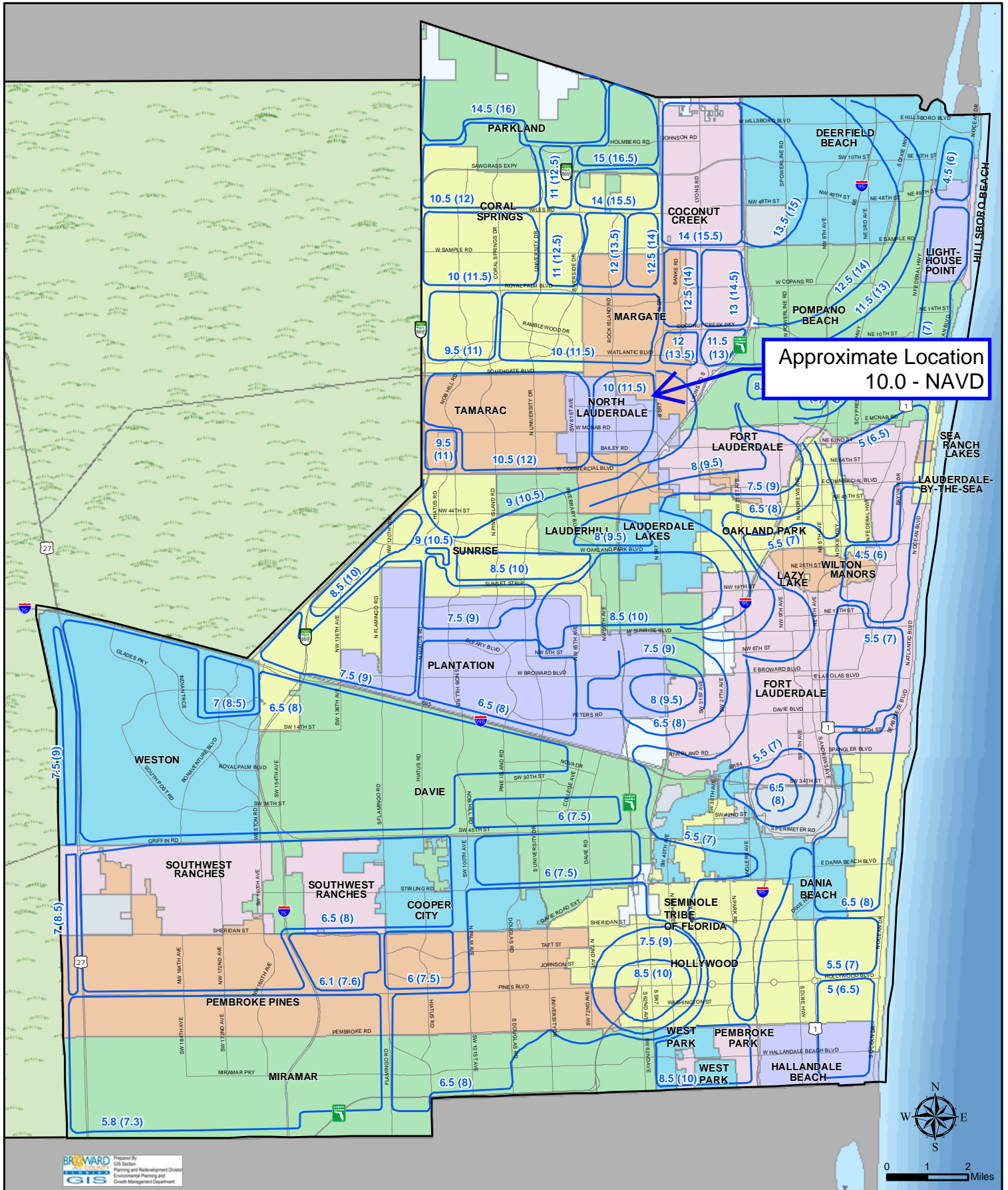
## FLOOD ZONES

- AH (SHALLOW FLOODING BY 1% FLOOD EVENT, MANDATORY FLOOD INSURANCE)
- AE (INUNDATION BY 1% FLOOD EVENT, MANDATORY FLOOD INSURANCE)
- X (MANDATORY FLOOD INSURANCE PURCHASE REQUIREMENTS DO NOT APPLY)

**APPENDIX A-7**

**100-YEAR FLOOD ELEVATION**





Approximate Location  
10.0 - NAVD

**100 Year Flood Contours NAVD (NGVD)**  
Example: 6.5 (8)

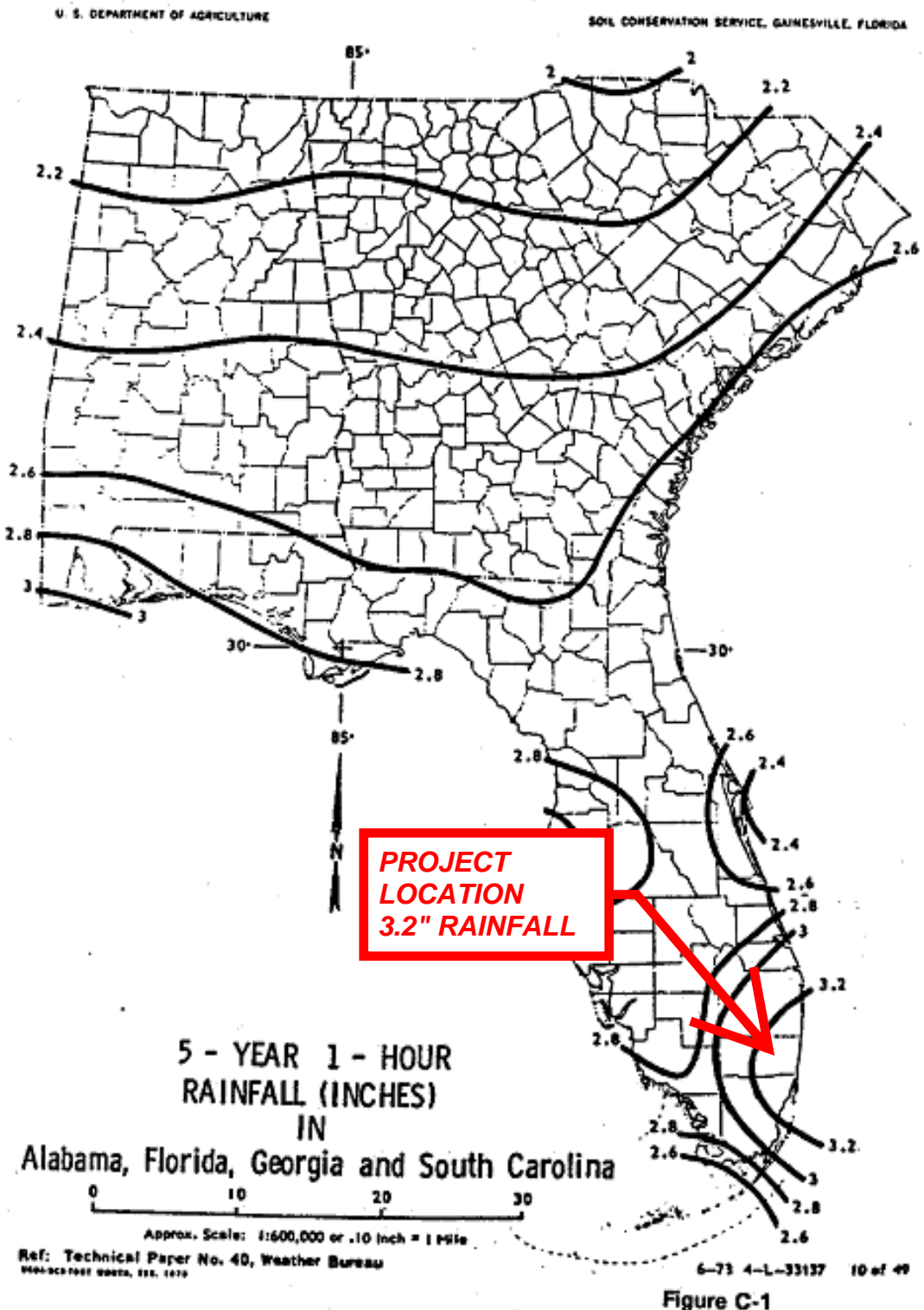
This map is for conceptual purposes only and should not be used for legal boundary determinations.

Elevations converted from NGVD to NAVD using the FEMA approved conversion factor for Broward County of (-)1.5, based on 1997 FEMA Flood Data

**APPENDIX A-8**

**SFWMD FLOOD CRITERIA  
(5-YEAR, 1-HOUR RAINFALL)**

Appendix C: Isohyetal Maps  
from SFWMD Technical Memorandum, *Frequency Analysis of One and Three Day  
Rainfall Maxima for central and southern Florida, Paul Trimble, October 1990.*



**APPENDIX A-9**

**SFWMD FLOOD CRITERIA  
(10-YEAR, 1-DAY RAINFALL)**

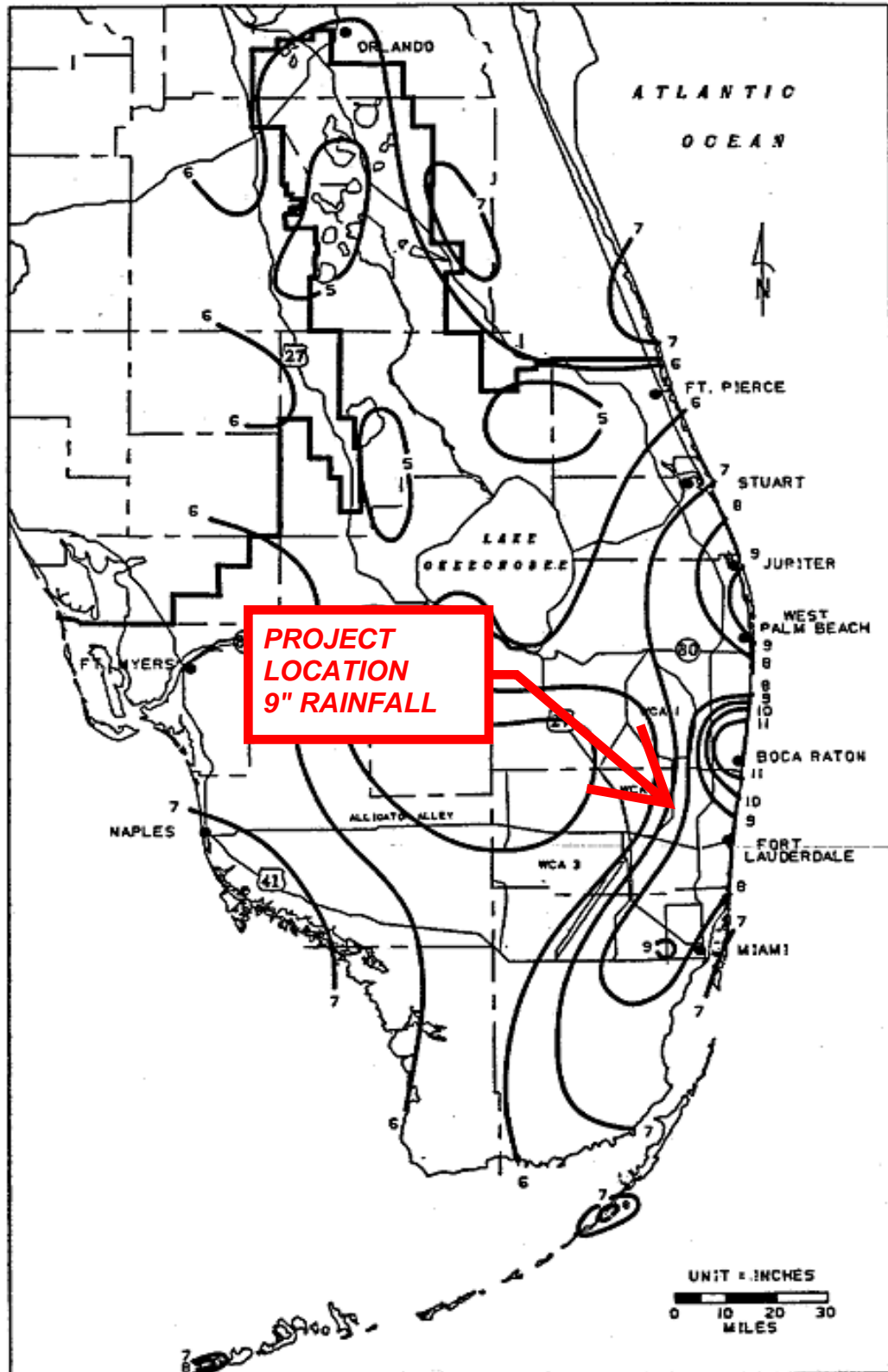


FIGURE C-4. 1-DAY RAINFALL: 10-YEAR RETURN PERIOD

**APPENDIX A-10**

**SFWMD FLOOD CRITERIA  
(25-YEAR, 3-DAY RAINFALL)**

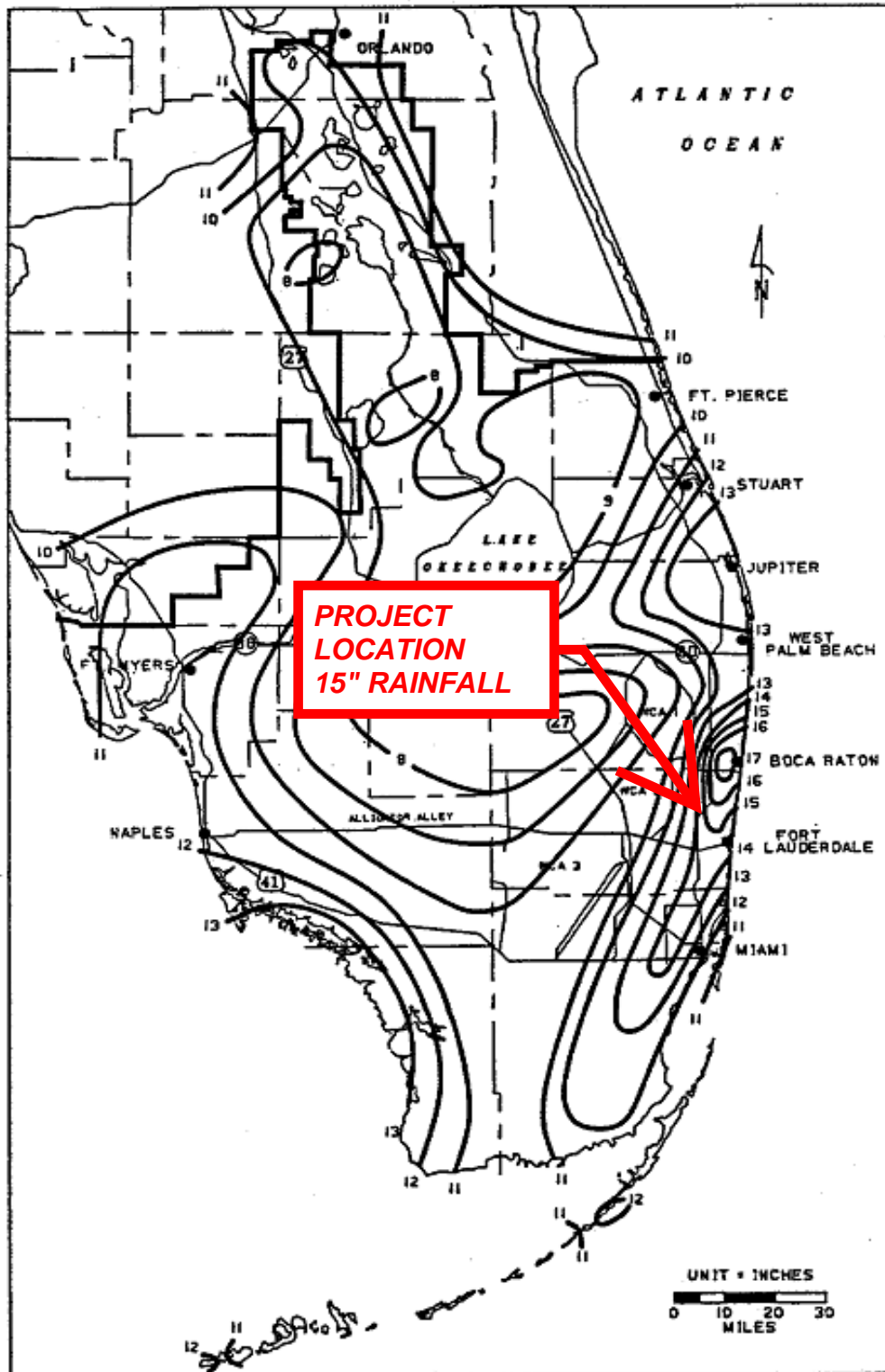


FIGURE C-8. 3-DAY RAINFALL: 25-YEAR RETURN PERIOD

**APPENDIX A-11**  
**SFWMD FLOOD CRITERIA**  
**(100-YEAR, 3-DAY RAINFALL)**



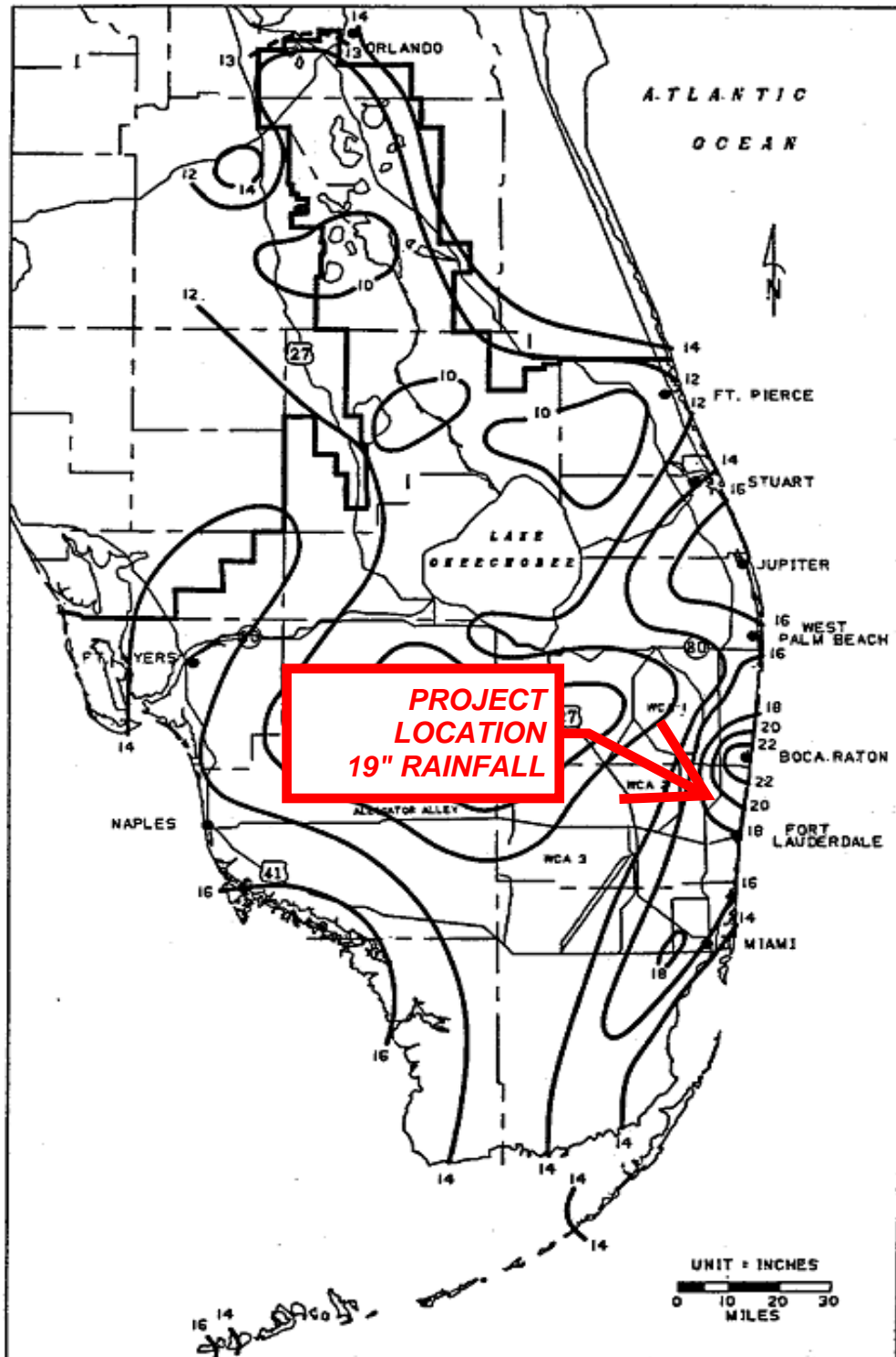
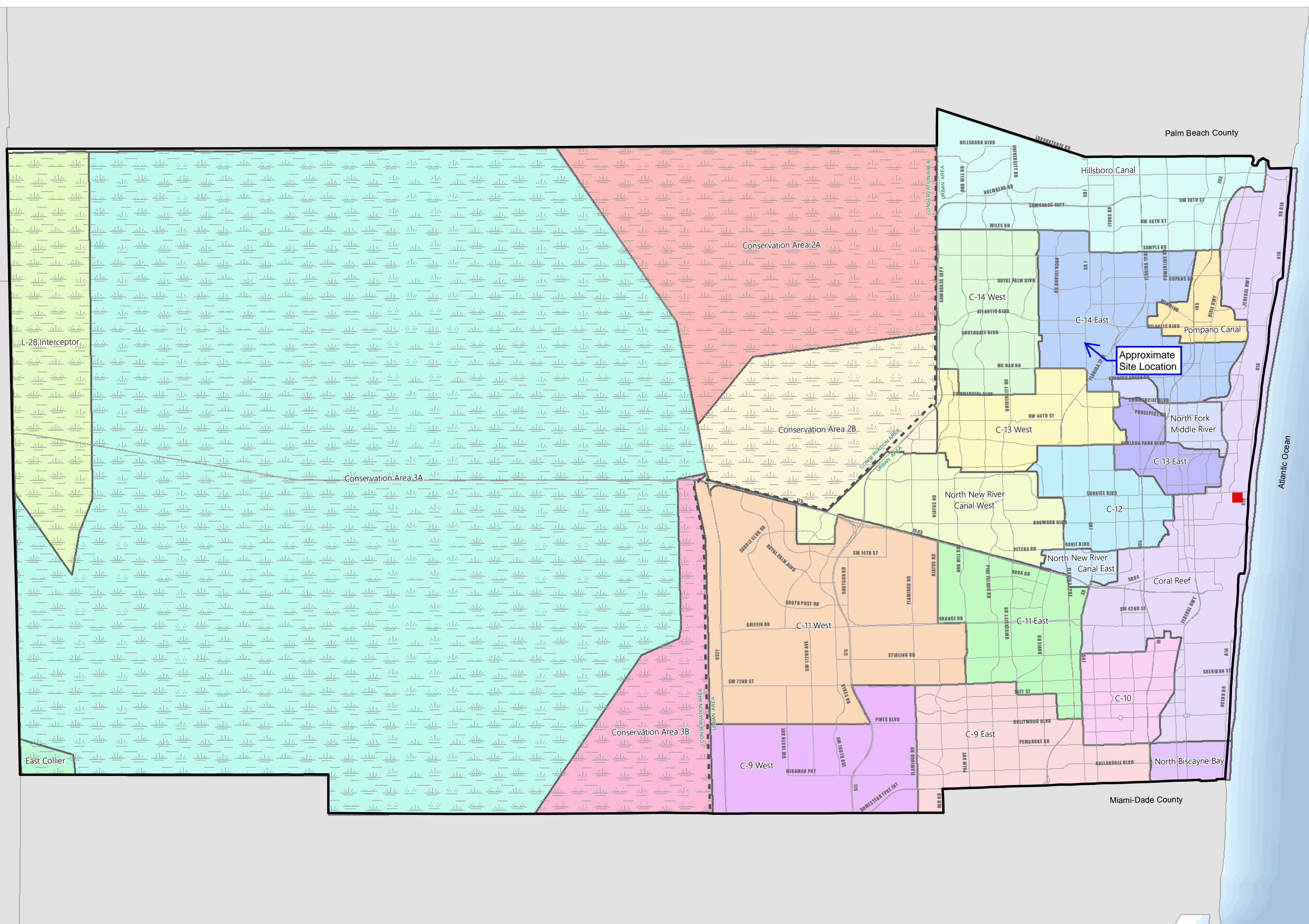


FIGURE C-9. 3-DAY RAINFALL: 100-YEAR RETURN PERIOD

**APPENDIX A-12**  
**BROWARD COUNTY BASIN MAP**



## Legend

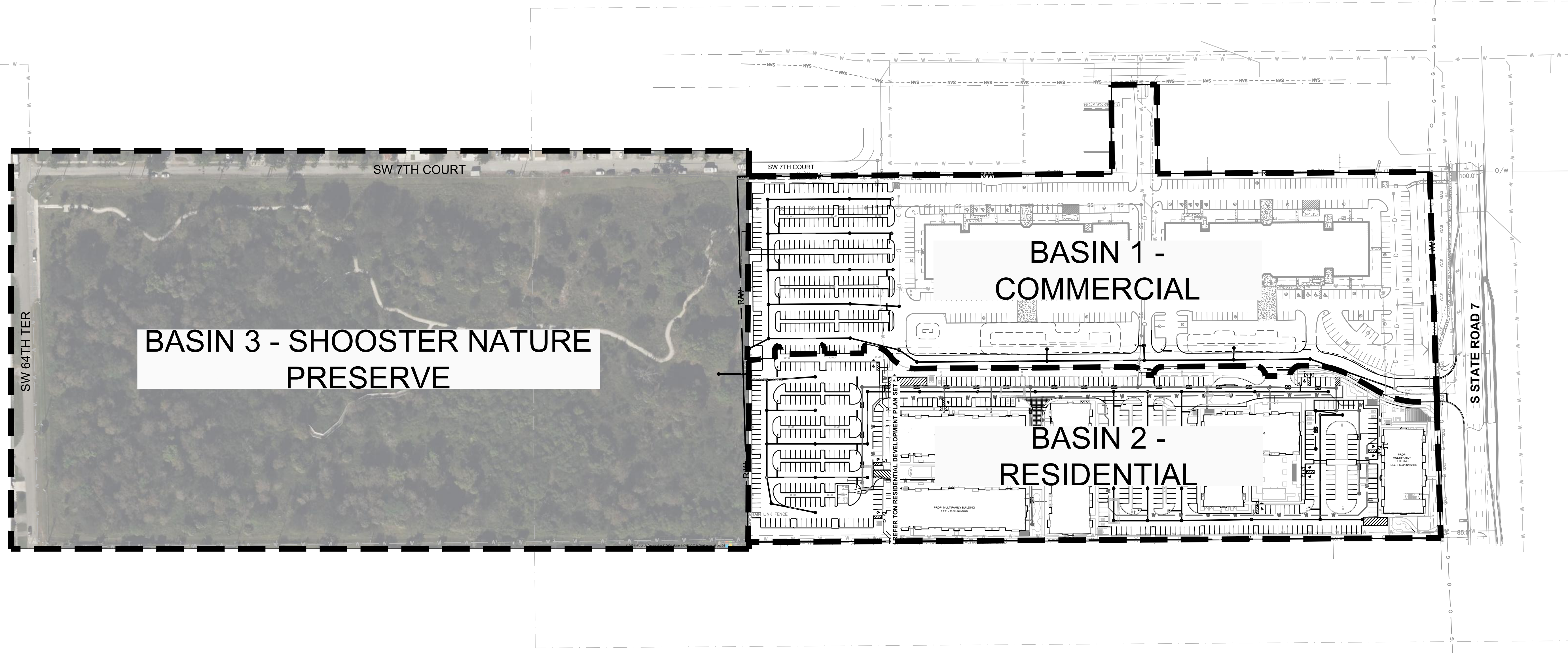
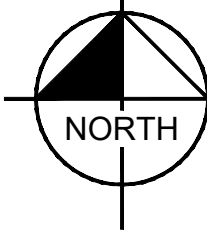
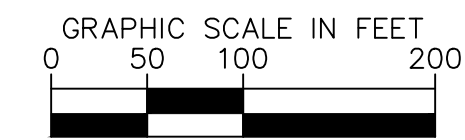
- County Boundary
- Urban Area Boundary
- Major Roads
- Drainage Basins (with basin names)
- Water Conservation Areas (with names)

Source: South Florida Water Management District  
Environmental Protection and Growth Management Department  
Environmental Planning and Community Resilience  
Broward GIS, 2016

This map is for conceptual purposes only and is not intended for legal boundary determinations.

**APPENDIX A-13**  
**BASIN EXHIBIT**

Plotted By: Willdon, Terese Sheet Set: SR-7 MARGATE Layout: PCD-1.2 KEY SHEET August 06, 2024 07:06:53pm K:\MB\_LUR0\143660000 - Margate\Civil\Design\CADD\Exhibits\2024-07-26 - Basin exhibit\Basin exhibit.dwg



DATE: 8/6/2024

**Kimley»Horn**  
601 PETERS ROAD, SUITE 2200  
P.O. BOX 10000  
PHOENIX, AZ 85068  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35108

MARGATE PARKING DEVELOPMENT  
FOR:  
REZ SE LAND, LLC  
LOCATED AT:  
BROWARD COUNTY, FLORIDA.

NOT FOR CONSTRUCTION

DRAWN \_\_\_\_\_  
DATE \_\_\_\_\_  
SCALE AS SHOWN  
JOB NO. 143660000  
SHEET TITLE:

SHEET NUMBER:

PLANS ARE IN NAVD 1988 DATUM  
CONVERSION EQUATION IS BELOW:  
(NAVD 1988) + 1.6' = (NGVD 1929)

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE AND OBTAINING ALL NECESSARY PERMITS

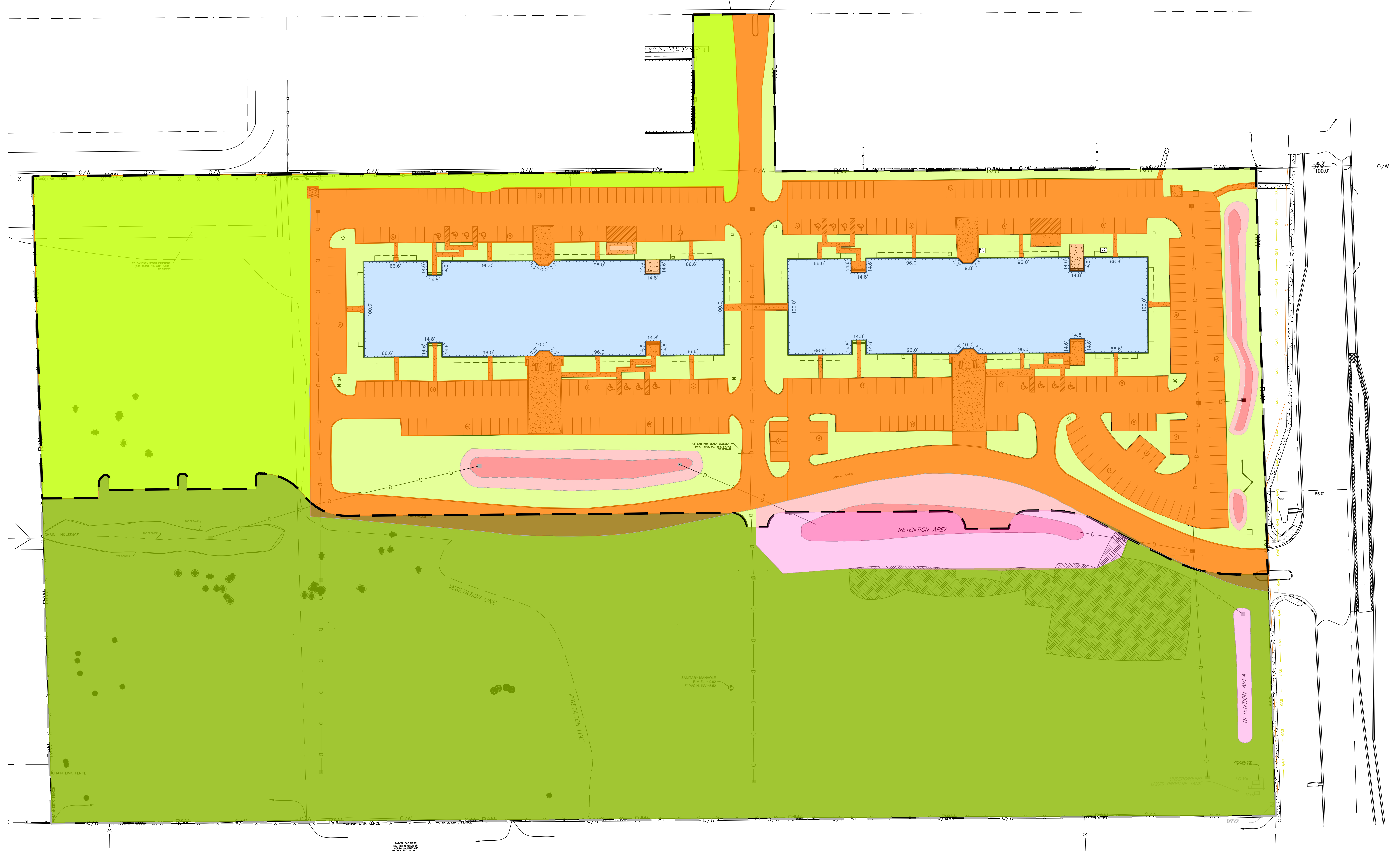
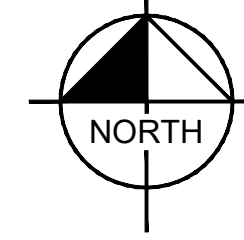
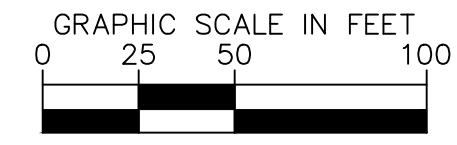
**Sunshine811**  
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*Check positive response codes before you dig!*

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**APPENDIX A-14**  
**EXISTING AREA CALCS**

DRAINAGE AREAS						
	IMPERVIOUS (ACRES)	BUILDING & OVERHANG (ACRES)	PERVIOUS (ACRES)	EXISTING DETENTION BOTTOM (ACRES)	EXISTING DETENTION BANK (ACRES)	TOTAL (ACRES)
BASIN 1	3.98	1.67	4.50	0.19	0.39	10.73
BASIN 2	0.16	—	8.59	0.13	0.35	9.23
TOTAL	4.14	1.67	14.02	0.05	0.08	19.96

AREA LEGEND					
	IMPERVIOUS	BUILDING & OVERHANG	PERVIOUS	EXISTING DETENTION BOTTOM	EXISTING DETENTION BANK
BASIN 1	[Orange]	[Blue]	[Light Green]	[Pink]	[Light Pink]
BASIN 2	[Brown]	[White]	[Dark Green]	[Light Green]	[Light Pink]



PLANS ARE IN NAVD 1988 DATUM  
CONVERSION EQUATION IS BELOW:  
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THE PRESENCE OF GROUNDWATER  
SHOULD BE ANTICIPATED. CONTRACTOR'S  
BID SHALL INCLUDE CONSIDERATION FOR  
ADDRESSING THIS ISSUE AND OBTAINING  
ALL NECESSARY PERMITS

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DATE \_\_\_\_\_  
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JOB NO. 14366000  
SHEET TITLE:

SHEET NUMBER:

**Kimley** **Horn**  
801 PETERS ROAD, SUITE 2200  
P.O. BOX 1000  
PHONE 954-538-5100  
WWW.KIMLEY-HORN.COM REGISTRY NO. 35108

DATE: 8/6/2024

MARGATE PARKING  
DEVELOPMENT  
FOR:  
REZ SE LAND, LLC  
LOCATED AT:  
BROWARD COUNTY, FLORIDA.

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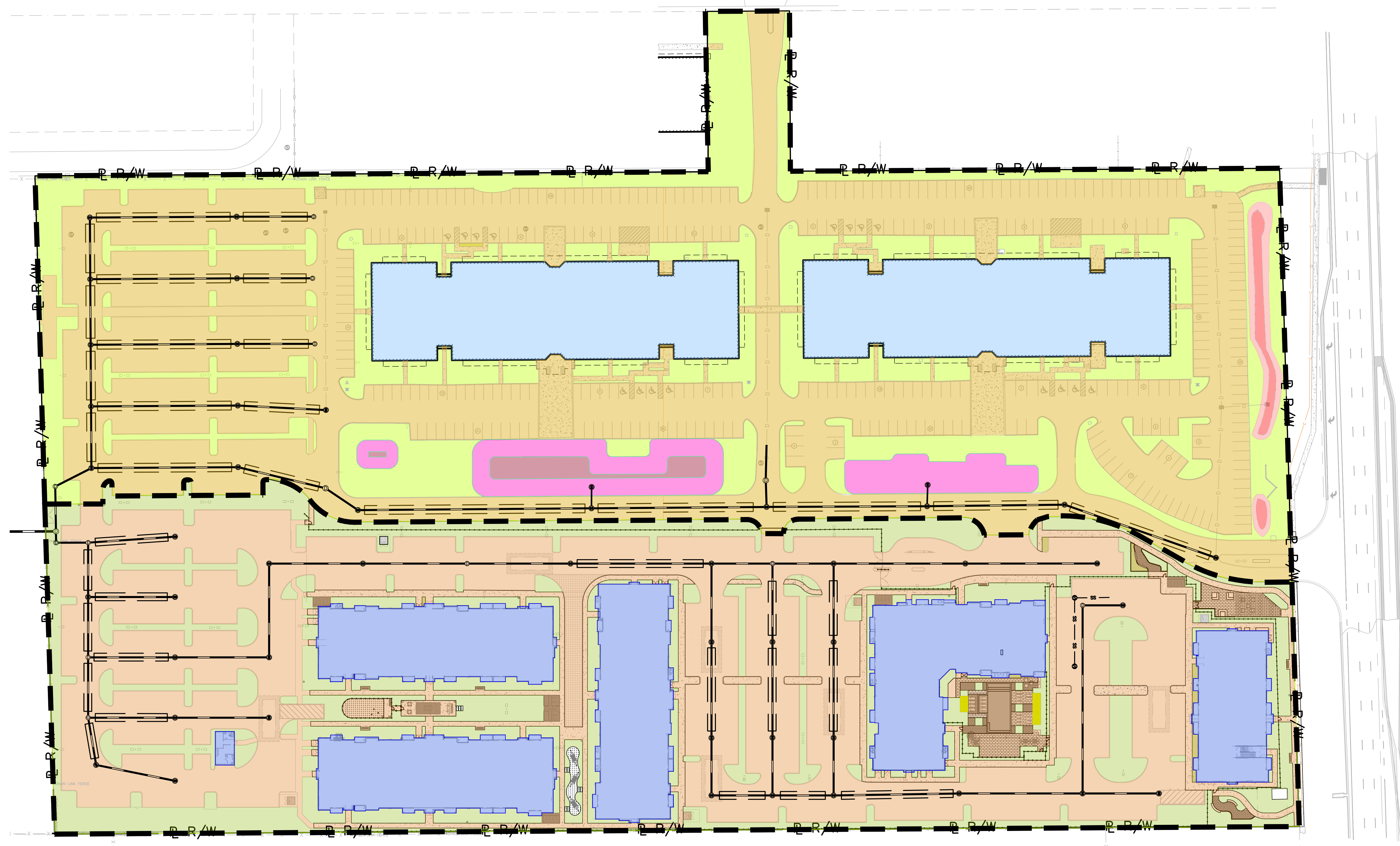
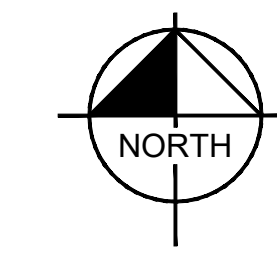
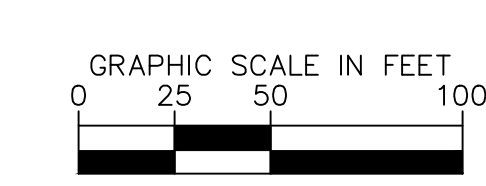
BY

**APPENDIX A-15**  
**PROPOSED AREA CALCS**

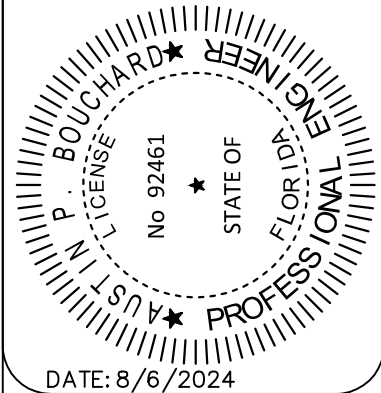


DRAINAGE AREAS								
	IMPERVIOUS (ACRES)	BUILDING & OVERHANG (ACRES)	PERVIOUS (ACRES)	EX. DETENTION BOTTOM (ACRES)	EX. DETENTION BANK (ACRES)	PROP. DETENTION BOTTOM (ACRES)	PROP. DETENTION BANK (ACRES)	TOTAL (ACRES)
BASIN 1	5.80	1.67	2.62	0.05	0.08	0.08	0.43	10.73
BASIN 2	4.99	2.01	2.23	—	—	—	—	9.23
TOTAL	10.79	3.68	4.85	0.05	0.08	0.08	0.43	19.96

AREA LEGEND							
	IMPERVIOUS	BUILDING & OVERHANG	PERVIOUS	EXISTING DETENTION BOTTOM	EXISTING DETENTION BANK	PROPOSED DETENTION BOTTOM	PROPOSED DETENTION BANK
BASIN 1	[Orange]	[Blue]	[Green]	[Red]	[Pink]	[Light Blue]	[Light Green]
BASIN 2	[Orange]	[Blue]	[Green]	[Red]	[Pink]	[Light Blue]	[Light Green]



MARGATE PARKING DEVELOPMENT  
 FOR:  
 REZ SE LAND, LLC  
 LOCATED AT:  
 BROWARD COUNTY, FLORIDA.



**Kimley & Horn**  
 8011 PETERS ROAD, SUITE 2200  
 PALM BEACH, FLORIDA 33410  
 PHONE 561-838-5100  
 WWW.KIMLEY-HORN.COM REGISTRY NO. 35108

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 DATE \_\_\_\_\_  
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SHEET NUMBER:

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 PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

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**APPENDIX B: DRAINAGE CALCULATIONS**

**APPENDIX B-1**

**TR-55 REPORT – BASIN 1 (COMMERCIAL)**

## Land Use + Soil Storage Calculations

Margate Proposed Development - Commercial (Basin 1)  
Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### Existing Land Use

Description	Sub-Area (ac)	Area (ac)
Impervious Area		5.65
Building	1.67	
Asphalt / Sidewalk / Other Imp.	3.98	
Pervious Area		5.08
Dry Detention Bottom	0.19	
Dry Detention Banks	0.39	
Landscaping	4.50	
Total Area		10.73

### Proposed Land Use

Description	Sub-Area (ac)	Area (ac)
Impervious Area		7.47
Building	1.67	
Asphalt / Sidewalk / Other Imp.	5.80	
Pervious Area		3.26
Dry Detention Bottom (Proposed Detention Areas)	0.08	
Dry Detention Banks (Proposed Detention Areas)	0.43	
Dry Detention Bottom (Existing Detention Areas)	0.05	
Dry Detention Banks (Existing Detention Areas)	0.08	
Landscaping	2.62	
Total Area		10.73

## Land Use + Soil Storage Calculations

Margate Proposed Development - Commercial (Basin 1)  
Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### Soil Storage

	Existing	Proposed	DATUM
Wet Season Water Table / Control Elevation	5.50	5.50	NAVD
Soil Storage Capability (Coastal, Flatwoods, Depressional)	Depressional	Depressional	
Average Site Elevation (Dry Detention Bottom)	8.50	8.20	NAVD
Average Depth to Water Table (Dry Detention Bottom)	3.00	2.70	ft
Soil Storage Capability (Depressional, w/ 25% reduction)	3.30	1.58	in
Soil Storage (S) Over the Site (Dry Detention Bottom)	0.06	0.01	in
Average Site Elevation (Dry Detention Banks)	9.25	9.00	NAVD
Average Depth to Water Table (Proposed Land Use)	3.75	3.50	ft
Soil Storage Capability (Depressional, w/ 25% reduction)	3.30	3.30	in
Soil Storage (S) Over the Site (Proposed Land Use)	0.12	0.02	in
Average Site Elevation (Landscaping)	9.75	9.75	NAVD
Average Depth to Water Table (Landscaping)	4.25	4.25	ft
Soil Storage Capability (Depressional, w/ 25% reduction)	5.10	5.10	in
Soil Storage (S) Over the Site (Landscaping)	2.14	1.25	in
Soil Storage (S) Over the Site (Entire Site)	2.32	1.28	in
Curve Number (CN) Based on Soil Storage (S)	81.2	88.7	

## Site Stage-Storage - Existing

Margate Proposed Development - Commercial (Basin 1)  
 Project No: 143660000

Stage Step Interval:	0.5
Start Stage Elevation:	5.50

	Impervious Area	Dry Detention Bottom	Dry Detention Banks	Landscaping	Total Area
Storage Type	L	V	L	L	
Area (ac)	3.980	0.190	0.390	4.500	9.060
Avg Low Elev.	9.30	8.50	8.50	9.00	
Avg High Elev.	10.50		10.00	10.50	

Stage	Impervious Area	Dry Detention Bottom	Dry Detention Banks	Landscaping	TOTAL CUM, AC-FT
<b>5.50</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>6.00</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>6.50</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>7.00</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>7.50</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>8.00</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>8.50</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>9.00</b>	0.000	0.095	0.033	0.000	<b>0.128</b>
<b>9.50</b>	0.066	0.190	0.130	0.375	<b>0.761</b>
<b>10.00</b>	0.813	0.285	0.293	1.500	<b>2.890</b>
<b>10.50</b>	2.388	0.380	0.488	3.375	<b>6.631</b>
<b>11.00</b>	4.378	0.475	0.683	5.625	<b>11.161</b>
<b>11.50</b>	6.368	0.570	0.878	7.875	<b>15.691</b>
<b>12.00</b>	8.358	0.665	1.073	10.125	<b>20.221</b>
<b>12.50</b>	10.348	0.760	1.268	12.375	<b>24.751</b>
<b>13.00</b>	12.338	0.855	1.463	14.625	<b>29.281</b>
<b>13.50</b>	14.328	0.950	1.658	16.875	<b>33.811</b>

## Site Stage-Storage - Proposed

Margate Proposed Development - Commercial (Basin 1)  
 Project No: 143660000

TVC  
 8/6/2024

Stage Step Interval:	0.5
Start Stage Elevation:	5.50

Storage Type  
 Area (ac)  
 Avg Low Elev.  
 Avg High Elev.

Impervious Area	Dry Detention Bottom (Proposed Detention Areas)	Dry Detention Banks (Proposed Detention Areas)	Dry Detention Bottom (Existing Detention Areas)	Dry Detention Banks (Existing Detention Areas)	Landscaping	Total Area
L	V	L	V	L	L	
5.800	0.080	0.430	0.050	0.080	2.620	9.060
9.50	6.50	6.50	8.20	8.20	9.50	
12.50		10.50		9.80	10.00	

							TOTAL
Stage	Impervious Area	Dry Detention Bottom (Proposed Detention Areas)	Dry Detention Banks (Proposed Detention Areas)	Dry Detention Bottom (Existing Detention Areas)	Dry Detention Banks (Existing Detention Areas)	Landscaping	CUM, AC-FT
<b>5.50</b>	0.000	0.000	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>6.00</b>	0.000	0.000	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>6.50</b>	0.000	0.000	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>7.00</b>	0.000	0.040	0.013	0.000	0.000	0.000	<b>0.053</b>
<b>7.50</b>	0.000	0.080	0.054	0.000	0.000	0.000	<b>0.134</b>
<b>8.00</b>	0.000	0.120	0.121	0.000	0.000	0.000	<b>0.241</b>
<b>8.50</b>	0.000	0.160	0.215	0.015	0.002	0.000	<b>0.392</b>
<b>9.00</b>	0.000	0.200	0.336	0.040	0.016	0.000	<b>0.592</b>
<b>9.50</b>	0.000	0.240	0.484	0.065	0.042	0.000	<b>0.831</b>
<b>10.00</b>	0.242	0.280	0.658	0.090	0.080	0.655	<b>2.005</b>
<b>10.50</b>	0.967	0.320	0.860	0.115	0.120	1.965	<b>4.347</b>
<b>11.00</b>	2.175	0.360	1.075	0.140	0.160	3.275	<b>7.185</b>
<b>11.50</b>	3.867	0.400	1.290	0.165	0.200	4.585	<b>10.507</b>
<b>12.00</b>	6.042	0.440	1.505	0.190	0.240	5.895	<b>14.312</b>
<b>12.50</b>	8.700	0.480	1.720	0.215	0.280	7.205	<b>18.600</b>
<b>13.00</b>	11.600	0.520	1.935	0.240	0.320	8.515	<b>23.130</b>
<b>13.50</b>	14.500	0.560	2.150	0.265	0.360	9.825	<b>27.660</b>
<b>14.00</b>	17.400	0.600	2.365	0.290	0.400	11.135	<b>32.190</b>

## Water Quality Calculations - Proposed

Margate Proposed Development - Commercial (Basin 1)  
Project No: 143660000

Designed by: TVC  
Checked by: AB  
Date: 8/6/2024

### I. LAND USE:

1	Building	1.67 ac.	15.56%
2	Garages	0.00 ac.	0.00%
3	Asphalt / Sidewalk / Other Imp.	5.80 ac.	54.05%
4	Lake Surface	0.00 ac.	0.00%
5	Lake Banks	0.00 ac.	0.00%
6	Pervious Pavement	0.00	0.00%
7	Dry Detention Bottom	0.13 ac.	1.21%
8	Dry Detention Banks	0.51 ac.	4.75%
9	Landscaping	2.62 ac.	24.42%
<b>Total =</b>		<b>10.73 ac.</b>	<b>100%</b>

**Total overall impervious surface with building = 69.62%**

Is the site within a basin discharging to WNAS? **No**

### II. WATER QUALITY CRITERIA:

Quality standards shall be provided for one of the following three combinations:

1. If a wet detention system, then whichever is the greater of the following:
  - a. The first inch of runoff from the entire project site.
  - b. The amount of 2.5 inches times the percent impervious for the project site.
2. Exfiltration trench requires the volume required for the wet detention system.
3. If the site is within a basin that discharges to an Impaired Water Body (Waters Not Attaining Standards - WNAS), must provide an additional 50% of Required Water Quality Volume as reasonable assurance to not impact water quality.

### III. WATER QUALITY COMPUTATIONS:

1. Compute the first inch of runoff from the entire developed project site:
 
$$= 1.00 \text{ inch} \times 10.73 \text{ acres} \times (1 \text{ foot} / 12 \text{ inches})$$

$$= \mathbf{0.894 \text{ ac-ft for the first inch of runoff}}$$
2. Compute 2.5 inches times the percent impervious for the developed project site:
  - a. Site area for water quality pervious / impervious calculations only:
 
$$= \text{Total Project} - (\text{Lake Area} + \text{Buildings})$$

$$= 10.73 \text{ acres} - (0.00 \text{ acres} + 1.67 \text{ acres})$$

$$= \mathbf{9.06 \text{ acres of site area for water quality calculations}}$$
  - b. Impervious area for water quality pervious / impervious calculations only:
 
$$= \text{Site area for water quality} - \text{Pervious area}$$

$$= 9.06 \text{ acres} - 3.26 \text{ acres}$$

$$= \mathbf{5.80 \text{ acres of impervious area for water quality calculations}}$$
  - c. Percentage of impervious area for water quality:
 
$$= \text{Impervious area for water quality} / \text{Site area for water quality} \times 100\%$$

$$= 5.80 \text{ acres} / 9.060 \text{ acres} \times 100\%$$

$$= \mathbf{64.02 \% \text{ Impervious}}$$
  - d. For 2.5 inches times the percentage of impervious area:
 
$$= 2.5 \text{ inches} \times 64.02 \%$$

$$= \mathbf{1.60 \text{ inches to be treated}}$$
  - e. Compute volume required for quality detention:
 
$$= \text{Inches to be treated} \times (\text{Total Site Area} - \text{Lake Area})$$

$$= 1.60 \text{ inches} \times (10.73 \text{ acres} - 0.000 \text{ acres}) \times (1 \text{ foot} / 12 \text{ inches})$$

$$= \mathbf{1.43 \text{ ac-ft required for detention storage}}$$
3. The first inch of runoff from the entire developed site = 0.894 ac-ft  
 2.5 inches times the percentage of impervious area = 1.431 ac-ft  
  
 Additional 50% if within WNAS (0.000 ac-ft if not within WNAS) = 0.000 ac-ft

**WQ volume of 1.431 ac-ft required**



### Exfiltration Trench Calculations - Proposed

Margate Proposed Development - Commercial (Basin 1)  
 Project No: 143660000

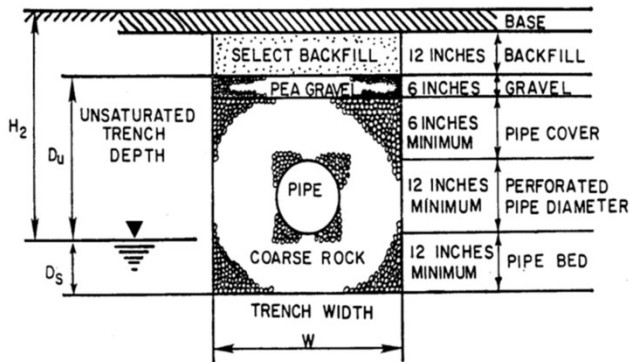
Designed by: TVC  
 Checked by: AB  
 Date: 8/6/2024

#### EXFILTRATION TRENCH CALCULATIONS:

1. Design Formula:  $L = 2 * (0.5 * V_{wq} + V_{add}) / ( K((H_2 * W) + (2 * H_2 * D_u) - (D_u^2) + (2 * H_2 * D_s)) + (1.39 * 10^4 * W * D_u))$

2. Design Information:

Weir Needed in ET System?	yes		
Weir Elevation	10.05 ft.		
$V_{wq}$ = Water Quality Vol. to be Exfiltrated:	17.17 ac-in	3.28"xSite =	2.93 ac-ft
$V_{add}$ = Add. Storage Vol. in 1 hour (up to 3.28"xSite - $V_{wq}$ ):	18.02 ac-in		35.19 ac-in
W = Trench Width:	9.00 ft.		
K = Hydraulic Conductivity:	3.550E-04	cfs/sq-ft per ft head	
H <sub>2</sub> = Depth of Water Table:	4.00 ft.		
D <sub>u</sub> = Non-Saturated Trench Depth:	2.50 ft.		
D <sub>s</sub> = Saturated Trench Depth:	2.00 ft.		
Total Trench Depth:	4.50 ft.		
3a. Exfiltration Trench Required (Quality):	573 ft.		
3b. Exfiltration Trench Allowed (Max. Additional Storage):	1202 ft.		
3c. Total Maximum Exfiltration Trench Allowed:	1775 ft.		
4. Exfiltration Trench Provided:	1755 ft.		
5. Storage Provided:			
Exfiltration Trench Vol Provided (Quality):	1.431 ac-ft		
Exfiltration Trench Vol Provided (Additional Storage):	1.477 ac-ft		
<b>Total Storage Volume Provided in Exfiltration Trench</b>	<b>2.908 ac-ft</b>		



Thickness (in)	Elev (ft)	Description
	9.50	Lowest Inlet
8		Asphalt + Base Thickness
12		Select Backfill
	8.00	Top of Trench (Top of Pea Gravel)
6		Pea Gravel
6		Pipe Cover (Min. 6")
	10.05	Weir Elevation (if applicable)
	7.00	Inside Top of Pipe
18		Pipe Size (Min. 12")
	5.50	Invert of Pipe
24		Pipe Bed (Min. 12")
	3.50	Bottom of Trench
	5.50	Water Table / Control Water Elevation

#### CHECKS

OK Dry System (Pipe Invert Higher than Water)

## TR-55 Volume Calculations - Proposed

Margate Proposed Development - Commercial (Basin 1)

Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### Volume Required

	<u>5-year/1 hours</u>	<u>10 year/24 hours</u>	<u>25-year /72 hours</u>	<u>100-year /72 hours</u>
Potential Maximum Retention (S) (in)	1.28	1.28	1.28	1.28
Rainfall (P) (in)	3.2	9	15	19
Total Site Drainage Area (A) (ac)	10.73	10.73	10.73	10.73
Runoff (Q) (in)	2.054	7.630	13.569	17.549
Volume of Runoff (V <sub>r</sub> ) (ac-ft)	1.836	6.823	12.133	15.692

### Stage - Storage Proposed

Stage (elev., ft)	Site Storage (ac-ft)	Total Volume Stored in Exfiltration Trench (V <sub>wq</sub> +V <sub>add</sub> +V <sub>void</sub> ) (ac-ft)	Volume in Underground Storage (ac-ft)	Total Storage (ac-ft)
5.50	0.000	0.000	0.000	0.000
6.00	0.000	0.000	0.000	0.000
6.50	0.000	0.000	0.000	0.000
7.00	0.053	0.000	0.000	0.053
7.50	0.134	0.000	0.000	0.134
8.00	0.241	2.908	0.000	3.149
8.50	0.392	2.908	0.000	3.300
9.00	0.592	2.908	0.000	3.500
9.50	0.831	2.908	0.000	3.739
10.00	2.005	2.908	0.000	4.913
10.50	4.347	2.908	0.000	7.255
11.00	7.185	2.908	0.000	10.093
11.50	10.507	2.908	0.000	13.415
12.00	14.312	2.908	0.000	17.220
12.50	18.600	2.908	0.000	21.508
13.00	23.130	2.908	0.000	26.038
14.00	32.190	2.908	0.000	35.098

### Summary Quality

Required Min Water Quality to Meet:	1.431 ac-ft
Water Quality Volume Met at Stage:	7.72 ft

Equations Used (from Technical Release 55)

$$S = (1000/CN) - 10$$

$$Q = (P_{25} - 0.2S)^2 / (P_{25} + 0.8S)$$

$$V_r \text{ (ac-ft)} = (Q)(A)/12$$

**APPENDIX B-2**

**TR-55 REPORT - BASIN 2 (RESIDENTIAL)**

## Land Use + Soil Storage Calculations

Margate Proposed Development - Residential (Basin 2)

Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### ***Existing Land Use***

Description	Sub-Area (ac)	Area (ac)
Impervious Area		0.16
Asphalt / Sidewalk / Other Imp.	0.16	
Pervious Area		9.07
Dry Detention Bottom	0.13	
Dry Detention Banks	0.35	
Landscaping	8.59	

Total Area 9.23

### ***Proposed Land Use***

Description	Sub-Area (ac)	Area (ac)
Impervious Area		7.00
Building	2.01	
Asphalt / Sidewalk / Other Imp.	4.99	
Pervious Area		2.23
Landscaping	2.23	

Total Area 9.23

## Land Use + Soil Storage Calculations

Margate Proposed Development - Residential (Basin 2)

Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### Soil Storage

		Proposed	DATUM
Wet Season Water Table / Control Elevation	5.50	5.50	
Soil Storage Capability (Coastal, Flatwoods, Depressional)	Flatwoods	Flatwoods	
Average Site Elevation (Landscaping)	11.00	11.00	0
Average Depth to Water Table (Landscaping)	5.50	5.50 ft	
Soil Storage Capability (Flatwoods, w/ 25% reduction)	6.75	6.75 in	
Soil Storage (S) Over the Site (Landscaping)	6.28	1.63 in	
Soil Storage (S) Over the Site (Entire Site)	6.46	1.63 in	
Curve Number (CN) Based on Soil Storage (S)	60.7	86.0	

## Site Stage-Storage - Existing

Margate Proposed Development - Residential (Basin 2)  
 Project No: 143660000

Stage Step Interval:	0.5
Start Stage Elevation:	5.50

	Impervious Area	Dry Detention Bottom	Dry Detention Banks	Landscaping	Total Area
Storage Type	L	V	L	L	
Area (ac)	0.160	0.130	0.350	8.590	9.230
Avg Low Elev.	10.65	8.00	8.00	10.00	
Avg High Elev.	10.84	0.00	10.00	12.00	

Stage	Impervious Area	Dry Detention Bottom	Dry Detention Banks	Landscaping	<b>TOTAL CUM, AC-FT</b>
<b>5.50</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>6.00</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>6.50</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>7.00</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>7.50</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>8.00</b>	0.000	0.000	0.000	0.000	<b>0.000</b>
<b>8.50</b>	0.000	0.065	0.022	0.000	<b>0.087</b>
<b>9.00</b>	0.000	0.130	0.088	0.000	<b>0.218</b>
<b>9.50</b>	0.000	0.195	0.197	0.000	<b>0.392</b>
<b>10.00</b>	0.000	0.260	0.350	0.000	<b>0.610</b>
<b>10.50</b>	0.000	0.325	0.525	0.537	<b>1.387</b>
<b>11.00</b>	0.041	0.390	0.700	2.148	<b>3.278</b>
<b>11.50</b>	0.121	0.455	0.875	4.832	<b>6.283</b>
<b>12.00</b>	0.201	0.520	1.050	8.590	<b>10.361</b>
<b>12.50</b>	0.281	0.585	1.225	12.885	<b>14.976</b>
<b>13.00</b>	0.361	0.650	1.400	17.180	<b>19.591</b>

## Site Stage-Storage - Proposed

Margate Proposed Development - Residential (Basin 2)  
 Project No: 143660000

Stage Step Interval:	0.5
Start Stage Elevation:	5.50

	Impervious Area	Landscaping	Total Area
Storage Type	L	L	
Area (ac)	4.990	2.230	7.220
Avg Low Elev.	10.50	10.50	
Avg High Elev.	12.50	11.50	

Stage	Impervious Area	Landscaping	TOTAL CUM, AC-FT
<b>5.50</b>	0.000	0.000	<b>0.000</b>
<b>6.00</b>	0.000	0.000	<b>0.000</b>
<b>6.50</b>	0.000	0.000	<b>0.000</b>
<b>7.00</b>	0.000	0.000	<b>0.000</b>
<b>7.50</b>	0.000	0.000	<b>0.000</b>
<b>8.00</b>	0.000	0.000	<b>0.000</b>
<b>8.50</b>	0.000	0.000	<b>0.000</b>
<b>9.00</b>	0.000	0.000	<b>0.000</b>
<b>9.50</b>	0.000	0.000	<b>0.000</b>
<b>10.00</b>	0.000	0.000	<b>0.000</b>
<b>10.50</b>	0.000	0.000	<b>0.000</b>
<b>11.00</b>	0.312	0.279	<b>0.591</b>
<b>11.50</b>	1.248	1.115	<b>2.363</b>
<b>12.00</b>	2.807	2.230	<b>5.037</b>
<b>12.50</b>	4.990	3.345	<b>8.335</b>
<b>13.00</b>	7.485	4.460	<b>11.945</b>

## Water Quality Calculations - Proposed

Margate Proposed Development - Residential (Basin 2)  
Project No: 143660000

Designed by: TVC  
Checked by: AB  
Date: 8/6/2024

### I. LAND USE:

1	Building	2.01 ac.	21.81%
2	Garages	0.00 ac.	0.00%
3	Asphalt / Sidewalk / Other Imp.	4.99 ac.	54.04%
4	Lake Surface	0.00 ac.	0.00%
5	Lake Banks	0.00 ac.	0.00%
6	Pervious Pavement	0.00	0.00%
7	Dry Detention Bottom	0.00 ac.	0.00%
8	Dry Detention Banks	0.00 ac.	0.00%
9	Landscaping	2.23 ac.	24.15%
<b>Total =</b>		<b>9.23 ac.</b>	<b>100%</b>

**Total overall impervious surface with building = 75.85%**

**Is the site within a basin discharging to WNAS? No**

### II. WATER QUALITY CRITERIA:

Quality standards shall be provided for one of the following three combinations:

- If a wet detention system, then whichever is the greater of the following:
  - The first inch of runoff from the entire project site.
  - The amount of 2.5 inches times the percent impervious for the project site.
- Exfiltration trench requires the volume required for the wet detention system.
- If the site is within a basin that discharges to an Impaired Water Body (Waters Not Attaining Standards - WNAS), must provide an additional 50% of Required Water Quality Volume as reasonable assurance to not impact water quality.

### III. WATER QUALITY COMPUTATIONS:

- Compute the first inch of runoff from the entire developed project site:
 
$$= 1.00 \text{ inch} \times 9.23 \text{ acres} \times (1 \text{ foot} / 12 \text{ inches})$$

$$= \mathbf{0.770 \text{ ac-ft for the first inch of runoff}}$$
- Compute 2.5 inches times the percent impervious for the developed project site:
  - Site area for water quality pervious / impervious calculations only:
 
$$= \text{Total Project} - (\text{Lake Area} + \text{Buildings})$$

$$= 9.23 \text{ acres} - (0.00 \text{ acres} + 2.01 \text{ acres})$$

$$= \mathbf{7.22 \text{ acres of site area for water quality calculations}}$$
  - Impervious area for water quality pervious / impervious calculations only:
 
$$= \text{Site area for water quality} - \text{Pervious area}$$

$$= 7.22 \text{ acres} - 2.23 \text{ acres}$$

$$= \mathbf{4.99 \text{ acres of impervious area for water quality calculations}}$$
  - Percentage of impervious area for water quality:
 
$$= \text{Impervious area for water quality} / \text{Site area for water quality} \times 100\%$$

$$= 4.99 \text{ acres} / 7.220 \text{ acres} \times 100\%$$

$$= \mathbf{69.11 \% \text{ Impervious}}$$
  - For 2.5 inches times the percentage of impervious area:
 
$$= 2.5 \text{ inches} \times 69.11 \%$$

$$= \mathbf{1.73 \text{ inches to be treated}}$$
  - Compute volume required for quality detention:
 
$$= \text{Inches to be treated} \times (\text{Total Site Area} - \text{Lake Area})$$

$$= 1.73 \text{ inches} \times (9.23 \text{ acres} - 0.000 \text{ acres}) \times (1 \text{ foot} / 12 \text{ inches})$$

$$= \mathbf{1.33 \text{ ac-ft required for detention storage}}$$
- The first inch of runoff from the entire developed site = 0.770 ac-ft  
 2.5 inches times the percentage of impervious area = 1.330 ac-ft  
  
 Additional 50% if within WNAS (0.000 ac-ft if not within WNAS) = 0.000 ac-ft

**WQ volume of 1.330 ac-ft required**



### Exfiltration Trench Calculations - Proposed

Margate Proposed Development - Residential (Basin 2)  
 Project No: 143660000

Designed by: TVC  
 Checked by: AB  
 Date: 8/6/2024

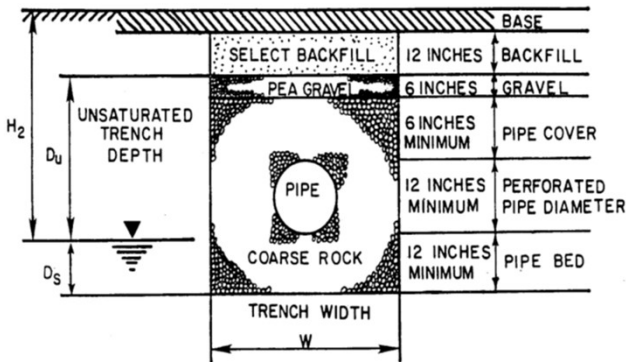
#### EXFILTRATION TRENCH CALCULATIONS:

1. Design Formula:  $L = 2 * (0.5 * V_{wq} + V_{add}) / (K * (H_2 * W) + (2 * H_2 * D_u) - (D_u^2) + (2 * H_2 * D_s)) + (1.39 * 10^4 * W * D_u)$
2. Design Information:
 

Weir Needed in ET System?	yes		
Weir Elevation	12.00 ft.		
$V_{wo}$ = Water Quality Vol. to be Exfiltrated:	15.95 ac-in	3.28"xSite =	2.52 ac-ft
$V_{add}$ = Add. Storage Vol. in 1 hour (up to 3.28"xSite - $V_{wo}$ ):	14.33 ac-in		30.29 ac-in
W = Trench Width:	8.00 ft.		
K = Hydraulic Conductivity:	4.690E-04 cfs/sq-ft per ft head		
H <sub>2</sub> = Depth of Water Table:	6.50 ft.		
D <sub>u</sub> = Non-Saturated Trench Depth:	2.50 ft.		
D <sub>s</sub> = Saturated Trench Depth:	1.50 ft.		
Total Trench Depth:	4.00 ft.		
- 3a. Exfiltration Trench Required (Quality): 328 ft.
- 3b. Exfiltration Trench Required (Max. Additional Storage): 590 ft.
- 3c. Total Maximum Exfiltration Trench Required: 918 ft.
4. Exfiltration Trench Provided: 918 ft.
5. Storage Provided:

Exfiltration Trench Vol Provided (Quality):	1.330 ac-ft
Exfiltration Trench Vol Provided (Additional Storage):	1.194 ac-ft
<b>Total Exfiltration Trench Vol Provided:</b>	<b>2.524 ac-ft</b>

**Total Storage Volume Provided in Exfiltration Trench 2.524 ac-ft**



Thickness (in)	Elev (ft)	Description
	10.27	Lowest Inlet
8		Asphalt + Base Thickness
12		Select Backfill
	8.00	Top of Trench (Top of Pea Gravel)
6		Pea Gravel
6		Pipe Cover (Min. 6")
	12.00	Weir Elevation (if applicable)
	7.00	Inside Top of Pipe
18		Pipe Size (Min. 12")
	5.50	Invert of Pipe
18		Pipe Bed (Min. 12")
	4.00	Bottom of Trench
	5.50	Water Table / Control Water Elevation

#### CHECKS

OK	Dry System (Pipe Invert Higher than Water)
----	--

## TR-55 Volume Calculations - Proposed

Margate Proposed Development - Residential (Basin 2)

Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### Volume Required

	<u>5-year/24 hours</u>	<u>10 year/72 hours</u>	<u>25-year /72 hours</u>	<u>100-year /72 hours</u>
Potential Maximum Retention (S) (in)	1.63	1.63	1.63	1.63
Rainfall (P) (in)	3.2	9	15	19
Total Site Drainage Area (A) (ac)	9.23	9.23	9.23	9.23
Runoff (Q) (in)	1.834	7.302	13.207	17.175
Volume of Runoff (V <sub>r</sub> ) (ac-ft)	1.411	5.619	10.163	13.216

### Stage - Storage Proposed

Stage (elev., ft)	Site Storage (ac-ft)	Total Volume Stored in Exfiltration Trench (V <sub>wq</sub> +V <sub>add</sub> +V <sub>void</sub> ) (ac-ft)	Volume in Underground Storage (ac-ft)	Total Storage (ac-ft)
5.50	0.000	0.000	0.000	0.000
6.00	0.000	0.000	0.000	0.000
6.50	0.000	0.000	0.000	0.000
7.00	0.000	0.000	0.000	0.000
7.50	0.000	0.000	0.000	0.000
8.00	0.000	2.524	0.000	2.524
8.50	0.000	2.524	0.000	2.524
9.00	0.000	2.524	0.000	2.524
9.50	0.000	2.524	0.000	2.524
10.00	0.000	2.524	0.000	2.524
10.50	0.000	2.524	0.000	2.524
11.00	0.591	2.524	0.000	3.115
11.50	2.363	2.524	0.000	4.886
12.00	5.037	2.524	0.000	7.561
12.50	8.335	2.524	0.000	10.859
13.00	11.945	2.524	0.000	14.469

### Summary Quality

Required Min Water Quality to Meet:	1.330 ac-ft
Water Quality Volume Met at Stage:	7.76 ft

Equations Used (from Technical Release 55)

$$S = (1000/CN) - 10$$

$$Q = (P_{25} - 0.2S)^2 / (P_{25} + 0.8S)$$

$$V_r \text{ (ac-ft)} = (Q)(A)/12$$

**APPENDIX B-3**

**TR-55 REPORT - BASIN 3 (EXISTING  
WETLAND CONDITIONS)**

## Land Use + Soil Storage Calculations

Shooster Nature Preserve

Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### *Existing Land Use*

Description	Sub-Area (ac)	Area (ac)
Impervious Area		0.36
Asphalt / Sidewalk / Other Imp.	0.36	
Pervious Area		19.46
Landscaping	19.46	
Total Area		19.82

## Land Use + Soil Storage Calculations

Shooster Nature Preserve

Project No: 143660000

Designed by: TVC

Checked by: AB

Date: 8/6/2024

### Soil Storage

	Existing	DATUM
Wet Season Water Table / Control Elevation	5.50	NAVD
Soil Storage Capability (Coastal, Flatwoods, Depressional)	Flatwoods	
Average Site Elevation (Landscaping)	9.00	
Average Depth to Water Table (Landscaping)	3.50	
Soil Storage Capability (Flatwoods, w/ 25% reduction)	4.05	
Soil Storage (S) Over the Site (Landscaping)	3.98	
Soil Storage (S) Over the Site (Entire Site)	3.98	
Curve Number (CN) Based on Soil Storage (S)	71.5	

## Site Stage-Storage - Existing

Shooster Nature Preserve

Project No: 143660000

Stage Step Interval: 0.5

Start Stage Elevation: 5.50

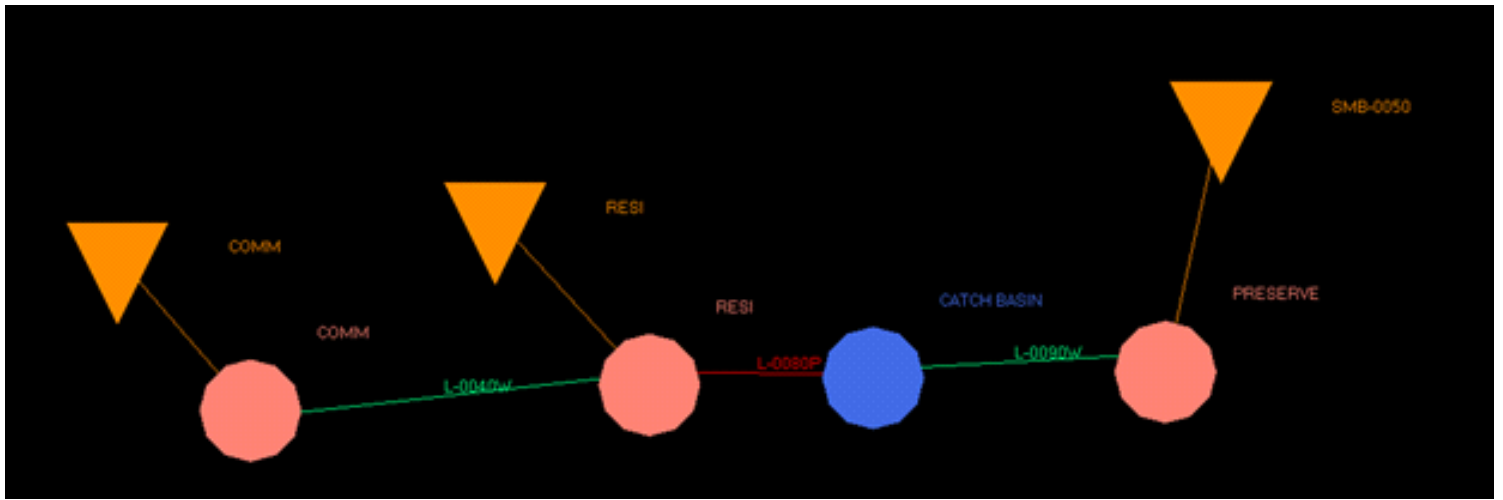
Storage Type	Impervious Area	Landscaping	Total Area
	L	L	
Area (ac)	0.360	19.460	19.820
Avg Low Elev.	8.00	7.50	
Avg High Elev.	9.00	10.50	

Stage	Impervious Area	Landscaping	TOTAL
			CUM, AC-FT
5.50	0.000	0.000	0.000
6.00	0.000	0.000	0.000
6.50	0.000	0.000	0.000
7.00	0.000	0.000	0.000
7.50	0.000	0.000	0.000
8.00	0.000	0.811	0.811
8.50	0.045	3.243	3.288
9.00	0.180	7.298	7.478
9.50	0.360	12.973	13.333
10.00	0.540	20.271	20.811
10.50	0.720	29.190	29.910
11.00	0.900	38.920	39.820
11.50	1.080	48.650	49.730
12.00	1.260	58.380	59.640
12.50	1.440	68.110	69.550
13.00	1.620	77.840	79.460
13.50	1.800	87.570	89.370

**APPENDIX B-4**

**ICPR4 - EXISTING**

# ICPR 4 - EXISTING MODELING





## Simple Basin: COMM

Scenario: Scenario1  
Node: COMM  
Hydrograph Method: NRCS Unit Hydrograph  
Infiltration Method: Curve Number  
Time of Concentration: 10.0000 min  
Max Allowable Q: 99999.00 cfs  
Time Shift: 0.0000 hr  
Unit Hydrograph: UH256  
Peaking Factor: 256.0  
Area: 10.7300 ac  
Curve Number: 80.7  
% Impervious: 0.00  
% DCIA: 0.00  
% Direct: 0.00  
Rainfall Name:

Comment:

## Simple Basin: RES1

Scenario: Scenario1  
Node: RES1  
Hydrograph Method: NRCS Unit Hydrograph  
Infiltration Method: Curve Number  
Time of Concentration: 10.0000 min  
Max Allowable Q: 9999.00 cfs  
Time Shift: 0.0000 hr  
Unit Hydrograph: UH256  
Peaking Factor: 256.0  
Area: 9.2300 ac  
Curve Number: 60.1  
% Impervious: 0.00  
% DCIA: 0.00  
% Direct: 0.00  
Rainfall Name:

Comment:

## Simple Basin: SMB-0050

Scenario: Scenario1  
Node: PRESERVE  
Hydrograph Method: NRCS Unit Hydrograph  
Infiltration Method: Curve Number  
Time of Concentration: 10.0000 min  
Max Allowable Q: 9999.00 cfs

Time Shift: 0.0000 hr  
 Unit Hydrograph: UH256  
 Peaking Factor: 256.0  
 Area: 19.8200 ac  
 Curve Number: 71.5  
 % Impervious: 0.00  
 % DCIA: 0.00  
 % Direct: 0.00  
 Rainfall Name:

Comment:

Node: CATCH BASIN

Scenario: Scenario1  
 Type: Stage/Area  
 Base Flow: 0.00 cfs  
 Initial Stage: 8.46 ft  
 Warning Stage: 0.00 ft

Comment:

Node: COMM

Scenario: Scenario1  
 Type: Stage/Volume  
 Base Flow: 0.00 cfs  
 Initial Stage: 5.50 ft  
 Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
5.50	0.00	0
6.00	0.00	0
6.50	0.00	0
7.00	0.00	0
7.50	0.00	0
8.00	0.00	0
8.50	0.00	0
9.00	0.13	5576
9.50	0.76	33149
10.00	2.89	125888
10.50	6.63	288846
11.00	11.16	486173
11.50	15.69	683500
12.00	20.22	880827
12.50	24.75	1078154

Stage [ft]	Volume [ac-ft]	Volume [ft3]
13.00	29.28	1275480
13.50	33.81	1472807

Comment:

Node: PRESERVE

Scenario: Scenario1  
 Type: Stage/Volume  
 Base Flow: 0.00 cfs  
 Initial Stage: 5.50 ft  
 Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
5.50	0.00	0
6.00	0.00	0
6.50	0.00	0
7.00	0.00	0
7.50	0.00	0
8.00	0.81	35327
8.50	3.29	143225
9.00	7.48	325742
9.50	13.33	580785
10.00	20.81	906527
10.50	29.91	1302880
11.00	39.82	1734559
11.50	49.73	2166239
12.00	59.64	2597918
12.50	69.55	3029598
13.00	79.46	3461278
13.50	89.37	3892957

Comment:

Node: RESI

Scenario: Scenario1  
 Type: Stage/Volume  
 Base Flow: 0.00 cfs  
 Initial Stage: 5.50 ft  
 Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
5.50	0.00	0
6.00	0.00	0
6.50	0.00	0

Stage [ft]	Volume [ac-ft]	Volume [ft3]
7.00	0.00	0
7.50	0.00	0
8.00	0.00	0
8.50	0.09	3790
9.00	0.22	9496
9.50	0.39	17076
10.00	0.61	26572
10.50	1.39	60418
11.00	3.28	142790
11.50	6.28	273687
12.00	10.36	451325
12.50	14.98	652355
13.00	19.59	853384

Comment:

Weir Link: L-0040W		
Scenario: Scenario1	Bottom Clip	
From Node: COMM	Default: 0.00 ft	
To Node: RESI	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Irregular	Ref Node:	
Invert: 0.00 ft	Discharge Coefficients	
Control Elevation: 0.00 ft	Weir Default: 2.800	
Cross Section: Comm to Resi	Weir Table:	
	Orifice Default: 0.600	
	Orifice Table:	

Comment:

Pipe Link: L-0080P		
	Upstream	Downstream
Scenario: Scenario1	Invert: 5.19 ft	Invert: 5.09 ft
From Node: RESI	Manning's N: 0.0130	Manning's N: 0.0130
To Node: CATCH BASIN	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 287.00 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft

Bend Location: 0.00 dec  
 Energy Switch: Energy

Op Table:  
 Ref Node:  
 Manning's N: 0.0000

Op Table:  
 Ref Node:  
 Manning's N: 0.0000

Comment:

**Weir Link: L-0090W**

Scenario: Scenario1	Bottom Clip
From Node: CATCH BASIN	Default: 0.00 ft
To Node: PRESERVE	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Sharp Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 8.46 ft	Discharge Coefficients
Control Elevation: 5.06 ft	Weir Default: 2.800
Max Depth: 3.00 ft	Weir Table:
Max Width: 2.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

**Simulation: 100Y72H**

Scenario: Scenario1  
 Run Date/Time: 8/6/2024 7:25:32 PM  
 Program Version: ICPR4 4.07.04

**General**

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	108.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

**Output Time Increments**

**Hydrology**

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

## Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

## Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

## Restart File

Save Restart: False

## Resources &amp; Lookup Tables

## Resources

Rainfall Folder:  
Reference ET Folder:  
Unit Hydrograph  
Folder:

## Lookup Tables

Boundary Stage Set:  
Extern Hydrograph Set:  
Curve Number Set:  
  
Green-Ampt Set:  
Vertical Layers Set:  
Impervious Set:  
Roughness Set:  
Crop Coef Set:  
Fillable Porosity Set:  
Conductivity Set:  
Leakage Set:

## Tolerances &amp; Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight 0.5 dec	
Fact:	
dZ Tolerance: 0.0010 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.0000 ft	OF Region Rain Opt: Global
Link Optimizer Tol: 0.0001 ft	Rainfall Name: ~SFWMD-72
	Rainfall Amount: 19.00 in
Edge Length Option: Automatic	Storm Duration: 72.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2	Min Node Srf Area 100 ft2
(2D):	(1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:
----------

## Simulation: 25Y72H

Scenario: Scenario1  
 Run Date/Time: 8/6/2024 7:27:10 PM  
 Program Version: ICPR4 4.07.04

## General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	108.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

## Output Time Increments

## Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

## Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

## Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

## Restart File

Save Restart: False

## Resources &amp; Lookup Tables

## Resources

Rainfall Folder:  
 Reference ET Folder:  
 Unit Hydrograph  
 Folder:

## Lookup Tables

Boundary Stage Set:  
 Extern Hydrograph Set:  
 Curve Number Set:  
  
 Green-Ampt Set:  
 Vertical Layers Set:  
 Impervious Set:  
 Roughness Set:  
 Crop Coef Set:  
 Fillable Porosity Set:

Conductivity Set:  
Leakage Set:

**Tolerances & Options**

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight 0.5 dec	
Fact:	
dZ Tolerance: 0.0010 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.0000 ft	OF Region Rain Opt: Global
Link Optimizer Tol: 0.0001 ft	Rainfall Name: ~SFWMD-72
	Rainfall Amount: 15.00 in
Edge Length Option: Automatic	Storm Duration: 72.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2	Min Node Srf Area 100 ft2
(2D):	(1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

**Simulation: 5Y1H**

Scenario: Scenario1  
Run Date/Time: 8/6/2024 7:28:00 PM  
Program Version: ICPR4 4.07.04

**General**

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	5.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

**Output Time Increments**

**Hydrology**

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000



## Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

## Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

## Restart File

Save Restart: False

## Resources &amp; Lookup Tables

## Resources

Rainfall Folder:  
Reference ET Folder:  
Unit Hydrograph  
Folder:

## Lookup Tables

Boundary Stage Set:  
Extern Hydrograph Set:  
Curve Number Set:  
  
Green-Ampt Set:  
Vertical Layers Set:  
Impervious Set:  
Roughness Set:  
Crop Coef Set:  
Fillable Porosity Set:  
Conductivity Set:  
Leakage Set:

## Tolerances &amp; Options

Time Marching: SAOR  
Max Iterations: 6  
Over-Relax Weight: 0.5 dec  
Fact:  
dZ Tolerance: 0.0010 ft  
  
Max dZ: 1.0000 ft  
Link Optimizer Tol: 0.0001 ft  
  
Edge Length Option: Automatic  
  
Dflt Damping (2D): 0.0050 ft  
Min Node Srf Area: 100 ft2  
(2D):  
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr  
ET for Manual Basins: False  
  
Smp/Man Basin Rain: Global  
Opt:  
OF Region Rain Opt: Global  
Rainfall Name: ~SCSIII-24  
Rainfall Amount: 3.20 in  
Storm Duration: 1.0000 hr  
  
Dflt Damping (1D): 0.0050 ft  
Min Node Srf Area: 100 ft2  
(1D):  
Energy Switch (1D): Energy

Comment:
----------

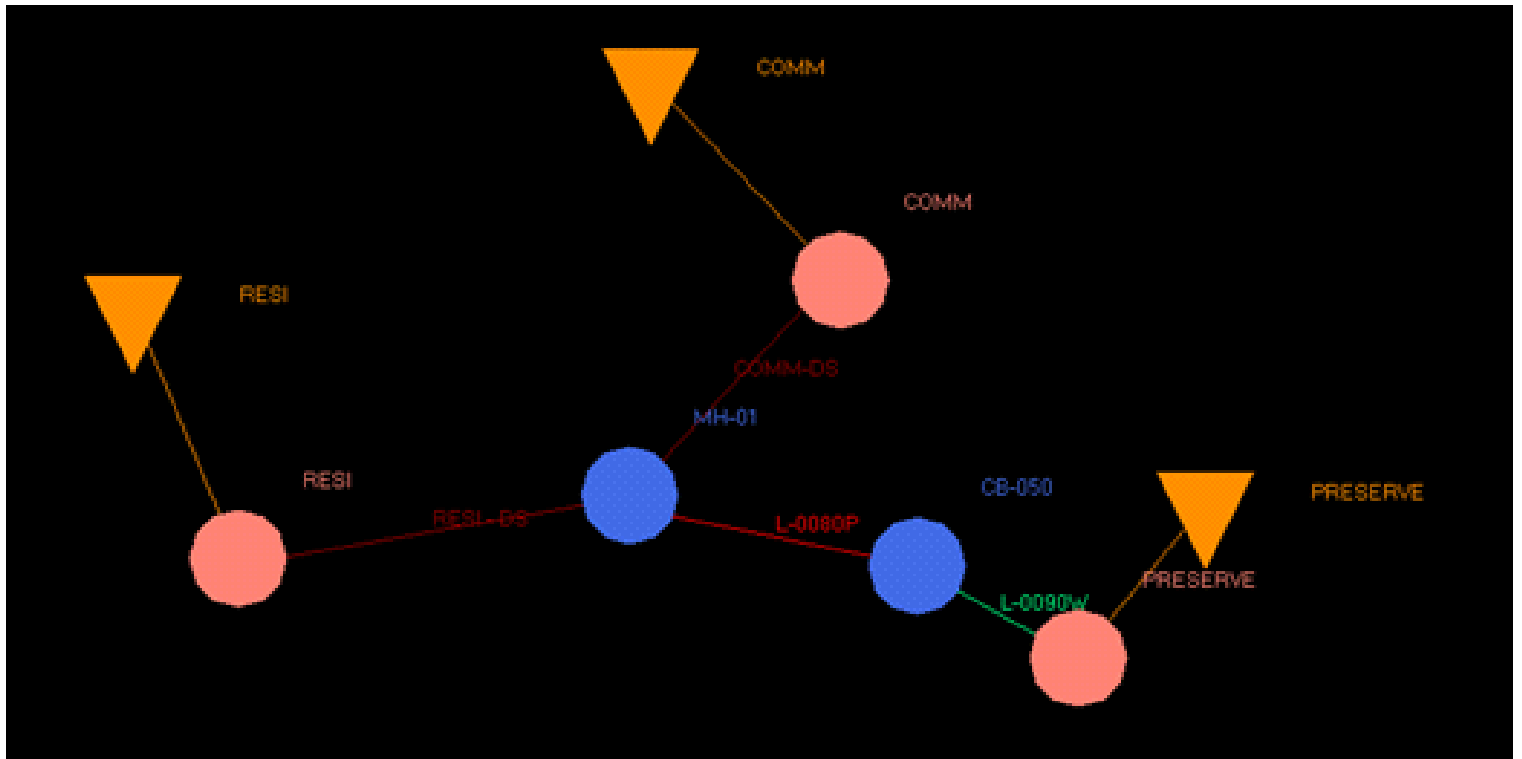
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Sim	Node Name	Maximum Stage [ft]
100Y72H	COMM	11.39
100Y72H	PRESERVE	10.20
100Y72H	RESI	11.93
25Y72H	COMM	10.57
25Y72H	PRESERVE	10.43
25Y72H	RESI	10.56
5Y1H	COMM	9.43
5Y1H	PRESERVE	8.33
5Y1H	RESI	9.43

**APPENDIX B-5**

**ICPR4 - PROPOSED**

# ICPR4 - PROPOSED MODELING



## Simple Basin: COMM

Scenario: Scenario1  
Node: COMM  
Hydrograph Method: NRCS Unit Hydrograph  
Infiltration Method: Curve Number  
Time of Concentration: 10.0000 min  
Max Allowable Q: 9999.00 cfs  
Time Shift: 0.0000 hr  
Unit Hydrograph: UH256  
Peaking Factor: 256.0  
Area: 10.7300 ac  
Curve Number: 88.7  
% Impervious: 0.00  
% DCIA: 0.00  
% Direct: 0.00  
Rainfall Name:

Comment:

## Simple Basin: PRESERVE

Scenario: Scenario1  
Node: PRESERVE  
Hydrograph Method: NRCS Unit Hydrograph  
Infiltration Method: Curve Number  
Time of Concentration: 10.0000 min  
Max Allowable Q: 9999.00 cfs  
Time Shift: 0.0000 hr  
Unit Hydrograph: UH256  
Peaking Factor: 256.0  
Area: 19.8200 ac  
Curve Number: 71.5  
% Impervious: 0.00  
% DCIA: 0.00  
% Direct: 0.00  
Rainfall Name:

Comment:

## Simple Basin: RESI

Scenario: Scenario1  
Node: RESI  
Hydrograph Method: NRCS Unit Hydrograph  
Infiltration Method: Curve Number  
Time of Concentration: 10.0000 min  
Max Allowable Q: 9999.00 cfs

Time Shift: 0.0000 hr  
 Unit Hydrograph: UH256  
 Peaking Factor: 256.0  
 Area: 9.2300 ac  
 Curve Number: 86.0  
 % Impervious: 0.00  
 % DCIA: 0.00  
 % Direct: 0.00  
 Rainfall Name:

Comment:

Node: CB-050

Scenario: Scenario1  
 Type: Stage/Area  
 Base Flow: 0.00 cfs  
 Initial Stage: 10.00 ft  
 Warning Stage: 0.00 ft

Comment:

Node: COMM

Scenario: Scenario1  
 Type: Stage/Volume  
 Base Flow: 0.00 cfs  
 Initial Stage: 5.50 ft  
 Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
5.50	0.00	0
6.00	0.00	0
6.50	0.00	0
7.00	0.05	2309
7.50	0.13	5837
8.00	3.15	137170
8.50	3.30	143748
9.00	3.50	152460
9.50	3.74	162871
10.00	4.91	214010
10.50	7.26	316028
11.00	10.09	439651
11.50	13.42	584357
12.00	17.22	750103
12.50	21.51	936888

Stage [ft]	Volume [ac-ft]	Volume [ft3]
13.00	26.04	1134215
14.00	35.10	1528869

Comment:

Node: MH-01

Scenario: Scenario1  
 Type: Stage/Area  
 Base Flow: 0.00 cfs  
 Initial Stage: 3.50 ft  
 Warning Stage: 0.00 ft

Comment:

Node: PRESERVE

Scenario: Scenario1  
 Type: Stage/Volume  
 Base Flow: 0.00 cfs  
 Initial Stage: 5.50 ft  
 Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
5.50	0.00	0
6.00	0.00	0
6.50	0.00	0
7.00	0.00	0
7.50	0.00	0
8.00	0.81	35327
8.50	3.29	143225
9.00	7.48	325742
9.50	13.33	580785
10.00	20.81	906527
10.50	29.91	1302880
11.00	39.82	1734559
11.50	49.73	2166239
12.00	59.64	2597918
12.50	69.55	3029598
13.00	79.46	3461278
13.50	89.37	3892957

Comment:

Node: RESI

Scenario: Scenario1  
 Type: Stage/Volume  
 Base Flow: 0.00 cfs  
 Initial Stage: 5.50 ft  
 Warning Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
5.50	0.00	0
6.00	0.00	0
6.50	0.00	0
7.00	0.00	0
7.50	0.00	0
8.00	2.52	109945
8.50	2.52	109945
9.00	2.52	109945
9.50	2.52	109945
10.00	2.52	109945
10.50	2.52	109945
11.00	3.12	135689
11.50	4.89	212834
12.00	7.56	329357
12.50	10.86	473018
13.00	14.47	630270

Comment:

Drop Structure Link: COMM-DS

Scenario: Scenario1  
 From Node: COMM  
 To Node: MH-01  
 Link Count: 1  
 Flow Direction: None  
 Solution: Combine  
 Increments: 0  
 Pipe Count: 1  
 Damping: 0.0000 ft  
 Length: 50.00 ft  
 FHWA Code: 0  
 Entr Loss Coef: 0.00  
 Exit Loss Coef: 0.00  
 Bend Loss Coef: 0.00  
 Bend Location: 0.00 dec  
 Energy Switch: Energy

Upstream Pipe

Invert: 5.50 ft  
 Manning's N: 0.0130  
 Geometry: Circular  
 Max Depth: 1.50 ft  
 Bottom Clip  
 Default: 0.00 ft  
 Op Table:  
 Ref Node:  
 Manning's N: 0.0000  
 Top Clip  
 Default: 0.00 ft  
 Op Table:  
 Ref Node:  
 Manning's N: 0.0000

Downstream Pipe

Invert: 4.50 ft  
 Manning's N: 0.0130  
 Geometry: Circular  
 Max Depth: 1.50 ft  
 Bottom Clip  
 Default: 0.00 ft  
 Op Table:  
 Ref Node:  
 Manning's N: 0.0000  
 Top Clip  
 Default: 0.00 ft  
 Op Table:  
 Ref Node:  
 Manning's N: 0.0000

Pipe Comment:

Weir Component



Weir:	1	
Weir Count:	1	Bottom Clip
Weir Flow Direction:	Both	Default: 0.00 ft
Damping:	0.0000 ft	Op Table:
Weir Type:	Sharp Crested Vertical	Ref Node:
Geometry Type:	Rectangular	Top Clip
Invert:	10.05 ft	Default: 0.00 ft
Control Elevation:	5.50 ft	Op Table:
Max Depth:	2.00 ft	Ref Node:
Max Width:	6.00 ft	Discharge Coefficients
Fillet:	0.00 ft	Weir Default: 3.200
		Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Weir Comment:

Drop Structure Comment:

Pipe Link: L-0080P	Upstream	Downstream
Scenario: Scenario1	Invert: 3.50 ft	Invert: 3.00 ft
From Node: MH-01	Manning's N: 0.0130	Manning's N: 0.0130
To Node: CB-050	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: None	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 56.00 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: L-0090W	
Scenario: Scenario1	Bottom Clip
From Node: CB-050	Default: 0.00 ft
To Node: PRESERVE	Op Table:
Link Count: 1	Ref Node:
Flow Direction: None	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Horizontal	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 10.00 ft	Discharge Coefficients

Control Elevation: 3.00 ft  
 Max Depth: 3.00 ft  
 Max Width: 2.00 ft  
 Fillet: 0.00 ft

Weir Default: 2.800  
 Weir Table:  
 Orifice Default: 0.600  
 Orifice Table:

Comment:

Drop Structure Link: RESI - DS		Upstream Pipe	Downstream Pipe
Scenario:	Scenario1	Invert: 5.50 ft	Invert: 4.50 ft
From Node:	RESI	Manning's N: 0.0130	Manning's N: 0.0130
To Node:	MH-01	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	None	Bottom Clip	
Solution:	Combine	Default: 0.00 ft	Default: 0.00 ft
Increments:	0	Op Table:	Op Table:
Pipe Count:	1	Ref Node:	Ref Node:
Damping:	0.0000 ft	Manning's N: 0.0000	Manning's N: 0.0000
Length:	34.00 ft	Top Clip	
FHWA Code:	0	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef:	0.00	Op Table:	Op Table:
Exit Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Loss Coef:	0.00	Manning's N: 0.0000	Manning's N: 0.0000
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default: 0.00 ft	
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default: 0.00 ft	
Geometry Type:	Rectangular	Op Table:	
Invert:	12.00 ft	Ref Node:	
Control Elevation:	5.50 ft	Discharge Coefficients	
Max Depth:	2.00 ft	Weir Default: 3.200	
Max Width:	6.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default: 0.600	
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Simulation: 100 Year - 72 Hour

Scenario: Scenario1  
 Run Date/Time: 8/6/2024 7:34:01 PM  
 Program Version: ICPR4 4.07.04

#### General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	108.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

#### Output Time Increments

##### Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

##### Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

##### Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

##### Restart File

Save Restart: False

#### Resources & Lookup Tables

##### Resources

Rainfall Folder:  
 Reference ET Folder:  
 Unit Hydrograph  
 Folder:

##### Lookup Tables

Boundary Stage Set:  
 Extern Hydrograph Set:  
 Curve Number Set:  
  
 Green-Ampt Set:  
 Vertical Layers Set:  
 Impervious Set:  
 Roughness Set:  
 Crop Coef Set:  
 Fillable Porosity Set:  
 Conductivity Set:

Leakage Set:

**Tolerances & Options**

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight: 0.5 dec	
Fact:	
dZ Tolerance: 0.0010 ft	Smp/Man Basin Rain Opt: Global
	OF Region Rain Opt: Global
Max dZ: 1.0000 ft	Rainfall Name: ~SFWMD-72
Link Optimizer Tol: 0.0001 ft	Rainfall Amount: 19.00 in
	Storm Duration: 72.0000 hr
Edge Length Option: Automatic	
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (2D): 100 ft2	Min Node Srf Area (1D): 100 ft2
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

**Simulation: 25 Year - 72 Hour**

Scenario: Scenario1  
 Run Date/Time: 8/6/2024 7:31:18 PM  
 Program Version: ICPR4 4.07.04

**General**

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	108.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

**Output Time Increments**

**Hydrology**

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

**Surface Hydraulics**

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

## Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

## Restart File

Save Restart: False

## Resources &amp; Lookup Tables

## Resources

Rainfall Folder:  
Reference ET Folder:  
Unit Hydrograph  
Folder:

## Lookup Tables

Boundary Stage Set:  
Extern Hydrograph Set:  
Curve Number Set:  
  
Green-Ampt Set:  
Vertical Layers Set:  
Impervious Set:  
Roughness Set:  
Crop Coef Set:  
Fillable Porosity Set:  
Conductivity Set:  
Leakage Set:

## Tolerances &amp; Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight 0.5 dec Fact:	
dZ Tolerance: 0.0010 ft	Smp/Man Basin Rain Global Opt:
Max dZ: 1.0000 ft	OF Region Rain Opt: Global
Link Optimizer Tol: 0.0001 ft	Rainfall Name: ~SFWMD-72
	Rainfall Amount: 15.00 in
Edge Length Option: Automatic	Storm Duration: 72.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2 (2D):	Min Node Srf Area 100 ft2 (1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

Simulation: 5 Year - 1 Hour

Scenario: Scenario1  
 Run Date/Time: 8/6/2024 7:32:31 PM  
 Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	5.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:  
 Reference ET Folder:  
 Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:  
 Extern Hydrograph Set:  
 Curve Number Set:  
  
 Green-Ampt Set:  
 Vertical Layers Set:  
 Impervious Set:  
 Roughness Set:  
 Crop Coef Set:  
 Fillable Porosity Set:

Conductivity Set:

Leakage Set:

## Tolerances &amp; Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight	0.5 dec		
Fact:			
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain	Global
		Opt:	
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	3.20 in
Edge Length Option:	Automatic	Storm Duration:	1.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area	100 ft2	Min Node Srf Area	100 ft2
(2D):		(1D):	
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:
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Sim	Node Name	Maximum Stage [ft]
100 Year - 72 Hour	COMM	11.79
100 Year - 72 Hour	PRESERVE	10.20
100 Year - 72 Hour	RESI	12.82
25 Year - 72 Hour	COMM	10.82
25 Year - 72 Hour	PRESERVE	10.29
25 Year - 72 Hour	RESI	12.20
5 Year - 1 Hour	COMM	7.81
5 Year - 1 Hour	PRESERVE	8.07
5 Year - 1 Hour	RESI	7.81



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Sim	Link Name	Maximum Flow Rate [cfs]
25 Year - 72 Hour	L-0090W	7.70

Prepared By and Return To:  
Christopher D. Castro, Esq.  
Next Legal PLLC  
1395 Brickell Avenue, Suite 950  
Miami, FL 33131

## DRAINAGE EASEMENT AGREEMENT

**THIS DRAINAGE EASEMENT AGREEMENT (“Agreement”)**, is made on this [ ] day of [ ], 2024 (the “**Effective Date**”) by **767 BUILDING, LLC**, a Florida limited liability company (“**767 Owner**”), **777 PROPERTIES, INC.**, a Florida corporation (“**777 Owner**”) (767 Owner and 777 Owner, collectively “**Office Owner**”), [ ], a [ ] (“**Multifamily Owner**”) (Office Owner and Multifamily Owner, each an “**Owner**” and collectively “**Owners**”), and the **BROWARD COUNTY BOARD OF COUNTY COMMISSIONERS**, a governmental entity of the State of Florida (“**County**”) (Office Owner, Multifamily Owner and County are each a “**Party**” and collectively, the “**Parties**”).

### **RECITALS:**

**WHEREAS**, Office Owner is the lawful owner of certain property situated in Broward County, Florida, as more particularly described in Exhibit “A”, attached hereto and made a part hereof, together with any improvements thereon (the “**Office Property**”);

**WHEREAS**, Multifamily Owner has acquired from 777 Owner on or about the Effective Date that certain real property located adjacent to the Office Property situated in Broward County, Florida, as more particularly described on Exhibit “B” attached hereto (the “**Multifamily Property**”; each of the Office Property and the Multifamily Property being referred to herein as a “**Property**” and, collectively, as the “**Properties**”);

**WHEREAS**, County is the lawful owner of certain property situated in Broward County, Florida, as more particularly described in Exhibit “C” attached hereto and made a part hereof, together with any improvements thereon (the “**County Property**”); and

**WHEREAS**, County has agreed to grant to Owners, certain drainage easements and related rights over, across, under and through those portions of the County Property more particularly described in Exhibit “D” attached hereto and made a part hereof (the “**Easement Area**”), subject to the terms and conditions set forth herein.

**NOW, THEREFORE**, in consideration of the sum of Ten Dollars (\$10.00), the covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Recitals. The foregoing recitals contained in the above WHEREAS clauses are true, accurate, and correct and are incorporated herein by reference.
2. Grant of Easement. County does hereby grant, bargain, sell and convey unto Owners, for the benefit of Owners (their respective successors and assigns), the right, title and privilege of a permanent non-exclusive drainage easement (the “**Easement**”) (which Easement shall be appurtenant to the Properties) in, on, over, under, across and through the Easement Area for the purpose of the water flowage, storage, drainage and runoff from each Property in, to, over and across the Easement Area for the purpose

of (i) the installation, use, maintenance, repair, restoration, modification and replacement of certain drainage improvements serving the Properties, such drainage improvements being more particularly described in Exhibit “E” attached hereto and made a part hereof (the “**Drainage Facilities**”), (ii) tying said Drainage Facilities into the utilities located within the Easement Area, and (iii) the drainage, flowage, storage and runoff of storm water from the Properties in, to over and across the Easement Area (the “**Drainage**”). The amount of the total Drainage allocation of the Properties to be utilized pursuant to this Easement is 11 CFS. Access to the Easement Area for maintenance or other purposes shall only be pursuant to the access point located on the Office Property as depicted on Exhibit “D” attached hereto.

3. Easement Benefit. Owners shall have all the rights and privileges necessary or convenient for the full benefit and use of the Easement as long as such rights and privileges are consistent with the purposes described in this Agreement.

4. County’s Rights. County reserves the right to use the Easement Area for any purpose which is not inconsistent with the Easement granted herein, provided that County shall not improve or alter, or permit the improvement or alteration of the Easement Area in any manner which would unreasonably interfere with or prohibit the use and enjoyment of the Easement granted herein.

5. Rights of Other Parties; No Rights in Public Generally.

a. The Easement created, granted, conveyed, and/or reserved pursuant to this Agreement may be used by the tenants, licensees, employees, customers, guests, invitees, permittees, agents, contractors, subcontractors, assigns and successors of the respective Owners.

b. The Easement created in this Agreement does not, is not intended to and shall not be construed to create any easements or rights in or for the benefit of the general public, and such easements and rights are private, non-exclusive and limited for the exclusive use and benefit of the parties hereto, as applicable, and their respective successors and assigns.

6. Testing. The County may, at its cost and expense, conduct (or to cause to be conducted) water testing with respect to the storm water being discharged into the Easement Area to confirm that the discharge is in compliance with the standards provided for in Exhibit “F” attached hereto (the “**Standards**”). In the event that such testing reveals that the storm water discharge into the Easement Area from the Office Property and/or Multifamily Property is not in compliance with the Standards, then the parties to this Agreement shall work together in good faith to determine what commercially reasonable steps are to be taken in order to bring such water discharge into compliance.

7. Maintenance. Multifamily Owner covenants at all times during the term hereof maintain or cause to be maintained at its expense all Drainage Facilities in good order, condition and repair. In the event of any damage to or destruction of all or a portion of the Drainage Facilities, the Multifamily Owner shall, at its sole cost and expense, with due diligence repair, restore and rebuild such drainage facilities to the condition of such drainage facilities prior to such damage or destruction (or with such changes as shall not conflict with this Agreement). Notwithstanding the foregoing, in the event of any damage or destruction caused to the Drainage Facilities by the negligence or willful misconduct of Office Owner, its guests, tenants and/or invitees, Office Owner shall reimburse Multifamily Owner, within ten (10) days of demand, for all costs incurred by Multifamily Owner to repair such damage.

8. Surface Water License. Each Owner, to the extent required by the applicable governmental authority, shall maintain a five (5) year surface water license with respect to their respective portion of the Properties.

9. Notices. All notices, consents, approvals, demands and objections given under this Agreement (a “**Notice**”) shall be in writing and delivered by (i) personal delivery, (ii) overnight FedEx, UPS or other similar courier service or (iii) United States Postal Service as Express Mail or certified mail, postage prepaid, return receipt requested, addressed to the recipient at the addresses specified below, or at such other address as it may designate by providing Notice in accordance with this Section. Such Notices shall be deemed to have been received on (i) delivery to the recipient’s address, provided delivery is before 5:00 p.m. (local time for the recipient) on a business day, otherwise on the following business day, or (ii) the attempted delivery if the recipient refuses delivery, or is no longer at such address and failed to provide Notice of its current address to the sending Party in accordance with this Section. For the avoidance of doubt, email correspondence shall not constitute a Notice under this Agreement.

To Office Owner: [ ]

With a copy to: [ ]

To Multifamily Owner: [ ]

With a copy to: [ ]

To County: [ ]

With a copy to: [ ]

10. Miscellaneous.

a. Amendment or Termination Must Be In Writing. No amendment or termination of this Agreement shall be valid unless executed in writing and signed by the applicable duly authorized representatives of Office Owner, Multifamily Owner and County or their respective successors in interest.

b. Cumulative Rights; No Waiver. Except as otherwise expressly set forth in this Agreement, all rights, powers and privileges conferred hereunder upon the Parties shall be cumulative but not restricted to those given by law. No failure of any Party to exercise any power given such Party hereunder or to insist upon strict compliance by any other Party to its obligations hereunder, and no custom or practice of the Parties in variance with the terms hereof, shall constitute a waiver of any Party’s right to demand exact compliance with the terms hereof.

c. Captions and Section Headings. Captions and section headings contained in this Agreement are for convenience and reference only and in no way define, describe, extend, or limit the scope or intent of this Agreement, nor the intent of any provision thereof.

d. Attorneys’ Fees. In the event of any litigation between the Parties hereto to enforce any provision and right hereunder, the unsuccessful Party to such litigation covenants and agrees to pay to the successful Party therein all reasonable and actual costs and expenses, expressly including, but not limited to, reasonable attorneys’ fees actually incurred therein by such successful Party (including through any appeal), which costs, expenses and reasonable attorneys’ fees shall be included in and as a part of any judgment rendered in such litigation. If either Party hereto, without fault on the part of such Party, is made a Party to any litigation instituted by or against the other Party hereto, then such other Party covenants and agrees to pay the Party that, without fault, has been made a Party to such litigation such Party’s costs and expenses, including but not limited to reasonable attorneys’ fees actually incurred by such Party in connection with such litigation.

e. Waiver of Strict Construction against Drafting Party. If any provision of this Agreement is subject to judicial interpretation, then it is agreed that the court interpreting or considering such provision will not apply the presumption or rule of construction that the terms of this Agreement be more strictly construed against the Party which itself or through its counsel or other agent prepared the same, as all Parties hereto have participated in the preparation of the final form of this Agreement through review by their respective counsel and the negotiation of changes in language in any provision deemed unsuitable or inadequate as initially written, and, therefore, the application of such presumption or rule of construction would be inappropriate and contrary to the intent of the Parties.

f. Interpretation. The use of any gender shall include all other genders. The singular shall include the plural and vice versa. Use of the words “herein,” “hereof,” “hereunder” and any other words of similar import refer to this Agreement as a whole and not to any particular article, section or subsection of this Agreement unless specifically noted otherwise in this Agreement.

g. Governing Law and Jurisdiction. This Agreement shall be deemed to be governed by, construed and enforced in accordance with the laws of the State of Florida. All claims, disputes and other matters in question arising out of or relating to this Agreement, or the breach thereof, will be decided by proceedings instituted and litigated in Broward County, Florida.

h. Calculation of Time Periods. Whenever this Agreement calls for or contemplates a period of time for the performance of any term, provision or condition of this Agreement, all of the days in such period of time shall be calculated consecutively without regard to whether any of the days falling in such period of time shall be a Saturday, Sunday or other non-business day; provided, however, if the last day of any such time period shall happen to fall on a Saturday, Sunday or other non-business day, the last day shall be extended to the next succeeding business day immediately thereafter occurring.

i. Severability. Wherever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement shall be prohibited by or invalid under such law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement.

j. Number and Gender. Whenever the singular or plural number, or the masculine, feminine, or neutral gender is used herein, it shall legally include the other.

k. Running with Land; Beneficiaries.

i. The easements, covenants and restrictions created by this Agreement are intended to run with title to the respective real property so burdened or benefited by the easements, covenants and restrictions created herein and such easements shall inure to the benefit and burden of the successor owners of the various parcels of real property affected thereby.

ii. This Agreement is made for the exclusive benefit of and shall be binding upon the Parties hereto and their respective legal representatives, heirs, successors, successors-in-title, transferees and assigns, but not any third person.

l. No Merger. If Owners at any time becomes the owner in fee of the County Property or if County at any time becomes the owner in fee of the Properties, then the easements created hereunder shall be deemed to survive and shall not merge.

m. Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall constitute one agreement and the signatures of any party to any counterpart shall be deemed to be a signature to, and may be appended to, any other counterpart.

n. Waiver of Trial by Jury. TO THE FULLEST EXTENT PERMITTED BY LAW, EACH PARTY HEREBY WAIVES TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER ARISING IN TORT OR CONTRACT) BROUGHT BY EITHER PARTY AGAINST THE OTHER ON ANY MATTER ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS AGREEMENT.

[Signatures on following page]

IN WITNESS WHEREOF, the Parties hereto have made and executed this Agreement:

Signed, sealed and delivered in  
the presence of:

**OFFICE OWNER:**

**767 BUILDING, LLC,**  
a Florida limited liability company

\_\_\_\_\_  
Signature of Witness  
Print Name: \_\_\_\_\_  
Address of Witness: \_\_\_\_\_

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

\_\_\_\_\_  
Signature of Witness  
Print Name: \_\_\_\_\_  
Address of Witness: \_\_\_\_\_

**777 PROPERTIES, INC.,**  
a Florida corporation

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by means of \_\_\_ physical presence or  
\_\_\_ online notarization this \_\_\_ day of \_\_\_\_\_, by \_\_\_\_\_, as  
\_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_, on behalf of  
the entity. He (a) \_\_\_\_\_ is personally known to me or (b) \_\_\_\_\_ has produced  
\_\_\_\_\_ as identification.

[NOTARIAL SEAL]

Notary: \_\_\_\_\_  
Print Name: \_\_\_\_\_  
Notary Public, State of \_\_\_\_\_  
My commission expires: \_\_\_\_\_

Signed, sealed and delivered in  
the presence of:

**MULTIFAMILY OWNER:**

[ \_\_\_\_\_ ]

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
Signature of Witness

Print Name: \_\_\_\_\_

Address of Witness: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Signature of Witness

Print Name: \_\_\_\_\_

Address of Witness: \_\_\_\_\_

\_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by means of \_\_\_ physical presence or  
\_\_\_ online notarization this \_\_\_ day of \_\_\_\_\_, by \_\_\_\_\_, as  
\_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_, on behalf of  
the entity. He (a) \_\_\_\_\_ is personally known to me or (b) \_\_\_\_\_ has produced  
\_\_\_\_\_ as identification.

[NOTARIAL SEAL]

Notary: \_\_\_\_\_

Print Name: \_\_\_\_\_

Notary Public, State of \_\_\_\_\_

My commission expires: \_\_\_\_\_



**ATTEST:**

\_\_\_\_\_

**COUNTY:**

BROWARD COUNTY BOARD OF  
COUNTY COMMISSIONERS,  
a governmental entity of the State of  
Florida

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me by means of \_\_\_ physical presence or  
\_\_\_ online notarization this \_\_\_ day of \_\_\_\_\_, by \_\_\_\_\_, as  
\_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_, on behalf of  
the entity. He (a) \_\_\_\_\_ is personally known to me or (b) \_\_\_\_\_ has produced  
\_\_\_\_\_ as identification.

[NOTARIAL SEAL]

Notary: \_\_\_\_\_

Print Name: \_\_\_\_\_

Notary Public, State of \_\_\_\_\_

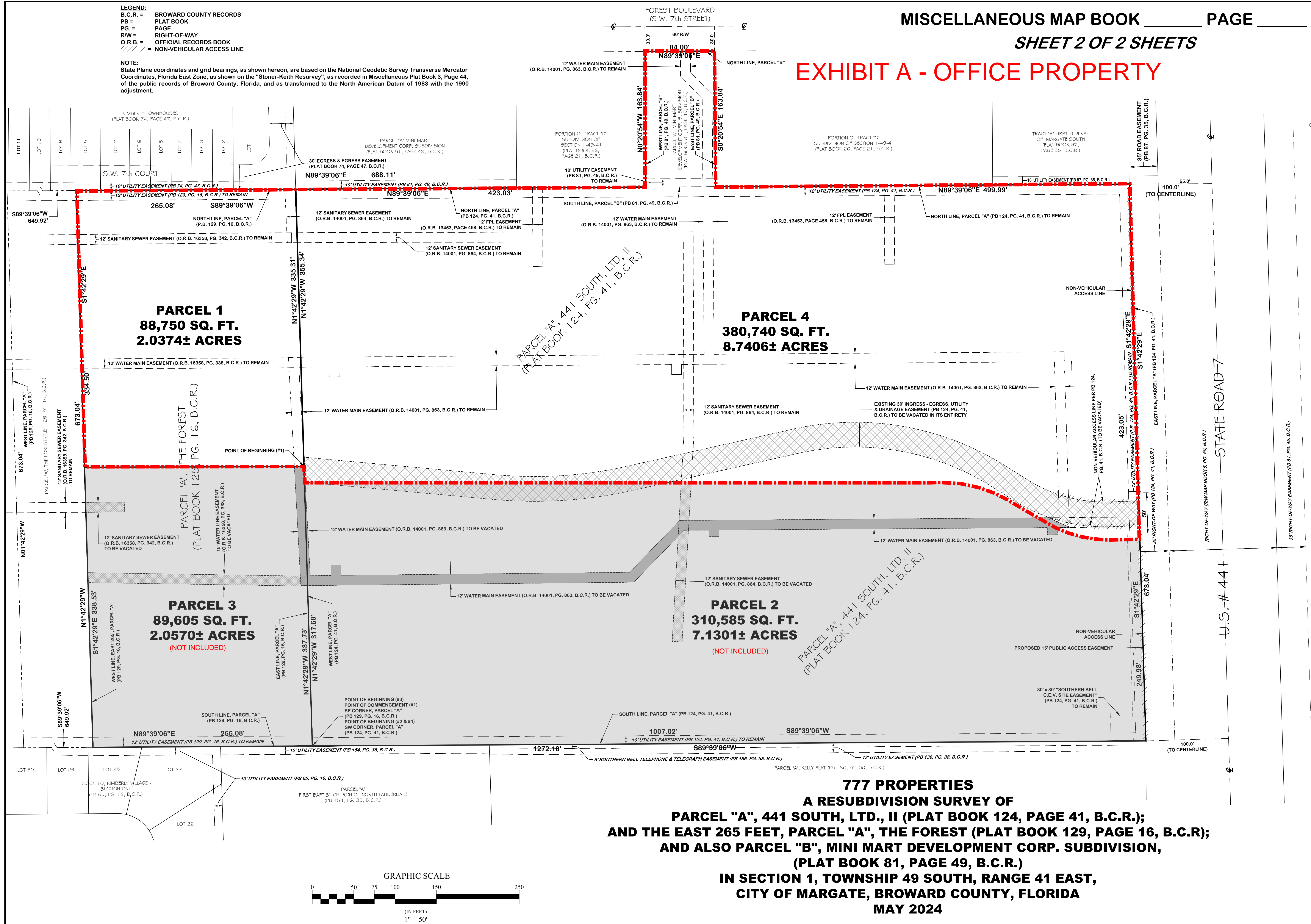
My commission expires: \_\_\_\_\_

EXHIBIT "A"

EXHIBIT A - OFFICE PROPERTY

- LEGEND:  
 B.C.R. = BROWARD COUNTY RECORDS  
 PB = PLAT BOOK  
 PG. = PAGE  
 R/W = RIGHT-OF-WAY  
 O.R.B. = OFFICIAL RECORDS BOOK  
 - - - = NON-VEHICULAR ACCESS LINE

NOTE:  
 State Plane coordinates and grid bearings, as shown hereon, are based on the National Geodetic Survey Transverse Mercator Coordinates, Florida East Zone, as shown on the "Stoner-Keith Resurvey", as recorded in Miscellaneous Plat Book 3, Page 44, of the public records of Broward County, Florida, and as transformed to the North American Datum of 1983 with the 1990 adjustment.



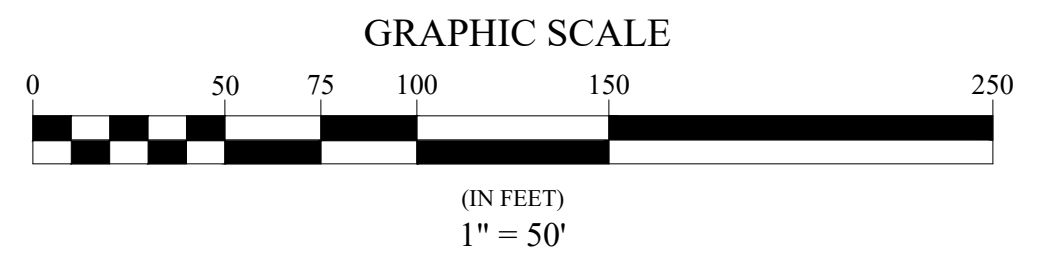
**PARCEL 1**  
 88,750 SQ. FT.  
 2.0374± ACRES

**PARCEL 4**  
 380,740 SQ. FT.  
 8.7406± ACRES

**PARCEL 3**  
 89,605 SQ. FT.  
 2.0570± ACRES  
 (NOT INCLUDED)

**PARCEL 2**  
 310,585 SQ. FT.  
 7.1301± ACRES  
 (NOT INCLUDED)

**777 PROPERTIES**  
**A RESUBDIVISION SURVEY OF**  
**PARCEL "A", 441 SOUTH, LTD., II (PLAT BOOK 124, PAGE 41, B.C.R.);**  
**AND THE EAST 265 FEET, PARCEL "A", THE FOREST (PLAT BOOK 129, PAGE 16, B.C.R.);**  
**AND ALSO PARCEL "B", MINI MART DEVELOPMENT CORP. SUBDIVISION,**  
**(PLAT BOOK 81, PAGE 49, B.C.R.)**  
**IN SECTION 1, TOWNSHIP 49 SOUTH, RANGE 41 EAST,**  
**CITY OF MARGATE, BROWARD COUNTY, FLORIDA**  
**MAY 2024**



A PORTION OF THE EAST 265.00 FEET (AS MEASURED AT RIGHT ANGLES) OF PARCEL "A", THE FOREST, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 129, PAGE 16, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, MORE FULLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID PARCEL "A"; THENCE NORTH 01°42'29" WEST, ON THE EAST LINE OF SAID PARCEL "A", A DISTANCE OF 337.73 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING NORTH 01°42'29" WEST, ON SAID EAST LINE, A DISTANCE OF 335.31 FEET TO THE NORTHEAST CORNER OF SAID PARCEL "A"; THENCE SOUTH 89°39'06" WEST, ON THE NORTH LINE OF SAID PARCEL "A", A DISTANCE OF 265.08 FEET; THENCE SOUTH 01°42'29" EAST, ON A LINE 265.00 FEET WEST OF AND PARALLEL WITH (AS MEASURED AT RIGHT ANGLES) THE EAST LINE OF SAID PARCEL "A", A DISTANCE OF 334.50 FEET; THENCE NORTH 89°49'31" EAST, A DISTANCE OF 265.10 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE, LYING AND BEING IN THE CITY OF MARGATE, BROWARD COUNTY, FLORIDA AND CONTAINING 88,750 SQUARE FEET OR 2.0374 ACRES MORE OR LESS.

AND:

ALL OF PARCEL "A" 441 SOUTH LTD. II, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 12, PAGE 16, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA; TOGETHER WITH ALL OF PARCEL "B" MINI MART DEVELOPMENT CORP. SUBDIVISION, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 81, PAGE 49, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA.

LESS:

A PORTION OF PARCEL "A", 441 SOUTH, LTD., II, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 124, PAGE 16, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, MORE FULLY DESCRIBED FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID PARCEL "A"; THENCE NORTH 01°42'29" WEST, ON THE W LINE OF SAID PARCEL "A", A DISTANCE OF 317.68 FEET; THENCE SOUTH 89°03'00" EAST, A DISTANCE OF 45.5 FEET; THENCE NORTH 89°33'42" EAST, A DISTANCE OF 731.89 FEET TO A POINT OF CURVE; THENCE EASTERN ON SAID CURVE TO THE RIGHT, WITH A RADIUS OF 149.33 FEET, A CENTRAL ANGLE OF 30°00'00", AN ARC DISTANCE OF 78.19 FEET TO A POINT OF TANGENCY; THENCE SOUTH 60°26'18" EAST, A DISTANCE OF 55.95 FEET TO A POINT OF CURVE; THENCE EASTERLY ON SAID CURVE TO THE LEFT, WITH A RADIUS OF 150.67 FEET, A CENTRAL ANGLE OF 30°00'00", AN ARC DISTANCE OF 78.89 FEET TO THE POINT OF TANGENCY; THENCE NORTH 89°33'42" EAST, A DISTANCE OF 32.67 FEET; THENCE SOUTH 01°42'29" EAST, ON THE EAST LINE OF SAID PARCEL "A", A DISTANCE OF 249 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL "A"; THENCE SOUTH 89°39'06" WEST, ON THE SOUTH LINE OF SAID PARCEL "A", A DISTANCE OF 1007.02 FEET TO THE POINT OF BEGINNING.

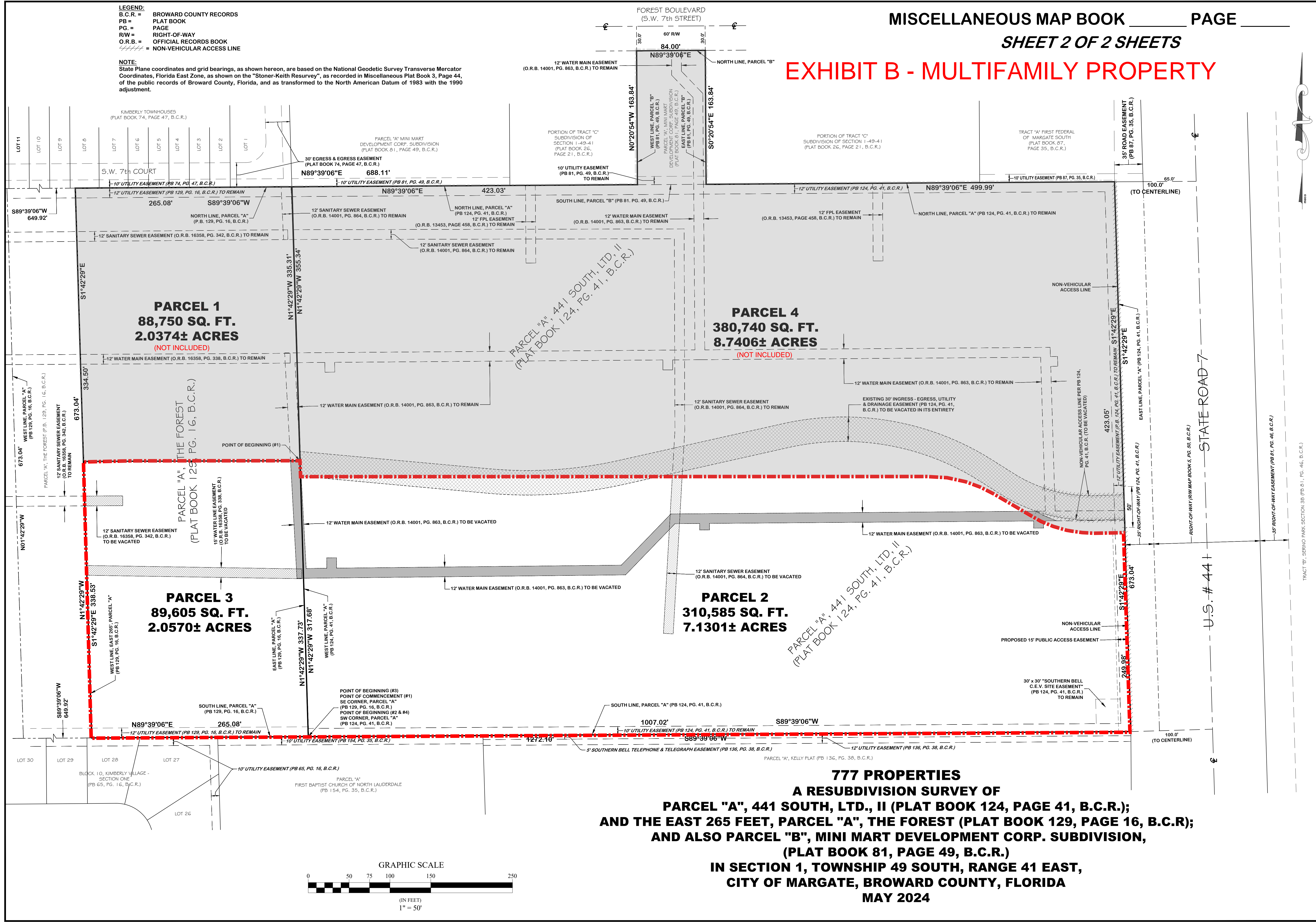
SAID LANDS SITUATE, LYING AND BEING IN THE CITY OF MARGATE, BROWARD COUNTY, FLORIDA AND CONTAINING 380,740 SQUARE FEET OR 8.7406 ACRES MORE OR LESS.

EXHIBIT "B"

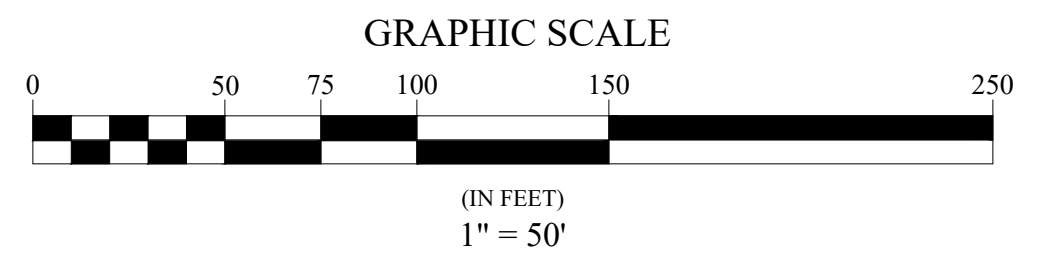
**EXHIBIT B - MULTIFAMILY PROPERTY**

**LEGEND:**  
 B.C.R. = BROWARD COUNTY RECORDS  
 PB = PLAT BOOK  
 PG. = PAGE  
 R/W = RIGHT-OF-WAY  
 O.R.B. = OFFICIAL RECORDS BOOK  
 - - - - - = NON-VEHICULAR ACCESS LINE

**NOTE:**  
 State Plane coordinates and grid bearings, as shown hereon, are based on the National Geodetic Survey Transverse Mercator Coordinates, Florida East Zone, as shown on the "Stoner-Keith Resurvey", as recorded in Miscellaneous Plat Book 3, Page 44, of the public records of Broward County, Florida, and as transformed to the North American Datum of 1983 with the 1990 adjustment.



**777 PROPERTIES  
 A RESUBDIVISION SURVEY OF  
 PARCEL "A", 441 SOUTH, LTD., II (PLAT BOOK 124, PAGE 41, B.C.R.);  
 AND THE EAST 265 FEET, PARCEL "A", THE FOREST (PLAT BOOK 129, PAGE 16, B.C.R.);  
 AND ALSO PARCEL "B", MINI MART DEVELOPMENT CORP. SUBDIVISION,  
 (PLAT BOOK 81, PAGE 49, B.C.R.)  
 IN SECTION 1, TOWNSHIP 49 SOUTH, RANGE 41 EAST,  
 CITY OF MARGATE, BROWARD COUNTY, FLORIDA  
 MAY 2024**



A PORTION OF PARCEL "A", 441 SOUTH, LTD., 11, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 124, PAGE 16, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, MORE FULLY DESCRIBED FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID PARCEL "A"; THENCE NORTH 01°42'29" WEST, ON THE WEST LINE OF SAID PARCEL "A", A DISTANCE OF 317.68 FEET; THENCE SOUTH 89°03'00" EAST, A DISTANCE OF 45.5 FEET; THENCE NORTH 89°33'42" EAST, A DISTANCE OF 731.89 FEET TO A POINT OF CURVE; THENCE EASTERLY ON SAID CURVE TO THE RIGHT, WITH A RADIUS OF 149.33 FEET, A CENTRAL ANGLE OF 30°00'00", AN ARC DISTANCE OF 78.19 FEET TO A POINT OF TANGENCY; THENCE SOUTH 60°26'18" EAST, A DISTANCE OF 55.95 FEET TO A POINT OF CURVE; THENCE EASTERLY ON SAID CURVE TO THE LEFT, WITH A RADIUS OF 150.67 FEET, A CENTRAL ANGLE OF 30°00'00", AN ARC DISTANCE OF 78.89 FEET TO A POINT OF TANGENCY; THENCE NORTH 89°33'42" EAST, A DISTANCE OF 32.67 FEET; THE SOUTH 01°42'29" EAST, ON THE EAST LINE OF SAID PARCEL "A", A DISTANCE OF 249.98 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL "A"; THEN SOUTH 89°39'06" WEST, ON THE SOUTH LINE OF SAID PARCEL "A", A DISTANCE OF 1007.02 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE, LYING AND BEING IN THE CITY OF MARGATE, BROWARD COUNTY, FLORIDA AND CONTAINING 310,585 SQUARE FEET OR 7.1301 ACRES MORE OR LESS.

AND:

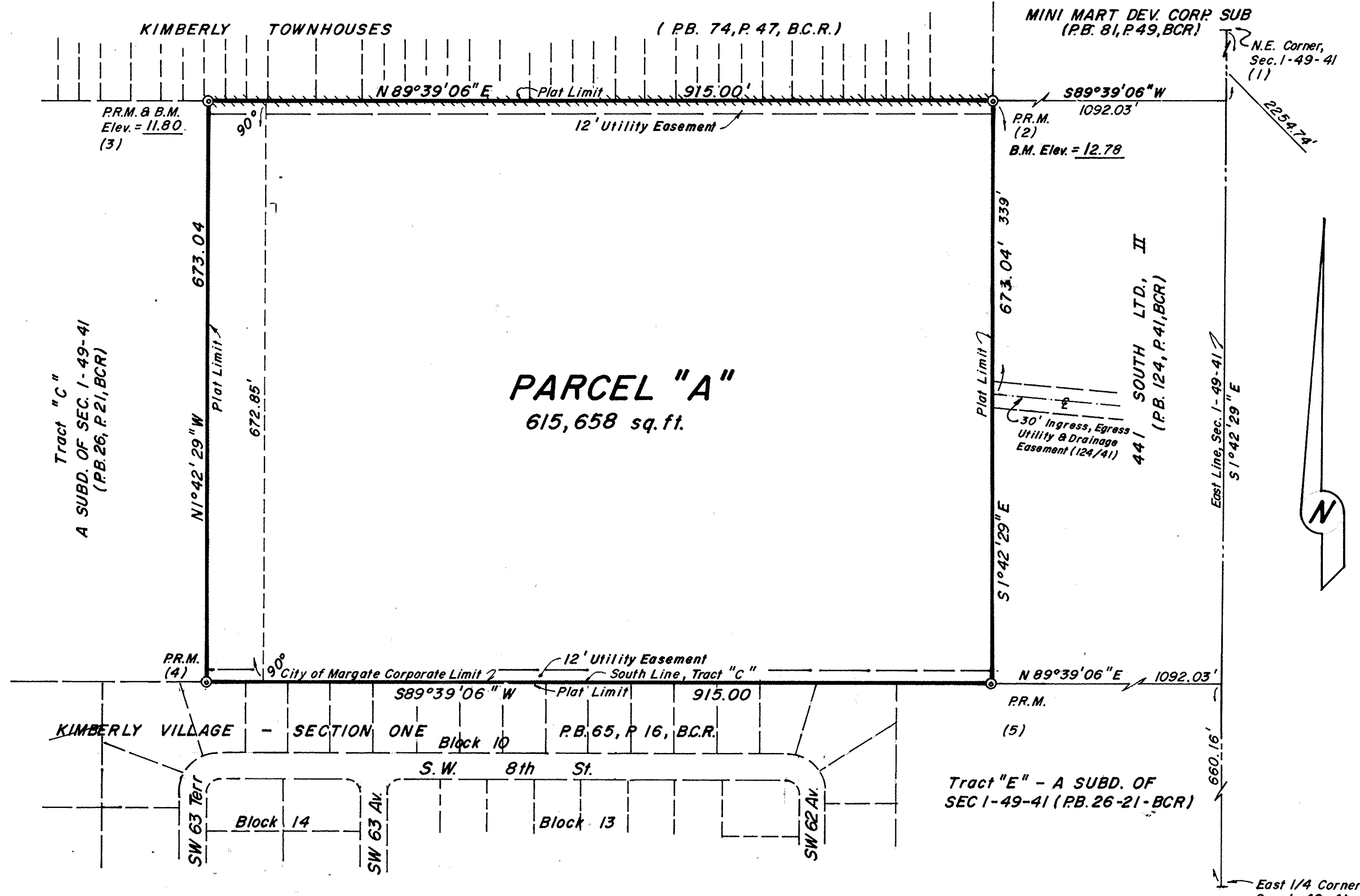
A PORTION OF THE EAST 265.00 FEET (AS MEASURED AT RIGHT ANGLES) OF PARCEL "A", THE FOREST, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 129, PAGE 16, OF THE PUBLIC RECORDS OF BROWARD COUNTY, FLORIDA, MORE FULLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID PARCEL "A"; THENCE NORTH 01°42'29" WEST, ON THE EAST LINE OF SAID PARCEL "A", A DISTANCE OF 337.73 FEET; THENCE SOUTH 89°49'31" WEST, A DISTANCE OF 261 FEET; THENCE SOUTH 01°42'29" EAST, ON THE WEST LINE OF THE SAID EAST 265.00 FEET OF PARCEL "A", A DISTANCE OF 338.53 FEET; THENCE NORTH 89°39'06" EAST, ON THE SOUTH LINE OF SAID PARCEL "A", A DISTANCE OF 265.08 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE, LYING AND BEING IN THE CITY OF MARGATE, BROWARD COUNTY, FLORIDA AND CONTAINING 89,605 SQUARE FEET OR 2.0570 ACRES MORE OR LESS.

EXHIBIT "C"





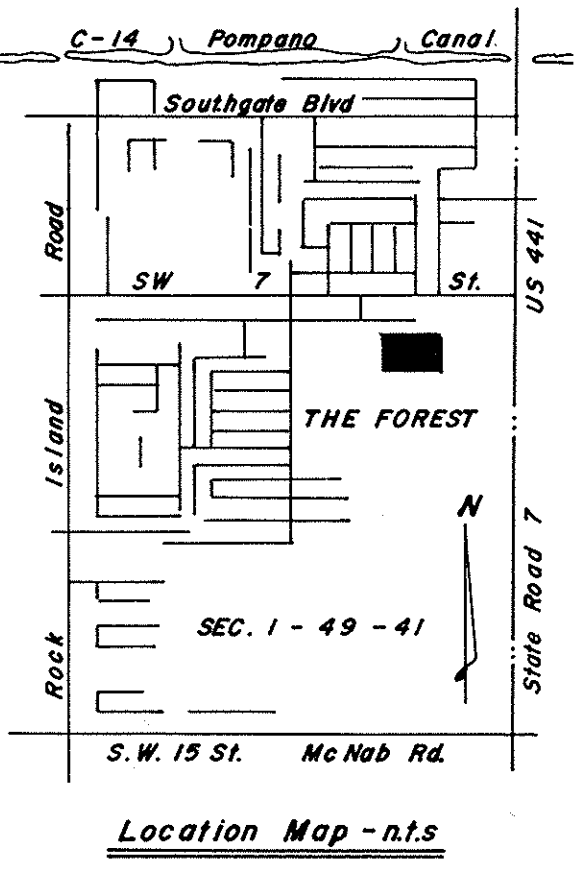
DESCRIPTION

The West 915.00 feet of the East 1957.03 feet, as measured along the South line of Tract "C", of the South 672.85 feet, as measured at right angles to said South line of Tract "C", being a portion of Tract "C", "A SUBDIVISION OF SECTION 1, TOWNSHIP 49 SOUTH, RANGE 41 EAST, BROWARD COUNTY, FLORIDA", according to the plat thereof, recorded in Plat Book 26, Page 21, of the public records of Broward County, Florida.

Table with 3 columns: No., North, East. It lists 6 P.R.M. coordinate points with their respective North and East values.

NOTES

- © P.R.M. - indicates Permanent Reference Monument
B.M. - indicates Bench Mark
This plat contains 14.1336 acres
Coordinates and bearings, as shown, refer to Transverse Mercator Grid System, Florida East Zone, per Misc. Plat Book 3, Page 44, B.C.R.
##### - indicates Non-Vehicular Access Line
This plat is restricted to 146,000 sqft of Office
Reference Bench Mark: P.R.M. on S.E. Corner of "441 SOUTH LTD. II", P.B. 124, P.41, B.C.R., B.M. EI = 11.70



DEDICATION

STATE OF FLORIDA SS KNOW ALL MEN BY THESE PRESENTS: That 441 SOUTH LTD., II, a Florida general partnership, owner of the lands COUNTY OF BROWARD described and shown as included in this plat, has caused said lands to be subdivided and platted as shown hereon, said plat to be known as "THE FOREST", being a resubdivision of a portion of Tract "C", "A SUBDIVISION OF SECTION 1, TOWNSHIP 49 SOUTH, RANGE 41 EAST, BROWARD COUNTY, FLORIDA", recorded in Plat Book 26, Page 21, Broward County Records. The utility easements are hereby dedicated to the public for proper purposes.

IN WITNESS WHEREOF: I hereunto set my hand in the City of Fort Lauderdale, County of Broward, State of Florida, this 17th day of January, 1986. Witness: Sharon D. Jones, Robert W. Buck, General Partner 441 SOUTH LTD., II

ACKNOWLEDGEMENT

STATE OF FLORIDA SS I HEREBY CERTIFY: That on this day personally appeared before me, an officer duly authorized by law to administer COUNTY OF BROWARD oaths and take acknowledgements, ROBERT W. BUCK, being a GENERAL PARTNER of 441 SOUTH LTD., II, to me well known to be the individual described in and who executed the foregoing dedication and he acknowledged before me that he executed the same freely and voluntarily, for uses and purposes therein expressed. WITNESS: My hand and official seal in the City of Fort Lauderdale, County of Broward, State of Florida, this 17th day of January, 1986. My commission expires the 11th day of April, 1989. NOTARY PUBLIC Sharon D. Jones STATE OF FLORIDA

BROWARD COUNTY OFFICE OF PLANNING

This plat is approved and accepted for record. Date October 29, 1986 By: Elliot Arnold

CITY CLERK'S CERTIFICATE

STATE OF FLORIDA SS THIS IS TO CERTIFY: That this plat of "THE FOREST", has been approved and accepted for record by the COUNTY OF BROWARD City of Margate, Broward County, Florida, by Resolution duly adopted by the City Commission on the 16th day of APRIL, 1986.

IN WITNESS WHEREOF: The said City Commission has caused these presents to be attested by its City Clerk and the corporate seal of the said City to be affixed, this 22nd day of May, 1986. By: Bryan P. Jones Mayor Attested: Melvin J. Parker Deputy City Clerk

CITY PLANNING AND ZONING BOARD

THIS IS TO CERTIFY: That the City Planning and Zoning Board of Margate, Broward County, Florida, has accepted and approved this plat, this 8th day of April, 1986. By: Henry W. Buckler, Jr. Chairman

CITY ENGINEER

This plat of "THE FOREST", is approved for record By: Emilio C. Esteban Emilio Esteban, City Engineer, Fla. P.E. Reg. No. 31945, this 19th day of May, 1986.

BROWARD COUNTY ENGINEERING DIVISION

This plat has been approved and accepted for record BY: Robert L. Thompson Robert L. Thompson Date: 10-30-86 County Surveyor, Fla. P.L.S. Reg. No. 3869 BY: Henry P. Cook Henry P. Cook Date: 10-30-86 Director, Fla. P.E. Reg. No. 12506

BROWARD COUNTY PLANNING COUNCIL

THIS IS TO CERTIFY: That the Broward County Planning Council approved this plat with regard to dedication of Rights-of-Way for Traffic Ways by Resolution duly adopted this 1st day of May, 1986. By: John Stano, this 1st day of May, 1986.

BROWARD COUNTY FINANCE AND ADMINISTRATIVE SERVICES DEPARTMENT - COUNTY RECORDS DIVISION - MINUTES SECTION

THIS IS TO CERTIFY: That this plat complies with the provisions of Chapter 177, FLORIDA STATUTES, and was accepted for record by the Board of Commissioners of Broward County, Florida, this 19th day of AUGUST, 1986. F.T. JOHNSON - COUNTY ADMINISTRATOR By: Shylla J. Thompson Deputy By: Frank C. Johnson Chairperson - County Commission

BROWARD COUNTY FINANCE AND ADMINISTRATIVE SERVICES DEPARTMENT - COUNTY RECORDS DIVISION - RECORDING SECTION

This plat filed for record this 3rd day of November, 1986, in BOOK 129 of PLATS, at Page 16, record verified F.T. JOHNSON - COUNTY ADMINISTRATOR By: Carole C. Doyle Deputy

SURVEYOR'S CERTIFICATE

STATE OF FLORIDA SS I HEREBY CERTIFY: That the attached plat, is a true and correct representation of the lands recently surveyed, subdivided and platted under my COUNTY OF BROWARD responsible direction and supervision, that the survey data shown complies with the applicable requirements of Chapter 177, FLORIDA STATUTES, A.D. 1971, and further that the PERMANENT REFERENCE MONUMENTS (P.R.M.'S) were set in accordance with Section 177.091 of said Chapter 177, on this 11th day of October, 1986. The BENCH MARKS shown are referenced to N.G. VERTICAL DATUM and conform to standards for third order work.

McLAUGHLIN ENGINEERING CO. This plat dated at Fort Lauderdale, Florida, this 10th day of January, 1986. BY: Robert C. McLaughlin Registered Land Surveyor No. 3356, State of Florida.

DEDICATION OF MORTGAGE HOLDER FREDERICK W. FISHER, as Trustee of the 1957 MARGARET W. FISHER TRUST, owner and holder of a mortgage on this property, recorded in O.R. BOOK 12192, PAGE 62, Broward County Records, does hereby join in the dedication shown hereon, but not for the purpose of releasing the mortgage. IN WITNESS WHEREOF: I hereunto set my hand in the City of Fort Lauderdale, County of Broward, State of Florida, this 4th day of March, 1986. Witness: Sharon D. Jones, Jeffrey A. Wyatt, Frederick W. Fisher: Frederick W. Fisher as Trustee

ACKNOWLEDGEMENT STATE OF FLORIDA SS I HEREBY CERTIFY: That on this day personally appeared before me, an officer duly authorized by law to administer oaths and take acknowledgements, FREDERICK W. FISHER, as Trustee of the 1957 MARGARET W. FISHER TRUST, to me well known to be the individual described in and who executed the foregoing dedication and he acknowledged before me that he executed the same freely and voluntarily, for uses and purposes therein expressed. WITNESS: My hand and official seal in the City of Fort Lauderdale, County of Broward, State of Florida, this 4th day of March, 1986. My commission expires the 19th day of November, 1988. NOTARY PUBLIC Sharon D. Jones STATE OF FLORIDA

DEDICATION OF MORTGAGE HOLDER SAN W. ORR, JR. and JOHN E. FORESTER, as Trustees of the 1957 MARGARET W. FISHER TRUST, owners and holders of a mortgage on this property recorded in O.R. BOOK 12192, PAGE 62, Broward County Records, do hereby join in the dedication shown hereon, but not for the purpose of releasing the mortgage. IN WITNESS WHEREOF: We hereunto set our hands in the City of Wausau, County of Marathon, State of Wisconsin, this 26th day of February, 1986. Witness: Donna Jack as both San W. Orr, Jr. as Trustee Witness: Julie A. Wilcox as both John E. Forester as Trustee

ACKNOWLEDGEMENT STATE OF WISCONSIN SS I HEREBY CERTIFY: That on this day personally appeared before me, an officer duly authorized by law to administer oaths and take acknowledgements, SAN W. ORR, JR. and JOHN E. FORESTER, as Trustees of the 1957 MARGARET W. FISHER TRUST, to me well known to be the individuals described in and who executed the foregoing dedication and they acknowledged before me that they executed the same freely and voluntarily, for uses and purposes therein expressed. WITNESS: My hand and official seal in the City of Wausau, County of Marathon, State of Wisconsin, this 26th day of February, 1986. My commission expires the 31 day of Dec., 1989. NOTARY PUBLIC Camille D. Dubois STATE OF WISCONSIN

"THE FOREST" A RESUBDIVISION OF A PORTION OF TRACT "C" "A SUBDIVISION OF SECTION 1, TWP 49 S., RGE 41 E., BROWARD COUNTY, FLORIDA" (P.B. 26, P. 21, B.C.R.) CITY OF MARGATE, BROWARD COUNTY, FLORIDA



Notary seals for Robert C. McLaughlin (441 So. Ltd, II Notary), Fisher Notary, Orr/Forester Notary, and City Engineer. Each seal includes the name and a circular emblem.

O.R. 13869 P. 220

EXHIBIT "D"

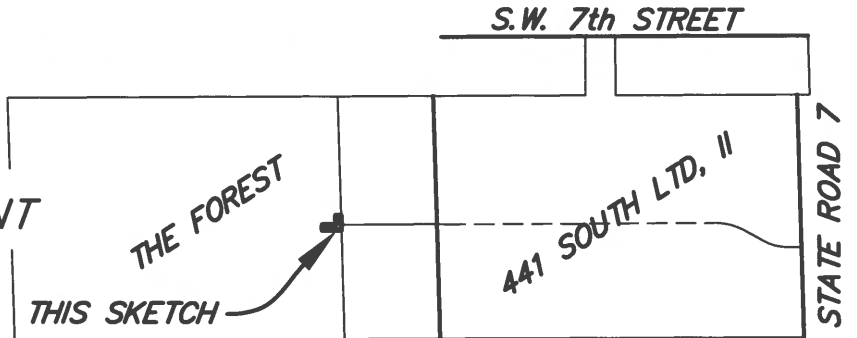


**CONTROL POINT ASSOCIATES, FL, LLC.**  
**LB #8137**

TRADITIONAL METHODS | MODERN APPROACHES  
 1700 N.W. 64th STREET #400, FORT LAUDERDALE, FLORIDA 33309  
 PHONE: (954) 763-7611 \* EMAIL: DDONAHOE@CPASURVEY.COM

**SCALE 1" = 40'**  
**SKETCH AND DESCRIPTION**  
**777 PROPERTIES**  
**15' ACCESS EASEMENT**

LEGEND:  
 B.C.R. = BROWARD COUNTY RECORDS  
 PB., PG. = PLAT BOOK & PAGE



**SITE LAYOUT \* NOT TO SCALE**

LEGAL DESCRIPTION:

A portion of Parcel "A", THE FOREST, according to the plat thereof, as recorded in Plat Book 129, Page 16 of the public records of Broward County, Florida, more fully described as follows:

Commencing at the Southeast corner of said Parcel "A"; thence South 89°39'06" West, on the South line of said Parcel "A", a distance of 265.08 feet; thence North 01°42'29" West, a distance of 301.80 feet to the Point of Beginning; thence continuing North 01°42'29" West, a distance of 40.30 feet; thence North 90°00'00" West, a distance of 15.01 feet; thence South 01°42'29" East, a distance of 25.29 feet; thence North 90°00'00" West, a distance of 37.25 feet; thence South 00°00'00" East, a distance of 15.00 feet; thence North 90°00'00" East, a distance of 52.70 feet to the Point of Beginning.

Said lands situate, lying and being in the City of Margate, Broward County, Florida and containing 1,167 square feet or 0.0268 acres more or less.

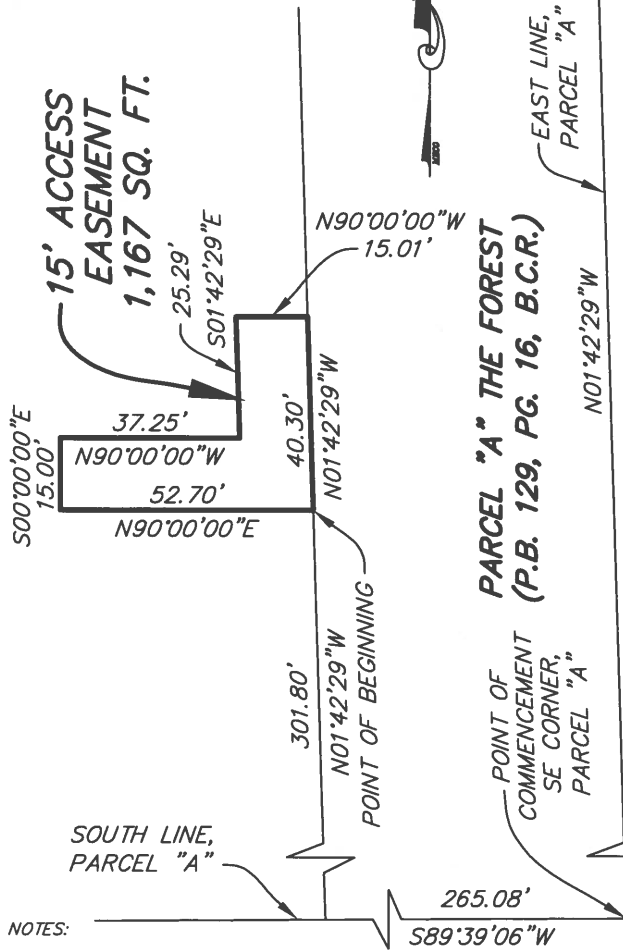
**CERTIFICATION**

Certified Correct. Dated at Fort Lauderdale, Florida this 26th day of July, 2024.

CONTROL POINT ASSOCIATES FL, LLC.

*J. M. McLaughlin Jr.*

JAMES M. McLAUGHLIN JR.  
 Registered Land Surveyor No. LS4497  
 State of Florida.



NOTES:

- 1) This sketch reflects all easements and rights-of-way, as shown on above referenced record plat(s). The subject property was not abstracted for other easements, road reservations or rights-of-way of record by Control Point Associates, FL, LLC.
- 2) Legal description prepared by Control Point Associates, FL, LLC.
- 3) This drawing is not valid unless sealed with an appropriate surveyors seal.
- 4) THIS IS NOT A BOUNDARY SURVEY.
- 5) Bearings shown assume the East line of Parcel "A" as North 01°42'29" West, per record plat (129/16).

FIELD BOOK NO. \_\_\_\_\_

DRAWN BY: JMMjr

JOB ORDER NO. V-7627, 15-230169-00

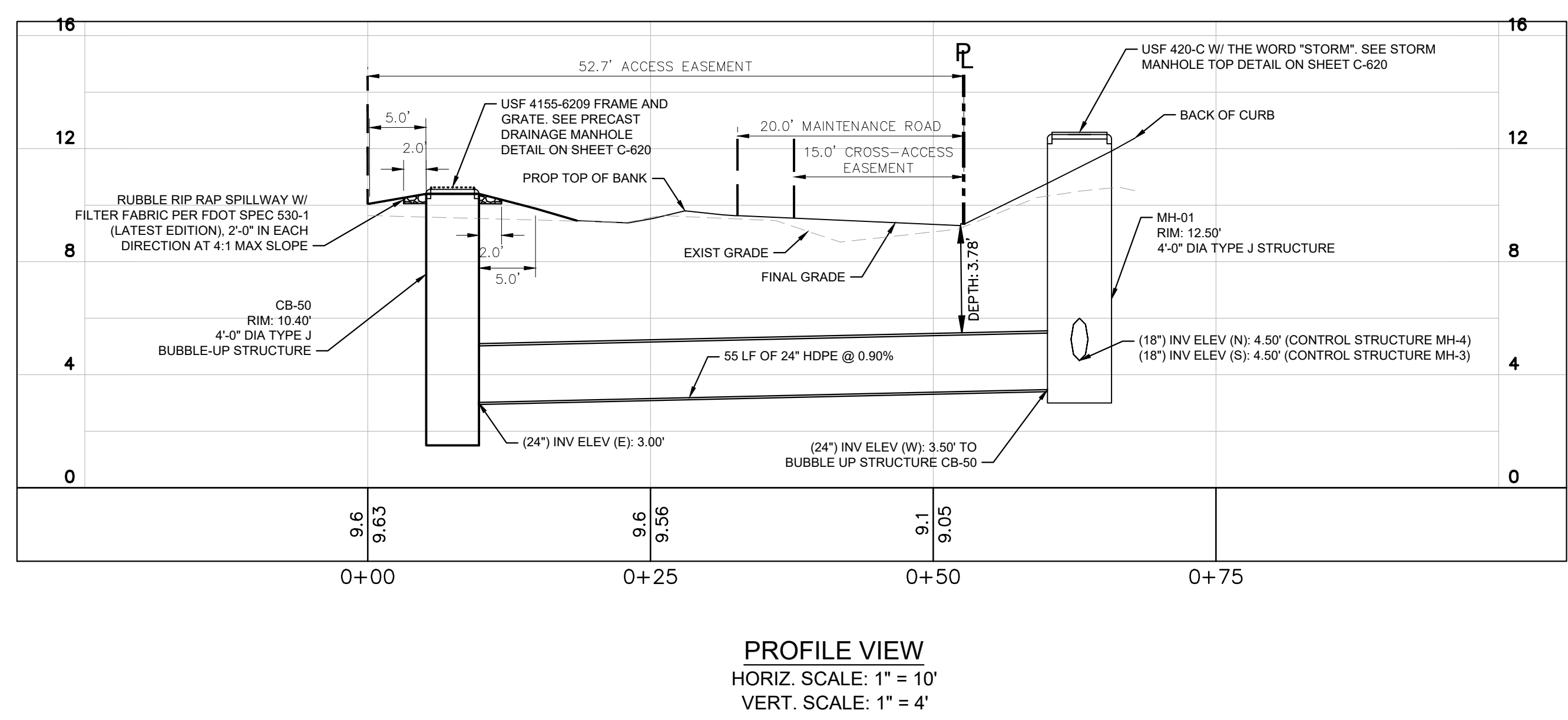
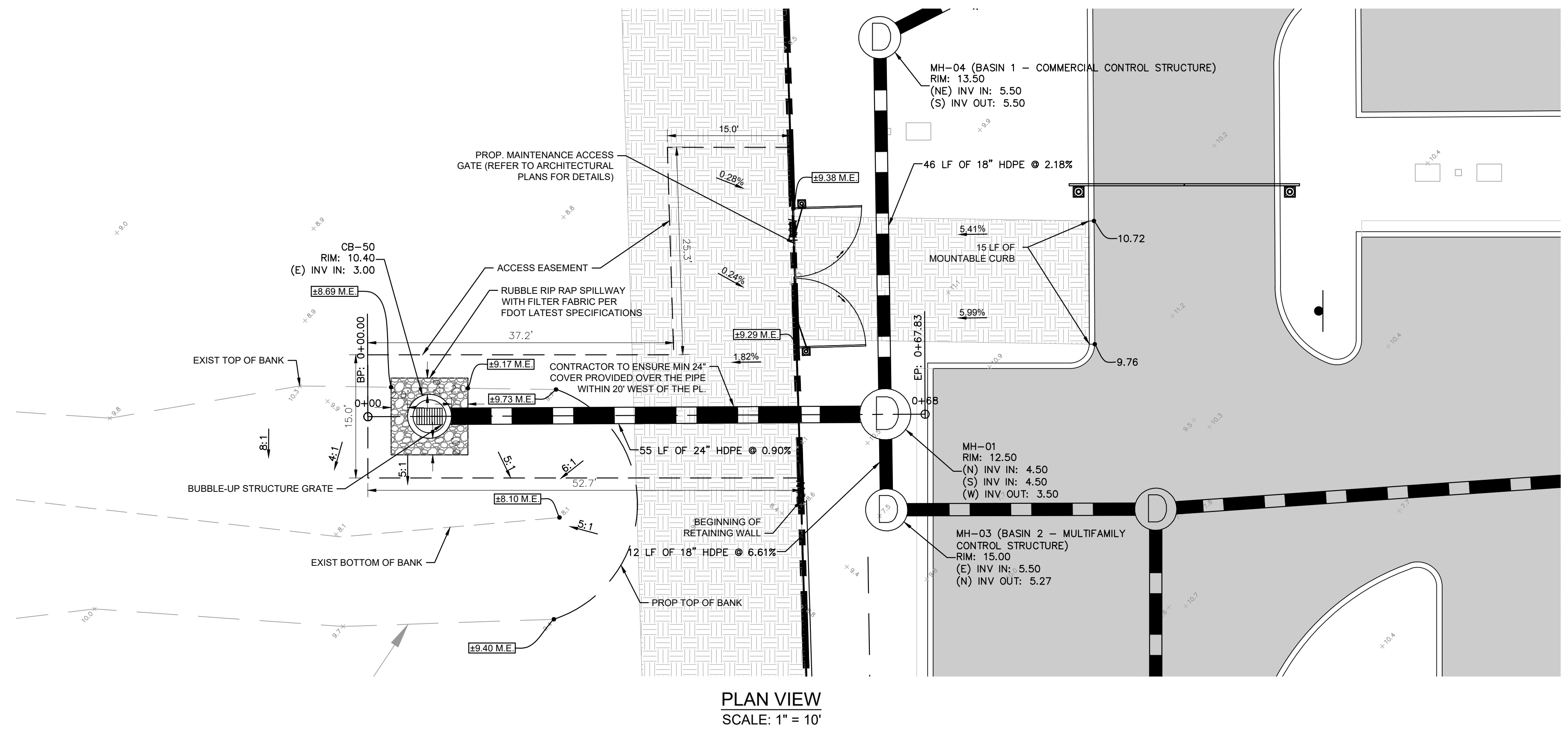
CHECKED BY: \_\_\_\_\_

REF. DWG.: 01-3-070

C: \JMMjr\2023\230169 (777 PROP)

EXHIBIT "E"

Plotted By: Beigelman, Alex Sheet Set: SR-7 MARGATE Layout: C-420 OFFSITE DRAINAGE PLAN AND PROFILE July 31, 2024 03:18:54pm \\kimley-horn.com\FI\_MIA\_MIB\_JURC\43860000 - Margate\Civil\Design\CADD\PlanSheets\Commercial\C-520 DRAINAGE PLAN & PROFILE.dwg



PLANS ARE IN NAVD 1988 DATUM  
CONVERSION EQUATION IS BELOW:  
(NAVD 1988) + 1.6' = (NGVD 1929)

THE PRESENCE OF GROUNDWATER  
SHOULD BE ANTICIPATED. CONTRACTOR'S  
BID SHALL INCLUDE CONSIDERATION FOR  
ADDRESSING THIS ISSUE AND OBTAINING  
ALL NECESSARY PERMITS

**Sunshine811**  
Call 811 or www.sunshine811.com two full  
business days before digging to have utilities  
located and marked.  
*Check positive response codes before you dig!*

NOT FOR CONSTRUCTION

DRAWN: AB  
DATE: JUL 2024  
SCALE: AS SHOWN  
JOB NO.: 143860000  
SHEET TITLE: OFFSITE DRAINAGE PLAN AND PROFILE

SHEET NUMBER: C-420

MARGATE PARKING  
DEVELOPMENT  
FOR:  
REZ SE LAND, LLC  
LOCATED AT:  
BROWARD COUNTY, FLORIDA.

COPYRIGHT © 2019 ASA ARCHITECTS, INC. THE ARCHITECTURAL DESIGN AND DETAIL DRAWINGS FOR THIS BUILDING AND/OR OVERALL PROJECT ARE THE LEGAL PROPERTY OF AND ALL RIGHTS ARE RESERVED BY THE ARCHITECT. THEIR USE FOR REPRODUCTION, CONSTRUCTION, OR DISTRIBUTION IS PROHIBITED UNLESS AUTHORIZED IN WRITING BY THE ARCHITECT.

EXHIBIT "F"

## Exhibit F- Standards

### 1. Water Quality Standards

- a. The Owners shall be responsible for the correction of any water quality problems that result from the construction or operation of the surface water management system.
- b. The district reserves the right to require that water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.
- c. Water quality data for the water discharged from the property or into surface waters of the state shall be submitted to the district as required parameters to be monitored may include those listed in chapters 62-302 if water quality data is required. The Owners shall provide data as required, on volumes of water discharged, including total volume discharged during the days of sampling and total monthly discharged from the property or into surface waters of the state.

### 2. Construction and Operation Standards

- a. The Owners shall prosecute the work authorized in a manner so as to minimize any adverse impact of the works on fish, wildlife, natural environmental values, and water quality. The Owners 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.
- b. The Owners shall comply with all applicable local subdivision regulations and other local requirements. In addition, the Owners shall obtain all necessary federal, state, local and special district authorizations prior to the start of any construction or alteration of works authorized by this permit.
- c. Off-site discharges during construction and development shall be made only through the facilities authorized by the district. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream water stages. Stages may be subject to operating schedules satisfactory to the district.
- d. The Owners shall be responsible for the correction of any erosion or shoaling problems that result from the construction or operation of the surface water management system.
- e. Measures shall be taken during construction to ensure that sedimentation and/or turbidity problems are not created in the receiving swale.
- f. Operation of the Drainage Facilities surface water management system shall be the responsibility the Owners.
- g. Prior to the commencement of construction, paving, grading, and drainage plans shall be submitted to the district for review and approval.

Project	Parties	Upload Docs	View Docs	eSign App	Details	Details
---------	---------	-------------	-----------	-----------	---------	---------

Project Name:	777 Properties	Application Received Date:	03/12/2024
Type:	Surface Water Management License	30-Day Due Date:	06/15/2024
ePermit ID:	0000280992	Date RAI Sent:	06/13/2024
Application Number:	L2024-086	Response Received Date:	05/16/2024

Folio Number:

Description:

**Street Number Pre Direction Street Name Street Type Unit Number City Zip Code Zip Extension Alternate Location**



The School Board of Broward County, Florida  
**PRELIMINARY SCHOOL CAPACITY AVAILABILITY DETERMINATION (SCAD)**

**SITE PLAN**  
**SBBC-3516-2023**  
**County No: N/A**  
**Folio #: 494101310020**  
**Shooster Property Multi-family Residential**  
**October 2, 2024**



**SCAD Expiration Date: April 03, 2025**

Growth Management  
Facility Planning and Real Estate Department  
600 SE 3rd Avenue, 8th Floor  
Fort Lauderdale, Florida 33301  
Tel: (754) 321-2177 Fax: (754) 321-2179  
[www.browardschools.com](http://www.browardschools.com)

**PRELIMINARY SCHOOL CAPACITY AVAILABILITY DETERMINATION  
SITE PLAN**

PROJECT INFORMATION	NUMBER & TYPE OF PROPOSED UNITS	OTHER PROPOSED USES	ADDITIONAL STUDENT IMPACT
<b>Date:</b> October 2, 2024 Folio # 494101310020	<b>Single-Family:</b>		Elementary: 3
<b>Name:</b> Shooster Property Multi-family Residential	<b>Townhouse:</b>		Middle: 3
<b>SBBC Project Number:</b> SBBC-3516-2023	<b>Garden Apartments:</b>		
<b>County Project Number:</b> N/A	<b>Mid-Rise:</b> 338		High: 12
<b>Municipality Project Number:</b> N/A	<b>High-Rise:</b>		
<b>Owner/Developer:</b> 777 Properties, Inc.	<b>Mobile Home:</b>		Total: 18
<b>Jurisdiction:</b> Margate	<b>Total:</b> 338		

**Comments**

District staff reviewed and issued a preliminary School Capacity Availability Determination (SCAD) Letter for this site plan application that preliminarily vests the project for public school concurrency for 338 (186 one-bedroom or less and 152 two-bedroom) mid-rise units, which were anticipated to generate 18 (3 elementary, 3 middle, and 12 high school) students into Broward County Public Schools.

The school Concurrency Service Areas (CSA) serving the project site in the 2023/24 school year included Atlantic West Elementary, Margate Middle, and Coconut Creek High Schools. The project was determined to meet public school concurrency requirements because adequate school capacity was projected to be available to support the project.

This preliminary determination for 338 (186 one-bedroom or less and 152 two-bedroom) mid-rise units was due to expire on October 5, 2024. However, the applicant requested an extension of this preliminary SCAD prior to its expiration date. As such, the preliminary determination shall be valid for a one-time extension of an additional 180 days from the original expiration date (October 5, 2024) and shall expire on April 03, 2025. Please be advised that the expiration of the SCAD will require the submission of a new application and fee for a new public school concurrency determination. This preliminary school concurrency determination shall be deemed void unless prior to April 03, 2025, notification of final approval to the District has been provided. Upon the District's receipt of sufficient evidence of final approval, which shall minimally specify the number, type, and bedroom mix for the approved residential units, the District will issue and provide a final SCAD letter for the approved units, which shall ratify and commence the vesting period for the approved residential project.

Please be advised that if a change is proposed to the development, which increases the number of students generated by the project, the additional students will not be considered vested for public school concurrency.

Students generated are based on the student generation rates contained in the currently adopted Broward County Land Development Code.

**SBBC-3516-2023 Meets Public School Concurrency Requirements**

**Yes**  **No**

10/2/2024

**Date**

Reviewed By:

*Glennika D. Gordon*

**Signature**

Glennika D. Gordon, AICP

**Name**

Planner

**Title**

## Comments

Staff previously reviewed the project and issued a Preliminary School Capacity Availability Determination Letter for 300 (135 one-bedroom or less and 165 two-bedroom) mid-rise units, which vests the project for the anticipated student impact of 17 (4 elementary, 3 middle, and 10 high school) students. This application proposes 338 (186 one-bedroom or less and 152 two-bedroom) mid-rise units, which are anticipated to generate 18 (3 elementary, 3 middle, and 12 high school) students in Broward County Public Schools, resulting in a net increase of 1 student.

The school Concurrency Service Areas (CSA) serving the project site in the 2023/24 school year include Atlantic West Elementary, Margate Middle, and Coconut Creek High Schools. Based on the Public School Concurrency Document (PSCPD), all three schools are currently operating below the Level of Service Standard (LOS), which is established as the higher of 100% gross capacity or 110% permanent capacity. Incorporating the cumulative students anticipated from this project as well as approved and vested developments anticipated to be built within the next three years (2023/24- 2025/26), these schools are expected to maintain their current status through the 2025/26 school year. Additionally, the school capacity or Florida Inventory of School Houses (FISH) for the impacted schools reflects compliance with the class size constitutional amendment.

Charter schools located within a two-mile radius of the site in the 2023/24 school year are depicted above. Students returning, attending, or anticipated to attend charter schools are factored into the five-year student enrollment projections for District schools. Enrollment projections are adjusted for all elementary, middle, and high schools impacted by a charter school until the charter school reaches full enrollment status.

To ensure maximum utilization of the impacted CSA, the Board may utilize school boundary changes to accommodate students generated from developments in the County.

Capital Improvements scheduled in the currently Adopted District Educational Facilities Plan (DEFP), Fiscal Years 2023/24 to 2027/28 regarding pertinent impacted schools are depicted above.

This application satisfies public school concurrency on the basis that there is adequate school capacity anticipated to be available to support the project as proposed. This preliminary determination shall be valid for either the end of the current school year or 180 days, whichever is greater for a maximum of 338 (186 one-bedroom or less and 152 two-bedroom) mid-rise units, and conditioned upon final approval by the applicable governmental body. As such, this Preliminary School Capacity Availability Determination (SCAD) Letter will expire on October 5, 2024. This preliminary school concurrency determination shall be deemed to be void unless prior to the referenced expiration of the preliminary SCAD, notification of final approval to the District has been provided, and/or an extension of this preliminary SCAD has been requested in writing and granted by the School District. Please be advised that the expiration of the SCAD will require the submission of a new application and fee for a new public school concurrency determination. Upon the District's receipt of sufficient evidence of final approval, which shall minimally specify the number, type, and bedroom mix for the approved residential units, the District will issue and provide a final SCAD letter for the approved units, which shall ratify and commence the vesting period for the approved residential project.

Please be advised that if a change is proposed to the development, which increases the number of students generated by the project, the additional students will not be considered vested for public school concurrency.

**SBBC-3516-2023 Meets Public School Concurrency Requirements**

Yes  No

Reviewed By:

4/8/2024

**Date**

*Glennika D. Gordon*

**Signature**

Glennika D. Gordon, AICP

**Name**

Planner

**Title**

## Amanda Martinez

---

**From:** Morrison, Karen <KMorrison@republicservices.com>  
**Sent:** Wednesday, May 31, 2023 9:20 AM  
**To:** Saul Perez; Rafael Valdetaro; Stadtlander, Mike; Turgot, Jean-Pierre  
**Cc:** Eliana Izza; Woods, James; Childs, Mo  
**Subject:** RE: Project: 777 SR 7  
**Attachments:** 265XP-265XPE Precision Series Compactor.pdf

Good morning Saul. We recommend the 35yd self-contained compactor to fit the enclosure – please see the attached for compactor specifications. With 300 units you'll need service once per week.

Thank you,  
-Karen

### Karen Morrison

Territory Executive

Commercial and Industrial Sales and Retention

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Is compacting for you? [Compactor Rental Solutions](#)

Who are we? <https://www.youtube.com/channel/UCfpPxmX8j04YOCNtE0njz0w>

751 NW 31st Avenue

e [kmorrison@republicservices.com](mailto:kmorrison@republicservices.com)

o (954) 327-9540 c (954) 205-0720

f (954) 327-9521 w [www.republicservices.com](http://www.republicservices.com)



We'll handle it from here.™



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---

**From:** Saul Perez <saul@rezfl.com>

**Sent:** Thursday, May 25, 2023 6:58 PM

**To:** Rafael Valdetaro <RValdetaro@margatefl.com>; Stadtlander, Mike <MStadtlander@republicservices.com>; Turgot, Jean-Pierre <JTurgot@republicservices.com>

**Cc:** Eliana Izza <Elizza@msaarchitectsinc.com>; Morrison, Karen <KMorrison@republicservices.com>; Woods, James <JWoods@republicservices.com>; Childs, Mo <MChilds@republicservices.com>

**Subject:** RE: Project: 777 SR 7

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Dear all,

Please find trash area detail and site plan attached. As you can see we have a dedicated compactor and a trash area in three of the five buildings. Look forward to your feedback.

Best,

Saul Perez

**R | E | Z Florida**

d: (305) 562-4704

f: (305) 397-1447

e: [Saul@rezfl.com](mailto:Saul@rezfl.com)

Sent from my iPhone

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---

**From:** Rafael Valdetaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>

**Sent:** Thursday, May 25, 2023 3:09 PM

**To:** Stadtlander, Mike <[MStadtlander@republicservices.com](mailto:MStadtlander@republicservices.com)>; Jean-Pierre Turgot <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>; Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>

**Cc:** Eliana Izza <[Elizza@msaarchitectsinc.com](mailto:Elizza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Morris Mo Childs <[mchilds@republicservices.com](mailto:mchilds@republicservices.com)>

**Subject:** RE: Project: 777 SR 7

Apologies Mike,

My previous email was incorrect.

Saul is sending his plans to Karen, and Karen will inform Saul of what she needs once she receives the plans.

Best Regards,

**Rafael Valdetaro**

Solid Waste & Recycling Coordinator

City of Margate

Dept. of Environmental & Engineering Services

901 N.W. 66th Avenue, Suite A

Margate, FL 33063

[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)

Main: (954) 972-0828  
Direct: (954) 884-3642  
Fax: (954) 978-7349



---

**From:** Stadtlander, Mike <[MStadtlander@republicservices.com](mailto:MStadtlander@republicservices.com)>  
**Sent:** Thursday, May 25, 2023 1:53 PM  
**To:** Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>; Jean-Pierre Turgot <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>; Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>  
**Cc:** Eliana Izza <[Elza@msaarchitectsinc.com](mailto:Elza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Morris Mo Childs <[mchilds@republicservices.com](mailto:mchilds@republicservices.com)>  
**Subject:** RE: Project: 777 SR 7

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Thanks sir.

Thanks,  
**Mike Stadtlander**  
Construction Account Manager  
954-288-1386 – cell



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---

**From:** Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>  
**Sent:** Thursday, May 25, 2023 1:52 PM  
**To:** Stadtlander, Mike <[MStadtlander@republicservices.com](mailto:MStadtlander@republicservices.com)>; Turgot, Jean-Pierre <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>; Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>  
**Cc:** Eliana Izza <[Elza@msaarchitectsinc.com](mailto:Elza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Childs, Mo <[MChilds@republicservices.com](mailto:MChilds@republicservices.com)>  
**Subject:** RE: Project: 777 SR 7

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Thank you Mike,

Saul with REZ spoke to Karen Morrison and she is sending him the plans. She will update us on anything Saul needs once she receives the plans.

Best Regards,

**Rafael Valdettaro**

Solid Waste & Recycling Coordinator

City of Margate

Dept. of Environmental & Engineering Services

901 N.W. 66th Avenue, Suite A

Margate, FL 33063

[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)

Main: (954) 972-0828

Direct: (954) 884-3642

Fax: (954) 978-7349



---

**From:** Stadtlander, Mike <[MStadtlander@republicservices.com](mailto:MStadtlander@republicservices.com)>

**Sent:** Thursday, May 25, 2023 9:16 AM

**To:** Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>; Jean-Pierre Turgot <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>; Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>

**Cc:** Eliana Izza <[Elizza@msaarchitectsinc.com](mailto:Elizza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Morris Mo Childs <[mchilds@republicservices.com](mailto:mchilds@republicservices.com)>

**Subject:** Re: Project: 777 SR 7

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Anytime Tomm or afternoon today and I'm good.

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---

**From:** Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>

**Sent:** Thursday, May 25, 2023 9:14:11 AM

**To:** Stadtlander, Mike <[MStadtlander@republicservices.com](mailto:MStadtlander@republicservices.com)>; Turgot, Jean-Pierre <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>; Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>

**Cc:** Eliana Izza <[Elizza@msaarchitectsinc.com](mailto:Elizza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Childs, Mo <[MChilds@republicservices.com](mailto:MChilds@republicservices.com)>

**Subject:** RE: Project: 777 SR 7

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Thank you for responding Jean and Michael.

If Friday works better(for Michael) than today, please let us know.

Best Regards,

**Rafael Valdettaro**

Solid Waste & Recycling Coordinator

City of Margate

Dept. of Environmental & Engineering Services

901 N.W. 66th Avenue, Suite A

Margate, FL 33063

[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)

Main: (954) 972-0828

Direct: (954) 884-3642

Fax: (954) 978-7349



---

**From:** Stadtlander, Mike <[MStadtlander@republicservices.com](mailto:MStadtlander@republicservices.com)>

**Sent:** Thursday, May 25, 2023 8:23 AM

**To:** Jean-Pierre Turgot <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>; Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>; Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>

**Cc:** Eliana Izza <[Elizza@msaarchitectsinc.com](mailto:Elizza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Morris Mo Childs <[mchilds@republicservices.com](mailto:mchilds@republicservices.com)>

**Subject:** RE: Project: 777 SR 7

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Good morning...I am unavailable from 10am-1pm today due to Dr. appts...otherwise I am open.

Thanks,

**Mike Stadtlander**

Construction Account Manager

954-288-1386 – cell



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---

**From:** Turgot, Jean-Pierre <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>  
**Sent:** Thursday, May 25, 2023 7:44 AM  
**To:** Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>; Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>  
**Cc:** Eliana Izza <[Elizza@msaarchitectsinc.com](mailto:Elizza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Childs, Mo <[MChilds@republicservices.com](mailto:MChilds@republicservices.com)>; Stadtlander, Mike <[MStadtlander@republicservices.com](mailto:MStadtlander@republicservices.com)>  
**Subject:** RE: Project: 777 SR 7

Good Morning,  
I am available today, tomorrow, and on Monday and Tuesday next week.  
Please let me know when the best time is for you and I will be glad to be on this call.  
Best Regards,

## Jean-Pierre Turgot

751 NW 31st Ave  
Ft. Lauderdale, FL 33311  
e [jturgot@republicservices.com](mailto:jturgot@republicservices.com)  
o 954-327-9555  
c 954-279-9293  
w [RepublicServices.com](http://RepublicServices.com)



Sustainability in Action

---

**From:** Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>  
**Sent:** Wednesday, May 24, 2023 5:56 PM  
**To:** Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>  
**Cc:** Eliana Izza <[Elizza@msaarchitectsinc.com](mailto:Elizza@msaarchitectsinc.com)>; Morrison, Karen <[KMorrison@republicservices.com](mailto:KMorrison@republicservices.com)>; Woods, James <[JWoods@republicservices.com](mailto:JWoods@republicservices.com)>; Turgot, Jean-Pierre <[JTurgot@republicservices.com](mailto:JTurgot@republicservices.com)>; Childs, Mo <[MChilds@republicservices.com](mailto:MChilds@republicservices.com)>  
**Subject:** Re: Project: 777 SR 7

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Thanks, Rafael. We are available either day. Look forward to discussing this matter.

Saul Perez  
R | E | Z Florida  
d: (305) 562-4704

f: (305) 397-1447  
e: [Saul@rezfl.com](mailto:Saul@rezfl.com)

Sent from my iPhone

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On May 24, 2023, at 10:50 AM, Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)> wrote:

Good Morning Karen, James & Jean-Pierre,

Saul is working on a pre-construction for a 300 unit apartment building in Margate. Since it is an apartment building they will be included in the exclusive franchise agreement.

Can either of you make yourselves available for a Teams meeting this week to make sure that we help Saul confirm he is building enough accommodations for the anticipated amount of waste volume the apartment building will generate?

Please feel reply to all and let me know when you all can be available.

Thank you,

**Rafael Valdettaro**

Solid Waste & Recycling Coordinator  
City of Margate  
Dept. of Environmental & Engineering Services  
901 N.W. 66th Avenue, Suite A  
Margate, FL 33063  
[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)

Main: (954) 972-0828  
Direct: (954) 884-3642  
Fax: (954) 978-7349

<image001.png>

---

**From:** Saul Perez <[saul@rezfl.com](mailto:saul@rezfl.com)>  
**Sent:** Tuesday, May 16, 2023 4:48 PM  
**To:** Rafael Valdettaro <[RValdettaro@margatefl.com](mailto:RValdettaro@margatefl.com)>  
**Cc:** Eliana Izza <[Elza@msaarchitectsinc.com](mailto:Elza@msaarchitectsinc.com)>  
**Subject:** Project: 777 SR 7

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Good afternoon Mr. Valdettaro,

I recently completed my preapplication meeting and was told to review my trash plan and design with you. Do you have a few minutes for a zoom call this week?

Thanks,

Saul Perez  
**R | E | Z Florida**  
d: (305) 562-4704  
f: (305) 397-1447  
e: [Saul@rezfl.com](mailto:Saul@rezfl.com)

Sent from my iPhone

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# 265XP PRECISION SERIES SELF-CONTAINED COMPACTOR



**Introducing the first ever Precision Series self-contained compactor that's designed and engineered for performance**

## GUARDIAN CONTROL SYSTEM

- » Automatic maintenance tracking
- » Superior 24 volt controls and NEMA 4 rated enclosure

## LARGEST ACCESS OPENING FOR MAINTENANCE / SERVICE

- » Easy to inspect and access cylinders and hoses

## PRECISION GUIDED RAM

- » Glides smoothly above floor on UHMW guides
- » Ram penetrates 7" into container to minimize spring-back

## LONGEST STANDARD WARRANTY

- » 5-year structural warranty

Patent Number 9,358,745

## IDEAL FOR:

Supermarkets



Malls



Hospitals



Restaurants



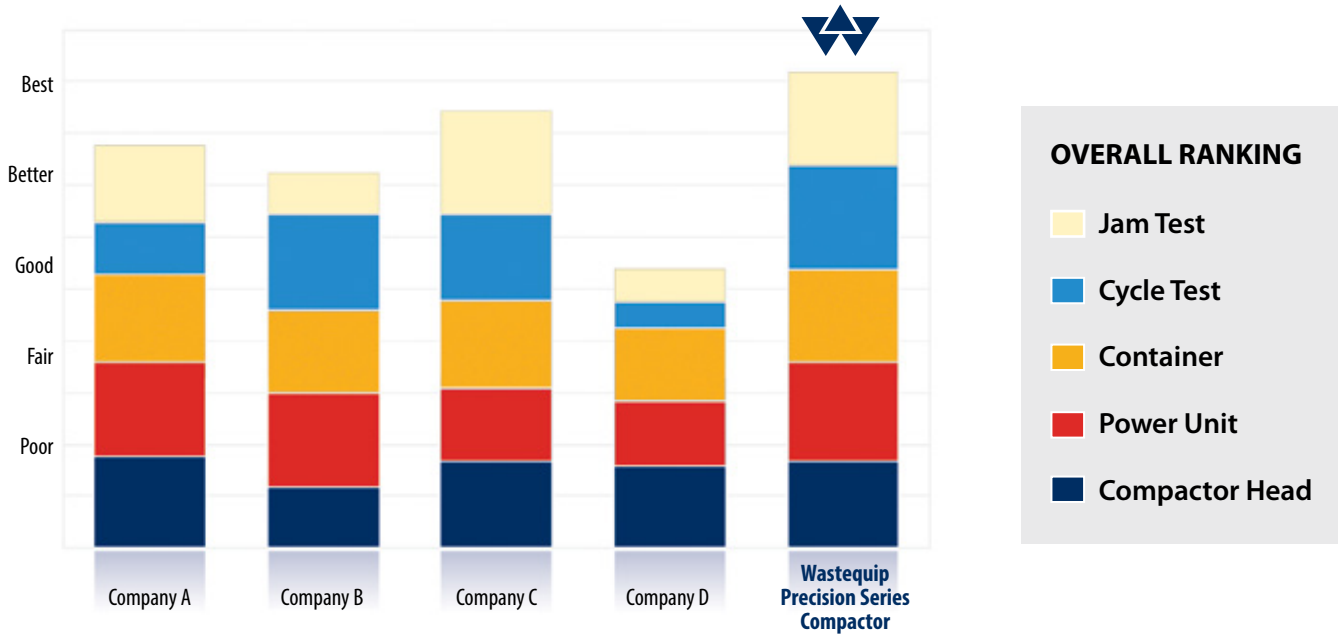
Office Buildings



Retail Establishments



# BEST-IN-CLASS BENCHMARK TESTING



## TESTING CRITERIA

### COMPACTOR HEAD

Ram base, face, floor plate, ram travel, and sidewall

### CONTAINER

Capacity, door sheet, side wall, door seal, hinge system and shipping height

### CYCLE TEST

Operation, wear and reliability

### POWER UNIT

Oil reservoir, pressure switch or transducer, directional valve, pump size and PLC

### JAM TEST

Flex/twist, ram rack and damage

## FEATURING OUR GUARDIAN CONTROL SYSTEM

Value-Added Standard Features	Wastequip Guardian Control System	Competitor A	Competitor B
Power unit runs any brand compactor	✓		
Automatically alerts when maintenance is due	✓		
NEMA 4 rated control panel	✓		
Low temperature oil	✓		
Push button controls	✓		✓
Pack-out override	✓		
Watch Dog timer	✓	✓	
24 volt controls	✓		✓
Programmable logic controller	✓	✓	✓
Multi-cycle timer	✓	✓	✓
Full light	✓	✓	

## PRECISION GUIDED RAM

**5**  
**YEAR**  
Structural Warranty

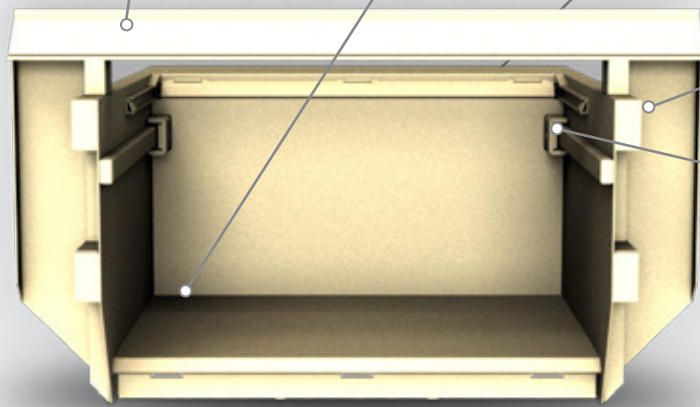
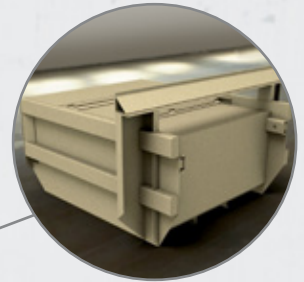
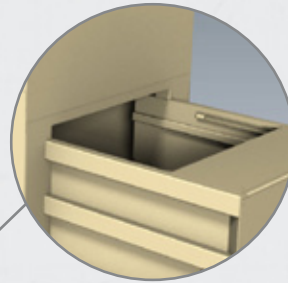
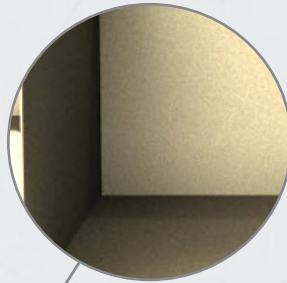
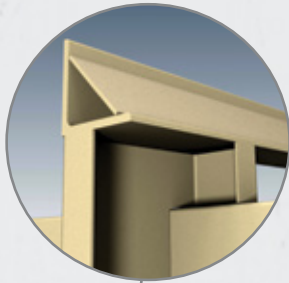
Breaker bar is engineered for increased strength and is designed for additional structural support.

Ram is suspended above chamber floor and glides on near frictionless UHMW guides.

Large 40" X 60" clear top opening is WASTEC rated at 1.48 cubic yards

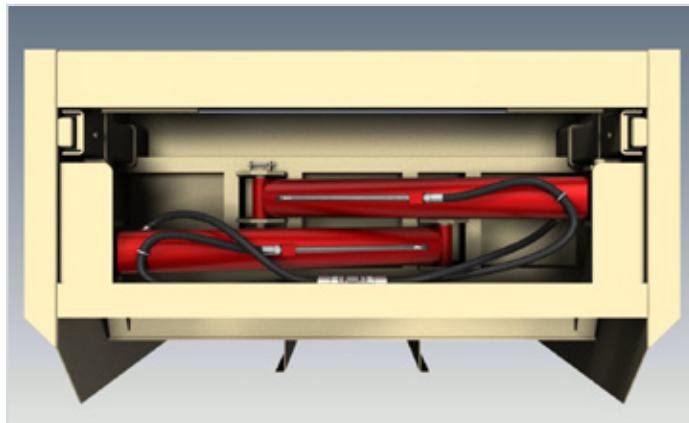
7" penetration into the container reduces spring-back of material into charge chamber

UHMW guides are long lasting and can be easily replaced



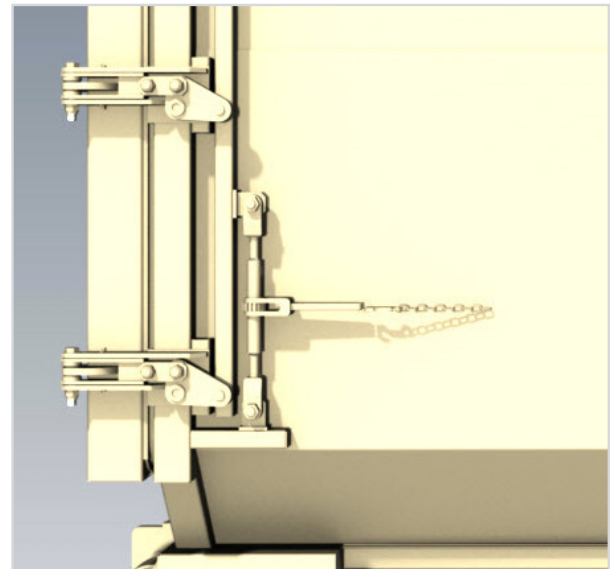
## LARGEST MAINTENANCE ACCESS IN THE INDUSTRY

- ▶ Large 49" X 18" access opening
- ▶ Hydraulic hoses are easy to inspect /replace
- ▶ Clean out area designed to drain excessive liquid
- ▶ Up to 33% less time to change cylinders



## ADJUSTABLE SLIDING HINGE

- ▶ Adjustable sliding hinge draws door in evenly
- ▶ Heavy-duty design and full door seal





# SELF-CONTAINED COMPACTORS

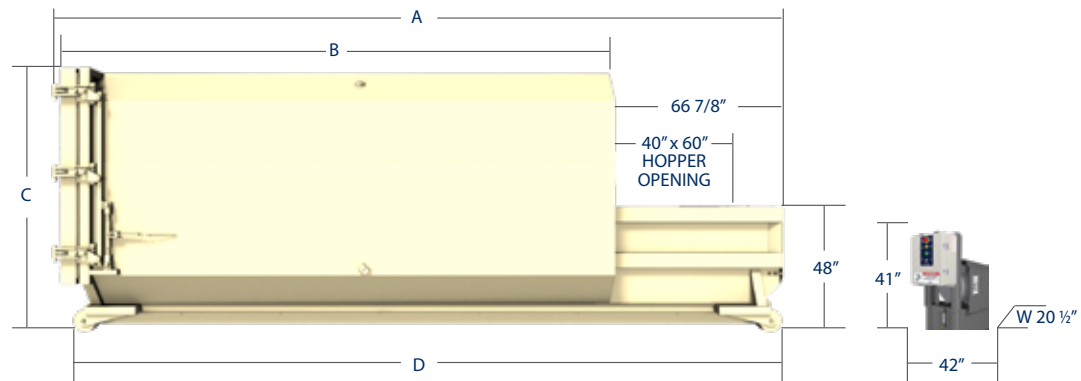
## FEATURES

### STANDARD

- Precision guided ram system
- Guardian Control System
- Automatic Maintenance Scheduler (AMS)
- NEMA 4 enclosure
- Controls in panel face
- 5-year structural warranty
- 33-second cycle time
- Full container light
- Low temperature oil
- Multi-cycle timer
- Operational and service manual
- Primed and painted in several colors

### OPTIONS

- Advance warning light
- Pressure gauge - color coded
- Controls on remote pendant in lieu of mounting in panel face
- Guide rails with stops
- Oil heater
- Photo electric eye
- Odor control system
- Container lifter
- HT (Hinged Tailgate) models



Compactor Models	265XP model (cu. yds.)	Overall length (A) (in.)	Container length (B) (in.)	Overall height (C) (in.)	Floor length (D) (in.)*	Width (in.)	Weight (lbs.)
	20	188	121-1/8	100	187	102	8,500
	25	218	148-1/8		217		8,850
	30	248	178-1/8		246		9,450
	35	278	208-1/8		277		10,000
	38	299	229-1/8		298		10,500

\* Bullnose to bullnose



Replacement parts available online at [www.gotoparts.com](http://www.gotoparts.com).

## SPECIFICATIONS

### Charge Box

- Wastequip rating - 2.00 cubic yards
- Wastec rating - 1.48 cubic yards
- Clear top opening - 40" Length x 60" Width

### Ram

- 1/4" steel construction with engineered structural reinforcements and precision guided ram system

### Compactor Head

- Floor - 3/8" with two 5" channel supports
- Sides - 3/16" side plates with 6" x 3" formed steel stiffener
- Top rail - 6" x 3" formed steel stiffener
- Breaker bar - 6" x 6" x 1/2" angle steel
- Sump - 12" height

**NOTE: XPE models include 1/2" ram and compactor head floor, 1/4" container floor, 3/8" push plate, stainless steel cylinder pins, hydraulic hose guards and fully welded (inside/outside) container sidewalls**

### Electrical

- Electric motor - 10 hp TEFC (Totally Enclosed Fan Cooled)
- Voltage - 208/230/460, 3 phase, 60 HZ (optional 575V)
- Power box - NEMA 4 rated, UL listed
- Automated cycle operation - turn key switch-ram extends, retracts and stops automatically

### Hydraulic Specifications

- Pump - 11.7 gpm
- Ram penetration - 7"
- Cycle time - 33 seconds
- Hydraulic cylinder - (2), cylinder bore - 4"
- Cylinder rod - 2.5"
- Hydraulic oil tank - 20 gallon reservoir
- Power unit location - remote

### Hydraulic Performance

- Ram face pressure**
  - Normal - 39,800 lbs
  - Maximum - 49,500 lbs
- Ram psi**
  - Normal - 25.00 psi
  - Maximum - 31.73 psi
- Operating pressure**
  - Normal - 1,850 psi
  - Maximum - 2,300 psi

### Container

- 7 gauge floor with 3" channel crossmember
- 6" x 2" x 1/4" tube rails, 36-1/2" I.D. between rails
- Solid steel bullnose and hook at both ends
- 4" diameter rollers, 4-1/2" long
- Length, Width and Height - see chart above

## Standard Color Choices\*



Colors shown are as accurate as printing allows. The actual color is subject to variation from the printed color sample. Color choices vary by plant location. Please contact your local sales representative for available colors. Custom colors are available upon request and are subject to an additional charge.



Tel: 877.468.9278 | [sales@wastequip.com](mailto:sales@wastequip.com) | [www.wastequip.com](http://www.wastequip.com)

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751 NW 31<sup>st</sup> Avenue, Fort Lauderdale, FL 33311  
O (954) 583-1830; F (954) 327-9521 republicservices.com

April 19, 2023

Dunay, Miskel and Backman, LLP  
Attn: Amanda Martinez  
14 SE 4th Street, Suite 36  
Boca Raton, FL 33432

***RE: 777 and 767 S State Road 7, Margate, FL***

To Whom It May Concern,

This is to confirm that Republic Services, as the franchise trash hauler for the city of Margate, will provide trash and recycle services at the referenced addresses.

We are proud to be the city's service provider and are available to answer any questions or provide further assistance.

Sincerely,  
Karen Morrison  
Territory Executive  
e [kmorrison@republicservices.com](mailto:kmorrison@republicservices.com)  
o (954) 327-9540 c (954) 205-0720



February 28, 2024  
File No.: 22-2586

777 Properties Inc.  
777 South State Road 7  
Margate, Fl. 33068

Attention: Mr. Saul Perez  
REZ SE Land LLC

**SUBSURFACE EXPLORATION REPORT  
PROPOSED DRAINAGE  
777 SOUTH STATE ROAD 7  
MARGATE, FL. 33068**

Ardaman & Associates, Inc. has completed the subsurface exploration of the project site at the subject address above. The work was requested and authorized by Mr. Saul Perez of REZ SE Land LLC. We explored the general subsurface conditions in order to evaluate their suitability for the proposed drainage design. We estimated the coefficient of design permeability of the soils. This report describes our explorations and tests, reports their findings, and summarizes our conclusions.

Our report has been prepared specifically for this project. It is intended for the exclusive use of Mr. Saul Perez, their representatives, and assigns. Our work has used methods and procedures consistent with local foundation engineering practices. No other warranty, expressed or implied, is made. We do not guarantee project performance in any respect, only that our work meets normal standards of professional care.

## **SITE LOCATION AND SITE DESCRIPTION**

The site for the proposed drainage includes two properties located at 777 South State Road 7 (ID numbers 494101310010 and 494101310020) in Margate, Florida (Section 6, Township 49 South and Range 41 East). A site vicinity map provided by Google Earth Pro 2024 was used as our Figure 1. The site is currently a grassy area, with a wooded portion to the west part of the property.

## **FIELD EXPLORATION PROGRAM**

### **Field Permeability Test**

In order to estimate the hydraulic conductivity of the upper soils, three (3) constant head exfiltration tests were performed at a depth of 10 feet below the ground surface at the locations shown in our Boring Location Plan. The tests were performed in accordance with methods described in the South Florida Water Management District (SFWMD) Permit Information Manual, Volume IV.

Descriptions of the soils observed in the exfiltration test boreholes and the test results are presented in the Appendix. In brief, the exfiltration tests yielded hydraulic conductivity values between  $3.55 \times 10^{-4}$  cfs/ft<sup>2</sup>-ft head and  $4.79 \times 10^{-4}$  cfs/ft<sup>2</sup>-ft head.

## **GROUNDWATER CONDITIONS**

Our drillers observed groundwater in the boreholes at depths of about 3.5 feet below the ground surface, as noted on the percolation logs. Fluctuations in the groundwater level on this site should be anticipated throughout the year due to seasonal variations in rainfall, drainage, and land surface elevation, relief point's distance. Groundwater elevation at this site may be expected after a period of heavy rains.

## CLOSURE

The analysis submitted herein is based upon the data obtained from the percolation boring presented in the Appendix. This report does not reflect any variations which may occur adjacent to or between the boring. The nature and extent of the variations between the borings may not become evident until during construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations during the construction period and noting the characteristics of the variations.

In the event any changes occur in the design, nature, or location of the proposed facility, we should review the applicability of the conclusions and recommendations in this report. We are pleased to be of assistance to you on this phase of your project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,

**ARDAMAN & ASSOCIATES, INC.**

FL Certificate No 0005950

Gabriela Gonzalez, E.I.  
Staff Engineer

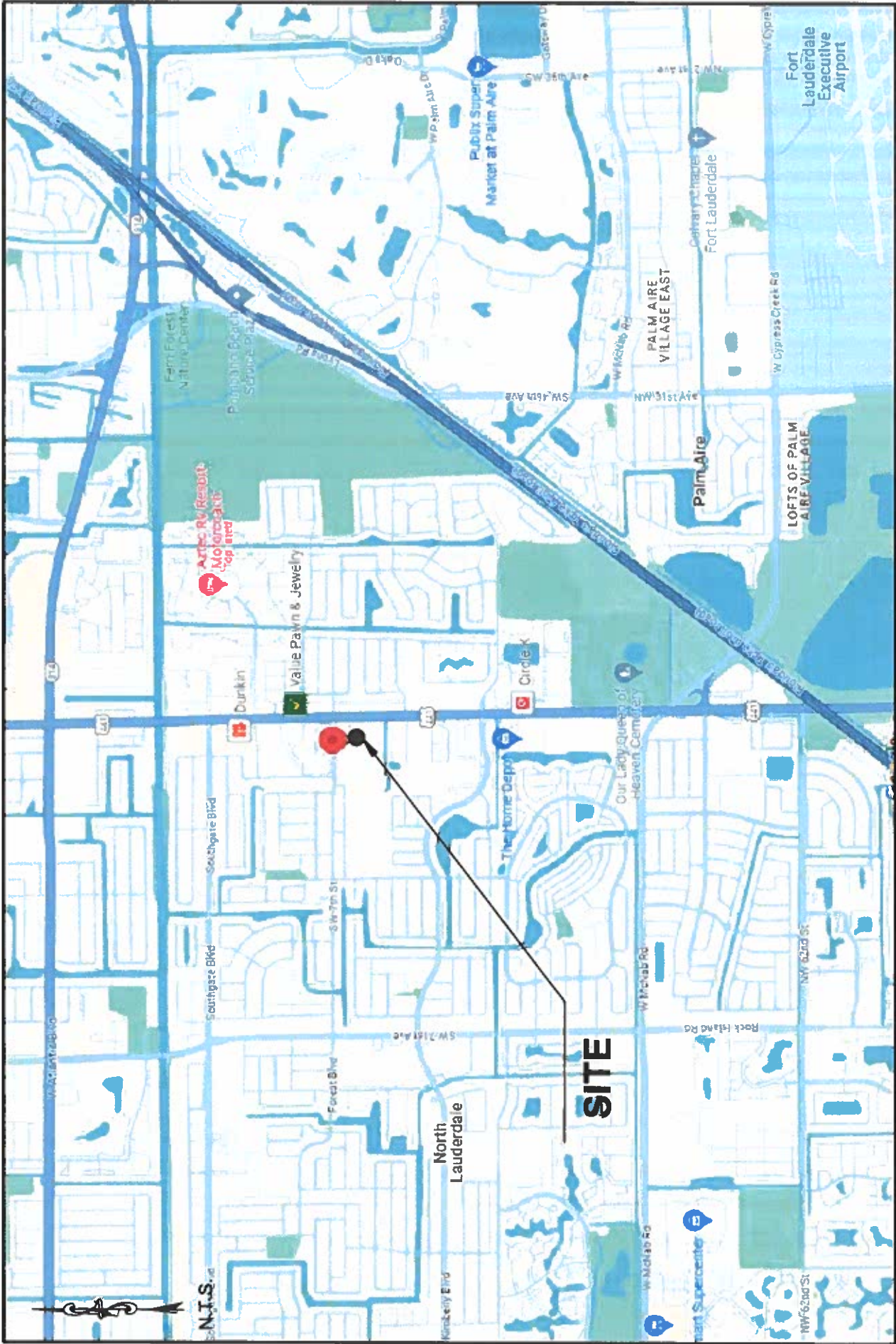
Evelio Horta, M.S.C.E., P.E.  
Project Engineer  
FL Reg. No. 82209

Evelio Horta, Ph.D., P.E, G.E.  
Principal Engineer  
FL Reg. No. 46625



This item has been digitally signed and sealed by Evelio Horta, PhD P.E., G.E on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

**SITE PLAN  
AND  
BORING LOGS**



File No.: 22-2586  
 Prepared By: GG  
 Date: 02/23/24

SITE VICINITY MAP  
 Figure No 1.

SUBSURFACE EXPLORATION REPORT  
 PROPOSED DRAINAGE  
 777 SOUTH STATE ROAD 7, MARGATE  
 BROWARD COUNTY, FLORIDA



**Ardaman & Associates, Inc.**  
 Geotechnical, Environmental and  
 Materials Consultants



Ardaman & Associates, Inc.  
 Geotechnical, Environmental and  
 Materials Consultants

SUBSURFACE EXPLORATION REPORT  
 PROPOSED DRAINAGE  
 777 SOUTH STATE ROAD 7, MARGATE  
 BROWARD COUNTY, FLORIDA

BORING LOCATION PLAN  
 Figure No 2.

File No: 22-2586  
 Prepared By: GG  
 Date: 02/23/2024



**SFWMD  
CONSTANT HEAD  
PERCOLATION TESTS**

**PROPOSED DRAINAGE**

777 South State Road 7  
Margate, Florida

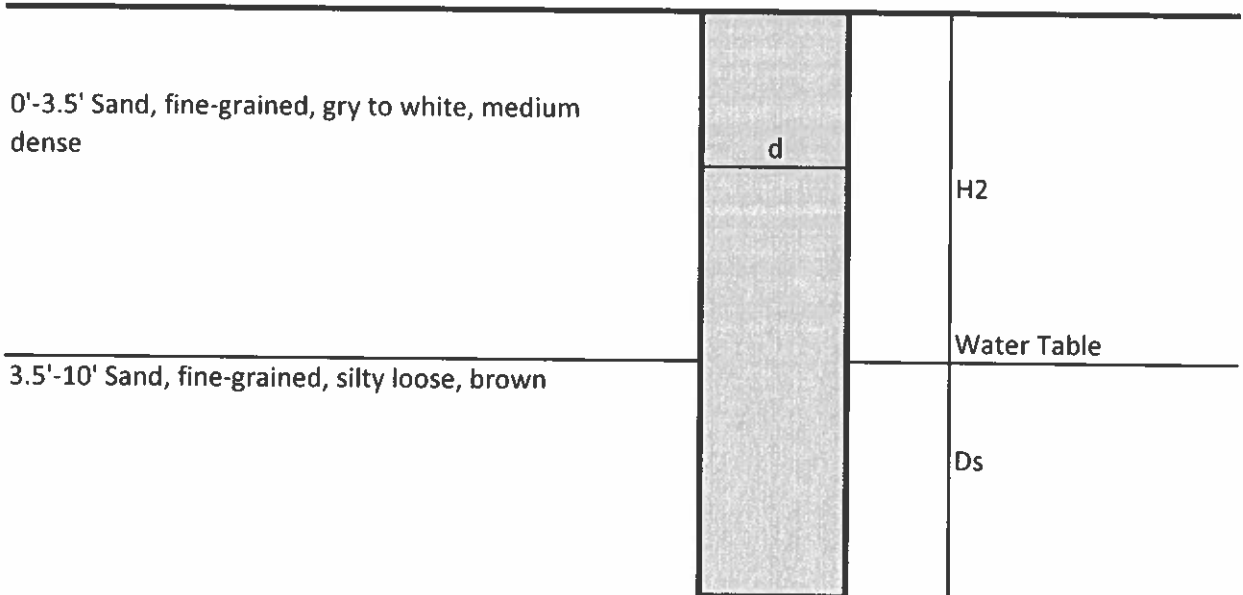
22-Feb-24

File No. 22-2586

CONSTANT HEAD PERCOLATION TEST  
SFWMD Usual Open Hole Test  
Test 1, Location EX-1

Location: See Plan

Grade



K= Hydraulic Conductivity (cfs/ft <sup>2</sup> -ft head)	3.55E-04
Q= Stabilized Flow Rate (cfs)	1.67E-02
d= Diameter of Test Hole (ft)	0.5
H2= Depth of Water Table (ft)	3.60
Ds= Saturated Hole Depth (ft)	6.4
H= Test Hole Depth (ft)	10

Evelio Horta, Jr., M.S.C.E., P.E.  
Project Engineer  
FL Reg. No. 82209

**PROPOSED DRAINAGE**

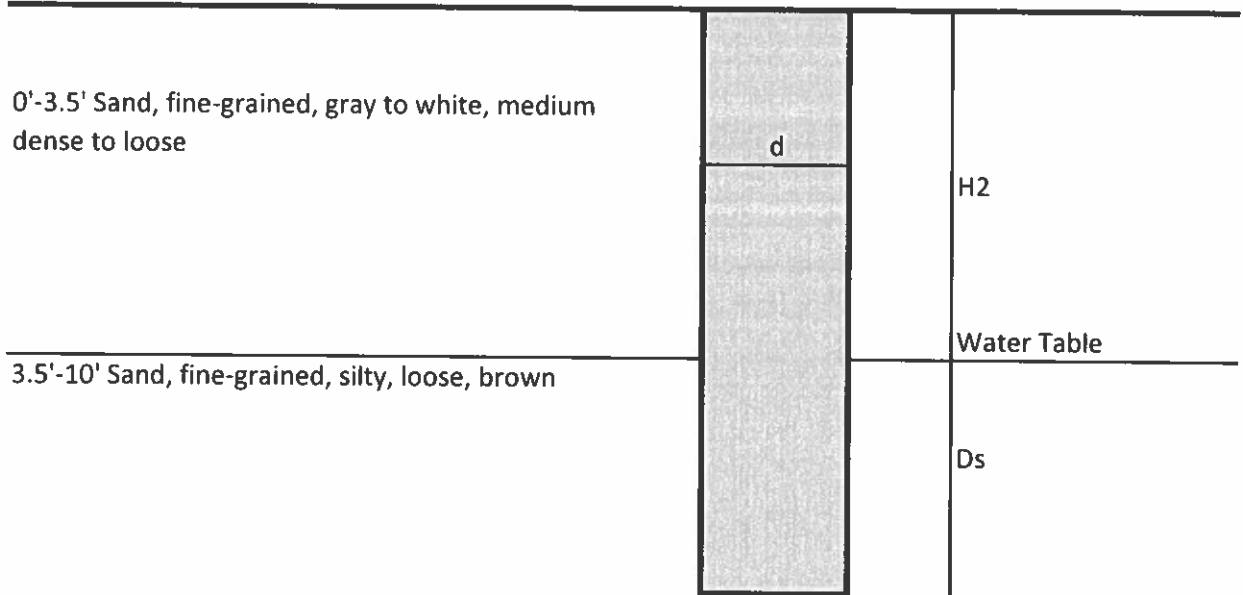
777 South State Road 7  
Margate, Florida

22-Feb-24  
File No. 22-2586

**CONSTANT HEAD PERCOLATION TEST**  
SFWMD Usual Open Hole Test  
Test 2, Location EX-2

Location: See Plan

Grade



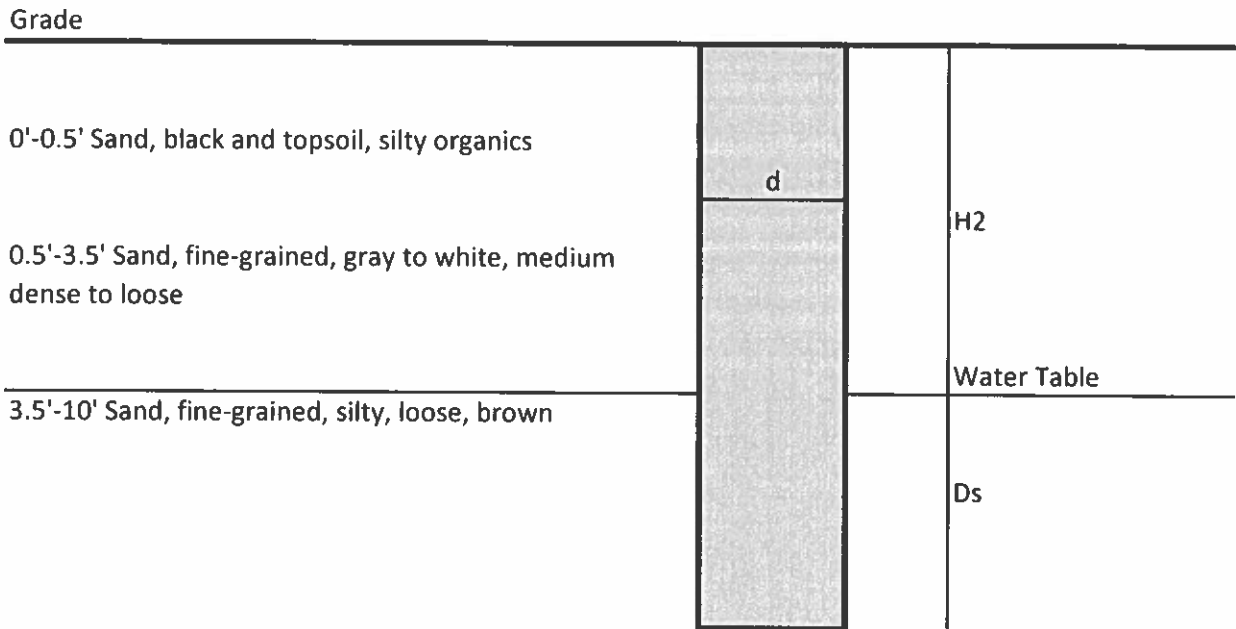
K= Hydraulic Conductivity (cfs/ft <sup>2</sup> -ft head)	4.59E-04
Q= Stabilized Flow Rate (cfs)	2.16E-02
d= Diameter of Test Hole (ft)	0.5
H2= Depth of Water Table (ft)	3.60
Ds= Saturated Hole Depth (ft)	6.4
H= Test Hole Depth (ft)	10

Evelio Horta, Jr., M.S.C.E., P.E.  
Project Engineer  
FL Reg. No. 82209

**PROPOSED DRAINAGE**  
 777 South State Road 7  
 Margate, Florida  
**CONSTANT HEAD PERCOLATION TEST**  
 SFWMD Usual Open Hole Test  
 Test 3, Location EX-3

22-Feb-24  
 File No. 22-2586

Location: See Plan



K= Hydraulic Conductivity (cfs/ft <sup>2</sup> -ft head)	4.79E-04
Q= Stabilized Flow Rate (cfs)	2.21E-02
d= Diameter of Test Hole (ft)	0.5
H2= Depth of Water Table (ft)	3.50
Ds= Saturated Hole Depth (ft)	6.5
H= Test Hole Depth (ft)	10

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Evelio Horta, Jr., M.S.C.E., P.E.  
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