

Central Florida Testing Laboratories, Inc.

Testing, Development and Research

12625 - 40th Street North Clearwater, Florida 33762

ENGINEERING BUSINESS NO. 1066

GEOLOGY BUSINESS NO. 224

TAMPA BAY AREA (727) 572-9797

FLORIDA 1-800-248-CFTL

FAX (727) 299-

**Sunshine Club Treasure Island
12200 Gulf Boulevard, Treasure Island
Coney Island Block 12, Lots 8, 9 & 10 Less Rd
Pinellas County, Florida
Double Ring Infiltration Test
November 2022**

Report Number. 243134

Prepared

for

Ascent Investments, LLC
c/o John A. Bodziak, Architect, AIA, PA
743 - 49th Street North
St. Petersburg, Florida 33710

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November 17, 2022

Ascent Investments, LLC
c/o John A. Bodziak, Architect, AIA, PA
743 – 49th Street North
St. Petersburg, FL 33710

Attn.: Mr. Jack Bodziak

Re: Double Ring Infiltration (DRI) Test for Sunshine Club Treasure Island,
12200 Gulf Boulevard, Treasure Island, FL 33706
CFTL Report No. 243134

Gentlemen,

As authorized, our office performed a Double Ring Infiltration (DRI) test on the site of your above referenced project. Based on the Site Plan provided by your Architect, Mr. Jack Bodziak, the site will utilize perimeter swales for the stormwater retention areas. Our test, labeled DRI-1 was conducted in the northeast corner of the overall property and in our opinion is representative of soil conditions beneath the site.

The purpose of the DRI test was to determine shallow soil profiles, current water table levels, infiltration rate of shallow soils, and provide an estimate of the historic seasonal high water table (SHWT) level based on soil indicators, when distinguishable.



In addition to the test location plan, we have included an area map (Figure 1) showing the site location with respect to the surrounding geographical area, large and small scale aerial photographs of the site, and NRCS (Natural Resources Conservation Services) data relating to the predominant soil type present on the property.

Please note that our test results reflect existing grades at the time the various tests

were performed. It is the responsibility of your Civil Engineer-of-Record to convert any below land surface to an elevation, when applicable. All measurements shown in this report are referenced from ground elevation at the specific location where the DRI and hand auger boring were performed. With regard to the estimated SHWT we are providing an elevation since we can reference it to NOAA Mean High High Water (MHHW) levels.

General Site Description

The site is located in Treasure Island, Pinellas County, Florida. Treasure Island is one of many small beach communities on the barrier island chain that runs along the west coast of Pinellas County, Florida. The subject site is located approximately 1/3 mile to the south of John's Pass which is a natural break in the



island chain and connects Boca Ciega Bay to the east to the Gulf of Mexico to the west. The property is also about equidistance between the Gulf of Mexico to the west and the Intercoastal Waterway to the east. More specifically the subject property is located at the northwest corner of

the intersection of Gulf Boulevard and 112nd Avenue in Treasure Island. The subject property consists of three contiguous lots with two of them presently containing existing structures and one of them being vacant. Based on spot elevations on the survey, the center of the vacant lot, presently covered with low grasses, on which the DRI test was conducted is at approximate elevation of +4.10'.

Test Methods

The DRI test was performed in general accordance with the guidelines presented in ASTM Test Method D-3385 titled *Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer*. The accompanying shallow auger boring was accomplished with the use of posthole diggers and the bucket type of hand auger. This method of sampling allows for soil samples in approximately six-inch vertical increments to be retrieved to the surface for visual classification and collection. All soils encountered are described using Munsell Color Chart number and common name of each soil stratum in order to provide a

level of consistency.

Test Results

Soils encountered in the shallow auger boring that accompanied the DRI test consisted of fine grained non-cohesive sands containing varying amounts of shell fragments. These sands extended to a depth of at least 6 feet. The static shallow



water table was measured at a depth of approximately 2.5 feet below the surface. This equates to an elevation of approximately $4.1' - 2.5' = +1.6'$. An observation of waterfront properties to the east found that our testing was conducted at or near high tide based on barnacles

visible on the seawalls. In our opinion, the soils show no indicator of a historic seasonal high water table (SHWT) level. However, the location of the property being on the barrier island chain and surrounded by sea water to the east and west has a shallow water table that is expected to be tidally influenced and rise and fall on a daily basis with the tidal levels in the Gulf of Mexico and/or the Intercoastal Waterway.

In consideration of the shallow water table being tidally influenced it is our estimate that a SHWT level would equate to the MHHWL (Mean High High Water Level) established by NOAA for this area of Treasure Island. The attached NOAA Datum sheet for Station 8726533 (see attached), which is Johns Pass (1/3 mile to the north) of the site. This datum sheet states the elevations shown are in feet and referenced to MLLW (Mean Low Low Water). MLLW is shown on the sheet at elevation 0.0'. The highest elevation on the sheet is designated as MHHW (Mean High High Water). It is listed at elevation +2.24'. The MHHW would be the established mean elevation of recorded high tides in Johns Pass during the monitoring period. With the elevations referenced to a NOAA standard of 0.0 for MLLW, the chart also shows that the more standardized reference elevation of NAVD88 at +1.43' above MLLW (0.0').

Therefore, converting MHHW to a NAVD88 elevation would equate to $2.24' - 1.43' = +0.81'$. This elevation of +0.81' NAVD88, in our opinion, should be the equivalent to the SHWT level in this area of Treasure Island; however, if the elevation of the vacant lot is correct at approximately +4.1' then we estimate the SHWT level to be the elevation of the static water table found at

the time of testing at high tide and at elevation +1.6’.

The maximum infiltration rate at DRI-1 was determined to be a fairly rapid 4.9 minutes per inch (12.2 inches/hr.) after 4 hours of testing with the test apparatus seated approximately 1.5 feet below the ground surface or 1 foot above the static water table level.

Natural Resources Conservation Service (NRCS) Data

The Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), currently lists the subject property as having Mapping Unit #19 soils with Mapping Unit #8 soils to its west and Mapping Unit # 16 soils to its southeast. Mapping Unit # 19 soils are described as *Palm Beach fine sand*, Mapping Unit #8 soils are described as *Beaches*, and finally Mapping Unit #16 soils are described as *Matlacha and St. Augustine soils and Urban land*. Both *Matlacha and St. Augustine soils* have a parent material listed as “sandy mine spoil or earthen fill”. This represents the dredge and fill spoils that were used to create the uplands inside the seawalls for the lots on the east side of the barrier island chain. Beaches are represented by sandy soils adjacent to the Gulf of Mexico. Finally, *Palm Beach fine sand* is described as having a parent material of shells and sandy marine deposits. All these classifications by description appear accurate for the site. The listed



SHWT for the *Matlacha* soils is 24 to 36 inches, while the *St. Augustine* soils have a listed SHWT of 18 to 36 inches and *Beaches* is surface (zero) to 24 inches. *Urban land* has no listed SHWT. These also appear accurate. However, a problem exists with the listed estimate for the *Palm Beach fine sand*. NRCS lists it as “More than 80 inches”. In our opinion this depth is incorrect and in our experience there is no site on the Pinellas County barrier island chain that has a water table deeper than 80 inches below the surface. The site is flat and at the same approximate elevation as Gulf Boulevard. Therefore, we believe our estimate is accurate.

All the above information is shown on our attached test report form and included NRCS data.

Limitations

This investigation and report deals only with the soil zones and strata located within the area represented from the ground surface to the termination depth of the borings.

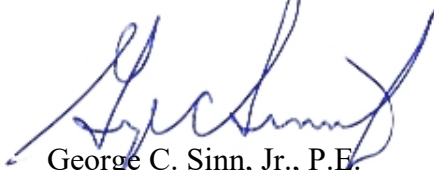
Please be aware that this report does not address any environmental concerns based on current or past uses of the property. This report is for the exclusive use of our client and may not contain sufficient information for other uses. In the event conclusions and/or recommendations based on our data are made by others, such conclusions and/or recommendations are not our responsibility unless we have been given an opportunity to review and concur with them.

Generally accepted soil mechanics and engineering practices were utilized in the preparation of this report; and no other warranty, either expressed or implied is made as to the recommendations provided.

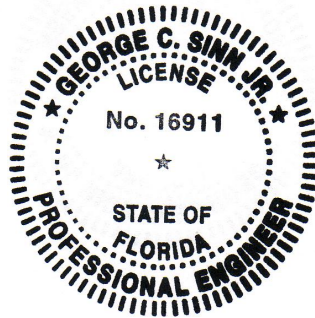
We appreciate the opportunity to be of service. If any further evaluations of the site or future construction testing services are needed, please do not hesitate to contact our office.

Sincerely,

CENTRAL FLORIDA TESTING LABORATORIES, INC.



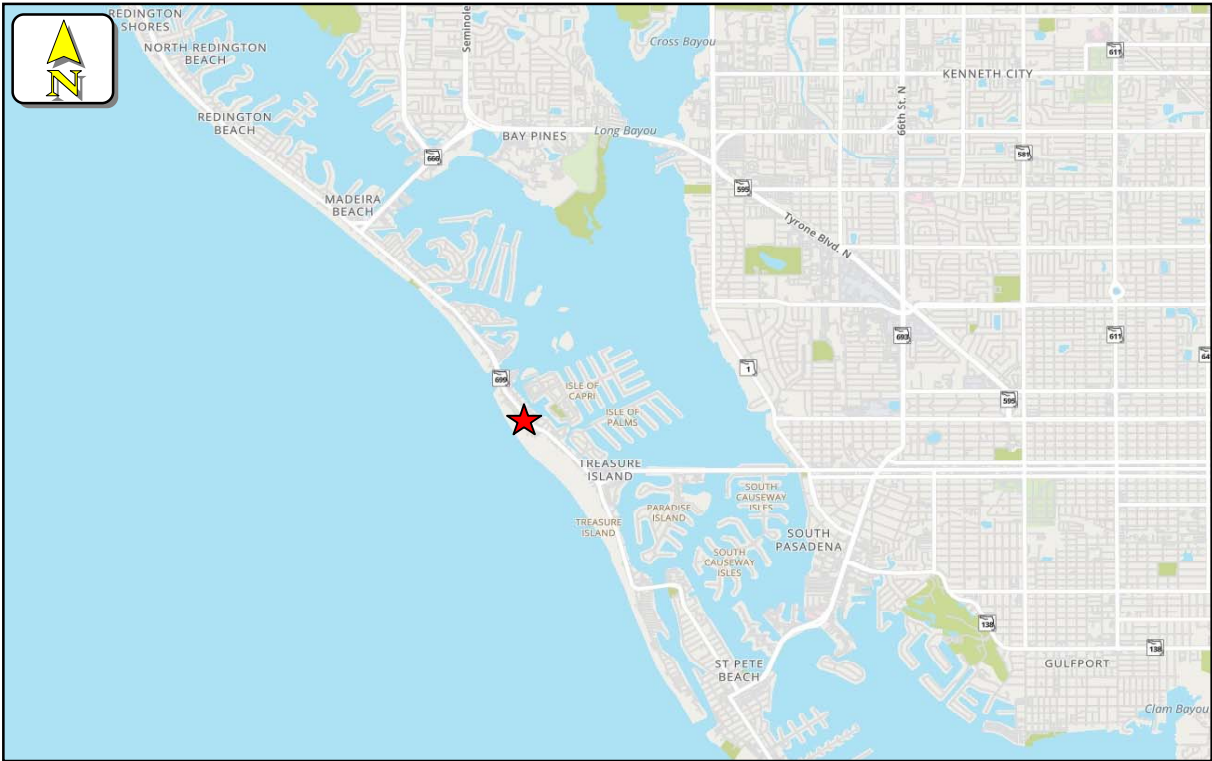
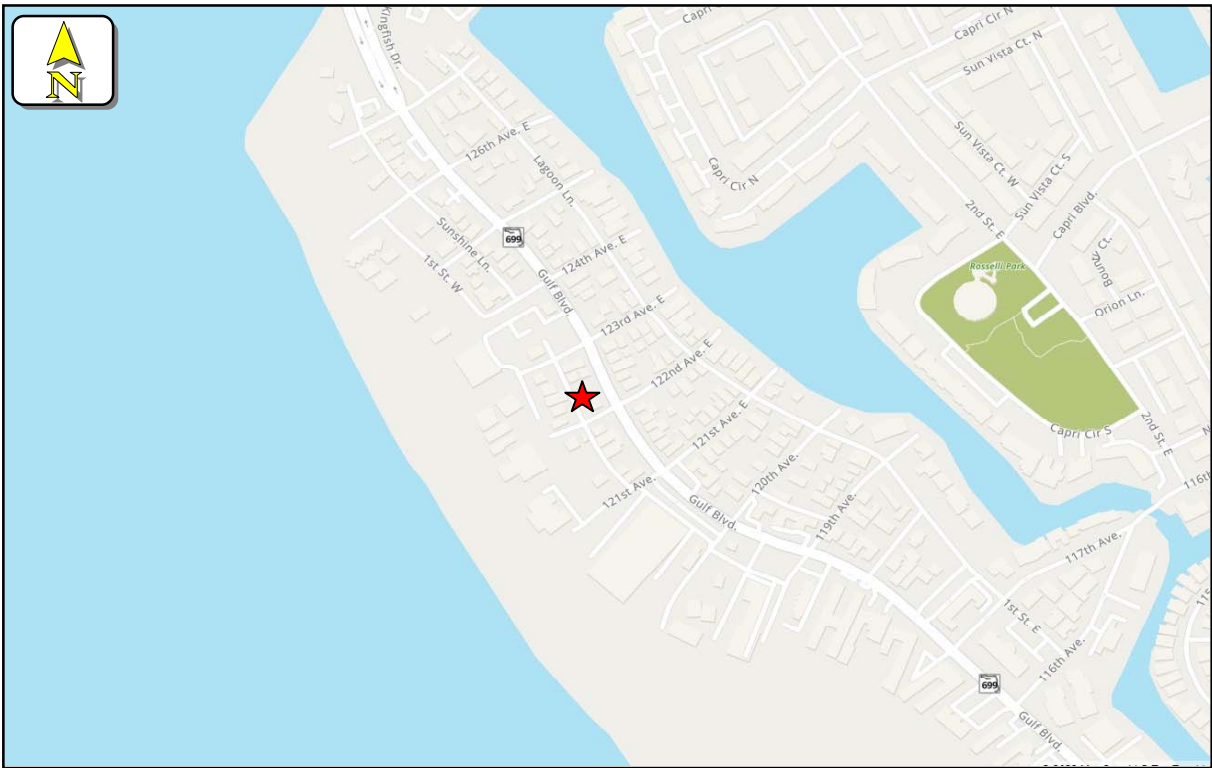
George C. Sinn, Jr., P.E.
President/Principal Engineer
FLN 16911
GCS/gs



Attachments

Maps

Various



CFTL Central Florida Testing Laboratories, Inc.

Sunshine Club Treasure Island
12200 Gulf Boulevard
Treasure Island, Florida 33706
Report No: 243134

Legend		Figure 1 - Location	
Subject Property	Interstate	Water	Intermittent Lake
Population Center	Toll Highway	Wetland	River/Canal
Land	US Highway	Intermittent River	Railroad
Sand	State Route		
Woodlands	Local Road		
Park	Major Connector		

2022 County Aerial Photograph of Site

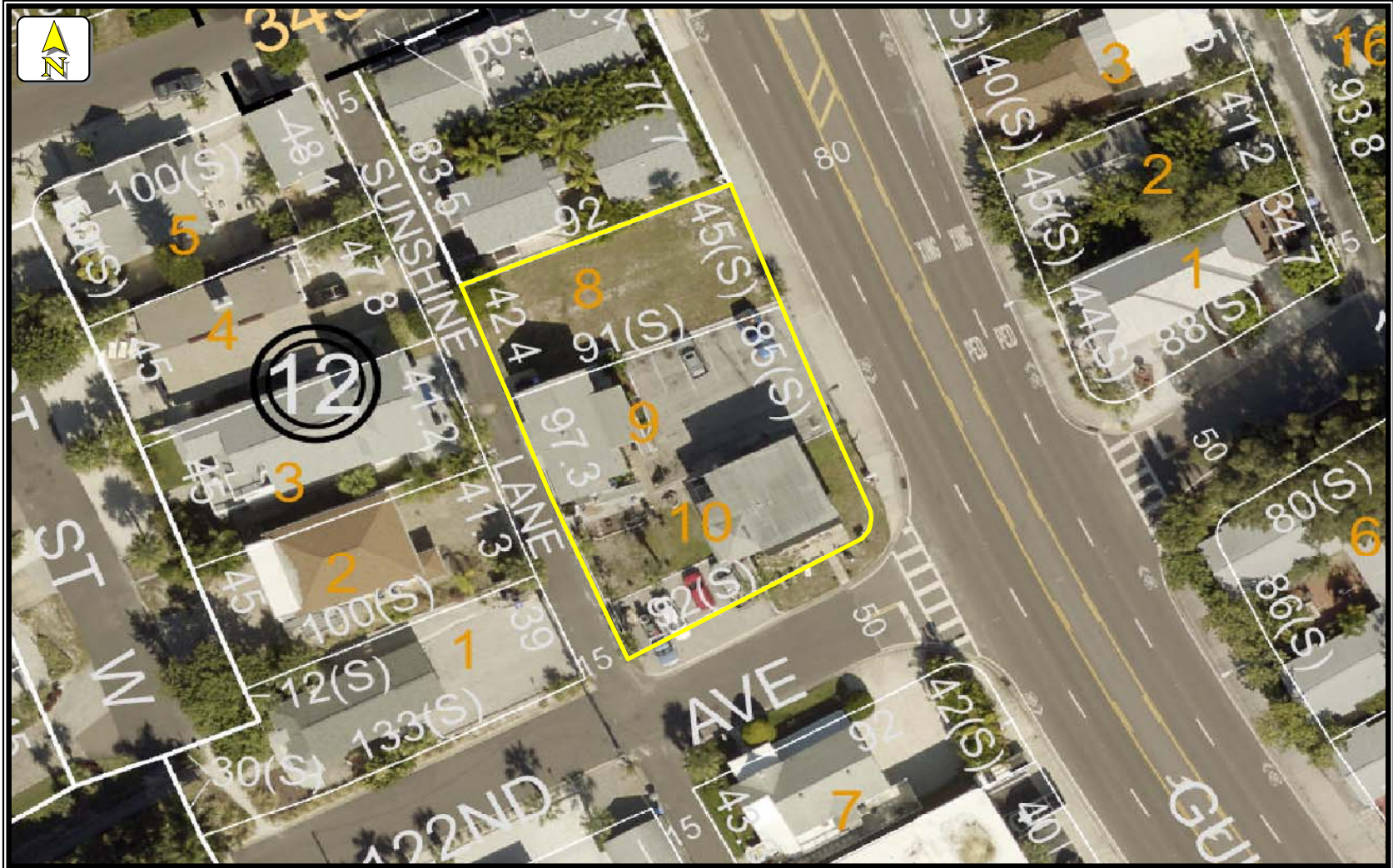


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GB#224

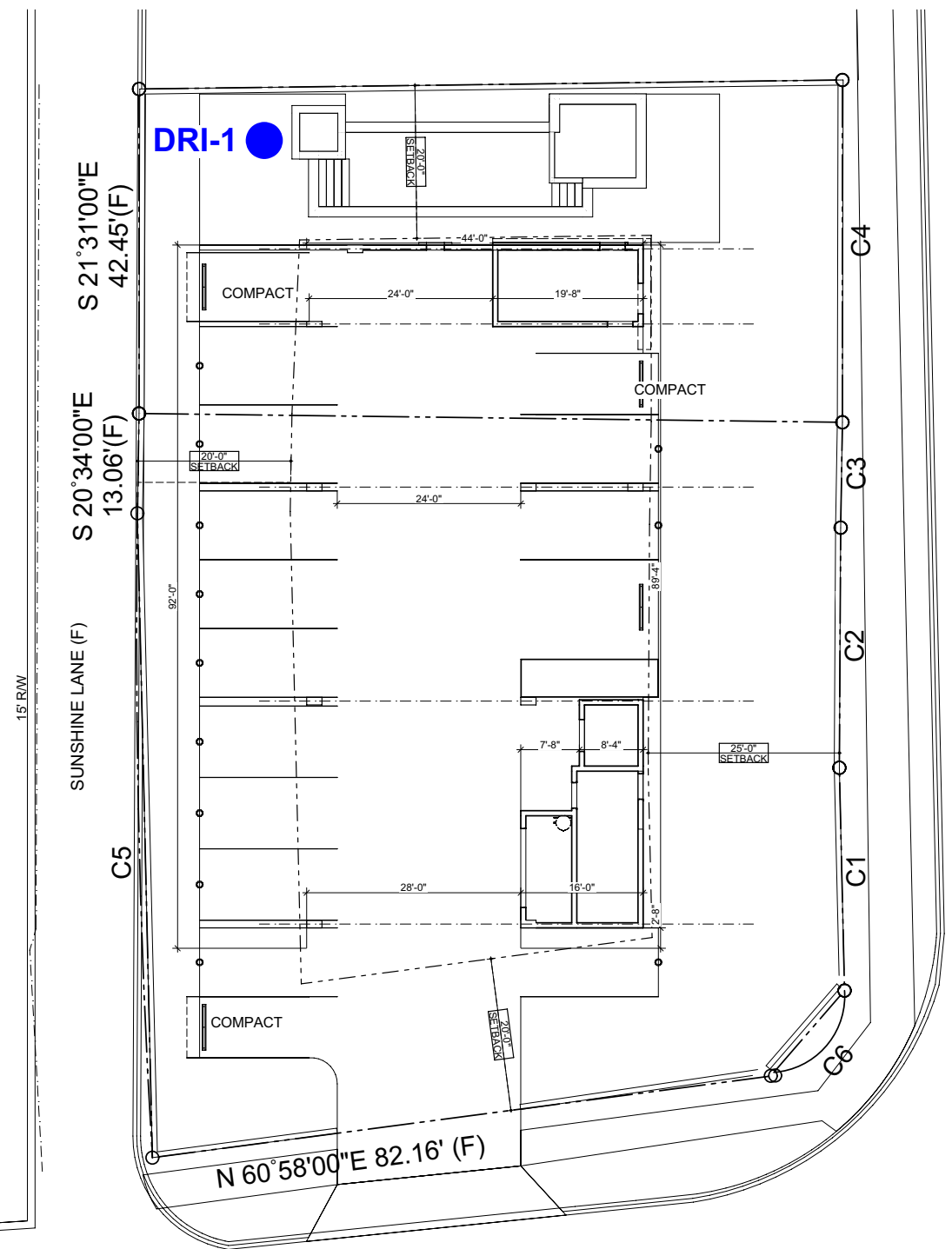
2022 County Aerial Photograph of Site



Central Florida Testing Laboratories, Inc.

EB#1066

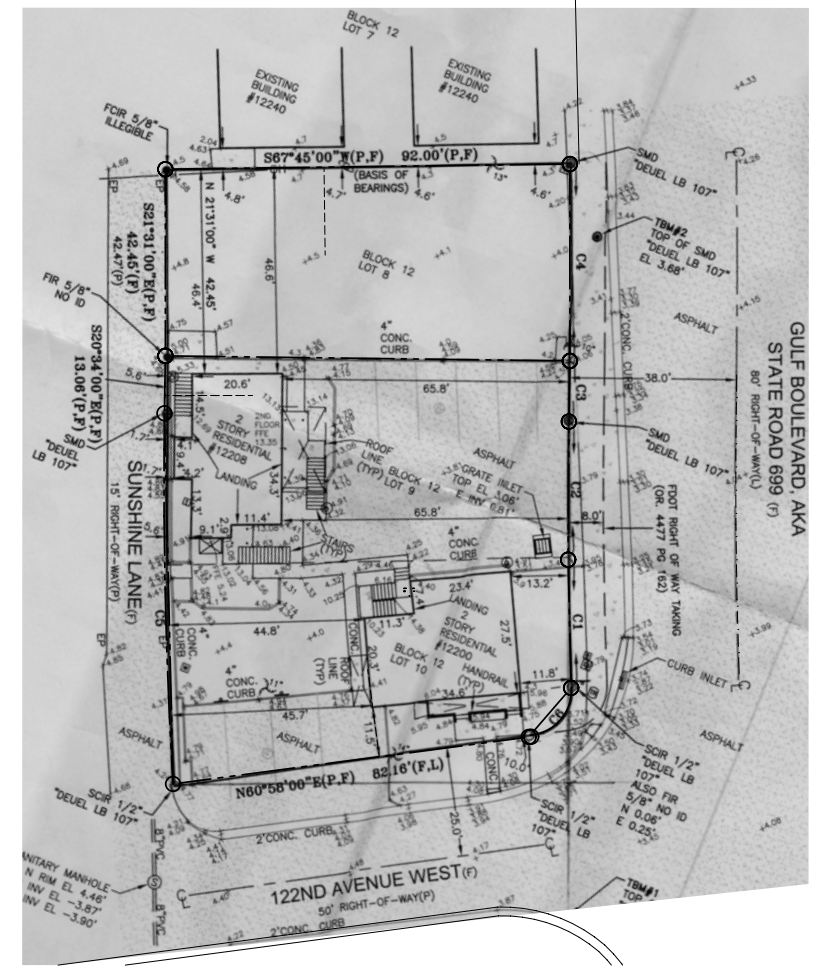
GB#224



2 SITE PLAN
SCALE: 1" = 10'



Sunshine Club Treasure Island
12200 Gulf Boulevard, Treasure Island
Approximate DRI Location
CFTL Report No. 243134



1 SURVEY
SCALE: 1" = 20'



GRADE LEGEND	
	EXISTING GRADE
	PROPOSED GRADE
	SLOPE
	TREE TO BE REMOVED
	SWALE

PROFESSIONAL STATEMENT TO THE BEST OF THE ARCHITECT'S KNOWLEDGE, INCLUDING PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE MINIMUM FIRE SAFETY STANDARDS AS DETERMINED IN ACCORDANCE WITH CHAPTER 63 AND 64, L.A.M. OF FLORIDA.

NO.	DATE	DESCRIPTION
1	MM/DD/YYYY	XXXXXXXXXXXXXXXXXXXXXXX

PROJECT
SUNSHINE CLUB TREASURE ISLAND
12200 GULF BLVD TREASURE ISLAND FL 33706
ARCHITECTURAL SITE PLAN

PRELIMINARY
NOT FOR CONSTRUCTION
9/12/2022

JOHN A. BODZIAK
ARCHITECT AIA, PA
ARCHITECTURE, DESIGN, AND CONSTRUCTION MANAGEMENT
FLORIDA REGISTRATION NO. AR00005965
EMAIL: JAC@JABODZIAK.COM
743 49th STREET, SUITE 200, TREASURE ISLAND, FLORIDA 33710
TEL: (727) 327-1866 FAX: (727) 826-0988

DRAWN BY: D.G.
UPDATED ON: OCT/09/21
DATE: MAR - 20YY
JOB PROJECT #: 2022-041
SHEET #: A-1.01
SHEET 16 OF 68

DRI Results

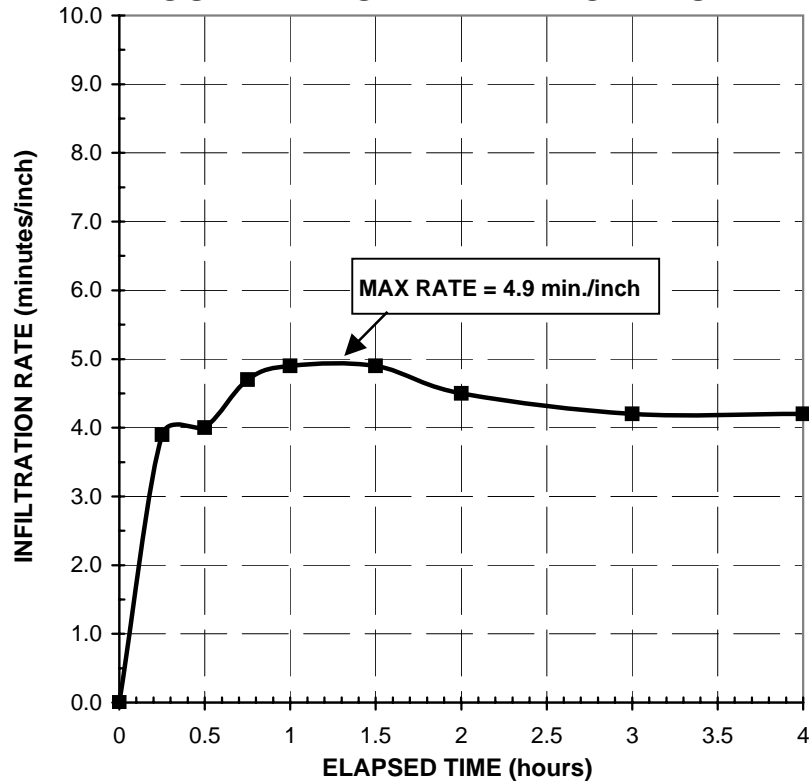


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DOUBLE RING INFILTRATION TEST



Project: **Sunshine Club Treasure Island**
12200 Gulf Boulevard
Treasure Island, Florida 33706

Client: **Ascent Investments, LLC**

Lab No.: **243134**

DOUBLE RING INFILTRATION DATA

Test Location: **DRI-1**
 Test Elevation: **1.5 feet below existing land surface**
 Test Date: **November 14, 2022**

Notes ALL DEPTHS REFERENCED FROM EXISTING GROUND

SHALLOW AUGER BORING DATA

Depth (ft.)	Munsel No.	Description
0.0 to 0.5	10YR 5/1	Gray fine sand
0.5 to 1.7	10YR 7/1	Light gray fine sand
1.7 to 6.0	10YR 7/3	Very pale brown fine sand w/shell

Maximum Infiltration Rate (min./in.): 4.9

EXISTING WATER TABLE DATA

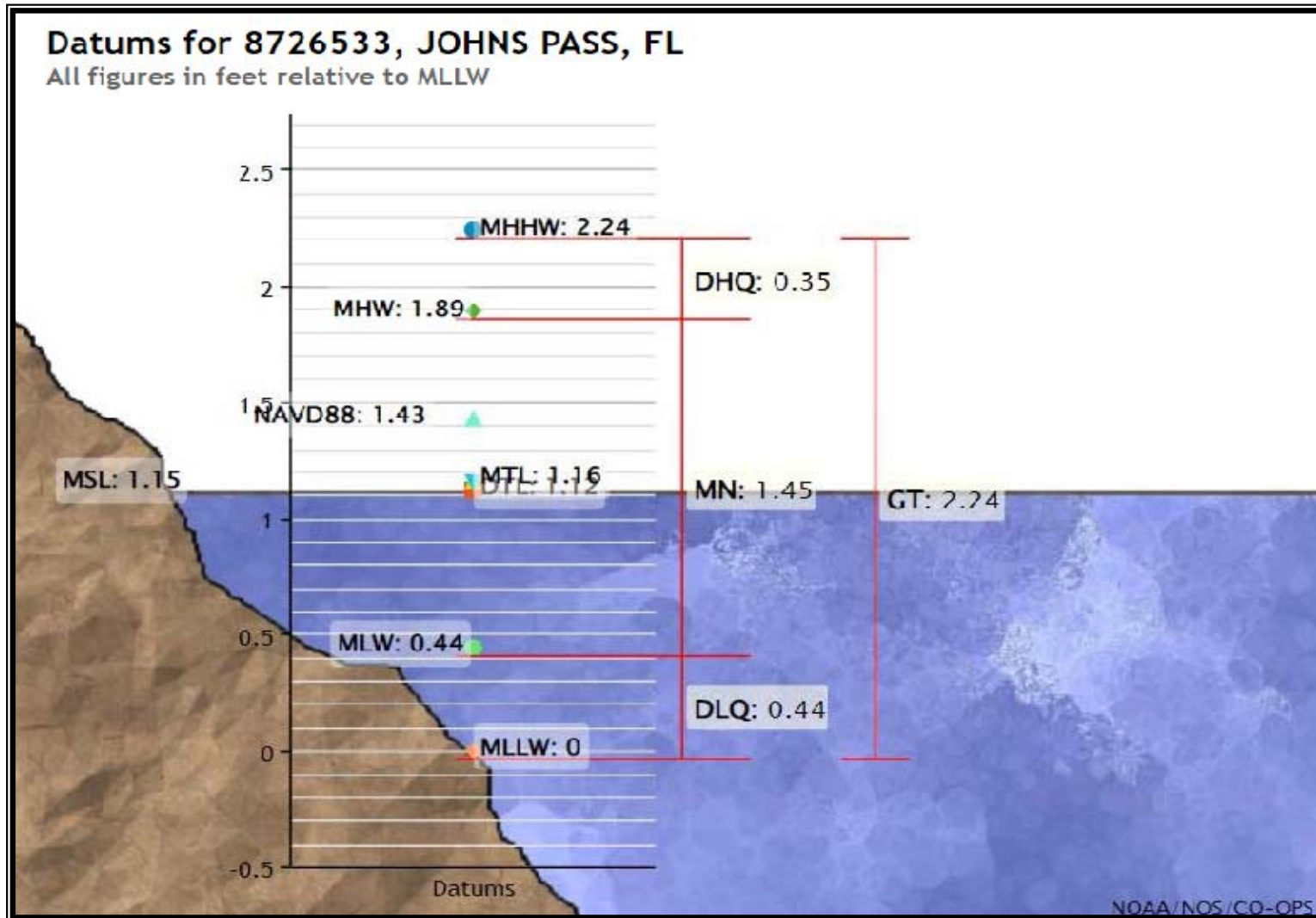
WATER TABLE AT TIME OF TEST (BLS): EST. **2.5'**
 EST. SEASONAL HIGH WATER TABLE **Tidal (2.5')**

NRCS WATER TABLE DATA

SOIL TYPE (AT DRI LOCATION): **Palm Beach fine sand**

SEASONAL HIGH WATER TABLE: **More than 80 inches**

NOAA MHHW Data



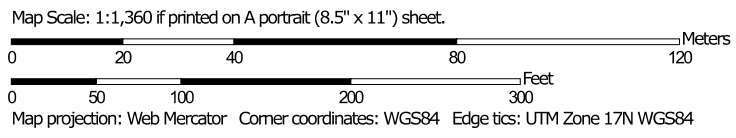
Central Florida Testing Laboratories, Inc.

EB#1066

GB#224


NRCS Data

Soil Map—Pinellas County, Florida
(12200 Gulf Boulevard, Treasure Island)




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 1:24,000.

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: Pinellas County, Florida

Survey Area Data: Version 19, Sep 1, 2022

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

Date(s) aerial images were photographed: Jan 20, 2020—Jan 28, 2020

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
8	Beaches	1.4	14.6%
16	Matlacha and St. Augustine soils and Urban land	0.2	1.7%
19	Palm Beach fine sand, 0 to 8 percent slopes	8.0	83.7%
Totals for Area of Interest		9.5	100.0%

Pinellas County, Florida

8—Beaches

Map Unit Setting

National map unit symbol: 134c5

Elevation: 0 to 20 feet

Mean annual precipitation: 42 to 56 inches

Mean annual air temperature: 52 to 77 degrees F

Frost-free period: 190 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Beaches: 95 percent

Minor components: 5 percent

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

Description of Beaches

Setting

Landform: Beaches on marine terraces

Landform position (three-dimensional): Rise

Down-slope shape: Convex

Across-slope shape: Linear

Properties and qualities

Slope: 1 to 3 percent

Drainage class: Poorly drained

Depth to water table: About 0 to 24 inches

Frequency of flooding: Very frequent

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Forage suitability group: Forage suitability group not assigned (G154XB999FL)

Other vegetative classification: Forage suitability group not assigned (G154XB999FL)

Hydric soil rating: Unranked

Minor Components

Palm beach

Percent of map unit: 5 percent

Landform: Ridges on marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Other vegetative classification: Forage suitability group not assigned (G154XB999FL)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Pinellas County, Florida
Survey Area Data: Version 19, Sep 1, 2022

Pinellas County, Florida

16—Matlacha and St. Augustine soils and Urban land

Map Unit Setting

National map unit symbol: 134ch
Elevation: 0 to 80 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 335 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Matlacha and similar soils: 33 percent
St. augustine and similar soils: 32 percent
Urban land: 31 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Matlacha

Setting

Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy mine spoil or earthy fill

Typical profile

C - 0 to 42 inches: sand
A/Eb - 42 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
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 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B
Forage suitability group: Forage suitability group not assigned
(G154XB999FL)
Other vegetative classification: Forage suitability group not
assigned (G154XB999FL)
Hydric soil rating: No

Description of St. Augustine

Setting

Landform: Rises on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluvium, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy mine spoil or earthy fill

Typical profile

A - 0 to 8 inches: sand
C1 - 8 to 33 inches: loamy fine sand
C2 - 33 to 48 inches: fine sand
C3 - 48 to 63 inches: sandy loam
C4 - 63 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to
very high (2.00 to 20.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
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 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Forage suitability group: Forage suitability group not assigned
(G154XB999FL)
Other vegetative classification: Forage suitability group not
assigned (G154XB999FL)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Marine terraces
Landform position (three-dimensional): Interfluvium, talf

Down-slope shape: Linear
Across-slope shape: Linear
Parent material: No parent material

Interpretive groups

Land capability classification (irrigated): None specified
Forage suitability group: Forage suitability group not assigned
(G154XB999FL)
Other vegetative classification: Forage suitability group not
assigned (G154XB999FL)
Hydric soil rating: Unranked

Minor Components

Kesson

Percent of map unit: 2 percent
Landform: Tidal marshes on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not
assigned (G154XB999FL)
Hydric soil rating: Yes

Wulfert

Percent of map unit: 2 percent
Landform: Tidal marshes on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not
assigned (G154XB999FL)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Pinellas County, Florida
Survey Area Data: Version 19, Sep 1, 2022

Pinellas County, Florida

19—Palm Beach fine sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 134cr

Elevation: 0 to 120 feet

Mean annual precipitation: 42 to 56 inches

Mean annual air temperature: 52 to 77 degrees F

Frost-free period: 190 to 365 days

Farmland classification: Not prime farmland

Map Unit Composition

Palm beach and similar soils: 95 percent

Minor components: 5 percent

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

Description of Palm Beach

Setting

Landform: Ridges on marine terraces

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Shells and sandy marine deposits

Typical profile

A - 0 to 4 inches: fine sand

C - 4 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 to 50.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

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 low (about 1.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL)
Hydric soil rating: No

Minor Components

Beaches

Percent of map unit: 3 percent
Landform: Beaches on marine terraces
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Forage suitability group not assigned (G154XB999FL)
Hydric soil rating: Unranked

Tavares

Percent of map unit: 2 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Pinellas County, Florida
Survey Area Data: Version 19, Sep 1, 2022