PLANNING & ZONING REGULAR MEETING
THURSDAY, JUNE 19, 2025 – 2:00 PM
10451 GULF BOULEVARD TREASURE ISLAND, FL 33706

MEETING NOTICE AND AGENDA

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1. **MEETING CALLED TO ORDER BY PRESIDING OFFICER**

2. **CELL PHONE ANNOUNCEMENT**

3. **PLEDGE ALLEGIANCE**

4. **ROLL CALL**
   Richard Harris- Chair
   Ross Sanchez- Vice-Chair
   Marvin Shavlan- Board Member
   Grant Smith- Board Member
   Kara Simm- Board Member
   Chris Downing- Board Member
   Jennifer Bonvouloir- Board Member
   *Gary Potenziano- Alternate Board Member**
   *Mark Zdrojewski- Alternate Board Member**

   **Per Sec. 70-3, alternate members shall only vote on any matter when a board member is unavailable.*

5. **APPROVAL OF MINUTES**

6. **STATUS UPDATE ON PRIOR PLANNING AND ZONING CASES** *Staff will address questions, comments, and/or concerns from the Board pertaining to prior cases.*

7. **HEARING PROCEDURES** *City Attorney explains hearing procedures.*

8. **ADMINISTRATION OF OATH**

9. **EX-PARTE COMMUNICATION DISCLOSURE**

10. **PRESENTATION OF ITEMS**

    10.A

SITE-000401-2023- 115 107th Ave- Site plan approval request to allow a commercial parking lot consisting of 243 parking spaces.

1. Staff Report.docx
2. Application.pdf
3. Warranty Deed.pdf
4. Pirate Square LLC - Sunbiz Filing.PDF
5. Affidavit to Authorize Agent.pdf
6. Survey.pdf
7. Civil Plans.pdf
8. Lighting Plan.pdf
9. Stormwater Report.pdf
10. Geotechnical Report.pdf
11. Waiver Request.pdf

10.B

SITE-000505-2025- 10700 Gulf Blvd- Site Plan approval request for a hotel consisting of 106 units.

1. Staff Report.docx
2. Application.pdf
3. Affidavit to Authorize Agent.pdf
4. Warranty Deed.pdf
5. Survey.pdf
6. Architectural Plans.pdf
7. Civil Plans.pdf
8. Landscape Plans.pdf
9. Drainage Report.pdf

11. PUBLIC COMMENTS FOR NON-AGENDA ITEMS

12. REPORTS AND COMMENTS OF CITY ATTORNEY, STAFF AND BOARD MEMBERS

13. PLANNING & ZONING BOARD / LOCAL PLANNING AGENCY MEETINGS

NEXT LPA MEETING: TBD
NEXT P&Z MEETING: TBD

14. ADJOURNMENT

AGENDA ITEM NO. 10.A

Item Cover Page

PLANNING & ZONING BOARD AGENDA ITEM REPORT

DATE:	June 19, 2025
SUBMITTED BY:	Jesse Miller, Community Development
ITEM TYPE:	Public Hearings
AGENDA SECTION:	PRESENTATION OF ITEMS
SUBJECT:	SITE-000401-2023- 115 107th Ave- Site plan approval request to allow a commercial parking lot consisting of 243 parking spaces.
BACKGROUND:	See attached Staff Report.
POLICY/PURPOSE:	N/A
STRATEGIC PLAN RELEVANCE:	N/A
ANALYSIS/DISCUSSION:	See attached Staff Report.
FUNDING:	N/A
MOTION:	See attached Staff Report.

ATTACHMENTS:

1. Staff Report.docx
2. Application.pdf
3. Warranty Deed.pdf
4. Pirate Square LLC - Sunbiz Filing.PDF
5. Affidavit to Authorize Agent.pdf
6. Survey.pdf
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CITY OF TREASURE ISLAND
PLANNING AND ZONING BOARD
10451 Gulf Blvd, Treasure Island, Florida 33706
(727) 547-4575

CASE NO. SITE-000401-2023
STAFF REPORT
THURSDAY, JUNE 19, 2025, AT 2:00 P.M.

DESCRIPTION: Site plan approval request to allow a commercial parking lot consisting of 243 parking spaces.

SITE LOCATION: 115 and 175 107th Ave
Treasure Island, FL 33706





PARCEL ID #: 23-31-15-91818-012-0260 and 23-31-15-91818-012-0140

LEGAL DESCRIPTION: LOTS 4 THRU 12 AND LOTS 24 THRU 38 INCLUSIVE, BLOCK 12, ACCORDING TO THE PLAT OF CITY OF TREASURE ISLAND BLOCKS 2-4-9-10-11-12-13-14-15 AND REMAINDER OF BLOCKS 1 AND 8, AS RECORDED IN PLAT BOOK 31, PAGES 19 THROUGH 22 INCLUSIVE, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

TOGETHER WITH THAT CERTAIN ALLEY LOCATED BETWEEN LOTS 16, 17, 18 AND 19, AND 20, 21, 22, AND 23, BLOCK 12, CITY OF TREASURE ISLAND, AS RECORDED IN PLAT BOOK 31, PAGES 19 TO 22, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, AS VACATED THROUGH RESOLUTION NO. 296 BY THE CITY OF TREASURE ISLAND, FILED IN BOOK 6679, PAGE 1356 OF THE OFFICIAL RECORDS OF PINELLAS COUNTY, FLORIDA.

This site plan as submitted also covers two public right of ways, an application for vacation of these two rights-of-way has been applied for.

PROPERTY OWNER: Pirate Square LLC
11620 7th St E
St Petersburg, FL 33706

GENERAL INFORMATION:

Land Use: Planned Redevelopment Mixed-Use

Zoning: PR-MU C (Planned Redevelopment- Mixed Use Core)

Adjacent Property (Use):

North:
172 107th Ave – Retail
160 107th Ave – Restaurant
152 107th Ave – Retail
128 107th Ave – Retail
120 107th Ave – Retail
118 107th Ave – Retail
116 107th Ave – General Office

West:
111 107th Ave Milliken Ct – Retail
105 Treasure Island Causeway – Restaurant

South: 160 107th Ave – Community Center Park

East: 10625 1st St E – Retail

Site Area: Approximately 2.88 acres | 125,508 sf

Flood Zone: AE-11, AE-10 (Coastal A Zone), Flood Insurance Rate Map Community Panel No. 12103C0194H, August 24, 2021.



PROPERTY SUMMARY AND BACKGROUND:

On January 6, 1970, the City Commission made a motion to adopt Resolution No. 296 to vacate an alley located between lots 16, 17, 18, 19, 20, 21, 22, and 23, block 12.

On January 14, 1986, the Planning and Zoning Board approved Resolution No. 86-4 for Site Plan No. 244 for renovation of a two-story retail and office building.

On August 12, 1986, the Planning and Zoning Board approved Resolution No. 86-19 to amend Site Plan No. 244 for the addition of parking spaces and a courtyard at the rear of the building.

On May 9, 1989, the Planning and Zoning Board approved Resolution No.89-7 to amend Site Plan No. 244 for building alterations and parking spaces.

On July 24, 2003 the City Commission approved a Downtown Parking Agreement for a 20% reduction in parking spaces.

In 2023 the applicant applied for a permit to demolish all existing buildings at 115 107th Avenue (shopping center), permit DEMO-006233-2023. In 2024 the applicant applied for a permit to demolish the bank/real estate office on the east end of the site, permit DEMO-

008620-2024. When the permit DEMO-006233-2023 is closed out there will be no remaining buildings on site.

The applicant is seeking site plan approval for the development of a commercial (paid) parking lot. In addition, the applicant is requesting approval of a waiver to Sec. 68-410.59(d) to allow for the use of an existing driveway located at the northwest corner of the subject property.

In May 2025, the applicant submitted a Petition for Vacation of Right-of-Way for both the north-south 10-foot alley and the east-west 30-foot alley that traverse the site. Please note that the site plan approval cannot become effective until the requested alley vacations have been granted and recorded in the official records of the County.

TREASURE ISLAND CODE OF ORDINANCES:

CHAPTER 38 RECYCLING AND WASTE MANAGEMENT
ARTICLE I. - IN GENERAL
Sec. 38-3. - Definitions.
The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:
Commercial customer means the owner, tenant, occupant, or other person having control of a commercial establishment.

Commercial property means a building, site, or portion of a structure where commercial use activities occur.

Commercial solid waste means solid waste generated by a commercial establishment, exclusive of prohibited waste and materials.

Container means a receptacle for the accumulation of solid waste or recyclable materials including, but not limited to, trash can, roll cart, bulk container or dumpster requiring mechanical lifting, and roll-off open-top or compaction containers.

Waste means garbage, rubbish, refuse, special waste, yard waste, or other discarded material resulting from domestic, commercial, or governmental operations, excluding biomedical waste, biological waste, construction and demolition debris, hazardous waste, hazardous materials, land-clearing debris. For the purposes of this chapter, the term does not include recyclable materials or recovered materials.

ARTICLE II. - COLLECTION AND DISPOSAL OF RECYCLABLE MATERIALS AND WASTE
Section 38-11. - Collection and disposal by city.
Residential and commercial waste collection. All waste generated and accumulated in the city shall, except as herein otherwise provided, be collected, transported and disposed of or otherwise managed by the city. Any residential or commercial property within the city that

is being constructed, is occupied or is capable of being occupied, shall be presumed to be generating waste for collection. The city may fulfill its obligation through a contractor.

Sec. 38-16. - Duties of commercial customers.

(a) *Requirement to use city-provided collection service.* All commercial customers are required to have all accumulation of waste, unless otherwise exempted or prohibited in this article, collected and disposed of by the waste collection services provided by the city and to pay the prescribed charges for such service.

(b) Commercial *waste audits and recycling.* Commercial property owners or managers shall conduct a waste audit at least once every five years to identify the types of waste generated that could potentially be reduced, recycled or otherwise diverted from disposal. The audit should identify existing recycling services and planned recycling services, with the estimated cost of such services, if available. Based on the projected volumetric waste offset, the city manager may reduce the required waste container size or collection frequency once recycling is implemented. If no recycling services are to be provided, the property owner or manager should provide the reason with submission of the audit. Commercial property owners or managers shall submit a copy of the waste audit to the city. The first audit shall be submitted by May 1, 2019 or at a later date as established by resolution of the city commission. More information regarding commercial waste auditing and waste reduction practices is available on the city's webpage at www.mytreasureisland.org.

(c) *Use and maintenance of containers.*

(1) Commercial customers shall use waste containers provided by the city unless otherwise approved by the city manager. The size and number of waste containers shall be sufficient to adequately manage the quantity of waste accumulated by the commercial establishment as determined by the city manager.

(2) Commercial customers may share waste containers upon a determination by the city that the sharing of containers would reduce or eliminate an unhealthful or objectionable condition as to constitute a nuisance. In the event of commercial customers sharing a container, service charges shall be prorated on the basis of the charges applicable to the respective establishments as determined by the city.

(3) Should the city manager allow the use of containers provided by the commercial customer, all such containers shall be subject to inspection and approval by the city manager.

(4) The commercial customer shall maintain all containers, whether provided by the city or the customer, in good and sanitary condition and free from stench and other objectionable conditions. Containers shall be subject to inspection and approval of conditions by the city.

(5) In the event of damage to a city-provided container caused by a commercial customer, the cost of repair or replacement shall be charged to the customer's account.

(d) *Collection frequency.* At a minimum, commercial establishments with commercial kitchens shall receive waste collection five times per week, unless otherwise approved by the city. All other commercial establishments shall receive waste collection at least two times per week. If the waste becomes offensive in odor or becomes a nuisance, it shall be collected as often as deemed necessary to address the offensive

odor or nuisance, at the discretion of the city manager. No change in the frequency of collection shall occur without prior approval by the city manager.

(e) *Preparation for collection.* Commercial customers shall prepare and deposit for collection or cause to be prepared and deposited for collection all waste in accordance with the methods prescribed in this article.

(1) *Preparation for collection.* All waste must be placed inside waste containers provided by the city. All solid waste, including disposable bottles, cans and other containers, shall first be drained of liquids. Wet waste shall be placed in plastic bags before being placed in waste containers. Best management practices for reducing liquids in commercial waste is available on the city's webpage at www.mytreasureisland.org. Containers shall be kept tightly covered at all times except when uncovered for the purpose of depositing waste. If the cover cannot be closed tightly because of the accumulation of waste, the city manager will require the customer to increase the capacity of its waste containers (i.e., either the number or size of containers) or add additional collections, and pay the prescribed charge for such service.

(2) *Improperly prepared materials.* Any solid waste prepared for collection not meeting the requirements of this article will not be collected, will be collected for an additional charge, or will be referred to code enforcement, and the commercial customer will be notified of the situation.

(f) *Placement of* commercial *containers.*

(1) All containers shall be screened from public view. Screens shall be constructed and maintained in such a manner as to ensure that the containers are not visible at ground level from any adjacent right-of-way or property. If an enclosure is used, it shall have a gate that is of sufficient width so that the container is easily accessible by a rear-loading waste collection truck or by wheeling the container to the point of pickup.

(2) Where containerized collection is required, the commercial customer shall be required to provide a pad of asphalt or concrete and paved area necessary to transport such containers to the point of pickup.

(3) All plans for screening and placement of containers shall be submitted to the city manager for approval before construction begins. The city manager shall have the right to make any adjustments to the plans for the best protection of the public and to eliminate wind-driven debris and unsightly litter conditions in and about the premises. The city manager reserves the right to determine the material used in construction of screens and enclosures.

(4) If deemed necessary by the city, the city has the authority to grant an administrative waiver to the site planning or development standards of the land development regulations pursuant to section 68-35 of the City Code.

CHAPTER 68- ZONING REGULATIONS
ARTICLE I.- IN GENERAL

Sec. 68-2- Definitions.

Unless specifically defined below or in the specific article in which they appear, words or phrases used in these regulations shall be interpreted so as to give them the meaning they have in common usage, and to give these regulations their most reasonable application.

For the purpose of enforcing and administering this chapter, the following words shall have the definitions and meanings as herein set forth.

Development means any construction, structures, creation of structures or alteration of the land surface or natural resources which requires authorization by the city through issuance of a development order.

Fence means any construction of wood, metal, plastic, chain link or other industry standard fence materials, erected for the purpose of privacy, protection or ornamentation.

Fence, open means a fence with horizontal or vertical openings not less than 3.5-inches and such that a 4-inch-diameter sphere cannot pass through any opening, between intermediate pickets not greater than 1-1/2-inch cross sections. Any solid perimeter supporting rails shall not exceed 6-inches.

Grade, finished means the finished elevation of a site after all fill, land balancing or site preparations have been completed. The finished elevation shall be inclusive of all grasses, landscaping, decks, patios, slabs or other ground coverings.

Grade, natural means the grade unaffected by construction techniques such as filling, landscaping or berming.

Guard means a required railing as defined by the Florida Building Code.

Hedge means a dense row of shrubs or bushes forming a boundary.

Impervious surface means a surface that has been compacted or covered with a layer of material so that it is highly resistant to or prevents infiltration by stormwater. It includes surfaces such as compacted limerock, or clay, as well as conventionally surfaced streets, roofs, sidewalks, parking lots and other similar surfaces, *a*nd all other artificial or non-natural surfaces.

Impervious surface ratio (ISR) means a measure of the intensity of hard surfaced development on a site. An impervious surface ratio is the relationship between the total impervious surface area on a site and the net land area. The ISR is calculated by dividing the square footage of the area of all impervious surfaces on the site by the square footage of the net land area.

Parking area means any public or private land area designated and used for parking motor vehicles including parking lots, garages, private driveways, and legally designated areas of public streets.

Parking lot means an off-street, ground level area improved for the temporary storage of licensed operable motor vehicles. Does not include an area used exclusively for the display of motor vehicles for sale as part of an automobile dealership (all references to parking lot may be commercial, private, valet, and/or public in nature unless otherwise specified).

Parking lot or structure, commercial means a lot or parcel of land or portion thereof, which is not accessory to any other use of the same or any other lot or parcel, and contains parking space rented to the general public for a fee.

Parking, off-street means a parking area improved for licensed motor vehicles, temporarily stored in connection with a use requiring same. It includes parking spaces, aisles, access drives, landscaped areas, and vehicular access to a public street.

Pervious area means any portion of lot or parcel not required, designated or encumbered by either principal or accessory uses, buildings and structures and other site uses. Pervious area shall be landscaped or retained in the natural state. Other materials may count as partially pervious as outlined in Chapter 76.

ARTICLE VI. – ZONING DISTRICT REGULATIONS
DIVISION 11. – PR-MU CORE AND PR-MU GULF BLVD. ZONING DISTRICTS.
Purpose: The Treasure Island PR-MU Core and PR-MU Gulf Blvd. (downtown redevelopment) zoning districts create an opportunity to revitalize the city's downtown core economically, visually, and functionally to provide an aesthetically pleasing and efficient multi-use activity center. Consisting of two planned redevelopment zoning districts, the downtown provides flexibility for the development of uses that minimize the impact upon the infrastructure.

Subdivision I.- PR-MU Core (Downtown Redevelopment) Zoning District
Sec. 68-410.01. - Purpose and intent.
The PR-MU core (downtown redevelopment) zoning district is established for the city's downtown. The uses in this zoning district include a mix of retail establishments, office uses, professional services, residential dwelling units and tourist dwelling units. The focus will be to establish a vibrant pedestrian-oriented downtown core within an attractive streetscape. No use is permitted unless it is listed as a permitted or special exception use in the PR-MU core zoning district. A use not listed or described by category is prohibited.

Sec. 68-410.02. – Permitted principal uses.
The purpose of listing the permitted principal uses is to identify principal uses that are allowable on a property within this zoning district. Subject to the provisions or restrictions contained in this section and elsewhere in this Code, permitted uses in the PR-MU core zoning district are as follows:

p) Parking lot and parking structure including for fee. A parking structure must provide liner building with active storefronts.

Sec. 68-410.09. - Setbacks.
To encourage pedestrian movement, there will be three zones:

(a) *"Utility zone"* is the area within the right-of-way which is used for sidewalks, street furnishings, street signage, traffic control devices, public sidewalk and light poles.

(b) *"Pedestrian friendly zone"* is a four-foot wide improved walkway constructed by the property owner on private property which is adjacent and parallel to the utility zone. Any awning or structure shall be built at a minimum of ten feet above natural of finished grade, whichever is higher. There may be a sign, lighting and/or fan which may be hung

from the underside of structure. There must be eight-feet of vertical clearance. This shall be an unobstructed pedestrian walkway which extends the entire width of the property.

(c) *"Dining area/outside display zone"* is an area eight-foot wide adjacent and parallel to the front building façade and the pedestrian zone. Any awning or arcade structure shall be built a minimum of ten feet above natural or finished grade, whichever is higher. There may be a sign, lighting and/or fan which may be hung from the underside of the structure. There must be eight feet of vertical clearance. This zone extends the entire width of the lot. This area may be used for landscaping, dining, and outside display of merchandise sold within the store.

With the redevelopment of each site, the property owner shall build:

- A structural arcade;
- Provide one wide awning the width of the building; or
- A series of awnings the width of the building.

The arcade/awning(s) serve to protect pedestrians from the elements. (i.e. sun, rain, etc.)

Front setbacks:

107th Avenue

At ground level only, the property owner's building façade will be built a minimum of 12 feet from the 107th Avenue right-of-way line and shall be aligned parallel to the right-of-way line in order to create a street wall.

Each arcade or awning shall be a minimum of 12 feet deep to cover both the pedestrian and dining/outside display zone.

"Dining area/outside display zone" shall be a minimum of eight feet in width.

The 2nd story of each building and above setback is zero and may extend out over the dining area/outside display area and the pedestrian zone along 107th Avenue.

Along the north-south pedestrian-ways, the setback shall be zero feet.

Gulf Boulevard (State Route 699), 104th , 106th and 108th Avenues.

"Dining area/outside display zone" shall be a minimum of five feet in width.

At ground level only along Gulf Boulevard, 104th , 106th and 108th Avenues, the front setback shall be a minimum of 9 feet. The 2nd story of each building and above setback is zero and may extend out over the dining area / outside display zone and the pedestrian zone.

Along the north-south pedestrian-ways, the setback shall be zero feet.

Side setbacks: The side setbacks shall be zero in order to establish a continuous street wall for the downtown activity center.

Rear setbacks: The rear setback shall be zero when the rear alley or alley/cross-easement is 24 feet in width. Where there is not a 24 feet wide alley or cross-easement, the rear setback shall be varied to provide the necessary distance to accommodate the 24 feet, a two-way vehicular travel width at the rear of the property.

Sec. 68-410.10. – Maximum impervious surface ratio.

Maximum impervious surface ratio (ISR) for all uses shall not exceed 0.90.

Subdivision III - Treasure Island Downtown Design Criteria

Sec. 68-410.59. – Parking requirements.

a) *Parking lot locations*. Off-street parking lots are discouraged in the front yard of 107th Avenue. Off-street parking lots shall be placed in rear yards, whenever possible. Off-street parking lots in the side yard shall be reviewed on a case-by-case basis during site plan review.

e) *Parking lot interconnections.* Rear-yard parking lots on properties fronting along the parallel alley between 108th Avenue and 107th Avenue and the parallel alley between 107th Avenue and 106th Avenue shall be interconnected to eliminate or minimize driveways along 108th Avenue and 106th Avenue respectively.
   (1) To ensure the effective use of these connections, the first property to redevelop shall be required to make an irrevocable offer of cross-access to the adjacent parcel prior to the city's issuance of a construction permit. The first property to redevelop must design and build the parking lot to accommodate cross-access.
   (2) When adjacent property owners seek permits, they will also be required to reciprocate with a similar cross-access agreement and then must complete the physical connection.
   (3) Individual property owners shall control all rights to the use of their own parking spaces, but may choose to allow wider use of these parking spaces through reciprocal arrangements with other parties.

f) *Driveway connections.*
   (1) Properties fronting on 107th Avenue shall relocate existing driveways and parking spaces from 107th Avenue to the parallel alley via 108th Avenue, 106th Avenue or 1st Street East when redevelopment of the site occurs. This provision will be waived during site plan review, should this requirement prohibit all reasonable access to a property.
   (2) When a driveway onto 107th Avenue is unavoidable, the driveway shall be shared with an adjoining property, if the adjoining property also has access only to 107th Avenue. If the adjoining property does not require the 107th Avenue driveway access, the driveway location shall be spaced as far as practical from other driveways or intersections.
   (3) Properties having frontage only on Gulf Boulevard, 108th Avenue, 106th Avenue, and 1st Street East may have driveways connected to their frontage, existing easements, and/or alleys. All Gulf Boulevard driveways shall be subject to FDOT approval.
   (4) Whenever possible, the driveway shall be shared with an adjoining property for lots abutting Boca Ciega Bay. This effort should reduce the number of driveway cuts along Gulf Boulevard.

Sec. 68-410.61. - Exterior lighting.

All exterior lighting shall meet the requirements found in section 68-467.

Sec. 68-410.64. - Building environment.

Building environment shall consider, whenever economically practical:

- For pedestrian walkways, brick or paver type treatment.
- Garden arrangements with emphasis on drought-resistant and salt-tolerant flora.

ARTICLE VII. – SUPPLEMENTARY LOT AND USE REGULATIONS
DIVISION 2. – LOT REGULATIONS

Sec. 68-454. – Intersection/driveway visibility.

At all street intersections and at the intersection of any street, driveway, or alley, no obstruction to vision (other than existing buildings posts or tree trunks with a maximum diameter of 12 inches, or existing buildings) between 30 inches and seven feet in height above the established grade of the street at the property line shall be erected or maintained on any lot within the triangle formed by the street, driveway, or alley frontage of such lot and a line drawn between the points along such street, driveway, or alley frontage 50 feet distant from their point of street intersection or ten feet distant from their point of intersection with driveways and alleys. Existing trees must be cleared between 30 inches and seven feet.

Sec. 68-458. Garden walls, retaining walls, fences and hedges.

(a) *Generally.* All walls, retaining walls and fences shall be located completely within the limits of the property lines. Walls and fences shall have equal architectural treatment on both sides; i.e. the side facing abutting properties, streets, etc., shall be finished. See also section 68-462, Screening regulations. All fees pursuant to this section shall be set by the city commission in appendix A.

In all cases the height is measured from the lowest of the two adjacent grades, based on natural or finished grade, whichever is lower as determined by a survey. Adjacent shall mean in the case of a retaining wall, the finished grade at the wall face.

Retaining wall height is limited to 6-inches above finished grade. In any case where a fence or wall is allowed to exceed the retaining wall height, the retaining wall plus the fence or wall as outlined below may be combined to meet the maximum height allowed.

Where a guard is required by the Florida Building Code, the combined height of the retaining wall and guard may exceed the maximum fence and wall height shown below. If the guard exceeds the allowable height shown below, then the guard shall meet the spacing requirements for an open fence.

All hedges shall be maintained at or below the maximum height shown and in compliance with the landscaping standards of this code. For this section's purpose, vegetation is considered a hedge when planted and maintained to create an open space less than two-feet wide by seven-feet high between each plant.

All walls, retaining walls, fences and hedges must meet the visibility triangle requirements of this code.

(b) *Street Side yard.*

1. Walls and fences within the required street side yard shall not exceed 3-foot solid or 4-foot open fence.

2. Chain link type fences are specifically prohibited in street side yards.

3. Hedges shall not exceed 4-feet in height.

4. Guards must meet the spacing requirements for an open fence.

(c) Secondary street side yards.

1. For purposes of this section only, on a lot with one or more street side yards, the secondary street side yards may have lesser setbacks. The primary yard will be the one matching the predominant front yard pattern on the block face of the streets.

2. On a secondary street side yard the wall, retaining wall or fence setback to be used will be half of the normally required street side yard setback shown in Sec. 68-541.

(d) Side and nonwaterfront rear yards.

1. All walls, fences or hedges located within the required side or nonwaterfront rear yard shall not exceed seven feet in height~~,~~

2. Guards may be solid.

(f) All yards.

1. Decorative post caps may be installed on structural posts of the fence but shall not extend more than ten inches above the top rail.

2. Decorative gate may be installed, but shall not exceed more than 10 inches above the top rail of the abutting fence.

(g) *Right-of-way.*

(1) No walls or fences are permitted to be constructed within or upon any dedicated right-of-way. ~~P~~lanters and decorative rocks not exceeding two-feet in height, and mailboxes as excluded from the definition of "structure" in section 68-2, shall be permitted upon the untraveled

(2) Vegetation and ornamental plantings are permitted upon the untraveled portion of the dedicated right-of-way beyond front yard setback areas so long as such vegetation or landscaping does not obstruct visibility and hedges do not exceed 30-inches in height.

(3) A mailbox, as allowed and permitted for by this section, shall not be deemed a structure, and when permitted, shall be allowed to be placed in the right-of-way. Such mailbox shall be supported by nothing stronger than a single four-inch by four-inch wooden support post, or shall be designed to be of breakaway material, in order not to be a hazard to vehicles or pedestrians. Such mailbox shall be a total height of no more than 60 inches, a total width of no more than 20 inches, and a total depth of no more than 32 inches. An applicant for any mailbox who desires such mailbox not to be considered a structure when such mailbox otherwise would be considered a structure, shall obtain a permit for such mailbox from the building department, and shall include with such application for permit a survey or sketch of

the property, showing the location of such mailbox. Such mailbox shall be allowed only in locations where the mailbox would not obstruct visibility or traffic.

(h) *Temporary fences.* The city may grant a permit for the placement of a temporary construction fence to be erected during the period of construction and maintained until the issuance of a certificate of occupancy. Such fence may be erected on the lot line of the property upon which construction is being maintained and which shall be reasonably designed to protect the public from intrusion upon the construction site. Under no circumstances shall a certificate of occupancy be issued until the temporary construction fence is removed.

Sec. 68-466.- Lighting

(a) *Applicability.* All outside lighting, (except street lighting), lamps, bulbs, lights, dock lighting, and security lighting producing artificial light from all single-family, multifamily, retail, office, tourist trade, and other land uses which shine or reflect light onto or into neighboring properties or residences so as to annoy or disturb the persons inhabiting such neighboring residences is hereby declared to be a nuisance and is unlawful and prohibited. All exterior lighting shall be installed in such a manner and shielded that the cone of light shall fall, within the perimeter of the property, and where applicable, landward of the coastal construction control line.

(b) *Prohibited light fixtures and light sources.* The following light fixtures and sources shall not be used where the source of the direct light emitted is visible from adjacent lots:

(1) Cobra-head-type fixtures having drop lenses or refractors which house other than incandescent sources; and

(2) Searchlights and other high-intensity narrow-beam fixtures, except in conjunction with an approved special event or temporary use permit.

(c) *Design requirements.* Outdoor lighting shall primarily be used to provide safety, while secondarily accenting key architectural elements and to emphasize landscape features. Light fixtures shall be designed as an integral design element that complements the design of the project. This may be accomplished through style, material or color. All lighting fixtures designed or placed to illuminate any portion of a site shall meet the following requirements:

Any state-of-the-art technology shall be taken into consideration that is consistent with the intent of this section, as new lighting technology develops that is useful in reducing light above the horizontal plane.

(1) *Fixture (luminaire).* The light source shall be concealed and shall not be visible from any street right-of-way or adjacent properties. In order to direct light downward and minimize the amount of light spill into the night sky and onto adjacent properties or waterways, all lighting shall be cutoff fixtures.

(2) *Mounting.* Fixtures shall be mounted in such a manner that the cone of light is contained on-site and does not cross any property line of the site.

(3) *Limit lighting to period of activity.* The use of sensor technologies, timers or other means to activate lighting during times when it will be needed is

encouraged to conserve energy, provide safety and promote compatibility between different land uses.

(d) *Specific lighting.*

(5) *Commercial, hotel/motel and multi-family parking area lighting.* All commercial, hotel/motel and multi-family parking areas shall be full cutoff. Light levels shall be a minimum of one initial foot candles of illumination throughout the parking lot. The maximum to minimum foot candle ratio shall not exceed 15 to one. All parking areas shall be required to provide lighting consistent with the design requirement of this section during nighttime hours of operation.

ARTICLE VII. – SUPPLEMENTARY LOT AND USE REGULATIONS
DIVISION 3. – USE REGULATIONS

Sec. 68-486. – Off-street parking.

g) *Utilization of yards.*

(2) In all zoning districts, for all other permitted uses, approved permitted uses with site plan review or approved special exception uses, required front, side or rear yards may be used for off-street parking except as limited herein. A maximum of 80 percent of a required front yard may be used for off-street parking. All parking areas shall have each parking space and aisle marked and shall be landscaped in conformance with the paved area landscape requirements in chapter 72, article II.

(3) In all zoning districts, parking area surfaces shall not extend closer than three feet from any abutting property line

CITY OF TREASURE ISLAND 2024 COMPREHENSIVE PLAN:

Objective 1.1: Future Land Use Map and Land Use Designations
Ensure that redevelopment and new development occur in planned areas at the appropriate densities and intensities as indicated on, and consistent with the City of Treasure Island 2040 Future Land Use Map.

Objective 1.4: Nonresidential Development
Commercial development shall occur in a planned and orderly fashion.

Policy 1.4.7: The City will encourage mixed-use, creative architectural design. Parking regulations in the land development regulations shall ensure adequate levels of parking spaces while encouraging the reduction of pedestrian and vehicular conflicts and enhancing the aesthetics of the pedestrian realm.

Objective 1.5: Redevelopment
The City shall encourage redevelopment that is compatible with the existing character in order to achieve an orderly and aesthetic mixture of land uses.

Policy 1.5.1: The City shall, through provisions contained in the land development regulations, encourage opportunities for the redevelopment or rehabilitation of existing commercial areas or uses.

Policy 1.5.7: Future development and redevelopment shall provide a balance of uses that foster a vibrant, viable resilient community and economic development opportunities.

2011 / AMENDED 2014 DOWNTOWN SPECIAL AREA PLAN:

Objective 1 – Promote Mixed-Use Development

Downtown has a significant amount of retail and commercial uses, including restaurants, bars, and other food-related establishments, it is evident from the market analysis conducted for the Downtown Redevelopment Plan that the district has the potential to support greater intensities of development and a greater diversity in the mix of uses. The combined effects of high land values and limited land supply in beachfront communities is expected to result, over the long term, in increased demand for mixed-use, mid-rise building projects combining ground-floor retail and commercial uses with upper-level residential uses. Strategies for promoting mixed-use development are further addressed on pages 44 and 50 of the Downtown Redevelopment Plan.

Objective 2 – Promote 107th Avenue as Downtown's Premiere Pedestrian Street

Plan recommendations are designed to remake 107th Avenue into Downtown's premier pedestrian street. By promoting redevelopment with open storefronts, multiple entries to individual tenant spaces, and active ground floor uses, the City can reinforce the street's character as a vibrant, accessible destination.

Objective 4 – Institute a District Approach to Parking

To address the relative lack of parking and improve accessibility, the City should work to begin the transition from an approach in which individual property owners are responsible for their parking needs, to one in which the downtown as a whole is treated as a single district, with enough parking supply to meet demand. To accomplish this, the City will explore the feasibility of public/private partnerships in developing parking and transportation facilities.

Objective 5 – Increase In-District Demand for Downtown Businesses

To bolster the market for downtown shops and restaurants, activate streetscapes and public spaces, and support local businesses during off-peak tourism season, the City will explore ways to incentivize the use of upper-story building space for temporary lodging uses and a modest increase in the number of permanent residential units downtown. Temporary lodging and permanent residential units within the Downtown will benefit from proximity to the beaches, access to services and amenities within the Downtown, and some degree of visual access to the water. The success of the Downtown as a mixed-use 18-hour environment depends heavily on having a population of people living in it throughout the year.

As more projects are created within the Downtown to take advantage of its intrinsic amenity appeal, the greater this amenity will be enhanced and strengthened.

THE 2023 COUNTYWIDE RULES:

The Countywide Plan provides standards that may not be exceeded. This process ensures that consistent development standards are maintained throughout the county, while allowing local community character to be preserved. Local plans can always be more restrictive than the Countywide Plan.

ARTICLE 8- TERMS AND DEFINITIONS
DIV. 8.2

Activity Center – A contiguous area designated with the Activity Center category on the Countywide Plan Map, which is governed by locally-adopted plan or code provisions that identify the area as a unified location, and which serves as an important, identifiable center of business, public, and residential activity that is the focal point of a community, designed to accommodate multiple modes of transportation including enhanced transit.

Special Area Plan – A plan that establishes the density, intensity, use, and other standards for a defined area within the local government's jurisdiction. A special area plan may be an adopted regulatory document that governs these standards, or a guiding plan that is implemented through adopted comprehensive plan and/or land development code provisions.

ARTICLE 2- COUNTYWIDE PLAN MAP AND CATEGORIES
DIV.2.3

2.3.3.15 Category/Symbol – Activity Center (AC).

Purpose – The purpose of this category is to recognize those areas of the county within each local government jurisdiction that have been identified and planned for in a special and detailed manner, based on their unique location, intended use, appropriate density/intensity, and pertinent planning considerations. In particular, it is the intent of this category to recognize those important, identifiable centers of business, public, and residential activity, as may be appropriate to the particular circumstance, that are the focal point of a community, and served by enhanced transit commensurate with the type, scale, and intensity of use. Activity Centers are designed at a size and scale that allows for internal circulation by pedestrians, bicyclists, and transit users, and typically encompass areas developed in a radial pattern within walking distance (¼ to ½ mile) of a central point or hub served by transit.

Use Characteristics – Those uses appropriate to and consistent with this category include:

- Permitted Uses – As determined by the local government's implementing regulations adopted pursuant to Section 6.2.3.2. Amendments to permitted uses shall be pursuant to Planning and Urban Design Principles described

in Section 6.2.6 and Land Use Goal 16.0 of the Countywide Plan Strategies, and the use provisions of Section 6.2.4.

• Locational Characteristics – The Land Use Strategy Map and Table 2-4 below identify locations appropriate to be designated as Activity Center utilizing one of four subcategories. Additional locations may be deemed appropriate pursuant to the Countywide Plan Map amendment process for Activity Centers and Multimodal Corridors provided in Division 6.2.

• Scenic/Noncommercial Corridor (SNCC) – Amendments adopting or modifying the Activity Center category within SNCCs are governed by Section 6.5.4.1.4, which restricts the category to certain SNCC classifications. Where an existing Activity Center overlaps a designated SNCC, the local regulatory provisions governing the Activity Center adopted pursuant to Section 6.2.3.2 shall take precedence.

• Traffic Generation Characteristics – The standard for the purpose of calculating typical traffic impacts relative to a Countywide Plan Map amendment for each Activity Center subcategory are listed in Table 2-3 below.

ANALYSIS OF LAND DEVELOPMENT REGULATIONS, COMPREHENSIVE PLAN, DOWNTOWN SPECIAL AREA PLAN, AND THE COUNTYWIDE RULES:

This application consists of two items: a waiver request to the downtown design criteria and a site plan approval request for a commercial parking lot.

The criteria for reviewing downtown design criteria waivers are contained in Sec. 68-410.52

ITEM 1 ADMINISTRATIVE WAIVER

Waiver request to Sec. 68-410.59(d) to permit the existing access from 107th Avenue to remain. This is a waiver and not a variance and therefore applies only to this surface parking lot site plan and is not applicable to any future site plans. Site plan approval is conditional upon staff approval of item 1.

Sec. 68-410.59(d)- Driveway Connections
Properties fronting 107th Avenue shall relocate existing driveways and parking spaces from 107th Avenue to the parallel alley via 108th Avenue, 106th Avenue or 1st Street East when redevelopment of the site occurs. This provision will be waived during site plan review, should this requirement prohibit all reasonable access to a property.

Sec. 68-410.52. - Waivers.
Every business is unique. All aspects of appearance and character cannot be fully listed within the downtown design criteria. A process shall be available to allow waivers of specific aspects of these criteria. A request for a waiver shall not be considered a variance. A design criteria waiver in the planned redevelopment areas shall be evaluated

administratively using the findings listed below together with the countywide rules in Section 6.4.3.1. Please note that section 6.4.3.1 no longer exists in the countywide rules. The requested change to the design criteria are evaluated using the following:

1. Shall not damage the character or quality of the neighborhood in which it is located, or hinder the proper future development of the surrounding properties;

This use as a surface parking lot is seen as an interim use and will not forestall the development of abutting properties. The expectation is that this property will be redeveloped to meet the design regulations in the future.

2. Shall not generate excessive vehicular traffic;

The proposed parking lot has 243 spaces, while the prior shopping center had 141 spaces. This use is not anticipated to greatly increase traffic, as the prior use as a site for a shopping center also generated traffic. While this plan has more parking spaces than the previous shopping center, the increase is not expected to significantly affect the traffic volumes.

3. Shall not create a vehicular parking or pedestrian/traffic circulation problem;

This surface parking lot use with the entrance on 107th Avenue is in conflict with the downtown design regulations which have the goal of establishing a vibrant pedestrian-oriented downtown core and have a provision in Sec.68-410.59 (d) that access should be from 106th Avenue or 1st Street East. The focus of the downtown plan is to establish a vibrant pedestrian-oriented downtown core with an attractive streetscape. Having the primary entrance to the parking lot on the street identified as the primary pedestrian route is not supported by the code.

The applicant has not demonstrated that the requirements in Sec. 68-410.59(d) for a driveway to remain. Removing the driveway on 107th Avenue does not prohibit all reasonable access to the property. There are currently curb cuts and existing driveways on 1st Street East and on 106th Avenue which provide access the site.

4. Shall not compromise the health, safety, and welfare of the public; and

The applicant in their attached narrative has noted that the elimination of the 107th Avenue entrance would lead to a compromise of the health safety and welfare of the public. The City's emergency response team does not support using the 107th Avenue entrance, their narrative is attached.

5. Shall be consistent with the purpose and intent of the city's downtown design criteria.

As noted above under criteria 3, this waiver is not consistent with the requirement to relocate driveways off 107th Avenue and to create a pedestrian friendly walkable environment on 107th Avenue.

WAVIER STAFF APPROVAL:

Upon balancing the above criteria staff is granting an administrative waiver to the Downtown Design Regulations Sec. 68-410.59(d), specifically for this surface parking lot. This waiver is not a variance. Though the denial of 107th access would still allow reasonable access to the site, the issuance of this waiver is specific to this interim surface parking lot use and has no bearing on future site plans.

ITEM 2 SITE PLAN

The criteria for reviewing a site plan for approval, approval with conditions or denial is contained in the City of Treasure Island Land Development Regulations – Sec. 70-92(a).

1) In what respects the plan is or is not consistent with the Comprehensive Plan and the purpose and intent of the zoning district in which it is located.

The subject property has a future land use designation of Planned Redevelopment Mixed-Use. The purpose of the future land use designation of Planned Redevelopment-Mixed Use (PR-MU) is to depict those areas that are developed with a collection of residential, office, and commercial uses, along corridors, adjacent to neighborhoods or within distinct areas that are interrelated and complementary. The category should facilitate infill and redevelopment of these areas to create a desirable mix of non-residential and residential uses, but promote aesthetically pleasing, safe environments, and buildings that are compatible with the area's character, uses, and transportation facilities.

Additionally, the subject property is located within a designated Activity Center category, as outlined in the Countywide Plan Map. Sec 2.3.3.15 of the Countywide Rules states that the purpose of this category is to recognize those areas of the county within each local government jurisdiction that have been identified and planned for, in a special and detailed manner, based on their unique location, intended use, appropriate density/intensity, and pertinent planning considerations. In particular, it is the intent of this category to recognize those important, identifiable centers of business, public, and residential activity, as may be appropriate to the particular circumstance, that are the focal point of a community, and served by enhanced transit commensurate with the type, scale, and intensity of use. Activity Centers are designed at a size and scale that allows for internal circulation by pedestrians, bicyclists, and transit users, and typically encompass areas developed in a radial pattern within walking distance (¼ to ½ mile) of a central point or hub served by transit.

The proposed parking use is not in line with the following objectives and policies of the Comprehensive Plan:

- Objective 1.1: Future Land Use Map and Land Use Designations
  Ensure that redevelopment and new development occur in planned areas at the appropriate densities and intensities as indicated on, and consistent with the City of Treasure Island 2040 Future Land Use Map.
    - Policy 1.1.1 The City's Future Land Use Map shall be consistent with the Countywide Rules, as adopted by Pinellas County.
- Objective 1.4: Nonresidential Development
  Commercial development shall occur in a planned and orderly fashion.
    - Policy 1.4.7: The City will encourage mixed-use, creative architectural design. Parking regulations in the land development regulations shall

ensure adequate levels of parking spaces while encouraging the reduction of pedestrian and vehicular conflicts and enhancing the aesthetics of the pedestrian realm.

- Objective 1.5: Redevelopment
  The City shall encourage redevelopment that is compatible with the existing character in order to achieve an orderly and aesthetic mixture of land uses.

  - Policy 1.5.1: The City shall, through provisions contained in the land development regulations, encourage opportunities for the redevelopment or rehabilitation of existing commercial areas or uses.

  - Policy 1.5.7: Future development and redevelopment shall provide a balance of uses that foster a vibrant, viable resilient community and economic development opportunities.

The proposed use is inconsistent with the designated Planned Redevelopment Mixed-Use land use element, as it does not advance infill and redevelopment efforts aimed at establishing a balanced and desirable mix of residential and non-residential uses. Furthermore, it fails to promote aesthetically cohesive, safe, and compatible development that aligns with the established character of the area and its existing land uses.

The proposed use is not in line with the following objectives of the Special Area Plan:

- Objective 1- Promote Mixed-Use Development
- Objective 2- Promote 107th Avenue as Downtown's Premiere Pedestrian Street
- Objective 4- Institute a District Approach to Parking
- Objective 5- Increase In-District Demand for Downtown Businesses

The proposed use is inconsistent with the purpose and intent of the PR-MU C Zoning District, which is to establish a vibrant pedestrian-oriented downtown core within an attractive streetscape. The proposed parking lot use is a permitted use in the zoning district per Sec. 68-410.02. The placement of parking lots on 107th Avenue is discouraged per Sec. 68-410.59 and this section also notes that parking lots shall be placed in the rear yard whenever possible.

2) In what respects the plan is or is not in conformance with all the applicable regulations of the zoning district in which it is located.

The proposed site plan is in conformance with these applicable regulations of the PR-MU C zoning district, with the exception of access from 107th Avenue.

	Land Development Regulations	**Proposed Site Plan**
Lot Width (min.)	N/A	120 ft.
Lot Depth (min.)	N/A	160 ft.
Lot Area (min.)	N/A	21,862 sq. ft.

Density	Residential (only permitted as part of mixed use)-24 Units (5 levels max.) Tourist lodging units-22 (5 levels max.)	N/A
Lot Coverage (max.)	N/A	N/A
ISR (max.)	90%	70%
FAR	1.0	N/A
Building Height **Max. above DFE** **Height Encroachment** **From Grade**	 60' 7' above roof -	 N/A
Height Encroachment	7' above roof	N/A
Setbacks **Front– 107th Ave** **Front– 106th Ave.** **Side – 1st St E** **West**	 9' 9' 0' 0'	 10' 10' N/A N/A
Design Elevation	13' NAVD Lowest Living Level	N/A
Loading Berths	0	N/A
Parking Spaces **Total Spaces** **Standard** **Compact (max.)** **ADA-accessible** **Bicycle**	 0 0 0 0 0 Bike Rack (5 spaces per rack)	 243 236 0 7 0

A waiver to Sec. 68-410.59(d) to allow access from 107th Avenue, rather than from 106th Avenue or 1st Street East has been requested, see item 1.

3) In what respects the plan is or is not in conformance with the City's subdivision regulations and all other applicable City requirements including the design and construction of streets, utility facilities and other essential services.
N/A- The proposed site plan does not include the subdivision of property.

4) In what respects the plan is or is not consistent with good design standards with respect to all internal or external relationships, including but not limited to:

a. Provisions to ensure compatibility with the planned character of the zoning district where the proposed development is to be located, and with existing development surrounding the site.
The PR-MU C zoning district was created to provide an opportunity to revitalize the City's downtown core economically, visually, and functionally, to provide an aesthetically pleasing and efficient activity center, with the main focus being on establishing a vibrant pedestrian-oriented downtown core.

A surface parking lot does not serve to revitalize the downtown core.

In response to the unexpected proposal to redevelop a significant portion of the downtown area into an off-street parking surface parking lot — a permitted principal use — there is a notable absence of detailed standards within the City's land development regulations to address the appropriateness and compatibility of a single-use development of this scale within the intended mixed-use, pedestrian-oriented character and redevelopment objectives of the PR-MU CORE zoning district.

While this parking lot plan cannot be analyzed in reference to most of the downtown design standards which are intended for buildings, the plan does meet the remaining criteria for parking lot layout, landscaping, drainage and buffering.

b. Internal or external circulation patterns, for vehicles, bicycles, and pedestrians; provisions for the separation of on-site pedestrian and vehicular traffic; provisions for the safe and convenient storage of bicycles, where applicable.

The proposed site plan meets drive aisle widths, parking space width and length. There are 236 standard parking spaces and 7 ADA-accessible spaces, resulting in a total of 243 parking spaces. Additionally, there is an ingress / egress driveway on 107th Avenue and another on 106th Avenue.

The access from 107th Avenue does not meet the Treasure Island Downtown Design Criteria, which calls for relocation of driveways along 107th Avenue, to either 106th Avenue or 1st Street East, see Sec. 68-410.59(d). A wavier has been requested specifically to this section of code, see item 1.

There is no proposed bicycle storage.

c. Disposition of open space, effective use of screening or buffering to reduce the impacts of incompatible and/or nonconforming uses, preservation of acceptable existing trees and other natural features, and protection of existing environmentally sensitive areas and their ecological functions.

The proposed site plan is in conformance with landscaping requirements set forth in Chapter 72- Resources; Vegetation and Environmentally Sensitive Lands.

The proposed plan is in accordance with the Impervious Surface requirement of the PR-MU Core zoning district.

d. Building arrangements, both between buildings in the proposed development and in relation to those on properties adjacent to the site.

N/A- The development consists of a commercial parking lot. There are no proposed buildings.

e. Provisions to ensure continued public use of existing public beach or waterfront access ways, if any. Also, proposed new or enhanced public

beach or waterfront access ways, if identified as a requirement during the conference(s) between the applicant and city staff (see Section 70-53).
N/A- The proposed site plan will not impact the use of the existing public beach or access to the waterfront, as this is not a waterfront property and does not abut a public beach.

The public beach is accessed via the City's existing pedestrian walkways and crosswalks.

f. Protection of historically/architecturally significant structures or archaeological sites, if any, on or near the proposed development site from any adverse effects of the proposed development.
N/A – There are no historically/architecturally significant structures on the site.

Not of historic significance, but it is worth noting that memorial pavers, specifically those along the existing North-South pedestrian alley, are required to be returned to their original location and condition, prior to close out of the open demolition permit (DEMO-006233-2023).

g. Suitability and design of proposed on-site recreation areas and improvements, or of other lands to be dedicated for public recreational purposes.
N/A – There are no on-site recreation areas, improvements, or lands to be dedicated for public recreational purposes.

5) In what respects the plan is or is not in conformance with city policies regarding sufficiency of ownership, guarantees for completion of all required improvements, and guarantees for continued maintenance.
The Public Works department will determine if the proposed development requires any new or upgraded public improvements during permit review.

A vacation application for the East-West alley and the North-South pedestrian walkway has been received by the city and is being reviewed. The city has requested additional information from the applicant. If this site plan application is approved, this approval will be contingent upon these vacations.

6) Where applicable, in what respects the plan is or is not in conformance with the regulations of the Southwest Florida Water Management District, the Tampa Bay Regional Planning Council, and state and federal agencies. The issuance of permits or letters of intent-to-approve by these agencies may be considered evidence of such conformance.
The proposed site plan will require a permit or an exemption from the Southwest Florida Water Management District. No review or approvals are required from the Tampa Bay Regional Planning Council.

7) In the case of rehabilitation or redevelopment of an existing nonconforming use, per Section 68-512(3), whether the overall degree of nonconformity on the

site is significantly reduced and additional adverse impacts are not created, and whether an exemption from variance requirements for any or all remaining nonconformities should be granted.
N/A – The subject property is currently a vacant lot.

STAFF RECOMMENDATIONS - SITE PLAN:
Staff have reviewed the proposed site plan.

Staff have reviewed the regulations for site plan approval and determined that it **does not satisfy the applicable criteria** set forth in Section 70-92 of the Land Development Code, specifically subsections:

- 70-92(a)(1),
- 70-92(a)(4) a.
- 70-92(a)(4) b.

Staff has reviewed the regulations for site plan approval and determined that it **does satisfy the applicable criteria** set forth in Section 70-92 of the Land Development Code, specifically subsections:

- 70-92(a)(2) with the administrative waiver granted by staff,
- 70-92(a)(4) c.
- 70-92(a)(5).

A review of the Comprehensive Plan, Special Area Plan and the Countywide Plan support that this proposed surface parking lot site plan does not meet the criteria of these plans for development of a pedestrian oriented mixed-use area as analyzed in detail above.

Accordingly, based on the criteria above, staff recommends **DENIAL** of the proposed site plan.

If the Planning & Zoning Board approves the site plan staff recommends the following conditions:

1. Provide a recorded Unity of Title prior to the City's issuance of a construction permit.

2. Establish and record irrevocable cross-access agreements to adjacent parcels prior to the City's issuance of a construction permit as stated in Sec.68-410.59(b).

3. Where necessary to accommodate proposed development, the property owner shall be responsible for the removal/relocation of any and all public utilities located on the subject site. This is regardless of whether the public utilities are known at the time of site plan approval or discovered after such approval. Any removal or relocation will require the approval of the City's Public Works Department.

4. All building permits and construction associated with this development proposal shall be subject to all current regulations within the Florida Building Code,

Floodplain Management Regulations, Land Development Regulations, and the Florida Fire Prevention Code in effect at the time of the building permit application process.

5. All conditions of approval stated in demo permit (DEMO-006233-2023) must be met, including but not limited to conditions pertaining to the restoration of pavers including the reinstallation of the pavers and the protection of the memorial pavers.

6. This site plan shall not be effective unless the North-South 10’ alley and the East-West 30’ alley have been vacated and the vacation and any associated easement have been recorded.

7. Per Sec 38-16, commercial solid waste shall be collected in city provided containers and then placed on the western edge of the property for pickup twice a week.

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JUNE 19, 2025
PLANNING AND ZONING BOARD
DEVELOPMENT ORDER

CASE NO. SITE-000401-2023 ITEM 2

LOCATION: 115 107TH AVE. TREASURE ISLAND, FL 33706

The Planning and Zoning Board has made a motion to:

[ ] APPROVE [ ] DENY
[ ] CONTINUE [ ] APPROVE WITH CONDITIONS

A site plan approval request of a commercial parking lot consisting of 243 parking spaces.

CONDITIONS:

1. Provide a recorded Unity of Title prior to the City's issuance of a construction permit.
2. Establish and record irrevocable cross-access agreements to adjacent parcels prior to the City's issuance of a construction permit as stated in Sec.68-410.59(b).
3. Where necessary to accommodate proposed development, the property owner shall be responsible for the removal/relocation of any and all public utilities located on the subject site. This is regardless of whether the public utilities are known at the time of site plan approval or discovered after such approval. Any removal or relocation will require the approval of the City's Public Works Department.
4. All building permits and construction associated with this development proposal shall be subject to all current regulations within the Florida Building Code, Floodplain Management Regulations, Land Development Regulations, and the Florida Fire Prevention Code in effect at the time of the building permit application process.
5. All conditions of approval stated in demo permit (DEMO-006233-2023) must be met, including but not limited to conditions pertaining to the restoration of pavers including the reinstallation of the pavers and the protection of the memorial pavers.
6. This site plan shall not be effective unless the North-South 10' alley and the East-West 30' alley have been vacated and the vacation and any associated easement have been recorded.
7. Per Sec 38-16, commercial solid waste shall be collected in city provided containers and then placed on the western edge of the property for pickup twice a week.

_____ _____
Richard Harris, Chair Date
Planning & Zoning Board

Case Number: _____

City of Treasure Island Planning and Zoning Board or City Commission Review Application

Please use blue or black ink only. Failure to complete this form in its entirety will result in this application being returned without review. Note: A separate application is required for each request.

Property Owners: Pirate Square LLC	Agent: Johnson Pope Bokor Ruppell & Burns LLP (Mark Bentley and Ryan Manasse)
Address: 11620 7th St East	Address: 401 E Jackson St., Suite 3100
St. Petersburg, FL 33706	Tampa, FL 33602
Phone:	Phone: (813) 225-2500
Fax:	Fax:
Email:	Email: development@jpfirm.com

List all Legal Owner(s) of Property: Pirate Square, LLC

Complete legal description (may be placed on attached separate page): Lots 4 through 12, and Lots 24 through 38, Block 12, City of Treasure Island, according to the plat thereof as recorded in Plat Book 31, Pages 19 through 22 of the Public Records of Pinellas County, Florida

Development Name: _____

Site Location/Address: 115 107th Ave., 119 107th Ave., 133 107th Ave., 145 107th Ave., 163 107th Ave., and 154 107th Ave.

Area of Development (Acreage or Square Feet) 1.99 acres (mol)

Parcel Identification Number (list all): 23-31-15-91818-012-0260

Application Request: Site plan approval for commercial parking lot.

Future Land Use Designation: PR-MU | Proposed Future Land Use: No change proposed.

Current Zoning: PR-MU-C | Proposed Zoning: No change proposed.

I certify that I have reviewed the Land Development Regulations and that my submission meets all requirements. The only exceptions are those items to which I am requesting variances to or waivers from certain sections of the code and understand that they must be listed on the plans individually and on the attached transmittal. I understand that if an item does need a variance, it will be necessary to file through the appropriate review entity.

Signature must be original (No copies, scans, faxes or e-mails)

Mark Bentley
Owner/Agent

7/28/23
Date

I#: 2005239875 BK: 14395 PG: 1724, 06/21/2005 at 11:59 AM, RECORDING 3 PAGES $27.00 D DOC STAMP COLLECTION $38500.00 KEN BURKE, CLERK OF COURT PINELLAS COUNTY, FL BY DEPUTY CLERK: CLKDMC4

Prepared By:
Geri Roberts
Fidelity National Title Insurance Company

File No. 05-016-807471

Property Appraiser's Parcel I.D.(folio) Number(s)
23/31/15/91818/012/0260

Return To:
Pirate Square LLC
118 107th Ave
Treasure Island, FL 33706

WARRANTY DEED

THIS WARRANTY DEED dated June 10, 2005, by Capri Isle Hospitality Strategies, Inc., a Florida Corporation hereinafter called the grantor, to Pirate Square, a LLC whose post office address is **118 107th Ave, Treasure Island, FL** ,33706, hereinafter called the grantee:

(Wherever used herein the terms "grantor" and "grantee" include all the parties to this instrument and the heirs, legal representatives and assigns of individuals, and the successors and assigns of corporations)

WITNESSETH: That the grantor, for and in consideration of the sum of $10.00 and other valuable consideration, receipt whereof is hereby acknowledged, hereby grants, bargains, sells, aliens, remises, releases, conveys, and confirms unto the grantee, all the certain land situated in Pinellas County, Florida, viz:

SEE ATTACHED EXHIBIT ONE

Subject to easements, restrictions, reservations, and limitations of record, if any.

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

TO HAVE AND TO HOLD the same in fee simple forever.

AND the grantor hereby covenants with said grantee that the grantor is lawfully seized of said land in fee simple; that the grantor has good right and lawful authority to sell and convey said land; that the grantor hereby fully warrants the title to said land and will defend the same against the lawful claims of all persons whomsoever; and that said land is free of all encumbrances, except taxes accruing subsequent to December 31, 2004.

IN WITNESS WHEREOF, the said grantor has signed and sealed these presents the day and year first above written.

Signed, sealed and delivered in the presence of:

(Witness Signature)

Wes Bailey
(Print Name of Witness)

Natalia Sherman
(Witness Signature)

NATALIA SHERMAN
(Print Name of Witness)

Capri Isle Hospitality Strategies, a LLC

By: _____

6090 Central Ave. St Petersburg FL 33707
(Address and Phone Number) (727) 347-1930

STATE of Florida

COUNTY of Pinellas

I HEREBY CERTIFY that on this day, before me, an Officer duly authorized in the State aforesaid and the County aforesaid to take acknowledgements, personally appeared Jeffrey J Coilley,

to me known to be the person(s) described in or who has/have produced _____ as identification and who executed the foregoing instrument and he/she/they acknowledged before me that he/she/they executed the same.

WITNESS my hand and official seal in the County and State last aforesaid this 10th day of June, 2005.

Cheryl G. Graham
Commission #DD299578
Expires: Mar 14, 2008
Bonded Thru
Atlantic Bonding Co., Inc.

Cheryl Graham
Notary Signature

Cheryl G Graham
Printed Notary Name

My commission expires: 3/14/08

Lots 4, 5, 6, 7, 8, 9, 10, 11, 12, 24, 25, 26, 27, 28, 29 and 30 and the Easterly 10 feet of Lot 31, Block 12, CITY OF TREASURE ISLAND BLOCKS 2-4-9-10-11-12-13-14-15 and REMAINDER OF BLOCKS 1 AND 8 according to the plat thereof, as recorded in Plat Book 31, Pages 19 through 22 of the Public Records of Pinellas County, Florida.



Detail by Entity Name

Florida Limited Liability Company
PIRATE SQUARE, LLC

Filing Information

Document Number	L05000048695
FEI/EIN Number	20-2850181
Date Filed	05/16/2005
State	FL
Status	ACTIVE
Last Event	LC AMENDMENT
Event Date Filed	11/18/2009
Event Effective Date	NONE

Principal Address

151 107 Avenue
Suite 3
TREASURE ISLAND, FL 33706

Changed: 01/22/2014

Mailing Address

151 107 Avenue
Suite 3
TREASURE ISLAND, FL 33706

Changed: 03/06/2013

Registered Agent Name & Address

BYRNE, SHAWN L
151 107 Avenue
Suite 3
TREASURE ISLAND, FL 33706

Name Changed: 06/01/2009

Address Changed: 01/22/2014

Authorized Person(s) Detail

Name & Address

Title MGR

BYRNE, SHAWN L
151 107 Avenue
Suite 3
TREASURE ISLAND, FL 33706

Annual Reports

Report Year	Filed Date
2020	03/17/2020
2021	03/01/2021
2022	02/08/2022

Document Images

02/08/2022 -- ANNUAL REPORT	View image in PDF format
03/01/2021 -- ANNUAL REPORT	View image in PDF format
03/17/2020 -- ANNUAL REPORT	View image in PDF format
02/26/2019 -- ANNUAL REPORT	View image in PDF format
01/22/2018 -- ANNUAL REPORT	View image in PDF format
02/13/2017 -- ANNUAL REPORT	View image in PDF format
01/27/2016 -- ANNUAL REPORT	View image in PDF format
01/12/2015 -- ANNUAL REPORT	View image in PDF format
01/22/2014 -- ANNUAL REPORT	View image in PDF format
03/06/2013 -- ANNUAL REPORT	View image in PDF format
03/09/2012 -- ANNUAL REPORT	View image in PDF format
02/06/2011 -- ANNUAL REPORT	View image in PDF format
03/08/2010 -- ANNUAL REPORT	View image in PDF format
11/18/2009 -- LC Amendment	View image in PDF format
06/01/2009 -- Reg. Agent Change	View image in PDF format
02/01/2009 -- ANNUAL REPORT	View image in PDF format
01/18/2008 -- ANNUAL REPORT	View image in PDF format
01/29/2007 -- ANNUAL REPORT	View image in PDF format
04/25/2006 -- ANNUAL REPORT	View image in PDF format
10/05/2005 -- Amendment	View image in PDF format
09/29/2005 -- Amendment	View image in PDF format
09/26/2005 -- Reg. Agent Change	View image in PDF format
05/16/2005 -- Florida Limited Liabilites	View image in PDF format

AFFIDAVIT TO AUTHORIZE AGENT

STATE OF FLORIDA
COUNTY OF PINELLAS

Pirate Square LLC
NAME OF OWNER(S) being duly sworn, depose(s) and say(s):

PROPERTY ADDRESS(ES): 115 107th Ave., 119 107th Ave., 133 107th Ave., 145 107th Ave., 163 107th Ave., 153 106th Ave.,

Parcel I.D. Number(s).: 23-31-15-91818-012-0260

1. That this property constitutes the property for which request for permits and approvals from the City of Treasure Island, as necessary, are being applied for.

2. That the undersigned (has/have) appointed Johnson Pope Bokor Ruppel & Burns, LLP as (his/their) agent(s) to represent the above-described property and serve as the applicant/agent for development applications/modifications, at the Planning and Zoning Board meeting and execute any permits or other documents necessary to affect such permit(s).

3. That this affidavit has been executed to induce appropriate state agency in Florida to consider, and act on the above-described property.

4. That (I/we), the undersigned authority, hereby certify that the foregoing is true and correct.

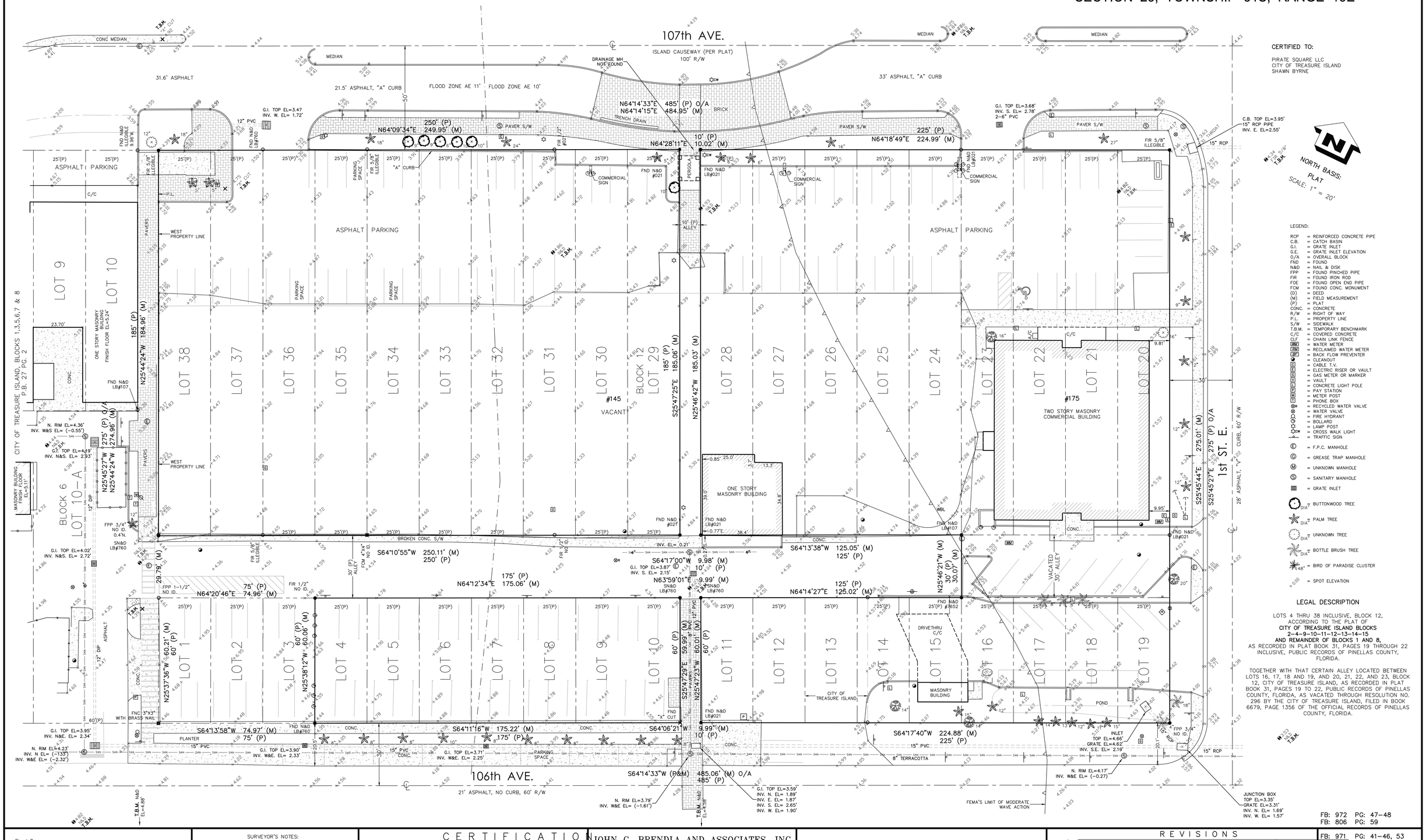
PRINTED NAME OF PROPERTY OWNER(S): SHAWN Byrne
SIGNATURE OF PROPERTY OWNER(S): _____
DATE: 6/14/23

STATE OF: Florida
COUNTY OF: Pinellas
The foregoing instrument was acknowledged before me this 14th day of June 2023, by (company/agent) Shawn Byrne by (persons name) _____, it's (title) Mgr who is personally known to me, or who has produced _____ as identification and who _____ did X did not take an oath.

Janet Byrd
(Print, Type, or Stamp Commissioned Name of Notary Public)
Commission Number: GG-954280
Commission Expires: Feb 3, 2024

JANET BYRD
Notary Public - State of Florida
Commission # GG 954280
My Comm. Expires Feb 3, 2024
Bonded through National Notary Assn.

SECTION 23, TOWNSHIP 31S, RANGE 15E



CERTIFIED TO:

PIRATE SQUARE LLC
CITY OF TREASURE ISLAND
SHAWN BYRNE

LEGEND:

RCP	= REINFORCED CONCRETE PIPE
C.B.	= CATCH BASIN
G.I.	= GRATE INLET
G.E.	= GRATE INLET ELEVATION
O/A	= OVERALL BLOCK
FND	= FOUND
N&D	= NAIL & DISK
FPP	= FOUND PINCHED PIPE
FIR	= FOUND IRON ROD
FOE	= FOUND OPEN END PIPE
FCM	= FOUND CONC. MONUMENT
(D)	= DEED
(M)	= FIELD MEASUREMENT
(P)	= PLAT
CONC.	= CONCRETE
R/W	= RIGHT OF WAY
P.L.	= PROPERTY LINE
S/W	= SIDEWALK
T.B.M.	= TEMPORARY BENCHMARK
C/C	= COVERED CONCRETE
CLF	= CHAIN LINK FENCE
WM	= WATER METER
RW	= RECLAIMED WATER METER
BF	= BACK FLOW PREVENTER
	= CLEANOUT
	= CABLE T.V.
	= ELECTRIC RISER OR VAULT
	= GAS METER OR MARKER
	= VAULT
	= CONCRETE LIGHT POLE
	= PAY STATION
	= METER POST
	= PHONE BOX
	= RECYCLED WATER VALVE
	= WATER VALVE
	= FIRE HYDRANT
	= BOLLARD
	= LAMP POST
	= CROSS WALK LIGHT
	= TRAFFIC SIGN
(E)	= F.P.C. MANHOLE
(G)	= GREASE TRAP MANHOLE
(M)	= UNKNOWN MANHOLE
(S)	= SANITARY MANHOLE
	= GRATE INLET
DIA.	= BUTTONWOOD TREE
DIA.	= PALM TREE
DIA.	= UNKNOWN TREE
DIA.	= BOTTLE BRUSH TREE
48"	= BIRD OF PARADISE CLUSTER
+0.00	= SPOT ELEVATION

LEGAL DESCRIPTION

LOTS 4 THRU 38 INCLUSIVE, BLOCK 12, ACCORDING TO THE PLAT OF **CITY OF TREASURE ISLAND BLOCKS 2-4-9-10-11-12-13-14-15 AND REMAINDER OF BLOCKS 1 AND 8,** AS RECORDED IN PLAT BOOK 31, PAGES 19 THROUGH 22 INCLUSIVE, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

TOGETHER WITH THAT CERTAIN ALLEY LOCATED BETWEEN LOTS 16, 17, 18 AND 19, AND 20, 21, 22, AND 23, BLOCK 12, CITY OF TREASURE ISLAND, AS RECORDED IN PLAT BOOK 31, PAGES 19 TO 22, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, AS VACATED THROUGH RESOLUTION NO. 296 BY THE CITY OF TREASURE ISLAND, FILED IN BOOK 6679, PAGE 1356 OF THE OFFICIAL RECORDS OF PINELLAS COUNTY, FLORIDA.

FB: 972 PG: 47-48
FB: 806 PG: 59

Flood Zone
AE (EL. 11'), AE (EL. 10')
COMMUNITY PANEL #125153 1210300194 H, EFFECTIVE 8/24/21

Basis of Bearings:
SOUTH BOUNDARY OF LOTS 1 THRU 19
BEING S64°14'33"W (PER PLAT)

Benchmark:
COUNTY #236 PBE 147 (USCE 1968)
EL. = 5.273' N.G.V.D., ADJUSTED TO
EL. = 4.51' N.A.V.D. M.S.L. = 0.00'

SURVEYOR'S NOTES:

This survey was prepared without the benefit of a title search and is subject to all easements, rights-of-way and other matters of record.

Survey not valid without the signature and original raised seal of a Florida licensed Surveyor and Mapper.

This survey is made for the exclusive use of the current owners of the property and also those who purchase, mortgage or guarantee the title thereto within one (1) year from date hereof.

CERTIFICATION

I hereby certify that the survey represented hereon meets the requirements of Chapter 5J-17, Florida Administrative Code.

John O. Brendla
Digitally signed by John O. Brendla
Date: 2024.09.03 08:42:38

JOHN O. BRENDLA
Florida surveyor's registration No. 4601
Certificate of Authorization No. 760

JOHN C. BRENDLA AND ASSOCIATES, INC.
Professional Land Surveyors and Mappers
JCB
4015 82nd Avenue North
Pinellas Park, Florida 33781
Telephone (727) 576-7546
Facsimile (727) 577-9932
LB 760

BOUNDARY SURVEY WITH TOPOGRAPHY, TREES, AND IMPROVEMENTS

2108-77.CRD

REVISIONS

No.	DESCRIPTION	DATE
1.	ADDITIONAL PER ENG.	11/29/2022
2.	UPDATE AFTER DEMOLITION	2/29/2024
3.	DETAIL INLET STRUCTURE S.E.	8/30/2024

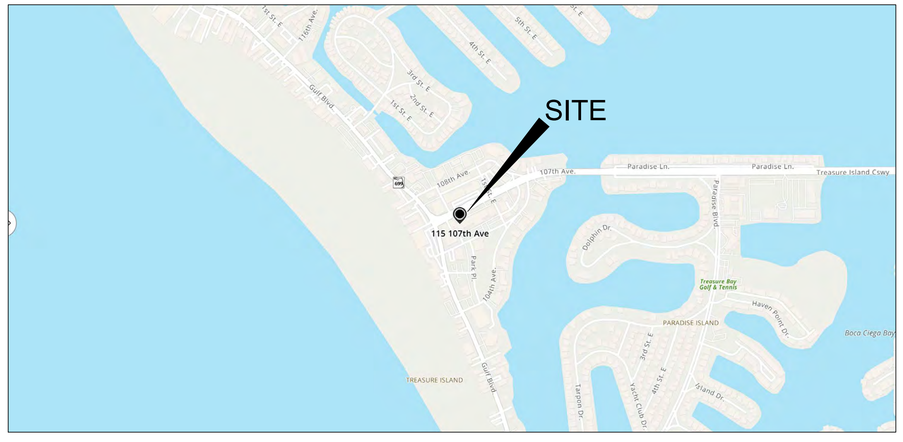
FB: 971 PG: 41-46, 53
FB: 973 PG: 1
Survey date: 12/30/2021
Job Number: 2108-77
Drawn by: JM
Chkd by: JOB
SHEET 1 of 1

Site Construction Plans for:

Pirate Square:
Parking Lot Redevelopment

115 107th Avenue, Treasure Island, FL 33706
Section 23, Township 31, Range 15
Parcel No. 23-31-15-91818-012-0260 & 23-31-15-91818-012-0140

Location Map



Legal Description:

LOTS 4 THRU 38 INCLUSIVE, BLOCK 12, ACCORDING TO THE PLAT OF CITY OF TREASURE ISLAND BLOCKS 2-4-9-10-11-12-13-14-15 AND REMAINDER OF BLOCKS 1 AND 8, AS RECORDED IN PLAT BOOK 31, PAGES 19 THROUGH 22 INCLUSIVE, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

TOGETHER WITH THAT CERTAIN ALLEY LOCATED BETWEEN LOTS 16, 17, 18 AND 19, AND 20, 21, 22, AND 23, BLOCK 12, CITY OF TREASURE ISLAND, AS RECORDED IN PLAT BOOK 31, PAGES 19 TO 22, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, AS VACATED THROUGH RESOLUTION NO. 296 BY THE CITY OF TREASURE ISLAND, FILED IN BOOK 6679, PAGE 1356 OF THE OFFICIAL RECORDS OF PINELLAS COUNTY, FLORIDA.

Source: Boundary Survey with Topography, Trees and Partial Improvements, prepared by John C. Brendla & Associates, Inc., dated 12-21, project No. 2108-77.

Sheet Index

No.	Title
C1	Cover Sheet
C2	Existing Conditions Aerial
C3	Alley Vacation & Easement Dedication Plan
C4	Demolition Plan
C5	Site Plan
C6	Paving, Grading and Drainage Plan
C7	Landscape Plan
C8	Stormwater Pollution Prevention Plan
C9	Detail Sheet
C10	Notes
-	Lighting Plan (by others)
-	Survey (by others)

Sunshine State One Call of Florida, Inc:
(800) 432-4770
www.callsunshine.com

PLANENG, INC
Board of Professional Engineers
Certificate of Authorization
No. 26432

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501 Fitzgerald Street
Pensacola, FL 32505
T (850) 444.9493

Tampa:
3737 Lake Joyce Dr
Land O Lakes, FL 34639
T (813) 962.1752

Issue / Revisions

NORTH

Scale NTS

Owner / Developer:
Pirate Square, LLC
11620 7th St. E.
St. Petersburg, FL 33706
Ph. (727) 692.6672
Attn: Shawn Byrne
shawnlbyrne@gmail.com

Civil Engineer/Planner &
Owner's Authorized Agent:
Planeng, Inc.
3737 Lake Joyce Dr.
Land O Lakes, Florida 34639
Ph. (813) 962.1752
Attn. Russell Ottenberg
russell@planeng.com

Surveyor:
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Pinellas Park, FL 33781
Ph. (727) 576.7546
Attn: John O. Brendla
Dely@jcbrendla.com

Geotechnical Engineer:
Central Florida Testing Laboratories, Inc.
12625 40th Street North
Clearwater, FL 33762
Ph. (727) 572.9797
Attn: George Sinn, P.E.
gsinn@cftlinc.com

PLANENG, INC

Jay M. Gill, State of Florida, Professional Engineer, License No. 60679. This item has been digitally signed and sealed by Jay M. Gill, P.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.

JAY M. GILL LICENSE No. 60679 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Jay M. Gill
DN: CN=Jay M. Gill, O=PLANENG, INC., OU=ENGINEER, E=jay@planeng.com, C=US
Date: 2025.04.29 08:49:39 -04'00'

Date

Reviewed by
JMG/RMO

Plan Description
Cover Sheet

Sheet No.
C1

PLANENG

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

2023-0509TRIcom C1 Cover Sheet.dwg
CAD date 4/29/2025



PLANENG INC

Sheet No.
C2

Plan Description
Existing Conditions Aerial

Reviewed by
JMG/RMO

Date

Professional Engineer
Joseph R. Morrison
STATE OF FLORIDA
No. 60679
JAY M. GRIFFIN
Licensed Architect
License No. AR-0018

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

Scale
1" = 20'

NORTH

Issue / Revisions

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Lutz, Florida 33558
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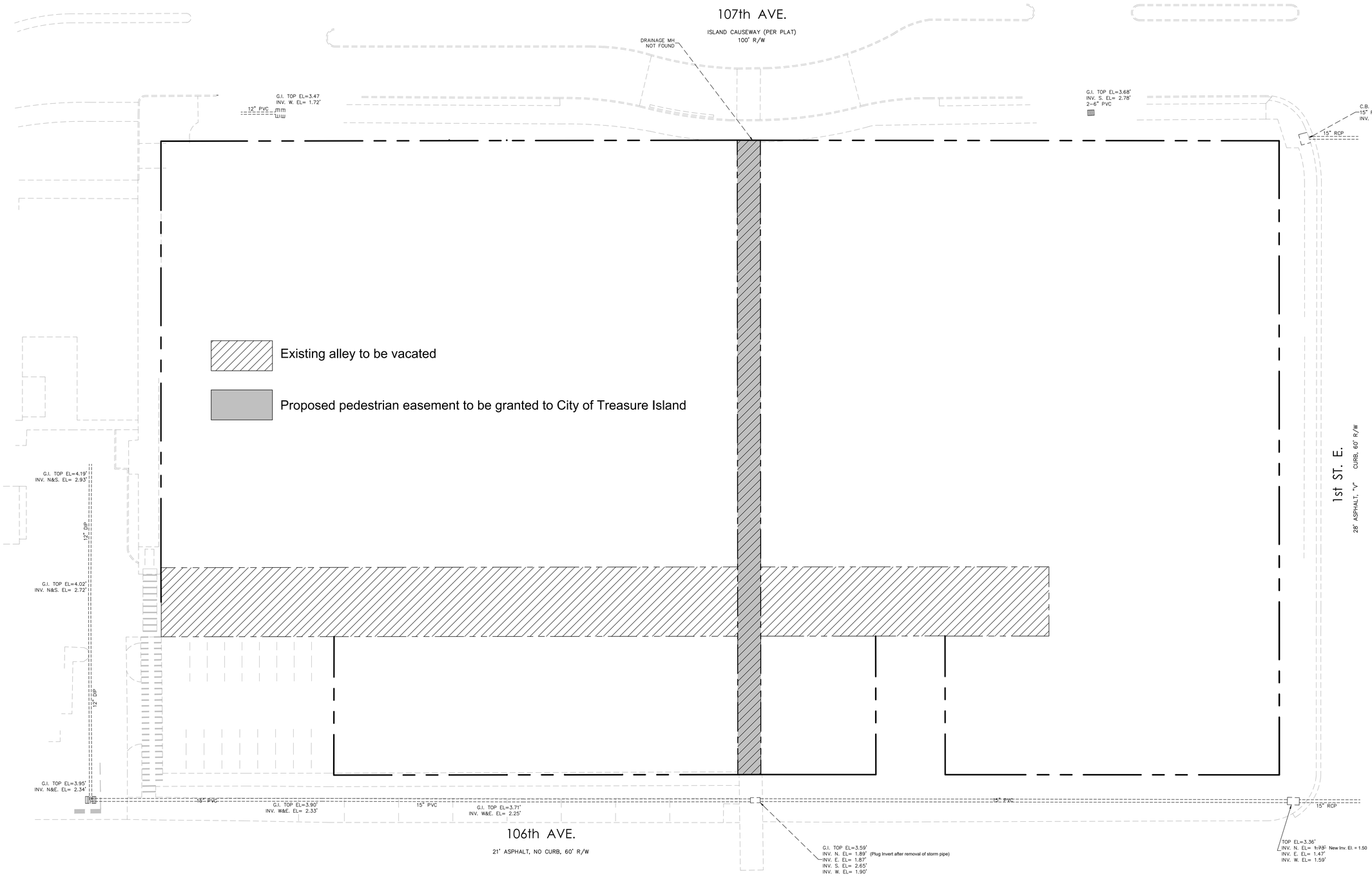
Board of Professional Engineers
Certificate of Authorization
No. 30422

2023-0509TRIcom C2 Existing Conditions Aerial.dwg
CAD date 4/29/2025



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Issue / Revisions

NORTH

Scale
1" = 20'

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

P. LANE ENG. INC

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JAY M. GILL
LICENSE
No. 60879
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

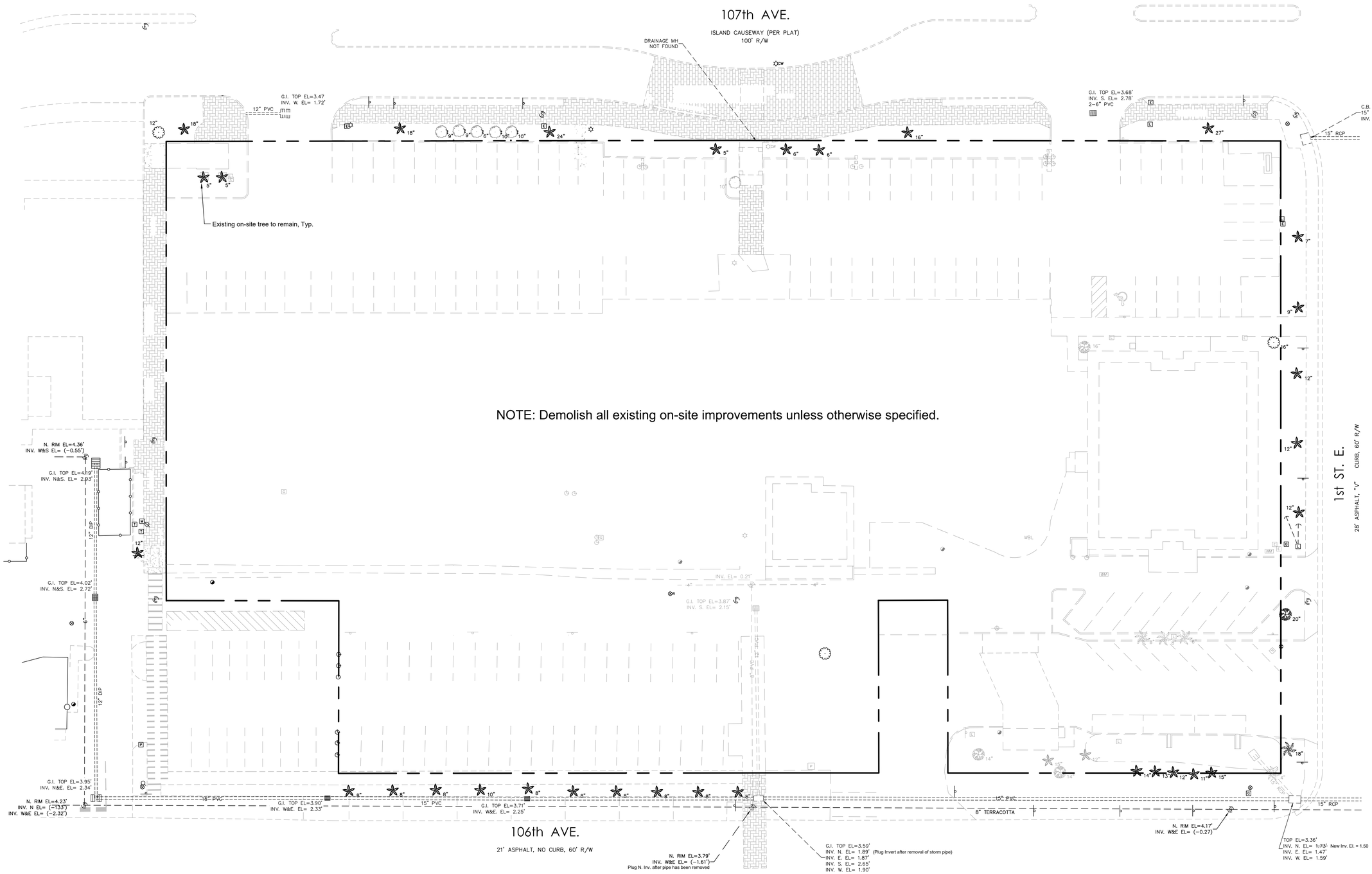
Date

Reviewed by
JMG/RMO

Plan Description
Alley Vacation & Easement Dedication Plan

Sheet No.
C3

2023-0509TRIcom C3 Alley Vac Plan.dwg
CAD date 4/29/2025



PLANENG INC
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Tampa:
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Issue / Revisions

NORTH

Scale
1" = 20'

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

PLANENG INC

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JAY M. GILL
LICENSE
No. 60879
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date

Reviewed by
JMG/RMO

Plan Description
Demolition Plan

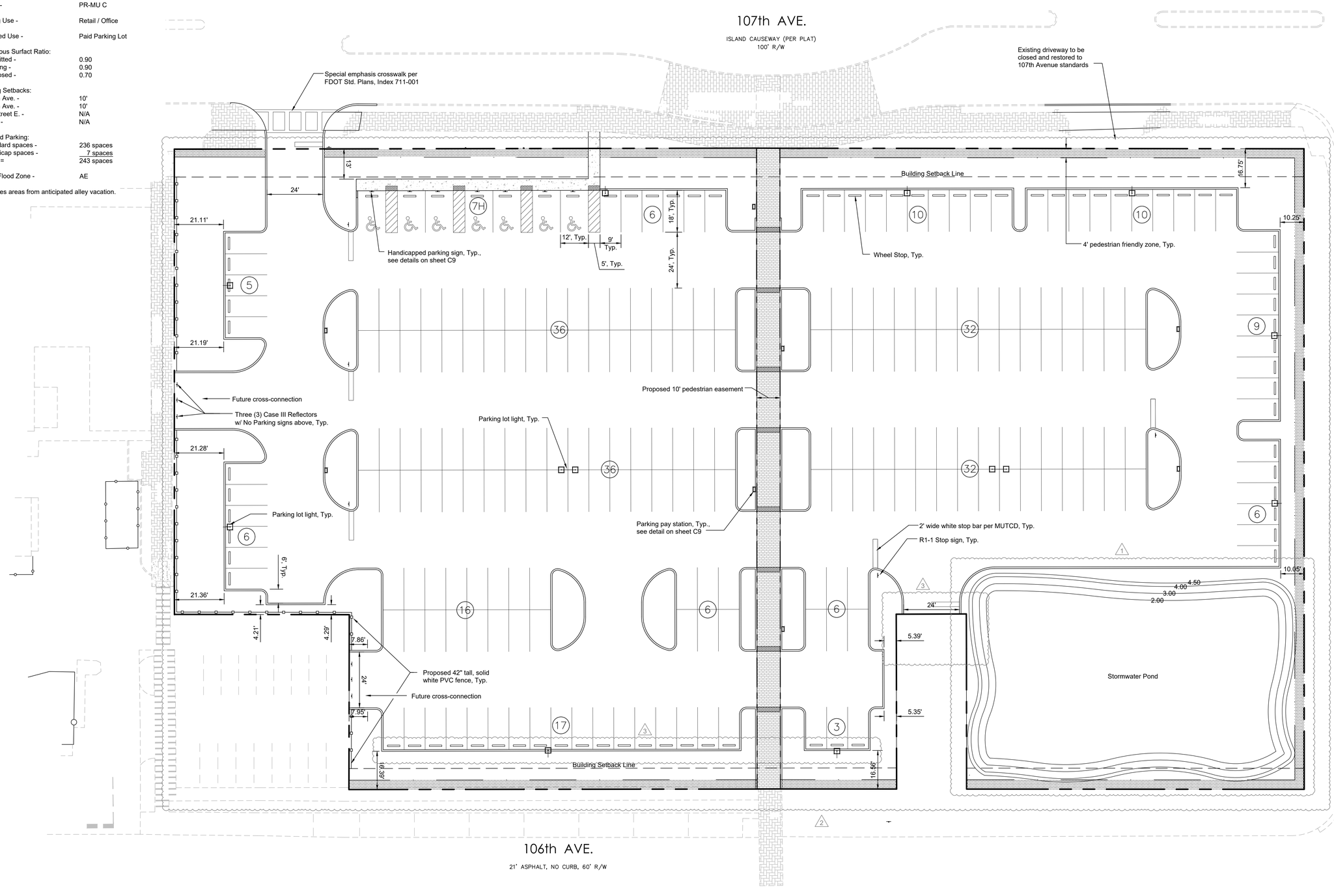
Sheet No.
C4

2023-0509TRIcom C4 Demolition Plan.dwg
CAD date 5/22/2025

SITE DATA TABLE:

Parcel Nos. -	23-31-15-91818-012-0260, 23-31-15-91818-012-0140
Property Area -	2.88 Ac. MOL / 125,508 s.f.*
Project Area -	2.88 Ac. MOL / 125,508 s.f.*
Future Land Use Category -	PR-MU
Zoning -	PR-MU C
Existing Use -	Retail / Office
Proposed Use -	Paid Parking Lot
Imperivous Surfact Ratio:	
- Permitted -	0.90
- Existing -	0.90
- Proposed -	0.70
Building Setbacks:	
- 107th Ave. -	10'
- 106th Ave. -	10'
- 1st Street E. -	N/A
- West -	N/A
Provided Parking:	
- Standard spaces -	236 spaces
- Handicap spaces -	7 spaces
- Total =	243 spaces
FEMA Flood Zone -	AE

* Includes areas from anticipated alley vacation.



PLANNING INC
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Tampa:
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Land O Lakes, FL 34639
T (813) 962.1752

Issue / Revisions

1, 1-10-25, Revised per City of Treasure Island review comments.

2, 4-29-25, Revised per City of Treasure Island and SWFWMD staff review comments.

3, 5-22-25, Revised per City of Treasure Island staff review comments.

Scale 1" = 20'

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

PLANNING INC

Jay M. Gill, State of Florida, Professional Engineer, License No. 60879. This item has been digitally signed and sealed by Jay M. Gill, P.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.

JAY M. GILL LICENSE No. 60879 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date

Reviewed by JMG/RMO

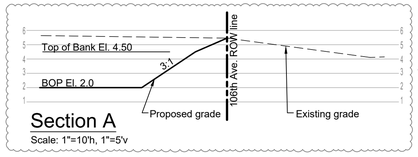
Plan Description Site Plan

Sheet No. C5

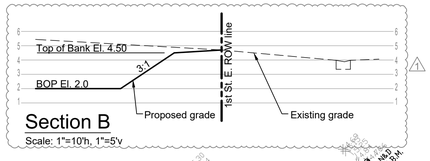
2023-0509TRIcom C5 Site Plan.dwg
CAD date 5/22/2025

LEGEND

- Rigid pavement / dumpster pad / concrete sidewalk
- Brick pattern stamped and colored concrete sidewalk
- Existing spot elevation (4.67)
- Proposed pavement elevation (118.00)
- Proposed top of curb or top of sidewalk elevation (117.75) / Proposed pavement elevation (117.25)
- Existing grade + 0.5' to top of curb (+0.50' MEG) / Match Existing Grade
- Flow Direction Indicator
- Proposed FDOT Type D Curb



Section A
Scale: 1"=10'h, 1"=5'v



Section B
Scale: 1"=10'h, 1"=5'v

NOTES:

1. Elevations shown hereon are based on NAVD88 datum per Boundary Survey with Topography, Tree and Improvements prepared by John C. Brendla & Associates, Inc., job No. 2108-077, revision dated 8-30-24.
2. Contractor shall match grades at property lines unless otherwise specified.
3. All quantities and linear footages identified are approximate. Contractor shall use his best judgement in evaluating and determining quantities and items as required and necessary to perform the scope of work described.
4. All stormwater grates shall be chained to inlets.

107th AVE.
ISLAND CAUSEWAY (PER PLAT)
100' R/W

106th AVE.
21' ASPHALT, NO CURB, 60' R/W

1st ST. E.
28' ASPHALT, "V" CURB, 60' R/W

B1 — ST-1
FDOT Type D Inlet
S Inv. El. = 0.53

B2 — ST-2
FDOT Type D Inlet
N. Inv. El. = -0.05
S. Inv. El. = -0.15

B3 — ST-4
FDOT Type D Inlet
N. Inv. El. = -0.15

ST-3
FDOT Type E Inlet
E. Inv. El. = -0.83
N. Inv. El. = -0.73
S. Inv. El. = -0.73

ST-5
Manhole
Rim El. = 5.20
E. Inv. El. = -2.27
W. Inv. El. = -2.17
S. Inv. El. = -2.17

ST-6
FDOT Type D Inlet
N. Inv. El. = -1.59

ST-7
FDOT Type D Inlet
S. Inv. El. = -1.84

ST-8
FDOT Type D Inlet
N. Inv El. = -2.42
S. Inv El. = -2.52

ST-9
FDOT Type E Inlet
N. Inv. El. = -3.10
W. Inv. El. = -3.10
S. Inv. El. = -3.20

ST-10
FDOT Type D Inlet
"Bubble-up" structure
Rim El. = 2.00
Inv. El. = -3.41

ST-11
Modified FDOT Type D Inlet
See sheet C9 for details

P1 — Stormwater Pond:
Top of Bank El. = 4.50
Bottom of Pond El. = 2.00
DHW_{100} El. = 4.30
DHW_{25} El. = 3.95
SHGW El. = 0.81

P2

58 LF of 18" ADS N-12 stormwater pipe @ 1.0%

134 LF of 24" ADS N-12 stormwater pipe @ 1.0%

83 LF of 24" ADS N-12 stormwater pipe @ 1.0%

58 LF of 18" ADS N-12 stormwater pipe @ 1.0%

21 LF of 24" ADS N-12 stormwater pipe @ 1.0%

33 LF of 15" RCP @ 0.61%

G.I. TOP EL=3.47
INV. W. EL= 1.72'
12" PVC

G.I. TOP EL=3.68'
INV. S. EL= 2.78'
2-6" PVC

15" RCP

C.B. TOP
15" RCP
INV. E.

N. RIM EL=4.36'
INV. W&S EL= (−0.55')

G.I. TOP EL=4.19'
INV. N&S. EL= 2.93'

G.I. TOP EL=4.02'
INV. N&S. EL= 2.72'

G.I. TOP EL=3.95'
INV. N&E. EL= 2.34'

N. RIM EL=4.23'
INV. N EL= (−13.5')
INV. W&E EL= (−2.32')

15" PVC

G.I. TOP EL=3.90'
INV. W&E. EL= 2.33'

G.I. TOP EL=3.71'
INV. W&E. EL= 2.25'

N. RIM EL=3.79'
INV. W&E EL= (−1.61')
Plug N. Inv. after pipe has been removed

T.B.M. N&O
EL=4.58'

G.I. TOP EL=3.59'
INV. N. EL= 1.89' (Plug Invert after removal of storm pipe)
INV. E. EL= 1.87'
INV. S. EL= 2.65'
INV. W. EL= 1.90'

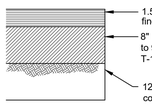
8" TERRACOTTA

N. RIM EL=4.17'
INV. W&E EL= (−0.27')

TOP EL=3.36'
INV. N. EL= ~~1.73'~~ New Inv. El. = 1.50
INV. E. EL= 1.47'
INV. W. EL= 1.59'

15" RCP

Medium Duty Pavement Detail



- 1.5" FDOT Type SP-9.5 Asphalt, fine, traffic level "C"
- 8" limerock base, LBR-100, compacted to 98% M.P. (ASTM D-1557, AASHTO T-180)
- 12" stabilized subgrade, LBR-40, compacted to 98% M.P. (ASTM D-1557, AASHTO T-180), maximum 6 inch lifts

SN = (1.5 x 0.44) + (8 x 0.18) + (12 x 0.08) = 3.06

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Issue / Revisions

1, 1-10-25, Revised per City of Treasure Island review comments.

2, 4-29-25, Revised per City of Treasure Island & SWFWMD staff review comments.

3, 5-22-25, Revised per City of Treasure Island staff review comments.

NORTH

Scale
1" = 20'

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

PLANEG INC

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LICENSE
No. 60879
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date

Reviewed by
JMG/RMO

Plan Description
Paving, Grading, and Drainage Plan

Sheet No.
C6

2023-0509TRIcom C6 PGD Plan.dwg
CAD date 5/22/2025

LANDSCAPE CALCULATIONS:

Required Perimeter Landscaping:
- 1 tree / 50 LF x 1,328 LF = 27 trees

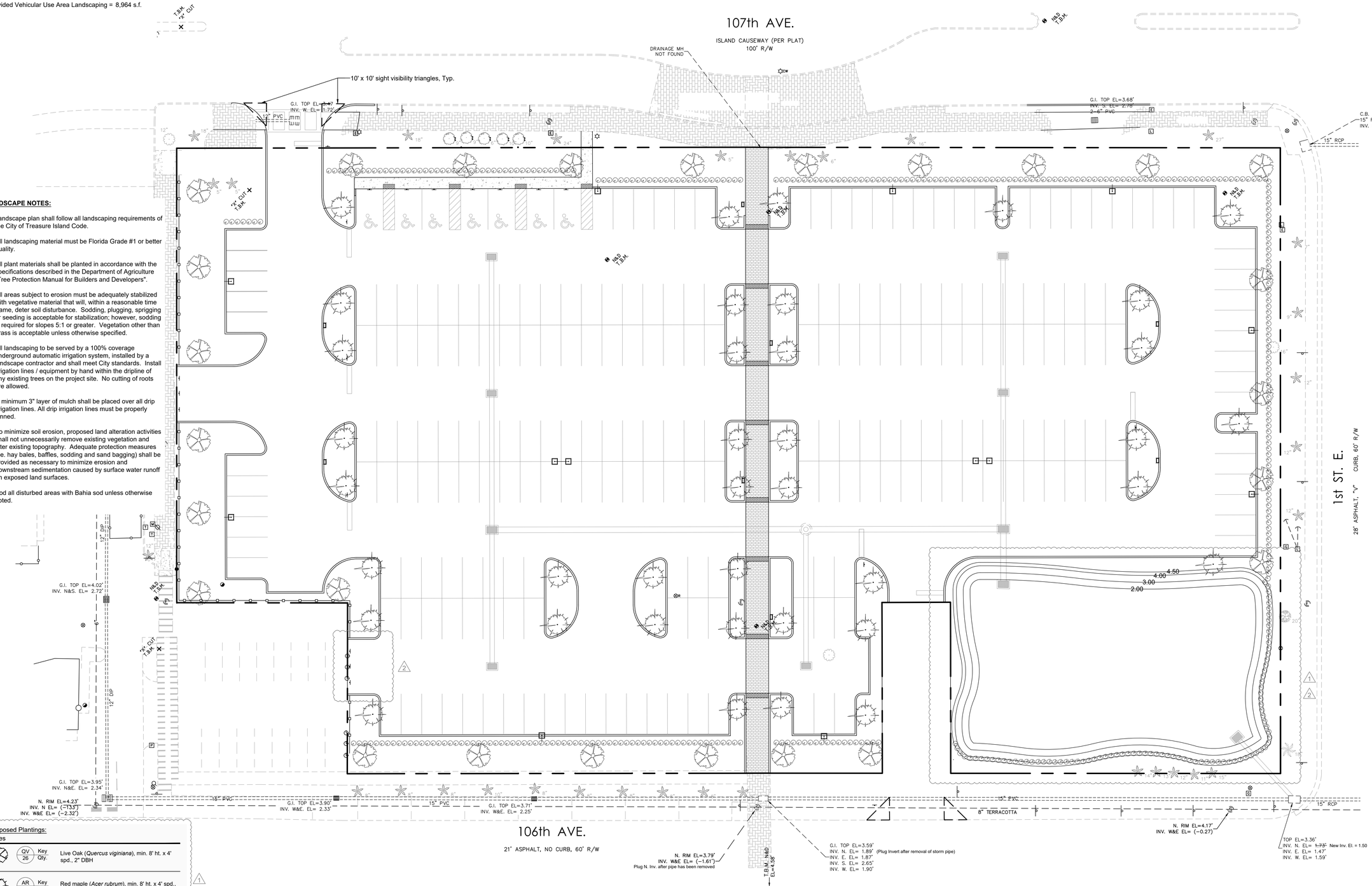
Provided Perimeter Landscaping = 27 trees

Required Vehicular Use Area Landscaping:
- 0.10 x 83,680 s.f. = 8,368 s.f.

Provided Vehicular Use Area Landscaping = 8,964 s.f.

LANDSCAPE NOTES:

1. Landscape plan shall follow all landscaping requirements of the City of Treasure Island Code.
2. All landscaping material must be Florida Grade #1 or better quality.
3. All plant materials shall be planted in accordance with the specifications described in the Department of Agriculture "Tree Protection Manual for Builders and Developers".
4. All areas subject to erosion must be adequately stabilized with vegetative material that will, within a reasonable time frame, deter soil disturbance. Sodding, plugging, sprigging or seeding is acceptable for stabilization; however, sodding is required for slopes 5:1 or greater. Vegetation other than grass is acceptable unless otherwise specified.
5. All landscaping to be served by a 100% coverage underground automatic irrigation system, installed by a landscape contractor and shall meet City standards. Install irrigation lines / equipment by hand within the dripline of any existing trees on the project site. No cutting of roots are allowed.
6. A minimum 3" layer of mulch shall be placed over all drip irrigation lines. All drip irrigation lines must be properly pinned.
7. To minimize soil erosion, proposed land alteration activities shall not unnecessarily remove existing vegetation and alter existing topography. Adequate protection measures (i.e. hay bales, baffles, sodding and sand bagging) shall be provided as necessary to minimize erosion and downstream sedimentation caused by surface water runoff on exposed land surfaces.
8. Sod all disturbed areas with Bahia sod unless otherwise noted.



Proposed Plantings:

Trees

Key	Qty.		
QV	26	Live Oak (*Quercus viginiana*), min. 8' ht. x 4' spd., 2" DBH	
AR	38	Red maple (*Acer rubrum*), min. 8' ht. x 4' spd., 2" DBH	

Shrubs

Key	Qty.		
SV	411	Sandankwa Viburnum (*Viburnum suspensum*), min. 3 gal., 18" ht., @ 30" O.C.	

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Issue / Revisions

1, 1-10-25, Revised per City of Treasure Island review comments.

2, 4-29-25, Revised per City of Treasure Island staff review comments.

NORTH

Scale 1" = 20'

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

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Date

Reviewed by JMG/RMO

Plan Description
Landscape Plan

Sheet No.
C7

2023-0509TR\com C7 Landscape Plan.dwg
CAD date 4/29/2025

Operation and Maintenance Instructions for Stormwater Management System

(The notes below are not inclusive of all erosion and sediment control requirements. It is the responsibility of the contractor to comply with the full requirements of the Florida Erosion and Sediment Control Manual, latest edition.)

1. The installation of temporary erosion control barriers shall be coordinated with the construction of the permanent erosion control features to the extent necessary to assure economical, effective and continuous control of erosion and water pollution throughout the life of the construction phase

2. The type of erosion control barriers used shall be governed by the nature of the construction operation and soil type that will be exposed. Silty and clayey material usually require solid sediment barriers to prevent turbid water discharge, while sandy material may need only silt screens or hay bales to prevent erosion. Floating turbidity curtains shall be used in open water situations. Diversion ditches or swales may be required to prevent turbid stormwater runoff from being discharged to wetlands or other water bodies. It may be necessary to employ a combination of barriers, ditches and other erosion / turbidity control measures if conditions warrant.

3. Where pumps are to be used to remove groundwater or turbid waters from construction areas, the water shall be treated prior to discharge. Treatment methods include and are not limited to, turbid water being pumped into grassed swales or appropriate vegetated areas, sediment basins, or confined by an appropriate enclosure such as turbidity barriers, and kept confined until its turbidity level meets state water quality standards.

4. The contractor shall schedule his operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposed, uncompleted construction to the elements shall be as short as practicable. Clearing and grubbing shall be so scheduled and performed that grading operations can follow immediately thereafter, and grading operations shall be scheduled and performed that permanent erosion control features can follow immediately thereafter if conditions on the project permit.

5. The contractor and/or owner's representative shall provide routine maintenance of permanent and temporary erosion control features until the project is complete and all bared soils are stabilized.

6. Silt fence shall be located at the perimeter of construction limits, locations as shown hereon and at locations as defined by field conditions. Erosion control must be installed prior to starting construction and must be maintained throughout the duration of the project. An erosion control inspection is required prior to the start of construction. Contractor to contact **City of Treasure Island** to schedule an inspection.

7. Inlet structures, pipes and stormwater basins shall be inspected for siltation accumulation every six months (minimum). Accumulated silt (greater than 3 inches) shall be removed.

8. A stone stabilized pad shall be located at points of vehicular ingress and egress on the construction site. FDOT No. 1 Coarse Aggregate (1.5 - 3.5 inch stone) shall be used. The aggregate layer shall be at least 6 inches thick, and extend the full width of the vehicular ingress and egress area. The length of the entrance must be at least 50 feet. The entrance must widen at its connection to the roadway in order to accommodate the turning radius of large trucks. If conditions on the site are such that most of the mud is not removed by the vehicles traveling over the gravel, then the tires of the vehicles shall be washed before entering a public road. Wash water will be carried away from the entrance to a settling area to remove sediment. A wash rack may also be used to make washing more convenient and effective. The entrance shall be maintained in a condition which will prevent tracking or flow of mud onto public rights-of-way.

9. Sediment trap(s) shall be located to obtain the maximum storage benefit from the terrain, for ease of clean out and disposal of trapped sediment and to minimize interference with construction activities. Sediment shall be periodically removed from the trap and placed in approved areas, based on composition of the material. Sediment traps, along with other perimeter controls, shall be installed before any land disturbance takes place in the drainage area. The sediment trap shall have an initial storage volume of 134 cubic yards, or 3600 cubic feet per acre of drainage area, measured from the low point of the ground to the crest of the gravel outlet. Sediment should be removed from the basin when the volume is reduced by one-half. The maximum height of the sediment trap embankment shall be 5 feet as measured from the low point. Side slopes of the embankment shall be 2:1 or flatter. The outlets shall be designed, constructed and maintained so that sediment does not leave the trap and that erosion of the outlet does not occur. A trap may have several different outlets with each outlet conveying part of the flow. The combined outlet capacity shall be sufficient for the drainage area. The structure shall be checked regularly to insure that it is structurally sound and has not been damaged by erosion or construction equipment. The height of the outlet shall be checked to ensure that its center is at least one foot below the top of the embankment.

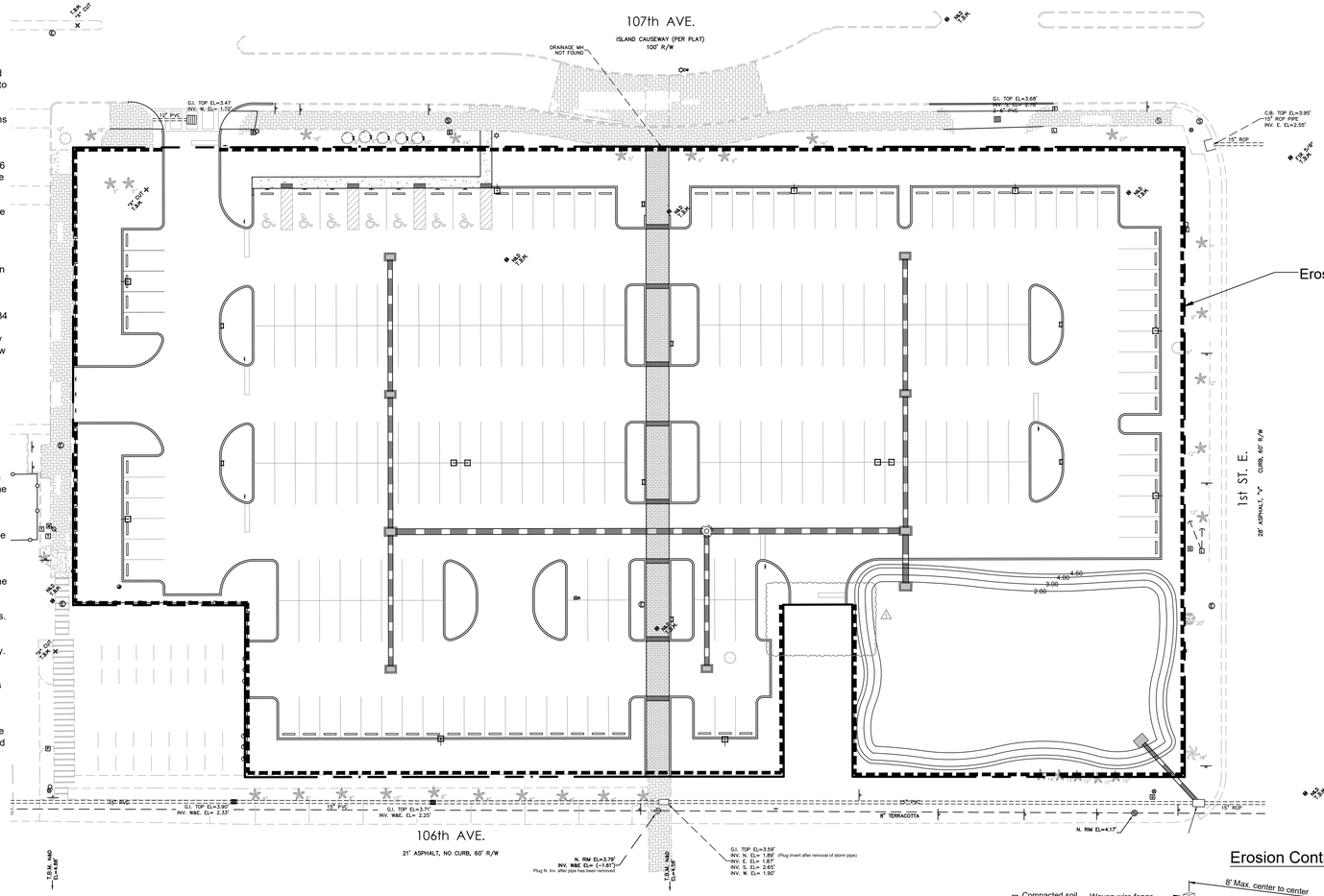
10. Sediment basins shall be located so as to intercept the largest possible amount of runoff from the disturbed area, generally low areas and natural drainageways below disturbed areas. Drainage into the basin can be improved by the use of diversion dikes and ditches. The basin shall not be located in a live stream and shall be located to trap sediment-laden runoff before entering streams. The basin shall not be located where its failure would result in the loss of life, damage to adjacent properties, or interruption of the use of public utilities or roads. The design capacity of the basin shall be at least 134 cubic yards or 3600 cubic feet per acre of drainage area measured from the bottom of the basin to the crest of the principal spillway (riser pipe). Sediment should be removed from the basin when the volume of the basin has been reduced to 55 cubic yards per acre of drainage area. The elevation of the sediment clean out level shall be calculated and clearly marked on the riser. In no case shall the sediment clean out level be higher than one foot below the top of the riser. The embankment shall have a minimum top width of 8 feet. The side slopes shall be 2:1 or flatter. The embankment may have a maximum height of 10 feet if the side slopes are 2:1. If the side slopes are 2.5:1 or flatter, the embankment may have a maximum height of 15 feet. The outlets for the basin may consist of a combination of principal and emergency spillways or a principal spillway alone. Dewatering shall be done in a way that removes relatively clean water without removing any of the sediment that has settled out and without removing any appreciable quantities of floating debris. The embankment of the basin should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. Additionally, no offsite discharges are allowed during dewatering activities. The General Contractor shall furnish a specific dewatering plan as necessary.

11. Equipment maintenance areas: exceptional care shall be taken during each individual repair or maintenance operation to prevent potential pollutants from becoming available to be washed into streams or conveyance systems. Temporary waste disposal receptacles shall be provided and emptied as required.

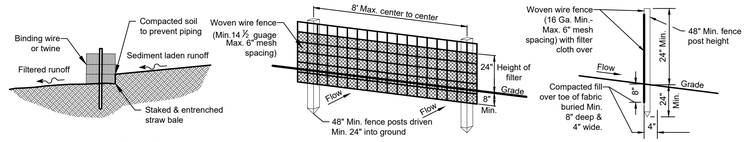
12. Where construction materials, chemicals, cements, solvents, paints, or other potential water pollutants are to be stored, thay shall be isolated in areas where they will not cause runoff pollution. Toxic chemicals and materials, such as pesticides, paints, and acids, shall be stored according to manufacturers' guidelines. Overuse shall be avoided and great care shall be taken to prevent accidental spillage. Containers shall never be washed in or near flowing streams or stormwater conveyance systems. Groundwater resources shall be protected from leaching by placing a plastic mat, tar paper, or other impervious materials on any areas where toxic liquids are to be opened and stored.

13. Runoff from the construction trailer shall be diverted to a temporary sediment trap or basin.

14. Location of the temporary construction trailer, construction material, debris pile, fuel storage, etc. shall be approved by the local municipality prior to the start of construction.



Erosion Control



Proper Placement of Straw Bale Barrier in Drainage Way

1. All bales shall be either wire-bound or string-tied. Install so that bindings are oriented around the sides to prevent deterioration of the bindings.
2. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked, the excavated soil shall be backfilled against the barrier. Backfill soil shall form the ground level on the downhill side and shall be built up to 4" against the uphill side of the barrier.
3. Each bale shall be securely anchored by at least two stakes or re-bars driven toward the previously laid bale to force the bales together. Stakes of re-bars shall be driven deep enough into the ground to securely anchor the bales.
4. The gaps between bales shall be chinked (filled by wedging) with straw to prevent water from escaping between the bales. (Loose straw scattered over the area immediately uphill from a straw bale barrier tends to increase barrier efficiency).
5. Inspection shall be frequent and repair or replacement shall be made promptly as needed as directed by inspector.

Construction Notes for Fabricated Silt Fence

1. Woven wire fence to be fastened securely to fence posts with wire ties or staples.
2. Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section.
3. When two sections of filter cloth adjoin each other they shall be overlapped by (6) inches and folded.
4. Locate posts downslope of fabric for fence support.
5. Maintenance shall be performed as needed and material removed when bulges develop in the silt fence.

POSTS: Steel, either "T" type or 4" hardwood
POSTS: Located maximum 8' on center.
FENCE: Woven wire, 16 GA. 6" max. mesh opening
FILTER CLOTH: Filter X, Mirafi 100X, stabi-linka T140N or approved equal.
PREFABRICATED UNIT: Envirofence, or approved equal.
6. Indicated on erosion control plans as

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Issue / Revisions

1, 5-22-25, Revised per City of Treasure Island staff review comments.

NORTH

Scale 1" = 30'

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

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Date

Reviewed by JMG/RMO

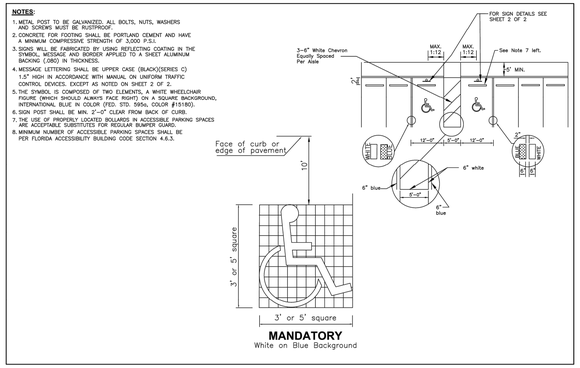
Plan Description

Stormwater Pollution Prevention Plan

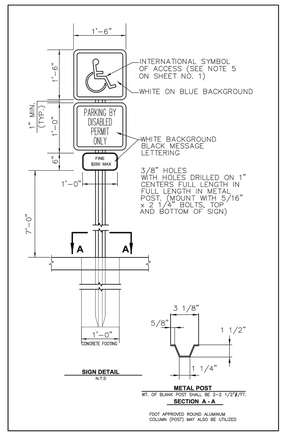
Sheet No.

C8

2023-0509TRIcom C8 SPPP.dwg
CAD date 5/22/2025



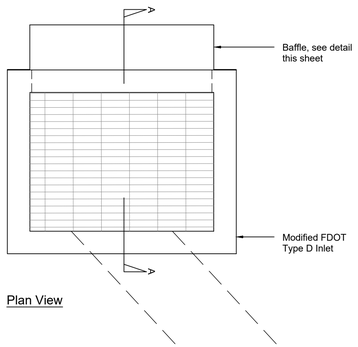
HC Parking Stall Striping Detail



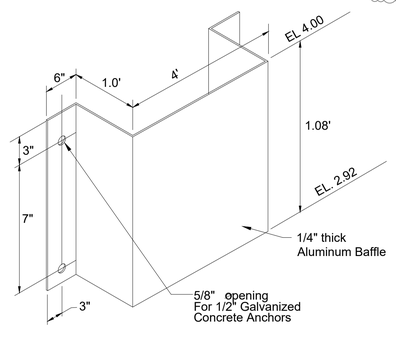
HC Sign Detail



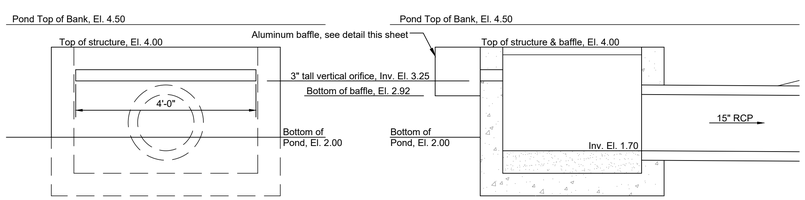
Pay Station



Plan View



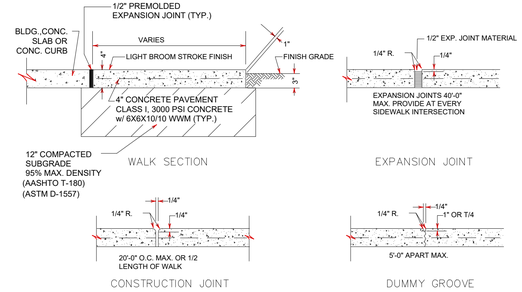
Baffle Detail



Front Elevation

Section A-A

Outfall Structure Detail (ST-11)



Sidewalk Detail

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Issue / Revisions

1, 4-29-25, Revised per City of Treasure Island staff review comments.

NORTH

Scale NTS

Pirate Square

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Date

Reviewed by JMG/RMO

Plan Description Details

Sheet No. C9

2023-0509TRIcom C9 Details.dwg
CAD date 4/29/2025

General Notes

1. The contractor shall verify control points for line and grade prior to construction.

2. Location, elevation, and dimensions of existing utilities, structures, and other features are shown in accordance with the best information available at time of the preparation of these plans but do not purport to be absolutely correct. All existing features are based on the Boundary Survey with Topography, Trees and Partial Improvements, prepared by John C. Brendla & Associates, Inc., dated 12-21, project No. 2108-77.

3. The contractor shall verify the location, elevation, and dimensions of all existing utilities, structures, and other features affecting his work and shall comply with all state, county, and local ordinances and obtain any necessary work permits that may be required prior to construction.

4. The contractor shall be responsible for the complete coordination of construction scheduling between the contractor and all utility agencies. The contractor shall adjust his schedule to coincide with other required utilities.

5. The engineer reserves the right to require quality assurance testing on all materials delivered to project.

6. In the event unsuitable material is encountered during excavation it is to be removed from the site except that it may be used to flatten slopes in areas approved by the engineers.

7. Overall cleanup shall be accomplished by the contractor in accordance with county standards or as directed by the engineer. Any and all expenses incurred for this work shall be included in the unit price bid for other items.

8. The contractor shall endeavor to protect private property. Any damage caused by the contractor in the performance of his work shall be corrected to the satisfaction of the engineer at the contractor's expense. Payment shall not be made for this work.

9. Any damage to state, county, or local roads caused by the contractor's equipment and operators shall be repaired by the contractor to the satisfaction of the engineer. Payment shall not be made for this work.

10. Any U.S.C. and G.S. Monument within limits of construction shall be protected by the contractor. If in danger of damage, the contractor shall notify:
    Director, Charting & Geodetic Services
    6001 Executive Blvd.
    Attn. C172
    Rockville, Maryland 20852
    Phone: (301) 433-8319

11. Exterior sidewalks are to be constructed in County right-of-way as shown on these plans.

12. Wherever material or construction item specifications are not specifically covered by these plans, City of Treasure Island, or directed by the engineer, "the Florida Department of Transportation standard specifications for road and bridge construction" latest edition, shall apply.

13. All street and storm sewer construction to be in accordance with the current County standards and specifications.

14. Florida statute requires a minimum of 2 days and a maximum of 5 days notice before a contractor may excavate. The contractor shall call SUNSHINE 1-800-432-4770 before excavation shall commence.

15. Compaction for pipe backfill shall comply with AASHTO and City of Treasure Island unless otherwise noted.

16. All fill up to the spring line of the pipe must be hand tamped.

17. Contractor shall submit to the engineer and/or architect for review, 7 copies of shop drawings on bid items (fire hydrants, valves, pipes, inlets, manholes, pumps, control panels, light fixtures, plumbing fixtures, etc.). The contractor shall allow a minimum of 7 days for review of shop drawings. Approval of shop drawings is required prior to installation or construction. Substitution of specified items, if requested, will be evaluated by the project engineer.

18. It shall be the contractor's responsibility to notify (48 hours in advance) the engineer, utility company and regulatory agency for all inspections. It shall be the contractor's responsibility to supply results of all tests, in accordance with the testing schedule to the engineer prior to commencing the next phase. The tests required shall be performed by an independent testing laboratory approved by the owner and cost for the testing shall be paid for by the contractor and said cost will be included in the bid price.

19. The contractor shall contact the engineer's office immediately on any conflicts between what is shown herein and actual condition discovered during construction of any improvements shown on the drawings.

20. Prior to beginning work, the contractor shall expose all existing utilities to be extended or crossed. Any conflicts and the contractor's proposed resolutions shall be brought to the engineer's attention for approval.

21. All practicable effort shall be taken during construction to control and prevent erosion and transport of sediment materials to inlets, surface drains, wetlands and lake areas. The contractor shall be responsible for all restoration efforts that may be required. The silt fence shall be installed (as shown on these plans) and inspected as defined by the Florida Department of Environmental Protection rule 62-621.300(4), F.A.C.

22. It is the responsibility of the owner / developer to insure the installation of adequate erosion control barriers prior to the commencement of any site work. These erosion control devices must be maintained in good condition throughout the construction process and until all loose soils have stabalized. All erosion control devices shall be regularly inspected during construction and modifiied if conditions warrant.

23. The contractor is to control all fugitive dust originating on this project by watering or other methods as required.

24. All disturbed areas shall be seeded and mulched, unless otherwise noted, after regrading.

25. Contractor shall provide a (min.) 24 inch wide strip of sod adjacent to curb or pavement installations.

26. It is the responsibility of the contractor to establish in the field right of way lines, base lines, bench marks (elev.), center lines, and stationing as required to construct this project.

27. Contractor shall coordinate and reimburse the appropriate overhead utility company for required support of utility poles where construction may cause the pole to lose its self supporting ability.

28. Special pipe foundations, if required, shall be determined in the field and the type required will be as directed by the engineer.

29. Finished grade for ground elevations on drawings refer to grade after sod.

30. All tests shall be witnessed by the engineer and the utility company representative.

31. Proposed land alteration activities shall not unnecessarily remove existing vegetation or alter existing topography.

32. Site preparation and fill placement shall be performed in accordance with the recommendations and procedures specified in the geotechnical report prepared by Central Florida Testing Laboratories, Inc., Report No. 249859, dated 8/13/24.

33. The Contractor shall protect all utilities and other improvements shown on these plans and all other utilities and other improvements not shown. The Contractor shall assume all responsibility for repairs of utilities and other improvements damaged during construction. The Contractor shall maintain sufficient protection to all utilities required to protect them from damage and to protect the public during construction. Any damage done to existing utilities shall be repaired by the contractor (at no additional expense) to a condition equal to or better than before the damage was done.

34. Relocation of existing street light poles, power or telephone poles, existing utilities, irrigation systems, sidewalks, etc., necessary for completion of the work are the responsibility of the Contractor.

35. Prior to construction, the Contractor shall obtain from the Engineer or Owner, a copy of all pertinent permits related to this project. It shall be the Contractor's responsibility to ensure that all construction activities are in compliance with the conditions of all permits and approvals. It shall be the Contractor's responsibility to verify that all required permits have been secured to complete the work depicted in these plans. A copy of all permits shall be kept on site at all times during construction.

General Notes (continued)

36. All handicapped signage, ramps, accessible routes and related features shall conform to the Florida Accessibility Code for Building Construction (latest edition thereof) and the Americans with Disabilities Act, whichever is more restrictive. Should the contractor determine any of the foregoing is not in compliance with either document, he shall immediately notify the Engineer for guidance.

37. It shall be the Contractor's responsibility to perform all necessary construction staking required to install the improvements shown on these drawings. Horizontal and vertical controls are shown on the boundary and topographic survey. Horizontal control shall be via an electronic file provided to the Contractor or his Surveyor. All documents, including original drawings, field notes, data and report originals are and shall remain the property of Planeng, Inc. as an instrument of service. If so requested in writing, the Contractor will be provided with reproducible drawings and other documents in consideration of which the Contractor agrees to use them without alteration solely in connection with the project.

38. The Engineer shall be consulted to make any/all required interpretations of the plans; however, this in no way relieves the Contractor of his responsibility for constructing the project to accomplish the intent of the plans.

39. Contractor to provide all warning signals, signs, lights, barricades, and flagman as required by applicable City, County or State regulations for construction adjacent to, or in public right-of-way.

40. The Contractor shall notify the local Police Department and the local Fire Department before closing any street or making it impassable.

41. It is suggested that the Contractor verify grading elevations prior to sodding or paving. Failure of adequate grading may result in resodding, regrading, and repaving if finished grades are incorrect. All proposed elevations are finished grades. As-built elevations and dimensions shall be certified by a professional land Surveyor registered in the State of Florida.

42. Refer to Building drawings for specifications of fill material underneath building pads, footers and etc.

43. All private and public property affected by this work shall be restored to a condition equal to or better than existed before commencing construction unless specifically exempted by the plans.

44. If during construction activities any evidence of historic resources, including but not limited to aboriginal or historic pottery, prehistoric stone tools, bone or shell tools, historic trash pits, or historic building foundation, are discovered, work shall come to an immediate stop and the Florida Department of Historic Resources (State Historic Preservation Officer) and City of Treasure Island shall be notified within two working days of the resources found on the site.

45. All construction shall comply with the 2021 Florida Fire Prevention Code 8th Edition and the 2023 Florida Building Code 8th Edition.

46. The use of aerial photographs in these plans is for informational purposes only and does not constitute a guarantee of the veracity of said aerial photographs.

47. Asphalt and/or concrete mix design(s) shall be reviewed by a Geotechnical Engineer.

48. Lift station power requirements (including single/three phase availability) shall be the responsibility of the contractor; contractor shall notify the EOR once power source and pump are selected.

Asphalt Paving Notes

Construction of asphalt paving shall be performed as follows:

1. The areas to be paved shall be graded to provide necessary drainage and shall slope away from structures.

2. The subgrade shall be compacted to provide a minimum compacted density of 98% of maximum density as determined by modified proctor (ASTM subgrade).

3. The surface shall be clean and dry. Prime coat shall be approved cutback asphalt (RC-70 or RC-90) and temperature when applied by means of a pressure distributor at the rate of approximately 0.1 to 0.25 gallons per square yard.

4. An asphalt concrete analysis to guarantee compliance with County specifications shall be conducted by an independent laboratory and the final report submitted prior to final acceptance.

5. All asphalt work shall conform to City of Treasure Island standards.

6. All roadway construction (including pavement marking and signage) and material testing shall comply with roadway standards and specifications of the City of Treasure Island land development regulations.

7. Base and backfill materials shall be either of the same type and compositon as the materials removed, or of equal or greater structural adequacy. Material contaminated with deleterious substances during excavation shall not be used.

8. The area of the trench above the pipe zone and below the base course must be backfilled and compacted in layers not exceeding twelve inches, except that the last two lifts shall not exceed six inches per lift.

9. If roadway section has a shoulder, shoulder to extend eight feet from edge of pavement. Use LBR 30 (or better) back-fill material in top 24 inches of trench.

Bidding Notes

1. The contractor is to supply all construction stakeout and an as-built survey of project. The cost to prepare an as-built survey by a professional surveyor shall be included in the contractor's proposal. As-built shall consist of a complete set of record drawings prepared by a professional land surveyor and supplied by the contractor and shall include but not limited to: storm sewer system; inlets; manholes; piping locations; all pipe inverts; manhole and inlet tops; pipe inverts; roadway center line elevations; curb flow line elevations; any and all design spot elevations expressly shown on the paving, grading and drainage plan. Owner's surveyor will supply horizontal and vertical controls, only.

2. The information provided in these plans is solely to assist the contractor in assessing the nature and extent of conditions which will be encountered during the course of the work. The contractors are directed, prior to bidding to conduct whatever investigations they deem necessary to arrive at their own conclusion regarding the actual conditions that will be encountered, and upon which their bids will be based.

3. The contractor is responsible for the coordination and cost of all required testing and inspections of the project. Contractor shall notify owner and engineer of all inspection requested from City of Treasure Island, the City of Treasure Island, DEP or SWFWMD, as appropriate; 24 hours prior to request. The contractor shall invite the owner and the engineer to all scheduled inspections by any reviewing agency.

4. Questions on quantities, quality, or materials which could change the contract price should be brought to the attention of the engineer prior to bidding. All questions will be answered and copied to all bidders.

5. The contractor shall contract with and direct a local testing laboratory for all required on site tests such as: concrete strength, slump, densities, or lbr of roadbeds, etc.. Copies of all tests shall be sent to the engineer and owner within 72 hours of the tests.

6. The compaction of all lots in phases shall be tested at varying depths. The compaction testing of lots shall be performed on 1/4 of the lots at locations selected by the engineer. All lot fill shall meet 95 percent of the modified proctor.

7. All slopes 4:1 or greater shall be sodded.

8. Contractor shall supply all of the equipment, material and personnel required for all testing.

9. Contractor shall be responsible for the engineer's cost(s) of re-inspections.

As-Built Notes

1. The General Contractor shall be responsible for providing as-builts in accordance with the local municipality, water management district and other AHJs.
2. In addition to the above, the as-builts shall include other information designated by the Engineer of Record.
3. If the Engineer of Record has not furnished the General Contractor with as-built requirements 10 (ten) weeks prior to the scheduled COC/TCO/CO date, the contractor shall immediately request said requirements no later than nine (9) weeks prior to the anticipated COC/TCO/CO date.
4. For utilities, at a minimum, as-built information shall include data on pipe locations, sizes and materials. Said data SHALL be collected prior to pipes being covered and/or trenches backfilled.
5. For stormwater, at a minimum, as-built information shall include pipe locations, sizes and materials. Said data SHALL be collected prior to pipes being covered and/or trenches backfilled.
6. The collection of the data specified in note 4 and/or 5 does not relieve the General Contractor from collecting additional data as may be required by the AHJs.

Testing Schedule

ITEM	TEST	TEST INDENTIFICATION	TEST REQUIREMENT	TEST FREQUENCY
EMBANKMENT	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	PER SOIL TYPE
	FIELD DENSITY	AASHTO T191, T204, T238 ASTM D1556, D2937, D2922	95% OF MAXIMUM DENSITY, WITHIN 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE	ONE PER 100 L.F HORIZONTALLY, ALTERNATING LIFTS (1 FT)
BACKFILL OF STRUCTURES	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	PER SOIL TYPE
	FIELD DENSITY	AASHTO T191, T204, T238 ASTM D1556, D2937, D2922	98% OF MAXIMUM DENSITY	EVERY 2' VERTICALLY
ROADWAY SUBGRADE	BEARING VALUES	LBR-FLA, D.O.T.	LBR=40 MIN.	ONE PER SOIL TYPE CHECK POINT LBR AT 500 L.F. HORIZONTALLY
	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	ONE PER SOIL TYPE
	FIELD DENSITY & THICKNESS	AASHTO T191, T238 ASTM D1556, D2922	98% OF MAXIMUM DENSITY	ONE PER 100 L.F HORIZONTALLY
BUILDING PADS	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T180 ASTM D1557	N/A	PER BUILDING PAD
	FIELD DENSITY	AASHTO T191, T204, T238 ASTM D1556, D2937, D2922	95% OF MAXIMUM DENSITY	AS DIRECTED BY SOILS ENGINEER
ROADWAY BASE (LIMEROCK, SHELL OR CRUSHRED CONCRETE)	BEARING VALUES	LBR-FLA, D.O.T.	100% LBR-FLA, D.O.T.	ONE PER SOURCE OR AS MATERIAL CHANGES CK. PT. LBR AT 500 L.F. HORIZONTAL
	MAXIMUM DENSITY OPTIMUM MOISTURE,	AASHTO T180 ASTM D1557	N/A	ONE PER SOURCE
	THICKNESS, FIELD DENSITY, GRADATION	AASHTO T191, T238 ASTM D1556, D2922 AASHTO T27, T89, T90	98% OF MAXIMUM DENSITY PER SPECIFICATIONS	ONE PER 100 L.F HORIZONTALLY
	ATTERBERG LIMITS	ASTM C136, D423, D424		ONE PER SOURCE
SOIL CEMENT BASE	MAXIMUM DENSITY OPTIMUM MOISTURE,	AASHTO T134 (STANDARD)	N/A	ONE PER SOIL TYPE MIN. 1 DAILY
	COMPRESSIVE STRENGTH SPECIMENS	PORTLAND CEMENT ASSOC. SPECIFICATIONS	300 PSI AT 7 DAYS	ONE SET PER SOIL TYPE DAILY
	FIELD DENSITY & THICKNESS	AASHTO T191, T238 ASTM D1556, D2922	95% OF MAXIMUM DENSITY	ONE PER 100 L.F HORIZONTALLY
ASPHALTIC CONCRETE	MATERIALS QUALITY			PER F.D.O.T SPECIFICATIONS
	BITUMEN CONTENT GRADATION	AASHTO T164, T30 ASTM D2172	PER FDOT SPECIFICATIONS	ONE PER DAY
	FIELD DENSITY	ASTM D02950-81	96% OF LAB DENSITY	ONE PER 100 L.F HORIZONTALLY
	THICKNESS	N/A	PER SPECIFICATIONS	ONE PER 100 L.F
CURB & ROADWAY CONCRETE	SLUMP TEST	AASHTO T119-82 ASTM C143	PER SPECIFICATIONS	AS DEEMED NECESSARY BY SOILS ENGINEER. TESTS MAY BE RUN BY THE SOILS ENGINEER OR HIS REPRE-SENTATIVE.
	COMPRESSIVE STRENGTH CYLINDERS	AASHTO T23-80 ASTM C31-69	N/A	ONE SET OF 4 CYLINDERS FOR 50 CUBIC YARD OR FRACTION THEREOF PER DAY INCLUDES ONE SLUMP TEST

Utility Notes

1. Existing above ground utility locations are based on information prepared by a licences surveyor (as depicted on the attached survey). It is the Contractor's responsibility to verify the elevations and locations and report any conflicts and/or discrepencies [greater than one (1) ft. horizontally or one tenth of a foot (0.10') vertically] to the Engineer so that he may make any necessary revisions. The Contractor shall locate and expose all existing utilities to be connected sufficiently ahead of construction to allow redesign by the Engineer if such utilities are found to be different than shown on these plans.

2. Locations of all existing utilities shown on the plans have been determined from the best information available and are given for the convenience of the Contractor. The Engineer assumes no responsibility for their accuracy. Prior to any start of construction activity, it shall be the Contractor's responsibility to call SUNSHINE and to notify various utilities to make necessary arrangement to any relocation of these utilities with the owner of the utility. The Contractor shall exercise caution when crossing the underground utilities, whether shown on the plans or located by the utility company. All utilities which interfere with the proposed construction shall be relocated by the respective utility company and the Contractor shall cooperate with them during relocation operations.

3. All new or altered piping, including treatment plant processing piping and appurtenances conveying finished drinking water, shall be designed and constructed in accordance with Sections 8.0 through 8.5 and 8.7 through 8.11 in Recommended Standards for Water Works as incorporated into Rule 62-555.330, F.A.C., except that:

   3.1 Asbestos cement water mains shall be pressure and leakage tested in accordance with American Water Works Association(AWWA) standard C603 as incorporated into Rule 62-555.330, F.A.C., and polyvinyl chloride water mains shall be pressure and leakage tested in accordance with AWWA Standard C605 as incorporated into the Rule 62-555.330, F.A.C. while all other types of water mains shall be pressure and leakage tested in accordance with AWWA Standard C600 as incorporated into the Rule 62-555.330 F.A.C

   WATER LINE PRESSURE TEST PROCEDURE:
   A. Tests shall be conducted at 150 psi (Min.) for two hours except for fire lines, which shall be conducted at 200 psi (Min.).
   B. Contractor shall pretest lines prior to calling Engineer to witness test.
   C. Pump-up point and blow-off point shall be located at opposite ends of the line being tested.
   D. The Contractor shall pump-up each line to be tested individually and leave pump connected to line. Pump shall be connected to open drum or bucket. During pump-up, the Contractor shall leave the blow-off valve open until water flows from valve under pressure of pump. Contractor shall then begin closing blow-off valve SLOWLY to minimize trapped air. DISCONNECTION OF PUMP FROM PUMP-UP POINT PRIOR TO COMPLETION OF TEST WILL VOID TEST.
   E. Leakage volumes will be calculated from open drum or bucket only.
   F. All costs associated with retesting/reinspection shall be borne by the Utility Contractor. Minimum charge for each retest/reinspection shall be $700.00. Charge shall be paid to Engineer prior to any retesting/reinspection.

4. All water mains and appurtances other than those that normally convey surface water, or ground water under the direct influence of surface water, and that are located upstream of all filtration and disenfection treatment facilities, shall be disinfected and bacteriologically evaluated in accordance with Rule 62-555.340, F.A.C.

   Sanitary sewers, force mains, and storm sewers should always cross under water mains. Sanitary sewers, force mains and storm sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the invert of the upper pipe and the crown of the lower pipe whenever possible.

   Where sanitary sewers, force mains and storm sewers must cross a water main with less than 18 inches vertical distance, both the sewer and the water main shall be constructed of available in the size proposed.) Sufficient lengths of DIP must be used to provide a minimum separation of 10 feet between any two joints. All joints on the water main within 20 feet of the crossing must be leak free, and mechanically restrained. A minimum vertical clearance of 6 inches must be maintained at the crossing.

   Where there is no alternative to sewer pipes crossing over the water main, the criteria for minimum separation of 18 inches between lines and 10 feet between joints shall be required.

   All crossings shall be arranged so that the sewer pipe joints and the water main pipe joints are equidistant from the point of crossing (pipes centered on the crossing).

   Where a new pipe conflicts with an existing pipe, the new pipe shall be constructed of DIP and the crossing shall be arranged to meet the requirements above.

   A minimum 10 foot horizontal separation shall be maintained between any type of sewer and water main in parallel installations whenever possible.

   In cases where it is not possible to maintain a 10 foot horizontal separation, the water main must be laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer or force main at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer.

   Where it is not possible to maintain a vertical distance of 18 inches in parallel installations, the water main shall be constructed of DIP and the sewer or the force main shall be constructed of DIP (if available in the size proposed) with a minimum vertical distance of 6 inches. The water main should always be above the sewer. Joints on the water main shall be located as far apart as possible from joints on the sewer or force main (staggered joints).

   Water mains and service lines shall have three feet of cover over the tops of pipes.

5. Contractor shall install all lines such that the bells of pipes do not coincide with pipe crossings.

6. Backflow prevention assemblies/devices shall be provided in accordance with Rule 62-555.360, F.A.C., and the AWWA's manual M14, "Recommended Practice for Backflow Prevention and Cross-Connection Control".

Utility Notes (cont.)

7. All new water services and plumbing shall be in conformance with the State plumbing code, fire & building codes (including portion of potable & fire lines from the check valves to the building) and contain no more than eight (8) percent lead. All solder and flux shall contain no more than 0.2 percent lead.

8. All new water main pipe, valves, fittings, and fire hydrants shall be in conformance with applicable AWWA standards and shall contain no more than eight percent lead. All packing and joint materials used shall be in conformance with applicable AWWA standards.

9. All backflow prevention assemblies will be installed in accordance with the manufacturer's installation instructions and the following requirements:

   9.1. Pipe lines should be thoroughly flushed to remove foreign material and debris before installing the assembly.
   9.2. If not already provided, shutoff valves should be installed at each end of the assembly for testing and servicing purposes. Only resilient type shutoff valves (ball valves, resilient wedge/seat gate valves, etc.) will be accepted on backflow prevention assemblies in accordance with national standards.
   9.3. The assembly should be placed in the horizontal position unless otherwise specified by manufacturer's instructions.
   9.4. The assembly should always be installed in an accessible location to facilitate testing and servicing.
   9.5. The assembly should be installed at least 18 inches above ground or maximum flood level, whichever is highest, in order to prevent any part of the assembly from becoming submerged.
   9.6. Assemblies installed in modified pits should have at least 2 feet of clearance on each side of the assembly to facilitate testing and servicing. Adequate drainage should be provided.
   9.7. The relief valve should never be plugged or solidly piped into the drainage ditch, sewer, or pump. The relief valve discharge pipe should be terminated a minimum of 12 inches above ground or maximum flood level and located so it is clearly visible and accessible.
   9.8. The assembly should be adequately supported to prevent it from sagging.
   9.9. The assembly should be approved by or meet the standards of the SBCC Standards Plumbing Code (ASSE Standard #1013) or AWWA Standard #C506-78.

10. All PVC water lines shall be wrapped with a #12 tracer wire & stubbed at each end in accordance with City/County requirements.

11. All proposed 8" PVC sanitary sewer lines shall be SDR26 PVC (green) and installed by an appropriately licensed contractor. The lines will need to be lamped.

12. All public water system components, excluding fire hydrants, that will be installed under this project and that will come into contact with drinking water will conform to NSF International Standard 61 as adopted in Rule 62-555.335, F.A.C., or other applicable standards, regulations, or requirements referenced in paragraph 62-555.320(3)(b)., F.A.C.; [F.A.C. 62-555.320(3)(b); exceptions allowed under FAC 62-555.320(3)(d)]

13. All pipe and pipe fittings installed under this project will be color coded or marked in accordance with subparagraph 62-555.320(21)(b)3, F.A.C., using blue as a predominant color. (Underground plastic pipe will be solid wall blue pipe, will have a co-extruded blue external skin, or will be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe will have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe will have continuous stripes that run parallel to the axis of the pipe, that are located no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint will be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipe with an internal diameter of 24" or greater, tape or paint will be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Above ground pipe will be painted blue or will be color coded or marked like underground pipe.) [FAC 62-555.320(21)(b)3]

14. Appropriate deflection tests shall be made for all flexible pipe. Testing is required after the final backfill has been in place for 30 days to permit stabilization of the soil-pipe system. Testing requirements specify: 1) no pipe shall exceed a deflection of 5%; 2) using a rigid ball or mandrell for the deflection test with a diameter of not less than 95% of the base inside diameter or average inside diameter of the pipe, depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured; and 3) performing the test without mechanical pulling devices. [RSWF 33.85]

15. Leakage tests: 1) the leakage exfiltration or infiltration does not exceed 0 gallons per inch of pipe diameter per mile per day for any section of the system; 2) exfiltration and infiltration tests performed with a minimum positive head of 2 feet; and 3) air tests, as a minimum, shall conform to the test procedure described in ASTM C-828 for clay pipe, ASTM C 924 for concrete pipe, ASTM F-1417 for plastic pipe, and for other materials appropriate test procedures. [RSWF 33.93, 33.94 and 33.95]

16. A bench shall be provided on each side of any manhole channel when the pipe diameter(s) are less than the manhole diameter and no lateral sewer, service connection, or drop manhole pipe discharges onto the surface of the bench. [RSWF 34.5]

17. a) manhole lift holes and grade adjustment rings shall be sealed with non-shrinking mortar or other appropriate material; b) inlet and outlet pipes shall be joined to the manhole with a gasketed flexible watertight connection or another watertight connection arrangement that allows differential settlement of the pipe and manhole wall; and c) watertight manhole covers shall be used wherever the manhole tops may be flooded by street runoff or high water. [RSWF 34.6]

18. Manhole inspection and testing for watertightness or damage shall be performed prior to placing manhole into service. Air testing, if specified for concrete sewer manholes, shall conform to the test procedures described in ASTM C-1244. [RSWF 34.9]

19. New or relocated underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer, storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer if the bottom of the water main will laid at least six inches above the top of the sewer); a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed"on site sewage treatment and disposal system." [FAC 62-555.314(1); exceptions allowed under FAC 62-555.314(5)]

20. New or relocated underground water mains, that will cross any existing or proposed gravity or vacuum-type sanitary sewer or storm sewer, will be laid so the outside of the water main is at least six inches above the other pipeline or at least twelve inches below the other pipeline; and new or relocated underground water mains that will cross any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water will be laid so the outside of the water main is at laest twelve inches above or below the other pipeline. [FAC 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]

21. At the utility crossings described in Note 21 above, one full length of water main pipe will be centered above or below the other pipeline so the water main joints will be as the pipes will be arranged so that all water or far as possible from the other pipeline main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying regulated under Part III of Chapter 62-610, F.A.C. [FAC not reclaimed water 62-555.314(2); exceptions allowed under FAC 62-555.314(5)]

22. Pavement restoration shall be carried out in accordance with the requirements of the authority having jurisdiction.

23. The Contractor shall coordinate with the power company for size and location of electrical service components.

24. The Contractor shall coordinate with the local telephone company for service.

25. The Contractor shall coordinate with local gas company for service.

26. All new water main pipe, valves, fittings, and fire hydrants shall be in conformance with applicable AWWA standards and shall contain no more than eight percent lead. All packing and jointing materials used shall be in conformance with applicable AWWA standards.

27. The location of all newly installed fire hydrants shall be identified with a blue reflective pavement marker installed on the roadway, perpendicular to the fire hydrant. The reflective marker will be located in the center of the lane closest to the hydrant.

28. The contractor will be responsible for the flow testing and color coding of all newly installed fire hydrants in the eixsting or proposed City of Treasure Island right-of-way and utility easements that are to be dedicated to City of Treasure Island prior to the final inspection of the project. The contractor shall refer to NFPA Standard 291 for flow testing and color coding methods and procedures.

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Board of Professional Engineers
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Issue / Revisions

NORTH

Scale NTS

Pirate Square

115 107th Avenue, Treasure Island, FL 33706

PLANENG, INC

Jay M. Gill, State of Florida, Professional Engineer, License No. 62579. This item has been digitally signed and sealed by Jay M. Gill, P.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.

JAY M. GILL LICENSE No. 60879 STATE OF FLORIDA PROFESSIONAL ENGINEER

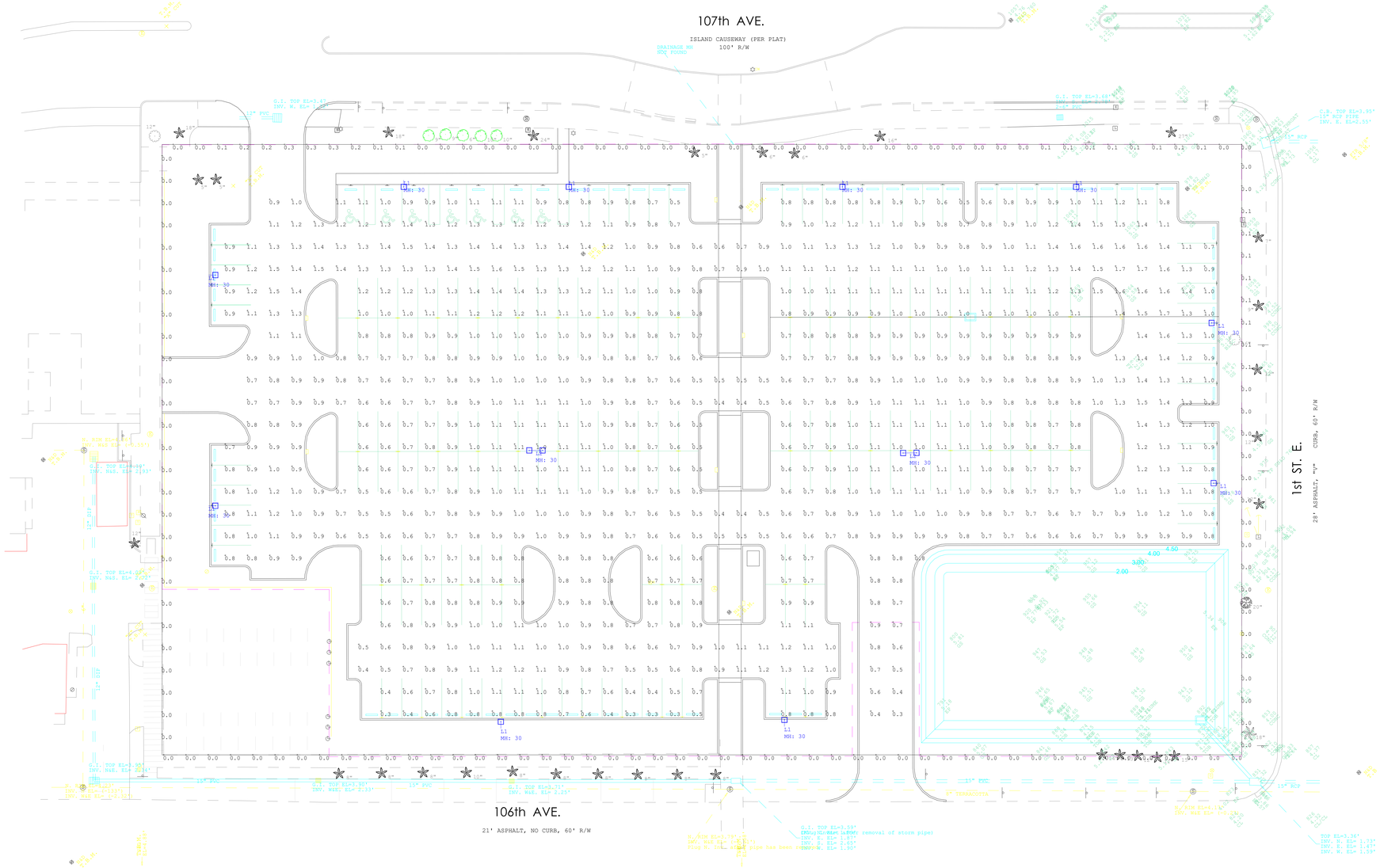
Date

Reviewed by JMG/RMO

Plan Description
Notes Sheet

Sheet No.
C10

2023-0509TRIcom C10 Notes.dwg
CAD date - 5/22/2025



GENERAL NOTES

1. ANY LINEWORK WITHIN THIS DRAWING WHICH HAS BEEN EXPORTED FROM AGI32 IS LABELED PER AGI32 ELEMENT FOR EASE OF TRANSFERRING LINE WORK INTO EXISTING DRAWING SETS. (IE. AGI32-Project_1-LUMINAIRE)
2. CALCULATION POINT GRID SPACING UNITS LOCATED IN CALCULATION SUMMARY. UNITS = IMPERIAL FEET.
3. TYPICAL HEIGHT OF WORKPLANE CALCULATION IS AT: 30"
4. TYPICAL REFLECTANCE USED: CEILING 80 - WALLS 50 - FLOOR 20 UNLESS OTHERWISE NOTED.
5. TYPICALLY ALL CALCULATIONS APPLY A LIGHT LOSS FACTOR (LLF) OF APPROXIMATELY 10% WHICH CAN BE SEEN IN THE CALCULATION SUMMARY AS 0.91 UNLESS OTHERWISE SPECIFIED BY GOVERNING AUTHORITIES OR CUSTOMER PREFERENCE. THIS ACCOMMODATES LIGHT LOSS DUE TO FIXTURE USE OVER TIME. UNKNOWN VARIABLES TO THE MATERIAL REFLECTANCE USED IN THE SPACE DURING CALCULATION MODELING AND GRANULAR LUMEN OUTPUT DIFFERENCES BETWEEN THE SPEC SHEET AND IES FILE PER FIXTURE TYPE.
6. SOME IES FILES REQUIRE MODIFICATIONS TO MEASURE VARIANCES OF PRODUCT SPECIFICATIONS. THOSE FIXTURES ARE IDENTIFIED WITH 'MOD' IN THE FIXTURE SCHEDULE DESCRIPTION AND TYPICALLY HAVE A DISTINCT LLF.
7. ALL LINEAR FIXTURE SYMBOLS ARE IMPORTED AS IES FILE ELEMENTS AND ARE NOT REPRESENTATIVE OF LIGHTING LAYOUT LINEAR PLAN SYMBOLS OR EXACT RUN LENGTHS. FINAL RUN LENGTH COUNTS FOR BUILDING A BILL OF MATERIAL (BOM) ARE THE RESPONSIBILITY OF THE PROJECT ARCHITECT, CONTRACTOR OR DISTRIBUTOR ON RECORD.

FIXTURE TAG KEY

FIXTURE TYPE ——— LXX
MOUNTING HEIGHT ——— MH: XX
SWITCH LEG / ZONE ——— XX

LIGHTING LAYOUT & POINT BY POINT CALCULATIONS

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PEOPERTY LINE	Illuminance	Fc	0.02	0.3	0.0	N.A.	N.A.
SITE	Illuminance	Fc	0.92	1.7	0.3	3.07	5.67

CALCULATION SUMMARY

Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	10	L1	Single	LITHONIA DSX1 LED P2 40K 80CRI BLC3	0.910	6514	67.79	677.9
	2	L2	Back-Back	LITHONIA DSX1 LED P2 40K 80CRI T5M	0.910	9352	67.79	271.16

FIXTURE SCHEDULE & SPECIFICATION CODES

envision LIGHTING SYSTEMS

ENVISION LIGHTING SYSYEMS
9501 International Court North
St. Petersburg,FL 33716
727-576-8488
www.envisionlightingsysyems.com

ENVISION LIGHTING SYSYEMS
5288 Summerlin Commons Way Ste. 902
Fort Myers,FL 33907
www.envisionlightingsysyems.com

Contact Info:
Dan Sroka
941-243-0608
dsroka@envisionlightingsysyems.com

NOTES:

1. Envision Lighting Systems does not carry any liability for compliance with any local, state or federal codes and guidelines; or any other authorities governing over the project. Lighting Design Services are supplemental to the Architect and/or Engineer of Record and require their certification and liability for the services rendered by Envision Lighting Systems.
2. Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine applicability of the layout to existing or future field conditions. This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions utilizing current industry standard lamp ratings in accordance with Illuminating Engineering Society approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and other variable field conditions.

1	Photometric Layout	05/06/25
No.	Revision/Issue	Date

Project Name and Address

PIRATE SQUARE

Project: PIRATE SQUARE	Sheet: L1
Date: 05/06/2025	
Scale: NTS	DRAWN BY: A.SCHUYLER

Stormwater Report

Pirate Square: Parking Lot Redevelopment

115 107th Avenue, Treasure Island, FL 33706

January 2025

Prepared for:
Pirate Square, LLC
St. Petersburg, FL 33706
Ph. (727) 692-6672

Prepared by:
Planeng, Inc.
501 Fitzgerald Street
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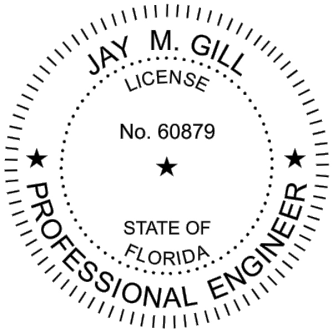
(850) 444-9493
[Board of Professional Engineers Cert. Of Authorization No. 26432]



Digitally signed by Jay M. Gill
DN: CN=Jay M. Gill, O="PLANENG, INC.", SERIALNUMBER=AATL20230629304414, L=Pensacola, S=Florida, C=US
Date: 2025.01.27 10:18:06-06'00'

Jay M. Gill, State of Florida, Professional Engineer, License No. **60879**. This item has been digitally signed and sealed by Jay M. Gill, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

TABLE OF CONTENTS

Introduction

Summary of Results

Pre-Development

Pre-Development Drainage Conditions Map

Pre-Development Modeling

Post-Development

Post-Development Drainage Conditions Map

Treatment Calculations

Treatment Recovery

BMPTrains Net Improvement Calculations

Post-Development Modeling

Appendices

- FEMA FIRM
- Existing Improvements Survey
- Operation and Maintenance Instructions
- Geotechnical Report
- Pre-application discussion with SWFWMD staff

INTRODUCTION

Existing Conditions

The proposed development will take place on a 2.89-acre site located at 115 107th Avenue, Treasure Island, FL 33706 (refer to the Site Construction Plans for a location map and existing conditions aerial).

The site falls in Flood Zone VE Elevation 11 (see excerpt of FEMA map in the Appendix) based on the latest FIRM map, and is currently a retail shopping area. The seasonal high water table was determined to be approximately 4 feet below existing site grades (see geotechnical investigation report prepared by Central Florida Testing Laboratories, Inc.). Also, the report states that the SHW elevation should be approximately equivalent to the Mean High Water Level, which is 0.81 ft. NAVD 88.

The stormwater basin per discussion with Rob McDaniel, P.E. (via email chain dated 8/27/24, refer to the Appendix) is located in the Boca Ciega Bay receiving waterbody (WBID 1694A1 per the FDEP Map tool), and is impaired for nutrients. Additionally, this site currently discharges via pipe to tidal waters located near the site, and as such, as long as the post development rate of discharge is less than the predevelopment rate of discharge in the 25-year, 24-hour storm event, the site should be exempt from attenuation requirements, and subject only to providing treatment of the subject site's improvements.

Proposed Development

The proposed development will consist of removing the existing buildings and parking lot improvements and constructing a paved parking lot. An onsite stormwater pond is proposed to keep runoff rates at or lower than current outfall rates and provide stormwater runoff treatment of the site.

Design Criteria

- Water Quantity

  The PostDevelopment 25-year, 24-hour storm event has been modeled in the proposed onsite pond to confirm runoff rates are equal to or lower than the associated existing conditions event rate. The SCS-TR20 method for runoff was used to comply with SWFWMD criteria. Six inches of freeboard has been provided for the 25-year event.

- Water Quality

  Per City of Treasure Island criteria, we have provided 1" of treatment over the site. This volume will be recovered within the required 72-hour window. Additionally per our discussion with Rob McDaniel, the receiving basin is impaired for nutrients and as such we have provided net improvement calculations via BMPTrains.

This report documents that the proposed stormwater system for the referenced development will comply with the regulatory requirements of SWFWMD and the City of Treasure Island.

Routing calculations were performed using Hydrocad (Version 10.2). Treatment volume recovery calculations within the proposed pond were performed with ModRET V. 6.11. Net improvement calculations were performed with BMPTrains Ver. 3.1.1.

SUMMARY OF RESULTS

Treatment

Basin	Required (cu.ft.)	Provided (cu.ft.)	Recovery Time Required (hours)	Recovery Time Provided (hours)
Post	10,612	11,047	72	52.6

Attenuation

Basin	Max. Stage (elev. in feet)	Max. Rate (cfs)
PreDevelopment 5 Year 24 Hour	-	13.81

Discharge to existing outfall	Max. Stage (elev. in feet)	Max. Rate (cfs)
From Proposed Pond, 25 Year 24 Hour	3.95	8.32

PRE-DEVELOPMENT

Planeng, Inc. 501 Fitzgerald Street, Pensacola, FL 32505 phone (850) 444-9493 email jay@planeng.com (page 6)

Pre-Development Drainage Conditions Map

PLANENG INC
Board of Professional Engineers
Certificate of Authorization
No. 26432

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Land O Lakes, FL 34639
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Issue / Revisions

NORTH

Scale
1" =20'

Pirate Square

Proposed Parking Lot

Circa 143 107th Ave, St. Petersburg, FL 33710

PLANENG INC

JAY M. GILL
LICENSE
No. 60879
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date

Reviewed by
JMG/RMO

Plan Description
PreDevelopment Plan

Sheet No.
1

Pre.dwg
CAD date 8/24/2024

PLANENG INC

PRE

107th AVE.
ISLAND CAUSEWAY (PER PLAT)
100' R/W

106th AVE.
21' ASPHALT, NO CURB, 60' R/W

1st ST. E.
28' ASPHALT, "V" CURB, 60' R/W

DRAINAGE MH
NOT FOUND

G.I. TOP EL=4.07
INV. W. EL=1.02'
12" PVC

G.I. TOP EL=3.68'
INV. S. EL= 2.78'
24" PVC

C.B. TOP EL=3.95'
15" RCP PIPE
INV. E. EL=2.55'
15" RCP

N. RIM EL=4.36'
INV. W&S EL= (-0.55')

G.I. TOP EL=4.89'
INV. N&S. EL= 2.93'

G.I. TOP EL=4.02'
INV. N&S. EL= 2.72'

G.I. TOP EL=3.95'
INV. N&E. EL= 2.34'

N. RIM EL=4.23'
INV. N EL= (-1.33')
W&E EL= (-2.32')

18" PVC

G.I. TOP EL=3.90'
INV. W&E. EL= 2.33'

15" PVC

G.I. TOP EL=3.71'
INV. W&E. EL= 2.25'

G.I. TOP EL=3.87'
INV. S. EL= 2.15'

INV. EL= 0.21'

N. RIM EL=3.79'
INV. W&E EL= (-1.61')

G.I. TOP EL=3.59'
INV. N. EL= 1.89'
INV. E. EL= 1.87'
INV. S. EL= 2.65'
INV. W. EL= 1.90'

8" TERRACOTTA

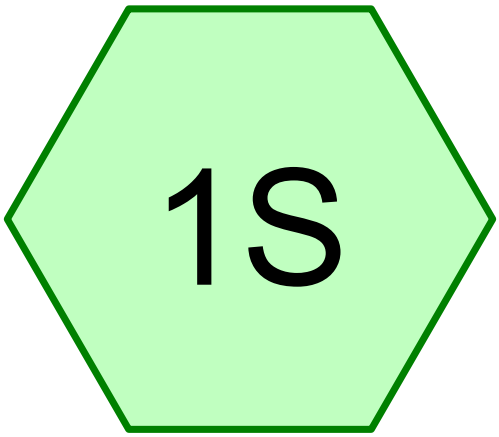
N. RIM EL=4.17'
INV. W&E EL= (-0.27')

TOP EL=3.36'
INV. N. EL= 1.73'
INV. E. EL= 1.47'
INV. W. EL= 1.59'

N64°14'33"E 485'(P) O/A
N64°14'15"E 484.95' (M)
N64°09'34"E 249.99' (M)
N64°12'34"E 175.06' (M)
N64°18'49"E 224.99' (M)
S64°10'55"W 250.11' (M)
250' (P)
S64°13'38"W 125.05' (M)
125' (P)
S64°17'40"W 224.88' (M)
225' (P)
S64°14'33"W 485.06' (M) O/A
485' (P)
S25°47'25"E 185.06' (M)
185' (P)
S25°46'42"W 185.01' (M)
N25°44'24"W 185.01' (M)
S25°45'27"E 185.01' (M)
S25°45'27"E 275' (P) O/A
N25°38'12"W 606.96' (M)
606.96' (P)
N25°45'27"W 606.96' (M)
S25°45'26"W 300.07' (M)
300' (P)

Pre-Development Modeling

Planeng, Inc. 501 Fitzgerald Street, Pensacola, FL 32505 phone (850) 444-9493 email jay@planeng.com (page 8)



Pre

Subcat Reach Pond Link

Routing Diagram for Pre
Prepared by Planeng, Inc, Printed 8/24/2024
HydroCAD® 10.20-4b s/n 03634 © 2023 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.281	79	<50% Grass cover, Poor, HSG B (1S)
2.642	98	Paved parking, buildings, HSG D (1S)
2.923	**96**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.281	HSG B	1S
0.000	HSG C	
2.642	HSG D	1S
0.000	Other	
2.923		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.281	0.000	0.000	0.000	0.281	<50% Grass cover, Poor	1S
0.000	0.000	0.000	2.642	0.000	2.642	Paved parking, buildings	1S
0.000	**0.281**	**0.000**	**2.642**	**0.000**	**2.923**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Pre Runoff Area=127,340 sf 90.38% Impervious Runoff Depth>8.50"
Tc=15.0 min CN=96 Runoff=13.81 cfs 2.070 af

Total Runoff Area = 2.923 ac Runoff Volume = 2.070 af Average Runoff Depth = 8.50"
9.62% Pervious = 0.281 ac 90.38% Impervious = 2.642 ac

Summary for Subcatchment 1S: Pre

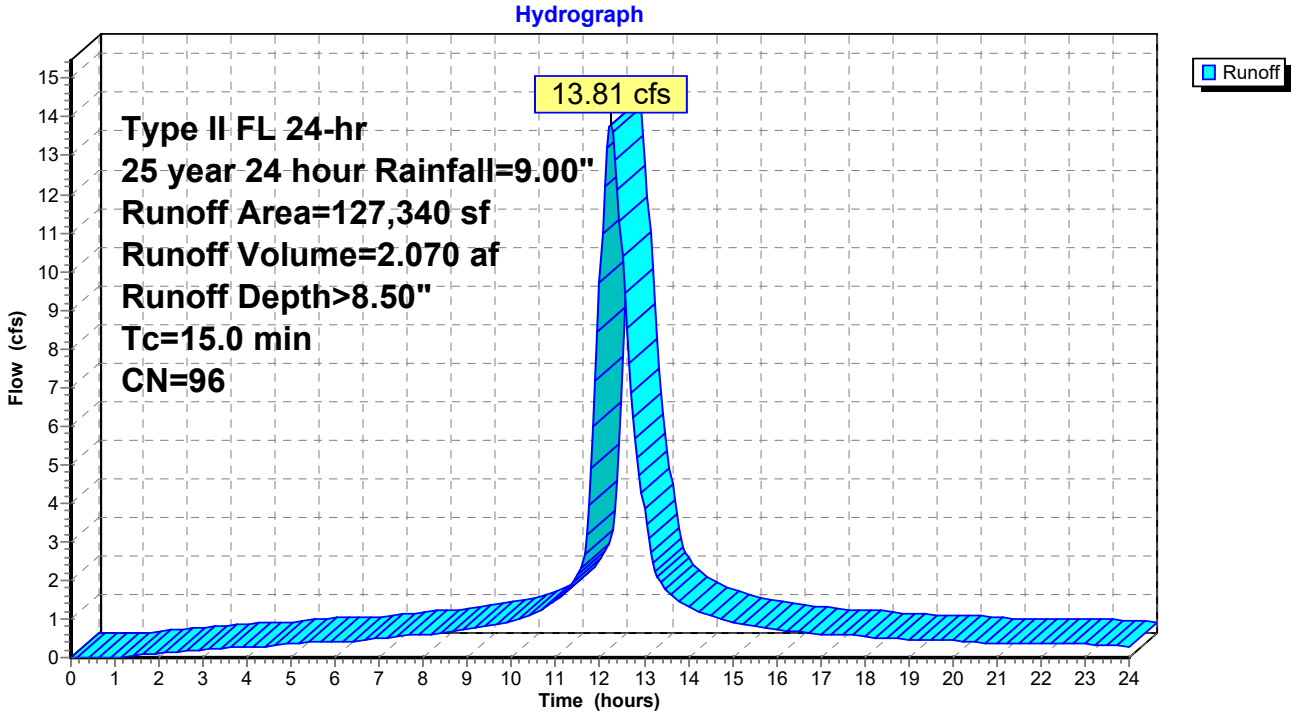
Runoff = 13.81 cfs @ 12.23 hrs, Volume= 2.070 af, Depth> 8.50"
Routed to nonexistent node 2P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II FL 24-hr 25 year 24 hour Rainfall=9.00"

	Area (sf)	CN	Description
	12,245	79	<50% Grass cover, Poor, HSG B
*	115,095	98	Paved parking, buildings, HSG D
	127,340	96	Weighted Average
	12,245		9.62% Pervious Area
	115,095		90.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment 1S: Pre



Hydrograph for Subcatchment 1S: Pre

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	13.00	6.66	6.18	3.86
0.25	0.01	0.00	0.00	13.25	6.82	6.34	2.23
0.50	0.03	0.00	0.00	13.50	6.96	6.48	1.75
0.75	0.05	0.00	0.00	13.75	7.08	6.60	1.49
1.00	0.08	0.00	0.00	14.00	7.18	6.71	1.32
1.25	0.11	0.00	0.01	14.25	7.28	6.80	1.17
1.50	0.14	0.01	0.04	14.50	7.37	6.89	1.08
1.75	0.17	0.02	0.08	14.75	7.45	6.97	1.00
2.00	0.20	0.02	0.11	15.00	7.52	7.05	0.92
2.25	0.23	0.04	0.13	15.25	7.60	7.12	0.85
2.50	0.26	0.05	0.16	15.50	7.66	7.19	0.82
2.75	0.29	0.07	0.19	15.75	7.73	7.25	0.79
3.00	0.32	0.09	0.21	16.00	7.79	7.31	0.74
3.25	0.35	0.11	0.23	16.25	7.85	7.37	0.69
3.50	0.39	0.13	0.25	16.50	7.90	7.42	0.66
3.75	0.42	0.15	0.28	16.75	7.96	7.48	0.63
4.00	0.46	0.18	0.28	17.00	8.01	7.53	0.61
4.25	0.49	0.20	0.28	17.25	8.06	7.58	0.59
4.50	0.52	0.23	0.30	17.50	8.11	7.63	0.58
4.75	0.56	0.25	0.33	17.75	8.15	7.67	0.57
5.00	0.60	0.29	0.36	18.00	8.20	7.72	0.53
5.25	0.64	0.32	0.38	18.25	8.24	7.76	0.49
5.50	0.68	0.35	0.39	18.50	8.28	7.80	0.51
5.75	0.72	0.39	0.40	18.75	8.33	7.85	0.52
6.00	0.76	0.42	0.40	19.00	8.36	7.88	0.47
6.25	0.80	0.46	0.41	19.25	8.40	7.92	0.44
6.50	0.85	0.50	0.44	19.50	8.44	7.96	0.45
6.75	0.89	0.54	0.47	19.75	8.48	8.00	0.47
7.00	0.94	0.58	0.50	20.00	8.52	8.04	0.45
7.25	0.99	0.62	0.52	20.25	8.55	8.07	0.42
7.50	1.05	0.67	0.55	20.50	8.58	8.10	0.40
7.75	1.10	0.72	0.58	20.75	8.62	8.14	0.38
8.00	1.15	0.77	0.58	21.00	8.65	8.17	0.37
8.25	1.21	0.82	0.60	21.25	8.68	8.20	0.37
8.50	1.27	0.88	0.65	21.50	8.71	8.23	0.37
8.75	1.34	0.94	0.70	21.75	8.74	8.26	0.37
9.00	1.41	1.01	0.75	22.00	8.77	8.29	0.37
9.25	1.48	1.08	0.80	22.25	8.81	8.33	0.37
9.50	1.56	1.15	0.83	22.50	8.84	8.36	0.37
9.75	1.64	1.22	0.87	22.75	8.87	8.39	0.37
10.00	1.72	1.31	0.95	23.00	8.90	8.42	0.34
10.25	1.82	1.40	1.04	23.25	8.92	8.44	0.32
10.50	1.93	1.50	1.16	23.50	8.95	8.47	0.32
10.75	2.05	1.62	1.31	23.75	8.98	8.49	0.31
11.00	2.18	1.75	1.48	24.00	**9.00**	**8.52**	0.29
11.25	2.35	1.91	1.73				
11.50	2.55	2.11	2.17				
11.75	3.06	2.61	3.93				
12.00	4.13	3.67	9.69				
12.25	5.27	4.80	**13.79**				
12.50	5.98	5.51	10.39				
12.75	6.40	5.93	6.21				

TABLE OF CONTENTS

Project Reports
1 Routing Diagram
2 Area Listing (all nodes)
3 Soil Listing (all nodes)
4 Ground Covers (all nodes)

25 year 24 hour Event
5 Node Listing
6 Subcat 1S: Pre

POST-DEVELOPMENT

Planeng, Inc. 501 Fitzgerald Street, Pensacola, FL 32505 phone (850) 444-9493 email jay@planeng.com (page 9)

Post-Development Drainage Conditions Map

107th AVE.

ISLAND CAUSEWAY (PER PLAT)
100' R/W

DRAINAGE MH
NOT FOUND

POST

ST-1
FDOT Type D Inlet
S Inv. El. = 0.53

ST-2
FDOT Type D Inlet
N. Inv. El. = -0.05
S. Inv. El. = -0.15

ST-3
FDOT Type E Inlet
E. Inv. El. = -0.83
N. Inv. El. = -0.73
S. Inv. El. = -0.73

ST-4
FDOT Type D Inlet
N. Inv. El. = -0.15

ST-5
Manhole
Rim El. = 5.20
E. Inv. El. = -2.27
W. Inv. El. = -2.17
S. Inv. El. = -2.17

ST-6
FDOT Type D Inlet
N. Inv El. = -1.59

ST-7
FDOT Type D Inlet
S. Inv. El. = -1.84

ST-8
FDOT Type D Inlet
N. Inv El.. = -2.42
S. Inv. El. = -2.52

ST-9
FDOT Type E Inlet
N. Inv. El. = -3.10
W. Inv. El. = -3.10
S. Inv El. = -3.20

ST-10
FDOT Type D Inlet
"Bubble-up" structure
Rim El. = 2.00
Inv. El. = -3.41

ST-11
Modified FDOT Type D Inlet
See sheet C9 for details

58 LF of 18" ADS N-12 stormwater pipe @ 1.0%

134 LF of 24" ADS N-12 stormwater pipe @ 1.0%

83 LF of 24" ADS N-12 stormwater pipe @ 1.0%

21 LF of 24" ADS N-12 stormwater pipe @ 1.0%

58 LF of 18" ADS N-12 stormwater pipe @ 1.0%

33 LF of 15" RCP @ 0.61%

Treatment Pond

1st ST. E.
28' ASPHALT, "v" CURB, 60' R/W

106th AVE.
21' ASPHALT, NO CURB, 60' R/W

G.I. TOP EL=3.47'
INV. W. EL=-1.72'

12" PVC

G.I. TOP EL=3.68'
INV. S. EL= 2.78'
24" RCP

C.B. TOP EL=3.95'
15" RCP PIPE
INV. E. EL=2.55'

15" RCP

N. RIM EL=4.36'
INV. W&S EL= (-0.55')

G.I. TOP EL=4.9'
INV. N&S. EL= 2.93'

G.I. TOP EL=4.02'
INV. N&S. EL= 2.72'

G.I. TOP EL=3.95'
INV. N&E. EL= 2.34'

N. RIM EL=4.23'
INV. N EL= (-13.3')
W&E EL= (-2.32')

18" PVC

G.I. TOP EL=3.90'
INV. W&E. EL= 2.33'

15" PVC

G.I. TOP EL=3.71'
INV. W&E. EL= 2.25'

N. RIM EL=3.79'
INV. W&E EL= (-1.61')
Plug N. Inv. after pipe has been removed

G.I. TOP EL=3.59'
INV. N. EL= 1.89' (Plug Invert after removal of storm pipe)
INV. E. EL= 1.87'
INV. S. EL= 2.65'
INV. W. EL= 1.90'

15" PVC

8" TERRACOTTA

N. RIM EL=4.17'
INV. W&E EL= (-0.27')

TOP EL=3.36'
INV. N. EL= ~~1.73'~~ New Inv. El. = 1.50
INV. E. EL= 1.47'
INV. W. EL= 1.59'

+0.50' MEG

NORTH

Scale
1" =20'

PLANNING INC

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Issue / Revisions

PLANNING

Pirate Square

Proposed Parking Lot

Circa 143 107th Ave, St. Petersburg, FL 33710

PLANNING INC

JAY M. GILL
LICENSE
No. 60879
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date

Reviewed by
JMG/RMO

Plan Description
PostDevelopment Plan

Sheet No.
1

Post.dwg
CAD date 8/28/2024

Treatment Calculations

Postdevelopment:

Treatment Volume:

Required = 127,340 x 1.0 in. x 1 ft./12 in. = 10,612 cu.ft.

Volume provided at elevation 3.25 = 11,047 cu.ft.

Notes:

- Seasonal high water elevation was established at Elev. 0.81 NAVD 88.
- Treatment volume recovery follows.

Treatment Recovery

MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

PROJECT NAME : Onsite pond
POLLUTION VOLUME RUNOFF DATA USED
UNSATURATED ANALYSIS EXCLUDED

Pond Bottom Area	8,535.00 ft²
Pond Volume between Bottom & DHWL	19,504.00 ft³
Pond Length to Width Ratio (L/W)	2.00
Elevation of Effective Aquifer Base	-16.00 ft
Elevation of Seasonal High Groundwater Table	0.81 ft
Elevation of Starting Water Level	2.00 ft
Elevation of Pond Bottom	2.00 ft
Design High Water Level Elevation	3.95 ft
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.25
Unsaturated Vertical Hydraulic Conductivity	15.80 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	23.70 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.25
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00

Hydraulic Control Features:

	Top	Bottom	Left	Right
Groundwater Control Features - Y/N	N	N	N	N
Distance to Edge of Pond	0.00	0.00	0.00	0.00
Elevation of Water Level	0.00	0.00	0.00	0.00
Impervious Barrier - Y/N	N	N	N	N
Elevation of Barrier Bottom	0.00	0.00	0.00	0.00

MODRET

TIME - RUNOFF INPUT DATA

PROJECT NAME: ONSITE POND

STRESS PERIOD NUMBER	INCREMENT OF TIME (hrs)	VOLUME OF RUNOFF (ft^3)
Unsat	0.00	0.00
1	1.00	10,612.00
2	8.88	0.00
3	8.88	0.00
4	8.88	0.00
5	8.88	0.00
6	8.88	0.00
7	8.88	0.00
8	8.88	0.00
9	8.88	0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : Onsite pond

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft^3)
00.00 - 0.00	0.810	0.000 *		
			0.00000	
0.00	0.810	0.25702		
			0.24335	
1.00	2.973	0.22969		0.00
			0.10844	
9.88	2.627	0.08651		0.00
			0.06458	
18.75	2.421	0.05527		0.00
			0.04596	
27.63	2.274	0.04093		0.00
			0.03589	
36.50	2.159	0.03267		0.00
			0.02945	
45.38	2.065	0.02721		0.00
			0.02497	
52.63	2.000	0.02330		0.00
			0.02163	
63.13	1.916	0.02032		0.00
			0.01902	
72.00	1.856			0.00

Maximum Water Elevation: 2.973 feet @ 1.00 hours Recovery @ 52.625 hours

* Time increment when there is no runoff

Maximum Infiltration Rate: 2.102 ft/day

Analysis Date: 1/25/2025

BMPTRAINS Net Improvement

Complete Report (not including cost) Ver 3.1.1

Project: Pirate Square Parking Lot
Date: 1/25/2025 9:05:34 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	Pirate Square Parking Lot
Rainfall Zone	Florida Zone 2
Annual Mean Rainfall	52.00

Pre-Condition Landuse Information

Landuse	High-Intensity Commercial: TN=2.40 TP=0.345
Area (acres)	2.89
Rational Coefficient (0-1)	0.76
Non DCIA Curve Number	96.20
DCIA Percent (0-100)	85.00
Nitrogen EMC (mg/l)	2.400
Phosphorus EMC (mg/l)	0.345
Runoff Volume (ac-ft/yr)	9.520
Nitrogen Loading (kg/yr)	28.172
Phosphorus Loading (kg/yr)	4.050

Post-Condition Landuse Information

Landuse	High-Intensity Commercial: TN=2.40 TP=0.345
Area (acres)	2.89
Rational Coefficient (0-1)	0.74
Non DCIA Curve Number	92.60
DCIA Percent (0-100)	85.00
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.400
Phosphorus EMC (mg/l)	0.345
Runoff Volume (ac-ft/yr)	9.230
Nitrogen Loading (kg/yr)	27.313
Phosphorus Loading (kg/yr)	3.926

Catchment Number: 1 Name: Pirate Square Parking Lot

Project: Pirate Square Parking Lot
Date: 1/25/2025

None Design

Watershed Characteristics

Catchment Area (acres)	2.89
Contributing Area (acres)	2.890
Non-DCIA Curve Number	92.60
DCIA Percent	85.00
Rainfall Zone	Florida Zone 2
Rainfall (in)	52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	

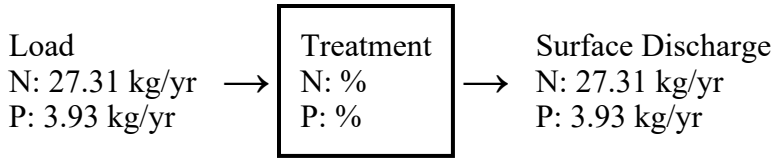
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	0.000
Media P Reduction (%)	0.000

Groundwater Discharge (Stand-Alone)

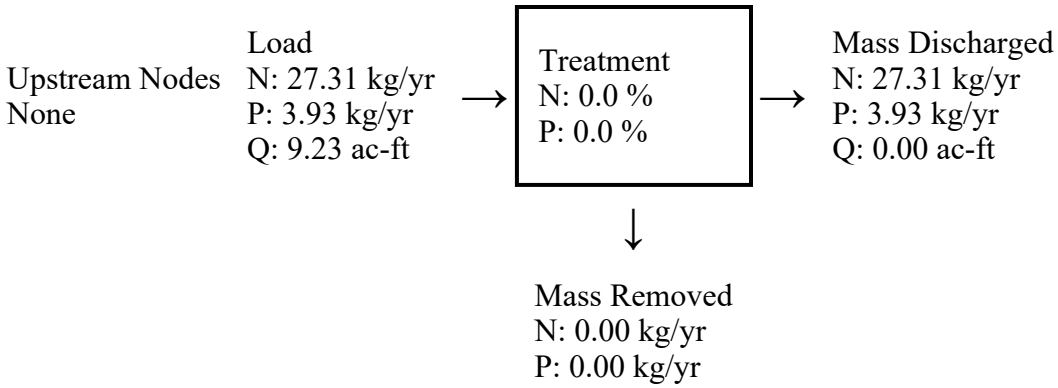
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for None (stand-alone)



↓ Mass Reduction
N: 0.00 kg/yr
P: 0.00 kg/yr

Load Diagram for (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: Pirate Square Parking Lot

Date:1/25/2025

Analysis Type: Net Improvement

BMP Types:	**Routing Summary**
Catchment 1 - (Pirate Square Parking Lot) None	Catchment 1 Routed to Outlet

Total nitrogen target removal met? **Yes**
Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge		
Total N pre load	28.17 kg/yr	
Total N post load	27.31 kg/yr	
Target N load reduction	%	
Target N discharge load	28.17 kg/yr	
Percent N load reduction	%	
Provided N discharge load	27.31 kg/yr	60.22 lb/yr
Provided N load removed	kg/yr	lb/yr

Phosphorus

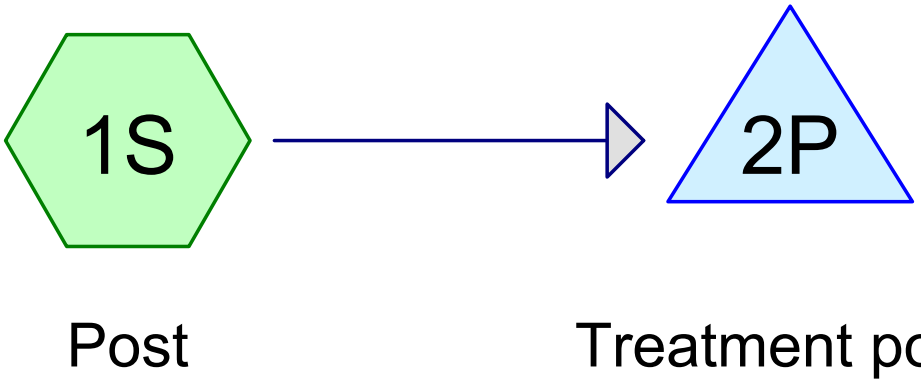
Surface Water Discharge

Total P pre load	4.05 kg/yr	
Total P post load	3.926 kg/yr	
Target P load reduction	%	
Target P discharge load	4.05 kg/yr	
Percent P load reduction	%	
Provided P discharge load	3.926 kg/yr	8.66 lb/yr
Provided P load removed	kg/yr	lb/yr

From Pre-Condition Loads

Existing N Discharge	28.17 (kg/yr)
Existing P Discharge	4.05 (kg/yr)

Post-Development Modeling



Subcat Reach Pond Link

Routing Diagram for Post
Prepared by Planeng, Inc, Printed 1/25/2025
HydroCAD® 10.20-2h s/n 03634 © 2024 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.812	79	<50% Grass cover, Poor, HSG B (1S)
2.111	98	Paved parking, buildings, HSG D (1S)
2.923	**93**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.812	HSG B	1S
0.000	HSG C	
2.111	HSG D	1S
0.000	Other	
2.923		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.812	0.000	0.000	0.000	0.812	<50% Grass cover, Poor	1S
0.000	0.000	0.000	2.111	0.000	2.111	Paved parking, buildings	1S
0.000	**0.812**	**0.000**	**2.111**	**0.000**	**2.923**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	2P	1.70	1.50	32.0	0.0062	0.013	0.0	15.0	0.0

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Post Runoff Area=127,340 sf 72.21% Impervious Runoff Depth>8.14"
Tc=15.0 min CN=93 Runoff=13.58 cfs 1.982 af

Pond 2P: Treatment pond Peak Elev=3.95' Storage=18,327 cf Inflow=13.58 cfs 1.982 af
Discarded=4.67 cfs 1.995 af Primary=3.64 cfs 0.247 af Outflow=8.32 cfs 2.242 af

Total Runoff Area = 2.923 ac Runoff Volume = 1.982 af Average Runoff Depth = 8.14"
27.79% Pervious = 0.812 ac 72.21% Impervious = 2.111 ac

Summary for Subcatchment 1S: Post

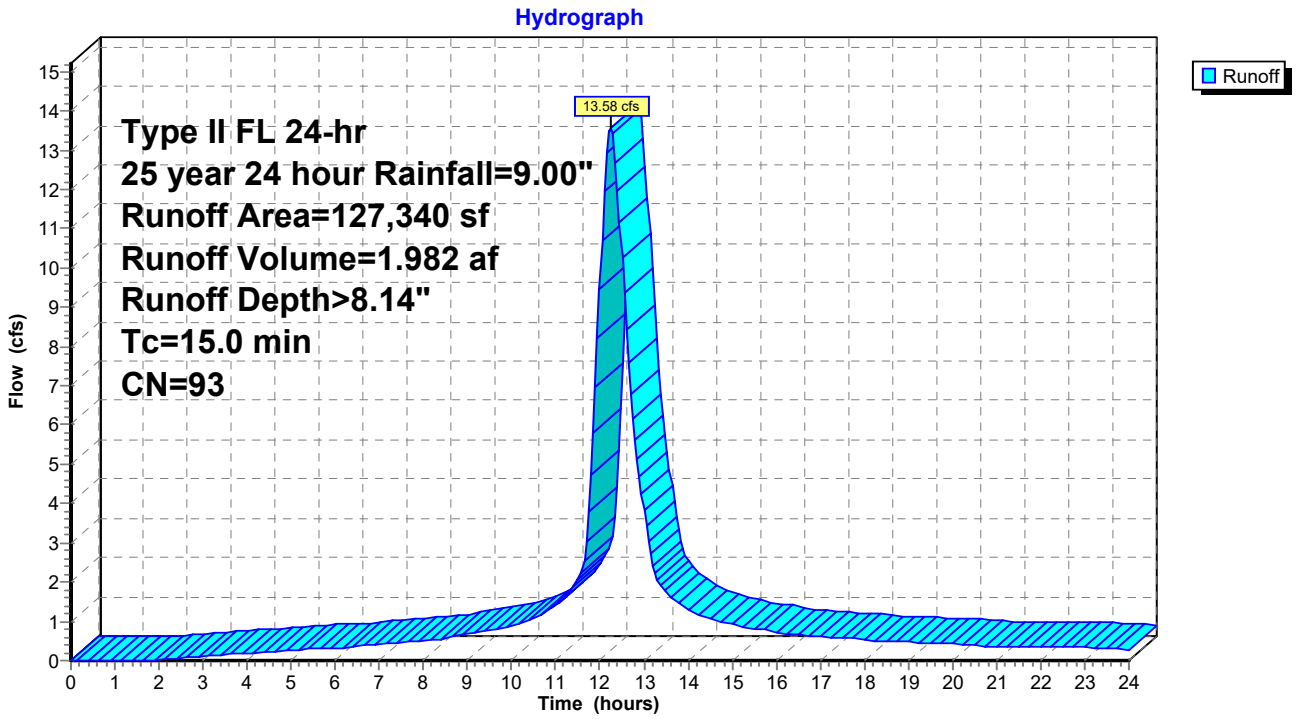
Runoff = 13.58 cfs @ 12.23 hrs, Volume= 1.982 af, Depth> 8.14"
Routed to Pond 2P : Treatment pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II FL 24-hr 25 year 24 hour Rainfall=9.00"

	Area (sf)	CN	Description
	35,390	79	<50% Grass cover, Poor, HSG B
*	91,950	98	Paved parking, buildings, HSG D
	127,340	93	Weighted Average
	35,390		27.79% Pervious Area
	91,950		72.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**

Subcatchment 1S: Post



Hydrograph for Subcatchment 1S: Post

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.25	0.01	0.00	0.00
0.50	0.03	0.00	0.00
0.75	0.05	0.00	0.00
1.00	0.08	0.00	0.00
1.25	0.11	0.00	0.00
1.50	0.14	0.00	0.00
1.75	0.17	0.00	0.00
2.00	0.20	0.00	0.02
2.25	0.23	0.01	0.04
2.50	0.26	0.01	0.06
2.75	0.29	0.02	0.09
3.00	0.32	0.03	0.11
3.25	0.35	0.04	0.13
3.50	0.39	0.06	0.15
3.75	0.42	0.07	0.18
4.00	0.46	0.09	0.18
4.25	0.49	0.10	0.19
4.50	0.52	0.12	0.21
4.75	0.56	0.14	0.24
5.00	0.60	0.17	0.26
5.25	0.64	0.19	0.29
5.50	0.68	0.22	0.30
5.75	0.72	0.25	0.31
6.00	0.76	0.27	0.32
6.25	0.80	0.30	0.34
6.50	0.85	0.34	0.36
6.75	0.89	0.37	0.39
7.00	0.94	0.41	0.42
7.25	0.99	0.45	0.45
7.50	1.05	0.49	0.48
7.75	1.10	0.53	0.50
8.00	1.15	0.57	0.51
8.25	1.21	0.62	0.53
8.50	1.27	0.67	0.58
8.75	1.34	0.73	0.63
9.00	1.41	0.79	0.68
9.25	1.48	0.85	0.73
9.50	1.56	0.92	0.77
9.75	1.64	0.99	0.81
10.00	1.72	1.06	0.88
10.25	1.82	1.15	0.97
10.50	1.93	1.25	1.09
10.75	2.05	1.36	1.23
11.00	2.18	1.48	1.41
11.25	2.35	1.64	1.65
11.50	2.55	1.83	2.08
11.75	3.06	2.31	3.79
12.00	4.13	3.34	9.45
12.25	5.27	4.46	**13.56**
12.50	5.98	5.16	10.27
12.75	6.40	5.58	6.15
13.00	6.66	5.83	3.83
13.25	6.82	5.99	2.22
13.50	6.96	6.13	1.74
13.75	7.08	6.25	1.48
14.00	7.18	6.35	1.31
14.25	7.28	6.45	1.16
14.50	7.37	6.53	1.08
14.75	7.45	6.62	1.00
15.00	7.52	6.69	0.92
15.25	7.60	6.76	0.85
15.50	7.66	6.83	0.82
15.75	7.73	6.89	0.78
16.00	7.79	6.96	0.73
16.25	7.85	7.01	0.69
16.50	7.90	7.07	0.66
16.75	7.96	7.12	0.63
17.00	8.01	7.17	0.61
17.25	8.06	7.22	0.58
17.50	8.11	7.27	0.58
17.75	8.15	7.32	0.57
18.00	8.20	7.36	0.52
18.25	8.24	7.40	0.49
18.50	8.28	7.44	0.50
18.75	8.33	7.49	0.51
19.00	8.36	7.52	0.47
19.25	8.40	7.56	0.44
19.50	8.44	7.60	0.45
19.75	8.48	7.64	0.47
20.00	8.52	7.68	0.45
20.25	8.55	7.71	0.42
20.50	8.58	7.74	0.39
20.75	8.62	7.77	0.37
21.00	8.65	7.81	0.37
21.25	8.68	7.84	0.37
21.50	8.71	7.87	0.37
21.75	8.74	7.90	0.37
22.00	8.77	7.93	0.37
22.25	8.81	7.96	0.37
22.50	8.84	7.99	0.37
22.75	8.87	8.02	0.36
23.00	8.90	8.05	0.34
23.25	8.92	8.08	0.32
23.50	8.95	8.11	0.32
23.75	8.98	8.13	0.31
24.00	**9.00**	**8.16**	0.29

Summary for Pond 2P: Treatment pond

Inflow Area = 2.923 ac, 72.21% Impervious, Inflow Depth > 8.14" for 25 year 24 hour event
Inflow = 13.58 cfs @ 12.23 hrs, Volume= 1.982 af
Outflow = 8.32 cfs @ 12.61 hrs, Volume= 2.242 af, Atten= 39%, Lag= 22.4 min
Discarded = 4.67 cfs @ 12.61 hrs, Volume= 1.995 af
Primary = 3.64 cfs @ 12.61 hrs, Volume= 0.247 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Starting Elev= 3.25' Surf.Area= 9,825 sf Storage= 11,048 cf
Peak Elev= 3.95' @ 12.61 hrs Surf.Area= 10,984 sf Storage= 18,327 cf (7,279 cf above start)
Flood Elev= 4.50' Surf.Area= 11,940 sf Storage= 24,634 cf (13,586 cf above start)

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	2.00'	24,634 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

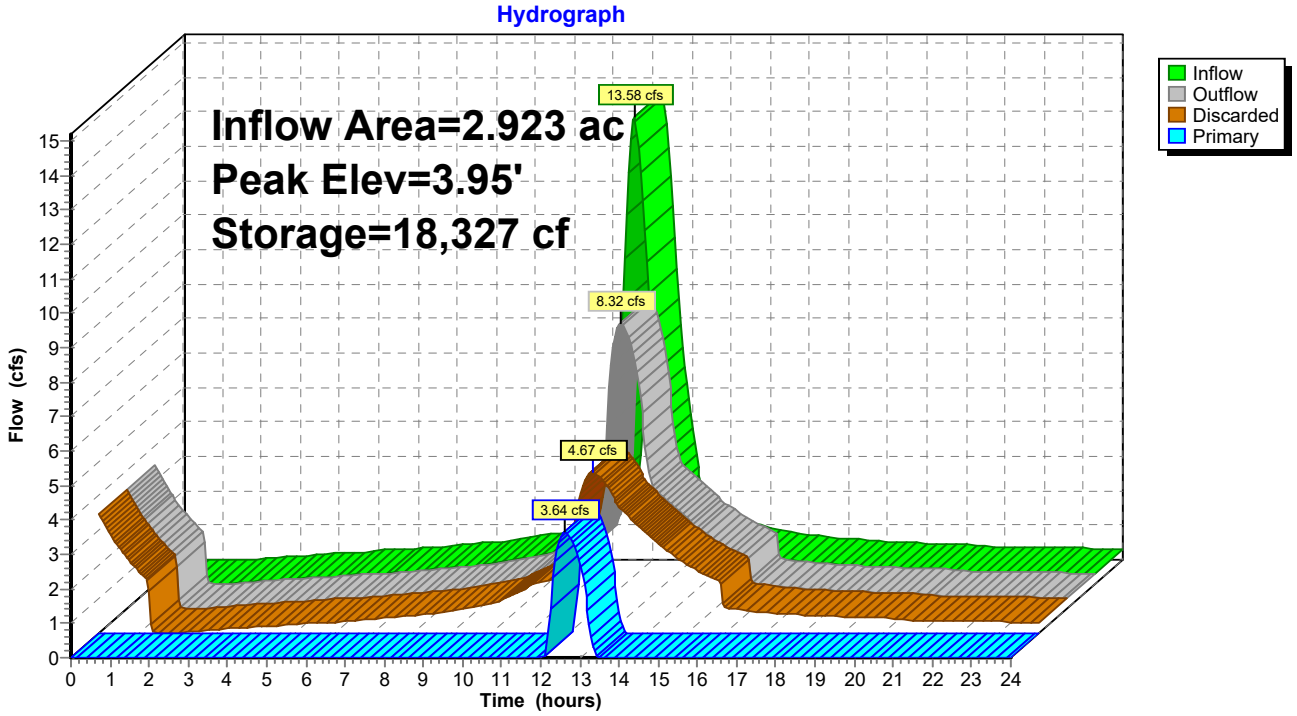
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
2.00	7,876	0	0
3.00	9,411	8,644	8,644
4.00	11,067	10,239	18,883
4.50	11,940	5,752	24,634

Device	Routing	Invert	Outlet Devices
#1	Primary	1.70'	**15.0" Round RCP_Round 15"** L= 32.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1.70' / 1.50' S= 0.0062 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	3.25'	**48.0" W x 3.0" H Vert. Vertical slot** C= 0.600 Limited to weir flow at low heads
#3	Device 1	4.00'	**36.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Discarded	2.00'	**7.900 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 0.81'

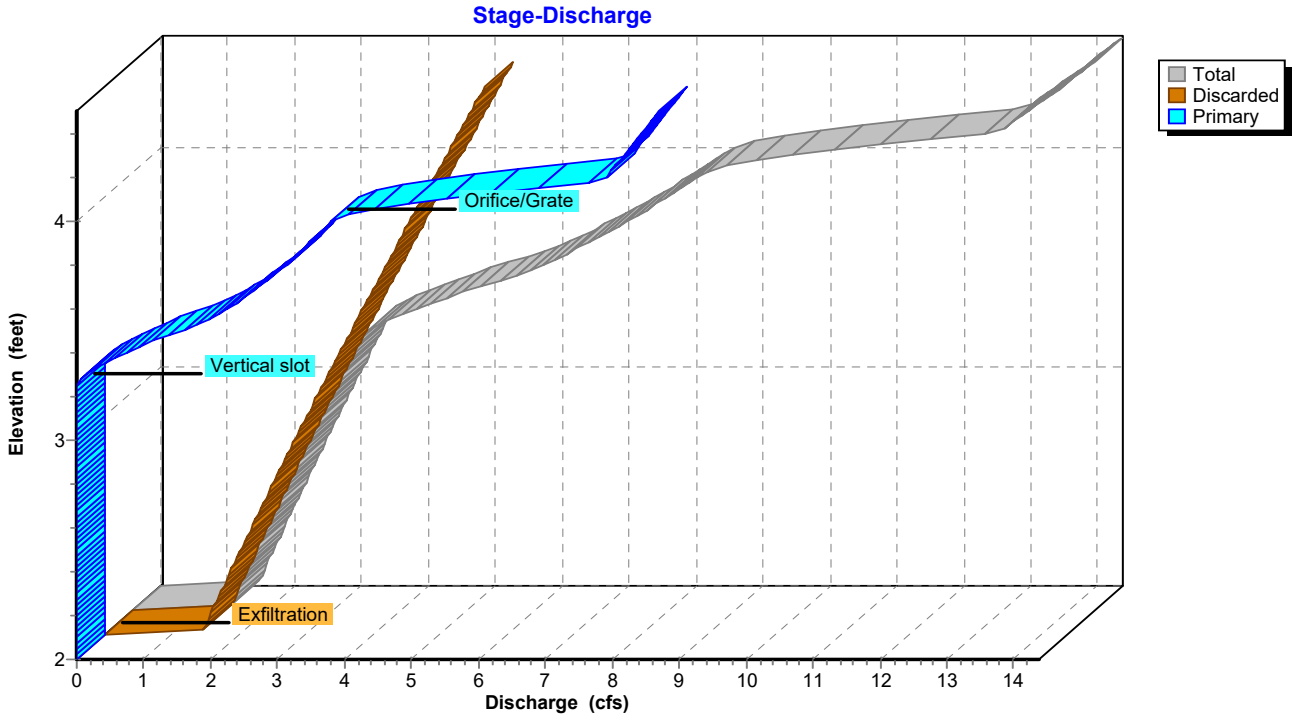
Discarded OutFlow Max=4.67 cfs @ 12.61 hrs HW=3.95' (Free Discharge)
└**4=Exfiltration** (Controls 4.67 cfs)

Primary OutFlow Max=3.64 cfs @ 12.61 hrs HW=3.95' (Free Discharge)
└**1=RCP_Round 15"** (Passes 3.64 cfs of 7.19 cfs potential flow)
  ├**2=Vertical slot** (Orifice Controls 3.64 cfs @ 3.64 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Treatment pond



Pond 2P: Treatment pond



Hydrograph for Pond 2P: Treatment pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	11,048	3.25	3.45	3.45	0.00
0.50	0.00	5,734	2.68	2.50	2.50	0.00
1.00	0.00	1,896	2.24	1.80	1.80	0.00
1.50	0.00	0	2.00	0.00	0.00	0.00
2.00	0.02	2	2.00	0.02	0.02	0.00
2.50	0.06	8	2.00	0.06	0.06	0.00
3.00	0.11	14	2.00	0.10	0.10	0.00
3.50	0.15	20	2.00	0.15	0.15	0.00
4.00	0.18	24	2.00	0.18	0.18	0.00
4.50	0.21	28	2.00	0.21	0.21	0.00
5.00	0.26	35	2.00	0.26	0.26	0.00
5.50	0.30	40	2.01	0.30	0.30	0.00
6.00	0.32	43	2.01	0.32	0.32	0.00
6.50	0.36	48	2.01	0.36	0.36	0.00
7.00	0.42	55	2.01	0.42	0.42	0.00
7.50	0.48	63	2.01	0.47	0.47	0.00
8.00	0.51	68	2.01	0.51	0.51	0.00
8.50	0.58	76	2.01	0.57	0.57	0.00
9.00	0.68	90	2.01	0.67	0.67	0.00
9.50	0.77	102	2.01	0.76	0.76	0.00
10.00	0.88	116	2.01	0.87	0.87	0.00
10.50	1.09	143	2.02	1.07	1.07	0.00
11.00	1.41	184	2.02	1.38	1.38	0.00
11.50	2.08	551	2.07	1.54	1.54	0.00
12.00	**9.45**	5,450	2.65	2.45	2.45	0.00
12.50	**10.27**	**17,926**	**3.91**	**8.13**	**4.61**	**3.52**
13.00	3.83	**15,447**	**3.68**	**6.85**	**4.20**	**2.65**
13.50	1.74	11,007	3.25	3.44	3.44	0.00
14.00	1.31	7,988	2.93	2.91	2.91	0.00
14.50	1.08	5,313	2.64	2.43	2.43	0.00
15.00	0.92	3,112	2.38	2.02	2.02	0.00
15.50	0.82	1,323	2.17	1.69	1.69	0.00
16.00	0.73	103	2.01	0.77	0.77	0.00
16.50	0.66	88	2.01	0.66	0.66	0.00
17.00	0.61	81	2.01	0.61	0.61	0.00
17.50	0.58	78	2.01	0.58	0.58	0.00
18.00	0.52	71	2.01	0.53	0.53	0.00
18.50	0.50	67	2.01	0.50	0.50	0.00
19.00	0.47	64	2.01	0.48	0.48	0.00
19.50	0.45	60	2.01	0.45	0.45	0.00
20.00	0.45	60	2.01	0.45	0.45	0.00
20.50	0.39	53	2.01	0.40	0.40	0.00
21.00	0.37	49	2.01	0.37	0.37	0.00
21.50	0.37	49	2.01	0.37	0.37	0.00
22.00	0.37	49	2.01	0.37	0.37	0.00
22.50	0.37	49	2.01	0.37	0.37	0.00
23.00	0.34	46	2.01	0.35	0.35	0.00
23.50	0.32	42	2.01	0.32	0.32	0.00
24.00	0.29	39	2.00	0.29	0.29	0.00

Appendix

National Flood Hazard Layer FIRMette

FEMA

82°46'22"W 27°46'25"N



82°45'44"W 27°45'53"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

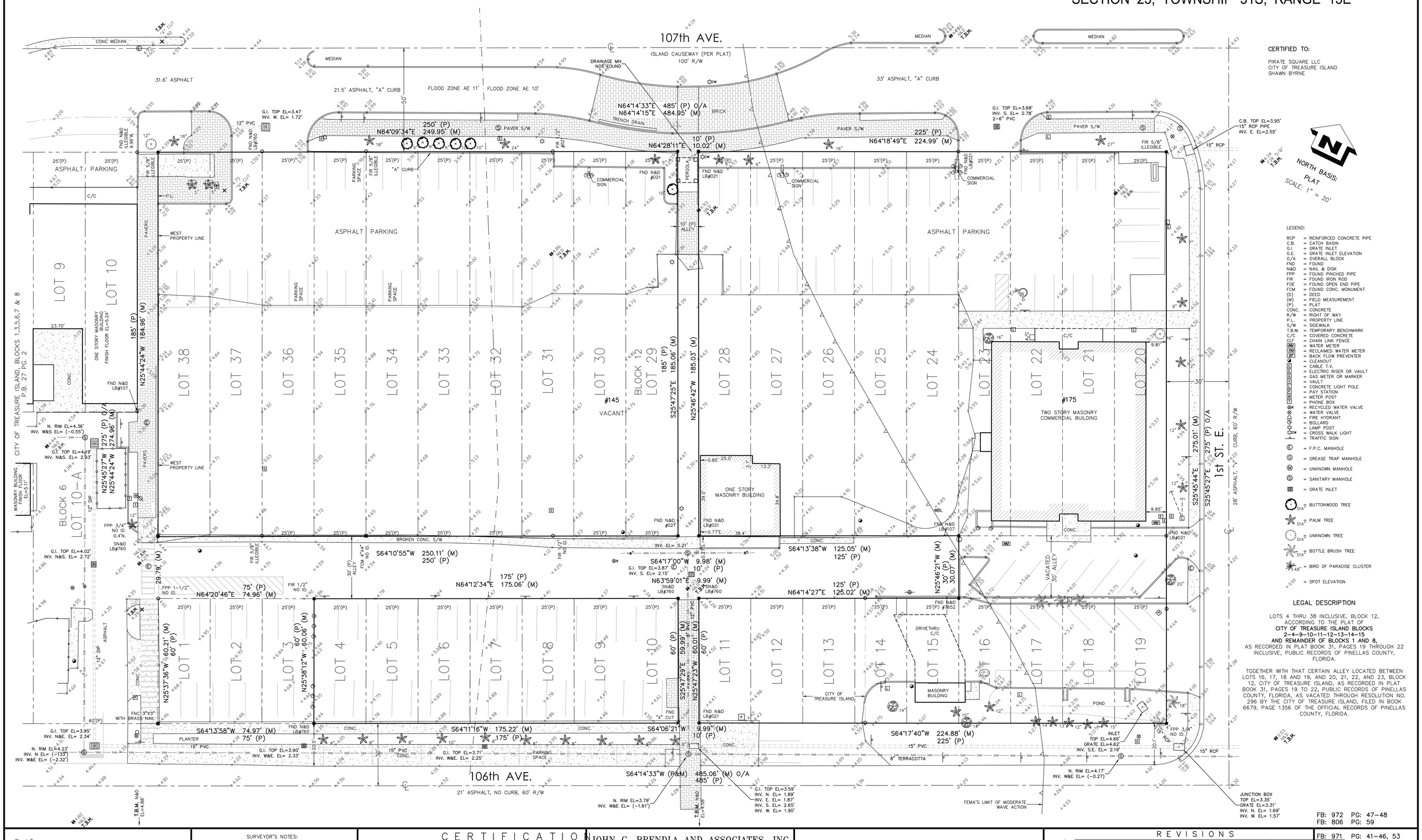
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/25/2025 at 3:09 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

SECTION 23, TOWNSHIP 31S, RANGE 15E



CERTIFIED TO:

PIRATE SQUARE LLC
CITY OF TREASURE ISLAND
SHAWN BYRNE

LEGEND:

RCP	= REINFORCED CONCRETE PIPE
C.B.	= CATCH BASIN
G.I.	= GRATE INLET
G.E.	= GRATE INLET ELEVATION
O/A	= OVERALL BLOCK
FND	= FOUND
N&D	= NAIL & DISK
FPP	= FOUND PINCHED PIPE
FIR	= FOUND IRON ROD
FOE	= FOUND OPEN END PIPE
FCM	= FOUND CONC. MONUMENT
(D)	= DEED
(M)	= FIELD MEASUREMENT
(P)	= PLAT
CONC.	= CONCRETE
R/W	= RIGHT OF WAY
P.L.	= PROPERTY LINE
S/W	= SIDEWALK
T.B.M.	= TEMPORARY BENCHMARK
C/C	= COVERED CONCRETE
CLF	= CHAIN LINK FENCE
WM	= WATER METER
RW	= RECLAIMED WATER METER
BF	= BACK FLOW PREVENTER
	= CLEANOUT
	= CABLE T.V.
	= ELECTRIC RISER OR VAULT
	= GAS METER OR MARKER
	= VAULT
	= CONCRETE LIGHT POLE
	= PAY STATION
	= METER POST
	= PHONE BOX
	= RECYCLED WATER VALVE
	= WATER VALVE
	= FIRE HYDRANT
	= BOLLARD
	= LAMP POST
	= CROSS WALK LIGHT
	= TRAFFIC SIGN
(E)	= F.P.C. MANHOLE
(G)	= GREASE TRAP MANHOLE
(M)	= UNKNOWN MANHOLE
(S)	= SANITARY MANHOLE
	= GRATE INLET
DIA.	= BUTTONWOOD TREE
DIA.	= PALM TREE
DIA.	= UNKNOWN TREE
DIA.	= BOTTLE BRUSH TREE
48"	= BIRD OF PARADISE CLUSTER
+0.00	= SPOT ELEVATION

LEGAL DESCRIPTION

LOTS 4 THRU 38 INCLUSIVE, BLOCK 12, ACCORDING TO THE PLAT OF **CITY OF TREASURE ISLAND BLOCKS 2-4-9-10-11-12-13-14-15 AND REMAINDER OF BLOCKS 1 AND 8,** AS RECORDED IN PLAT BOOK 31, PAGES 19 THROUGH 22 INCLUSIVE, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

TOGETHER WITH THAT CERTAIN ALLEY LOCATED BETWEEN LOTS 16, 17, 18 AND 19, AND 20, 21, 22, AND 23, BLOCK 12, CITY OF TREASURE ISLAND, AS RECORDED IN PLAT BOOK 31, PAGES 19 TO 22, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, AS VACATED THROUGH RESOLUTION NO. 296 BY THE CITY OF TREASURE ISLAND, FILED IN BOOK 6679, PAGE 1356 OF THE OFFICIAL RECORDS OF PINELLAS COUNTY, FLORIDA.

FB: 972 PG: 47-48
FB: 806 PG: 59

Flood Zone
AE (EL. 11'), AE (EL. 10')
COMMUNITY PANEL #125153 1210330194 H, EFFECTIVE 8/24/21

Basis of Bearings:
SOUTH BOUNDARY OF LOTS 1 THRU 19
BEING S64°14'33"W (PER PLAT)

Benchmark:
COUNTY #236 PBE 147 (USCE 1968)
EL. = 5.273' N.G.V.D., ADJUSTED TO
EL. = 4.51' N.A.V.D. M.S.L. = 0.00'

SURVEYOR'S NOTES:

This survey was prepared without the benefit of a title search and is subject to all easements, rights-of-way and other matters of record.

Survey not valid without the signature and original raised seal of a Florida licensed Surveyor and Mapper.

This survey is made for the exclusive use of the current owners of the property and also those who purchase, mortgage or guarantee the title thereto within one (1) year from date hereof.

CERTIFICATION

I hereby certify that the survey represented hereon meets the requirements of Chapter 5J-17, Florida Administrative Code.

JOHN O. BRENDLA
Florida surveyor's registration No. 4601
Certificate of Authorization No. 760

JOHN C. BRENDLA AND ASSOCIATES, INC.
Professional Land Surveyors and Mappers

JCB

4015 82nd Avenue North
Pinellas Park, Florida 33781
Telephone (727) 576-7546
Facsimile (727) 577-9932
LB 760

BOUNDARY SURVEY WITH TOPOGRAPHY, TREES, AND IMPROVEMENTS

2108-77.CRD

REVISIONS

No.	DESCRIPTION	DATE
1.	ADDITIONAL PER ENG.	11/29/2022
2.	UPDATE AFTER DEMOLITION	2/29/2024
3.	DETAIL INLET STRUCTURE S.E.	8/30/2024

FB: 971 PG: 41-46, 53
FB: 973 PG: 1

Survey date: 12/30/2021
Job Number: 2108-77

Drawn by: JM
Chkd by: JOB

SHEET 1 of 1

OPERATION AND MAINTENANCE INSTRUCTIONS

Instructions for the operation and maintenance of the Stormwater Management System for the proposed Pirate Square Parking Lot Redevelopment located at 115 107th Avenue, Treasure Island, FL 33706 are as follows:

Tracking Conditions

The permittee shall immediately provide written notification to Southwest Florida Water Management District, hereinafter called "the District" upon beginning any construction authorized by this permit. The applicant shall retain the Design Engineer, or other Professional Engineer registered in the State of Florida, to conduct on-site observations of the construction and assist with the as-built certification requirements of this project. The permittee shall inform the District in writing and prior to beginning construction of the name, address and phone number of the Professional Engineer so employed by the applicant/permittee for that purpose.

The Operation and Maintenance Entity shall submit inspection reports in the form required by the District in accordance with the following schedule unless specified otherwise herein or in Application information.

The dry detention stormwater pond serving the referenced development is located onsite, and is designed for water quality treatment via percolation with a treatment volume recovery time of less than 72 hours after a rainfall event. The O&M authority should be aware of any standing water in the stormwater inlets beyond this period of time, and other unusual flooding, which could illustrate that the system is malfunctioning. An inspection shall be performed 24-months after operation is authorized and every 24-months thereafter as a standard precaution.

Maintenance

The stormwater management system requires periodic maintenance to assure the hydraulic functioning of the system. Specific requirements are listed below:

- The pond and overflow weir shall be inspected on a monthly basis.
- All hydraulic structures (i.e. oil skimmer structures, culverts, inlets, pipes) shall be kept free of debris/obstructions to assure proper hydraulic functioning.
- The outfall structure shall be inspected on a monthly basis in order to keep it from clogging. Should clogging occur the O&M authority should employ the means necessary to clear the system of debris.
- An engineer registered in the State of Florida shall inspect the system at 24-month intervals and make recommendations on the maintenance of the stormwater management system.

Operation

The stormwater management system and discharge facility have been designed to be self-operating. The O&M authority is responsible for periodic inspections and maintenance of the system to ensure that it functions as designed and described above.

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-

Pirate Square
175 - 107th Avenue, Treasure Island
Parcels: 23-31-15-91818-012-0260 & -0140
Pinellas County, Florida
Geotechnical Services
August 2024

Report Number. 249859

Prepared
for

Pirate Square LLC
c/o Mr. Shawn Byrne
11620 - 7th Street East
Treasure Island, Florida 33706

Central Florida Testing Laboratories, Inc.

Testing Development and Research

12625 – 40TH STREET NORTH • CLEARWATER, FL 33762

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

TAMPA BAY AREA (727) 572-9797 FLORIDA 1-800-248-CFTL FAX (727) 299-0023

August 13, 2024

Pirate Square, LLC
11620 – 7th Street East
Treasure Island, FL 33706

Attn: Mr. Shawn Byrne

Re: Geotechnical Investigation for Stormwater Retention System Design for Proposed Pirate Square - 175 – 107th Avenue, Treasure Island, Fla.33706
(Parcels: 23-31-15-91818-012-0260 & -0140, Pinellas County, Florida)
CFTL Report No. 249859

Dear Mr. Byrne,

As authorized, our office has completed the scope of geotechnical testing services requested by Mr. Russell Ottenberg with Plan Eng as outlined in his July 24th, 2024 email. The purpose the testing was to provide recommendations for site preparation, pavement design and soil parameters for use in the design of the stormwater retention system planned for the project.

These services included an additional deep standard penetration test (SPT) boring to supplement the previous six SPT borings conducted over the site. This boring was to fulfil the requirement for two (2) SPT borings to be located within the new retention pond area planned for the southeast corner of the site. An existing shallow retention pond is already in this location.



The purpose of the borings were determine the depth to an impermeable layer as well as provide information relative to pavement design. The boring was drilled in conjunction with a Double Ring Infiltration (DRI) test conducted in the same area which is planned to contain the stormwater retention pond. Finally, laboratory testing was conducted on an undisturbed Shelby Tube sample of the soils to determine the

Fillable Porosity of the soils in the retention pond. The locations of all of the above referenced prior and current tests are shown on the Site Plan of the planned new parking lot included in this report.

Site Description

The subject property comprises approximately 3.5 acres m.o.l. of land located on the south side of 107th Avenue in Treasure Island, Florida. The property has been cleared of its 2-story strip mall and various businesses with the exception of a bank building located at its northeast corner and the bank drive-thru located at its southeast corner. Asphalt pavement remains in areas that surrounded the previous building footprints. The site is bordered by 107th Avenue on its north, 1st Street East on its east side, 106th Avenue on its south side and an existing separate retail strip building on its west side. The west end of the property is approximately 250 east of Gulf Boulevard, while the east end of the property is approximately 850 feet west of the Treasure Island Causeway connecting the barrier island chain and Treasure Island to mainland Pinellas County, Florida.





For additional reference to the site, we are also including an area map showing the property with respect to the surrounding geographical area, and large and small scale aerial photographs of the site prior to demolition of the buildings and NRCS (Natural Resources Conservation Services) data relating to the predominant soil type present on the property and their expected seasonal high water table (SHWT) level.

Test Methods

The SPT borings were completed using sampling intervals in excess of those required by ASTM Specifications, D-1586, describing the Standard Penetration Test or "split-spoon" method of sampling. Four samples were taken in the upper ten feet to provide greater definition within this zone.

The penetration resistance testing and sample taking was accomplished with the use of a 2" O.D. sampler seated six inches into the bottom of the borehole and advanced an additional one foot under the effort of a 140 pound hammer falling freely thirty inches. The number of blows required of the hammer to advance the sampler one foot into undisturbed material was noted as the blow count (N) of that particular stratum. Portions of each soil sample so taken, were classified, sealed in moisture-proof containers and returned to our laboratories for verification of field classification.



The borings were advanced using a truck mounted, rotary drill rig, utilizing a recirculating bentonite drill fluid to maintain the borehole in noncohesive soils and to remove cuttings created by the drill bit. Upon completion all boreholes were sealed in accordance with SWFWMD regulations.

The DRI test was performed in general accordance with the guidelines resented 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.

The accompanying hand auger boring to the DRI test was accomplished with the use of post hole 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, collection and further testing, if needed.

SPT Boring Results

While the boring logs for all six previous SPT borings are included in this report, only boring B-4 was positioned within the new retention pond area. Boring B-7 is our current boring labeled consecutively to the previous borings to provide two

borings within the retention pond area. Due to the existing bank drive-thru the borings were positioned to avoid blocking traffic to the drive-thru and/or boring through the existing asphalt pavement remaining in this area. The profiles of boring B-4 and B-7 will be described below.

Boring B-4, located to the south or rear of the existing bank drive-thru building and in the southeast portion of the site, encountered approximately 20 feet of variable density sandy/silty soils containing shell that ranged in consistency from loose to medium dense. Beginning at 20 feet and continuing to 30 feet was a layer of very loose baybottom silts, which was underlain by slightly loose to dense sands containing abundant shell to 50 feet. Finally, beginning at 50 feet and continuing to 60 feet was a layer very stiff to very hard marine clays. The boring was terminated after the 65 foot sampling interval in very dense sands after recording 3 consecutive refusal N-values represented by a penetration resistance of more than 100 blows per foot on the sampling device. No loss of drilling fluid circulation occurred in the boring. A measurement to the depth of the shallow water table was made in the grass area to the south of the SPT boring location using a hand auger. It measured 4.2 feet below the surface. The grass area is slightly lower than the pavement where the boring was drilled.

Boring B-7, also located in the planned retention pond area, encountered 19 feet of dense to loose sands with shell fragments followed by the baybottom silt layer that continued to 30 feet below the surface. Beginning at 30 feet and continuing to 50 feet were dense or medium dense sands with shell followed by the very stiff to very hard sandy marine clay layer which terminated the boring with the 60-foot sampling interval. Again, no loss of drilling fluid circulation occurred during advancement of the boring and the shallow water table was measured at 4 feet below the surface.

While the baybottom silt layer is partially restrictive to water flow, however in our opinion the actual restrictive layer of soil would be considered the marine clays which began at approximately 50 feet below the surface in both borings.

Double Ring Infiltration Test Results

Soils encountered in the shallow auger boring that accompanied the DRI test consisted of dark gray surficial sands with small roots associated with the grass lined existing retention pond, followed by non-cohesive light colored sands containing varying amounts of shell fragments. These sands extended to a depth of at least 6 feet consistent with the SPT boring profiles. **The static shallow water table was measured at a depth of approximately -4.0 feet below the surface.** In our opinion,



the soils show no indicator of a historic seasonal high water table (SHWT) level but do reflect potential filling activities associated with most if not all of the barrier island properties. With the Town of Treasure Island surrounded by sea water to the east and west its water table is expected to be tidally influenced and will most likely fluctuate on a daily basis with the tidal levels in the Gulf of Mexico to the west and/or the Intercoastal Waterway to the east.

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, which is for Johns Pass (1.25 miles 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.

Based on Google Earth® elevations, the entire site is at an elevation of approximately +5' NAVD88. With the depth to the static water table being measured at -4.2', this would equate to an elevation of +0.8' and correspond very closely with the NOAA information. Therefore, we estimate the SHWT level to be at a depth of approximately -4.0' below the surface and be tidally influenced.

The maximum infiltration rate at DRI-1 was determined to be a fairly rapid 7.6 minutes per inch (7.9 inches/hr.) after 4 hours of testing with the test apparatus seated approximately 2 feet below the ground surface. The infiltration rate from the DRI test is considered to represent "K_v" or the vertical hydraulic conductivity. "K_h" or the horizontal hydraulic conductivity is assumed by SWFWMD at 1.5 times the vertical. Therefore:

K_v = 7.9 inches/hr. = 15.8 ft./day
K_h = 1.5 x 15.8 ft./day = 23.7 ft./day

Fillable Porosity

Fillable porosity is the amount of void space present within the soil matrix after accounting for the space taken by the soils in-situ moisture content. No ASTM procedure is present to determine it, however the St. Johns River Water Management District (SJRWMD) in their publication SJ93-SP10, Section 7.2.4 provides a method of determining it. This method is referenced by other publications and its formula was used to calculate a value for Fillable Porosity for the shell laden sands beneath the retention pond area. At the time of our sampling, the in-situ moisture was determined to be 5.4% be weight and the in-

situ density of the soils was determined to be 100.2 pounds per cubic foot (pcf).

The overall Volume of Voids or total porosity was found to be 0.39, while the Fillable Porosity was calculated to be 0.26 or 26%.

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 one predominant type of soils. This type is Mapping Unit #16 soils which are described as *Matlacha and St. Augustine soils and Urban land.* Both *Matlacha and St. Augustine soils and Urban land.* These soils have a parent material listed as "sandy mine spoil or earthen fill". This represents the dredge and fill activities and associated spoils that were used to create the uplands along the barrier island chain. The depth to the water table is referenced as between 24 and 36 inches below the surface. *Urban land* has no listed SHWT due to soil disturbances from years of past development and additional filling, such as has taken place on this site. Both these classifications appear generally accurate and consistent with the soils found on the site.

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

Recommendations

In consideration of all of the above information, our recommendations for a pavement section for the planned new parking lot would be consistent with that designated for a light residential street or roadway. This should be consistent with the existing asphalt pavement that covers the site but is in need of repair or reconstruction.

Typical minimum Roadway Pavement Guidelines and associated Structural Numbers for varying traffic volumes are provided in the table below.



The Town of Treasure Island may have slightly different pavement section thicknesses than those shown and if

different municipal specifications would take precedence for proposed pavement areas.

	Arterial	**Collector (Major/Minor) Commercial / Industrial**	**Residential Medium Traffic**	**Residential Light Traffic**
Structural Number	**4.17**	**3.28**	**3.06**	**2.46**
Asphalt Superpave Surface	Type SP-12.5 Fine, Traffic Level "C" 3" min. thick (2 lifts) (0.44) (1.32 Total)	Type SP-12.5 Fine, Traffic level "C" 2" min. thick (0.44) (0.88 Total)	Type SP-9.5 Fine, Traffic Level "C" 1-$^1/_2$" min. thick (0.44) (0.66 Total)	Type SP-9.5 Fine, Traffic level "C" 1-1/2" min, thick (0.44) (0.66 Total)
Base (Compacted 98% of AASHTO T-180)	Limerock 10 $^1/_2$" Min. Thickness (Min. 100 LBR) (0.18) (1.89 Total)	Limerock 8" Min. thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 8" Min. thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 6" Min. thickness (Min. 100 LBR) (0.18) (1.08 Total)
Sub-Base (Compacted 98% of AASHTO T-180)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08)	9" min. thickness (Stab. w/min, 40 LBR) (0,08) (0.72 Total)

Structural Layer Coefficients for Optional Bases: Superpave Type B-12.5 Base = 0.30, Crushed Concrete Base is equivalent with Layer Coefficient = 0.18 if LBR = 150

We would assume that your parking lot project would come under "Residential Light Traffic" for its interior pavement with a Structural Number of at least 2.46, while its entrances onto 107th Avenue and 106th Avenue would need to meet the existing section thicknesses and Structural Number of these streets, which would most likely be either a SN of 3.06 or 3.28.

To be more specific regarding pavement section recommendations, more information regarding traffic volumes and traffic types would have to be known.

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 boring.

It is not intended to predict or accept responsibility for sinkhole development. Additional other means of subsurface investigations including, but not limited to, deep structural borings, rock coring, geophysical studies, ground penetrating radar or resistivity surveys are used for sinkhole potential determinations and are out of the scope of this investigation.

Generally accepted soil mechanics and foundation 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.

This report is for the exclusive use of our client and may not contain sufficient information for other uses, such as quantity take-offs, or for interpretation by other parties for bidding purposes. 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.

If borings were not staked by a registered land surveyor but were located by our drill crews, the following method was used:

Distances are generally measured using a 100 foot tape measure with right angle approximation used to turn corners. Scaling from prints or surveys with reference points shown on the plan or geographical references will produce a degree of accuracy that is typically +/- 5% for length and +/- 10 degrees for angles.

Soil strata delineations are estimated in the field by color changes, texture differences and penetration resistance values. These may be more gradual transitions than those shown on the boring log representations of strata delineations.

The ground water depth determination shown on the bottom of the boring log was measured in the bore hole at the time of drilling, unless noted otherwise. This depth does not reflect seasonal high water levels and would fluctuate as expected with variations in rainfall or other factors not present at the time of our soils investigation.

The boring data represents only that data obtained during this investigation at the approximate locations shown on the site schematic or plan.

Should significant variations of soil or subsurface conditions exist between boring locations and be encountered by future exploratory work or site preparation efforts, our office should be notified so that supplemental borings or data gathering determinations can be made to update our report and recommendations at a minimal expense to our client. It is the responsibility of our client to inform our office of these variations if possible modifications of the report is warranted.

This report is general in nature, unless specific geotechnical data or recommendations were asked to be addressed. However, we would be pleased to answer any questions concerning comments or recommendations made in this

report.

We appreciate the opportunity to have been of service. If any further evaluation of the site or testing services are needed, either prior to design or during construction, please do not hesitate to contact our office.

Sincerely,

CENTRAL FLORIDA TESTING LABORATORIES, INC.



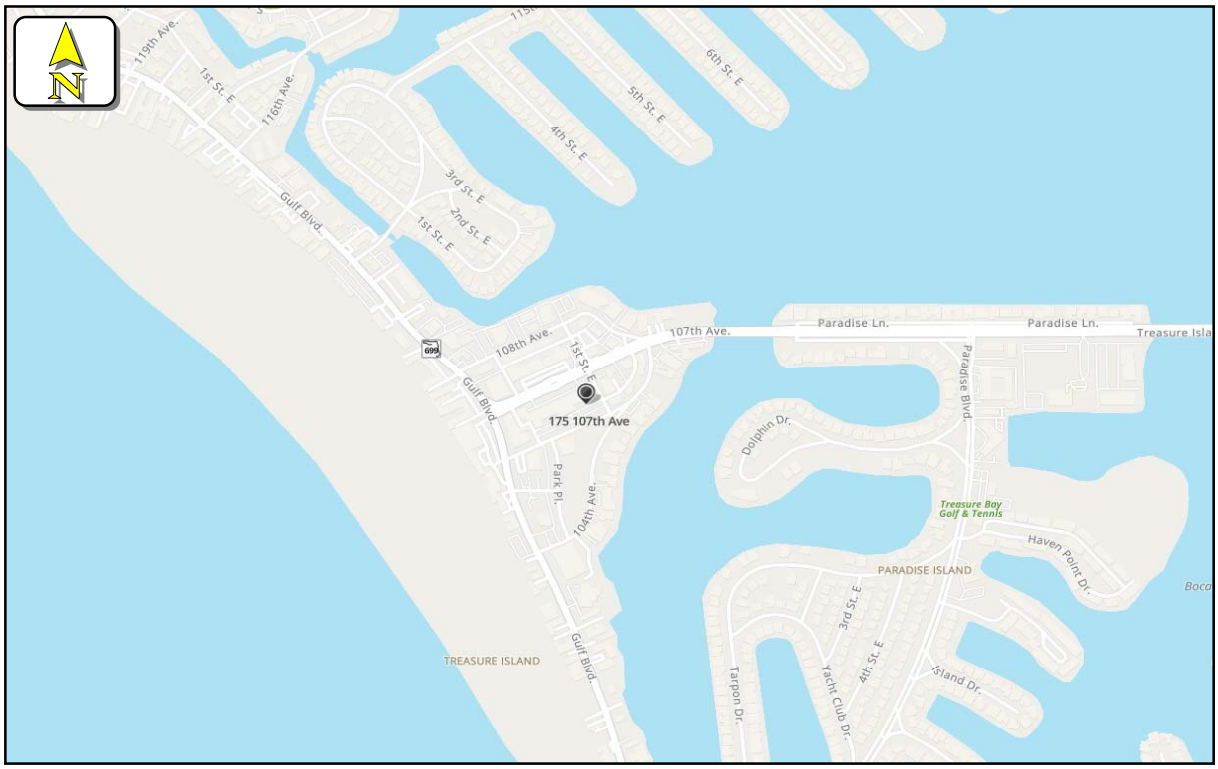
This item has been electronically signed and sealed by George C. Sinn, Jr., P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

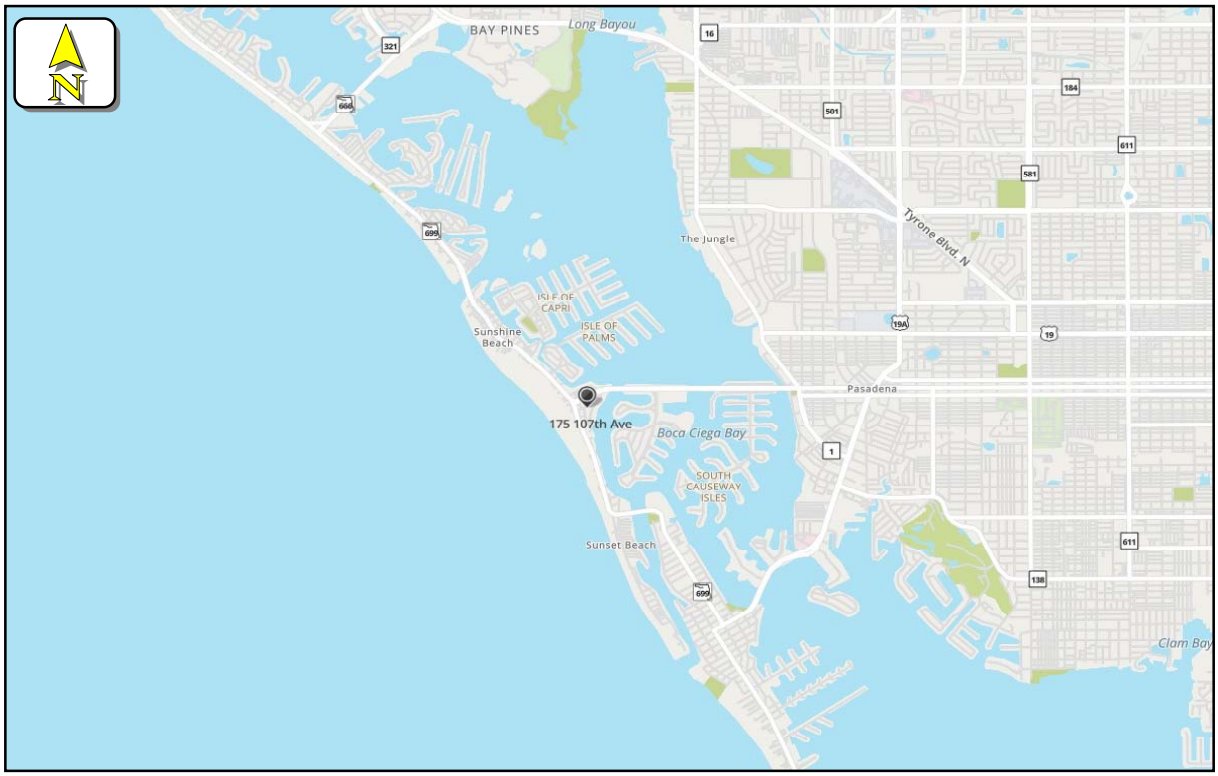
George C. Sinn, Jr., P.E.
President/Principal Engineer
FLN 16911
GCS/gs
Attachments

cc: Russell Ottenberg (email)

Maps

Various





Central Florida Testing Laboratories, Inc.

Pirate Square
175 - 107th Avenue
Treasure Island, Florida 33706
Report No: 249859

Legend

Figure 1 - Location

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

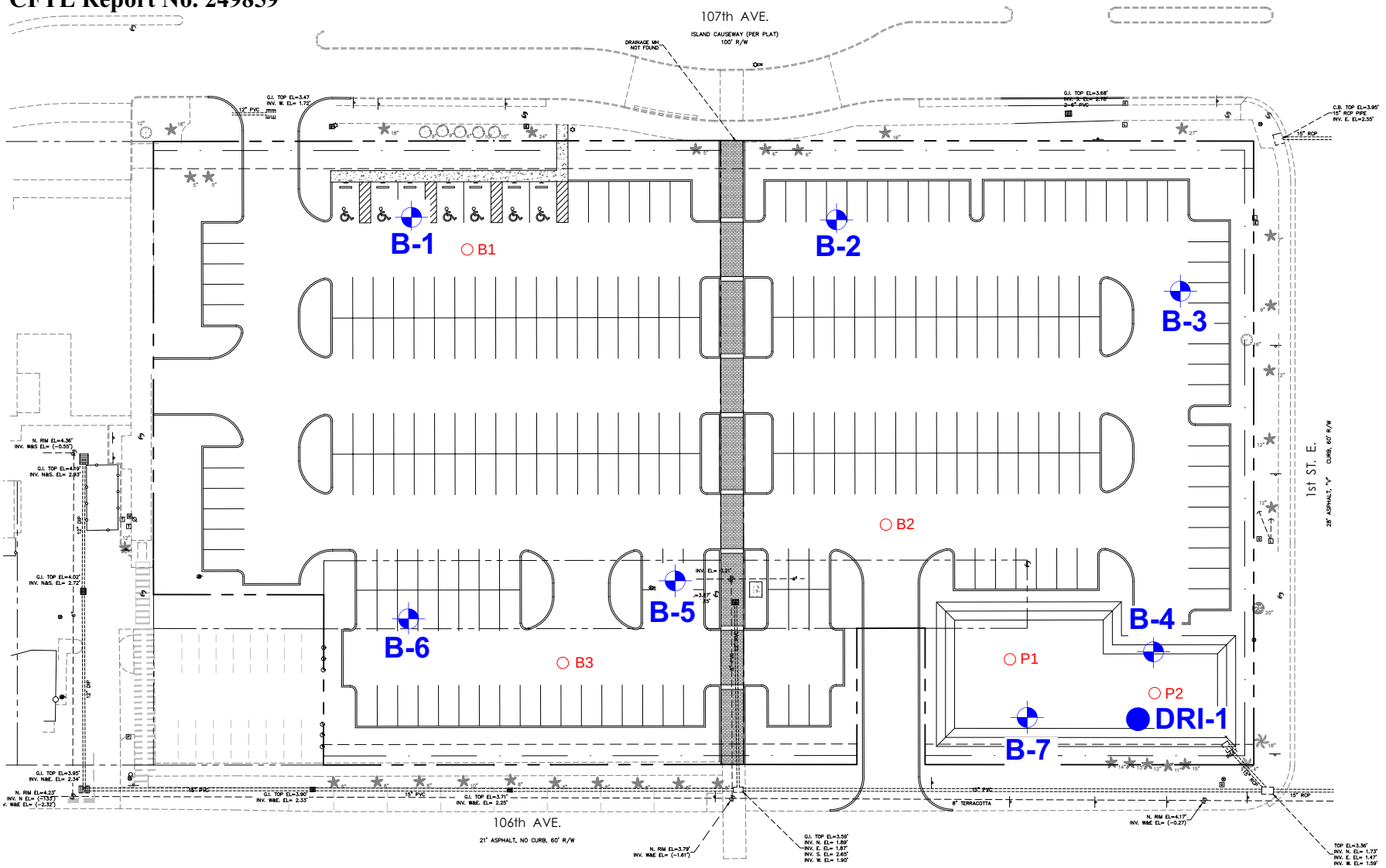
2023 County Aerial Photograph of Site



2023 County Aerial Photograph of Site



Pirate Square / 175 - 107th Avenue, Treasure Island
Approximate Test Locations
CFTL Report No. 249859



Site Boring Exhibit

PLANNING INC

Board of Professional Engineers
Certificate of Authorization
No. 26432

Pensacola:
501 Fitzgerald Street
Pensacola, FL 32505
T (850) 444.9493

Tampa:
3737 Lake Joyce Dr
Land O Lakes, FL 34639
T (813) 962.1752

Issue / Revisions

NORTH

Scale
1" = 20'

Pirate Square
Treasure Island, Florida

PLANNING INC

Date

Reviewed by
JMG/RMO

Plan Description
Parking Lot Plan

Sheet No.
P1

2023-0509TRIcom baset .dwg
CAD date 7/22/2024

SPT Boring Results

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-1
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value
0		Ground Surface			
0		***Asphalt with Limerock Base***	medium dense	7-8-12	20
		Sand Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained, occasional shell fragments.	medium dense	5-6-7	13
5			medium dense	3-4-7	11
		Sand Light brownish gray (10YR 6/2), fine grained.	loose	4-4-2	6
10			medium dense	6-8-9	17
15		***Sandy Silt (Bay Bottom)*** Light brownish gray (10YR 6/2), fine grained, trace to minor shell fragments, slightly clayey, with silty sand seams.	very loose	WOH-1/12"	1
20			very loose	WOH-1/12"	1
25		***Silty Sand*** Light brownish gray (10YR 6/2), fine grained.	very loose	WOH-1-1	2
30			loose	3-3-2	5
35		***Sand*** Light gray (10YR 7/2) to very pale brown (10YR 7/3), fine grained.	very dense	24-22-32	54
40		***Clayey Sand*** Light brownish gray (10YR 6/2), fine grained.	medium dense	9-7-12	19
45		***Sandy Clay*** Light brownish gray (2.5Y 6/2).	stiff	5-7-8	15
50			hard	8-13-19	32
55			very hard	30-38-50/4"	100+
60			very hard	18-22-38	60
65			very hard	29-50/5"	100+
70		End of Boring			

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

WOH = Weight of Hammer
No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Sheet 1 of 1

CFTL — TESTED • APPROVED — CENTRAL FLORIDA TESTING LABORATORIES

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-2
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value
0		Ground Surface			
0		***Asphalt with Limerock Base***	medium dense	10-11-12	23
		Sand Light gray (10YR 7/1), fine grained, minor shell fragments.	medium dense	3-4-7	11
5			medium dense	7-12-8	20
		Sand Light gray (10YR 7/1) to gray (10YR 6/1), fine grained, slightly silty.	slightly loose	2-3-4	7
10			slightly loose	2-3-4	7
15		***Silty Sand*** Light gray (10YR 7/1), fine grained.	very loose	5-2-1	3
20		***Sandy Silt (Bay Bottom)*** Light brownish gray (10YR 6/2), fine grained, occasional shell fragments, with silty sand seams.	very loose	1/12"-1	1
25			very loose	1/12"-1	1
30		***Sand*** Light brownish gray (10YR 6/2), fine grained.	medium dense	5-5-7	12
35		***Sand*** Light brownish gray (10YR 6/2), fine grained, slightly silty.	medium dense	6-7-8	15
40		***Sand*** Gray (10YR 6/1), fine grained.	medium dense	8-8-9	17
45		***Sandy Clay*** Gray (5Y 6/1).	very stiff	10-12-14	26
50		***Clayey Sand*** Gray (5Y 6/1), fine grained.	slightly loose	4-4-4	8
55		***Sand*** Gray (10YR 6/1), fine grained, slightly clayey.	very dense	50/3"	100+
60			very dense	12-23-46	69
65			very dense	14-24-50/5"	100+
		End of Boring			
70					

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-3
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Asphalt with Limerock Base	medium dense	11-8-9	17
	Sand Light gray (10YR 7/1) to light gray (10YR 7/2), fine grained, trace to minor shell fragments.	loose	4-3-3	6
5		medium dense	3-5-8	13
	Sand Gray (10YR 6/1), fine grained, slightly clayey.	slightly loose	1/12"-8	8
10		medium dense	8-13-9	22
	Sand Light gray (10YR 7/1), fine grained.	medium dense	15-16-5	21
20		very loose	1/12"-1	1
25	***Sandy Silt (Bay Bottom)*** Gray (10YR 6/1) to gray (10YR 5/1), fine grained, with silty sand seams.	very loose	1-1-1	2
30		very loose	2-1-2	3
35		medium dense	1-3-9	12
40	***Sand*** Light gray (10YR 7/1) to gray (10YR 6/1), fine grained, common cemented nodules at 35'.	dense	12-17-17	34
45		medium dense	6-7-11	18
50		very stiff	8-10-11	21
55	***Sandy Clay*** Light brownish gray (2.5Y 6/2).	very stiff	8-11-16	27
60		hard	13-19-25	44
	Sandy Clay Light gray (10YR 7/2).			
65		hard	18-17-18	35
	End of Boring			
70				

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation.

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

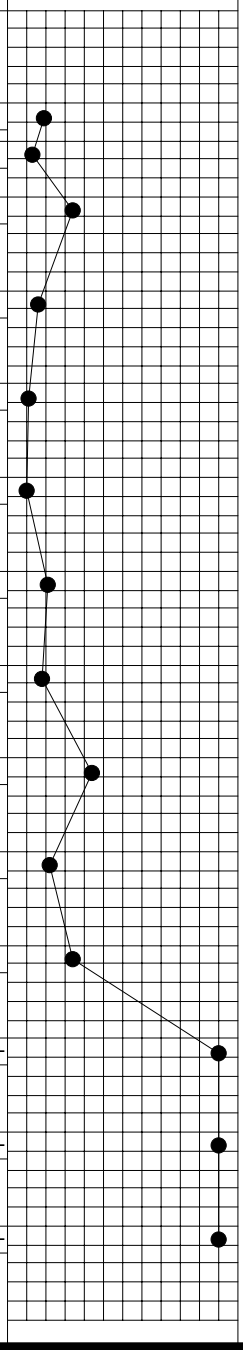
Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-4
Date Drilled: 09/23/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Asphalt with Limerock Base			
	Sand Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained.		Hand Auger	
5		slightly loose	1-3-6	9
	Silty Sand Light brownish gray (10YR 6/2), fine grained.	very loose	6-1-2	3
10		medium dense	9-13-11	24
	Sand Light gray (10YR 7/1) light brownish gray (10YR 6/2), fine grained, common shell fragments.			
15		loose	7-4-2	6
20		very loose	1/12"-1	1
	Sandy Silt (Bay Bottom) Gray (2.5Y 6/1), fine grained, minor shell fragments, slightly clayey, with silty sand seams.			
25		very loose	1/18"	0
30		medium dense	4-5-6	11
35		slightly loose	1-2-6	8
	Sand Light gray (10YR 7/1) to light brownish gray (10YR 6/2), fine grained, abundant to common shell fragments to 40', abundant cemented nodules at 45'.			
40		dense	31-20-14	34
45		medium dense	7-5-7	12
50		very stiff	9-11-13	24
	Sandy Clay Gray (2.5Y 6/1).			
55		very hard	7-17-50/4"	100+
60		very dense	32-50/5"	100+
	Sand Light gray (10YR 7/1), fine grained, slightly clayey.			
65		very dense	31-50/5"	100+
	End of Boring			
70				



Lab/ Notes

Notes: NRCS Designation: Matlacha and St. Augustine soils and Urban land
NRCS SHGWT: 18 to 36 inches
CFTL SHGWT: Tidal
Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

No loss of drill fluid circulation

Water Table: 4.2' bls (HA)
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-5
Date Drilled: 09/23/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value
0		Ground Surface			
0		***Asphalt with Limerock Base***		Hand Auger	
5		***Sand*** Light gray (10YR 7/1) to light gray (10YR 7/2), fine grained.	very loose	1-1/12"	1
			slightly loose	3-4-4	8
10		***Clayey Silt (Bay Bottom)*** Gray (2.5Y 6/1), trace shell fragments.	soft	1-1-2	3
15		***Sandy Silt (Bay Bottom)*** Gray (2.5Y 6/1) to grayish brown (10YR 5/2), fine grained, occasional shell fragments, slightly clayey, with silty sand seams.	very loose	1/12"-1	1
20			very loose	1-1-1	2
25			very loose	1/12"-2	2
30			slightly loose	2-1-7	8
35		***Sand*** Gray (10YR 5/1), fine grained.	dense	15-20-21	41
40		***Sand*** Light gray (10YR 7/1), fine grained, abundant cemented nodules, slightly silty.	medium dense	8-7-8	15
45		***Sandy Clay*** Light olive gray (5Y 6/2) to gray (5Y 6/1), cemented at 65'.	hard	15-17-15	32
50			hard	12-15-18	33
55			hard	15-13-23	36
60			very stiff	5-8-16	24
65			very hard	50/0"	100+
		End of Boring			
70					

Standard Penetration Test (blows/ft)
0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-6
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Asphalt with Limerock Base		Hand Auger	
5	***Sand*** Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained.	medium dense	1-6-5	11
		loose	2-3-1	4
10		medium dense	4-8-10	18
15		very loose	1/12"-1	1
20	***Sandy Silt (Bay Bottom)*** Light brownish gray (10YR 6/2) to grayish brown (10YR 5/2), fine grained, trace to minor shell fragments, with silty sand seams.	very loose	1/12"-1	1
25		very loose	1/12"-1	1
30		very loose	1-1-1	2
35	***Sand*** Light gray (10YR 7/2), fine grained, occasional shell fragments.	dense	16-18-19	37
40		medium dense	4-7-7	14
45	***Sandy Clay*** Light olive gray (5Y 6/2) to light brownish gray (10YR 6/2).	hard	14-19-23	42
50		very stiff	9-11-13	24
55	***Sandy Clay*** Light brownish gray (10YR 6/2).	stiff	5-6-9	15
60		very hard	50/3"	100+
65		very hard	24-34-50/5"	100+
70	End of Boring			

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Pirate Square LLC
Project: Pirate Square
Location: 175 - 107th Avenue
City / State: Treasure Island, Florida

Report No: 249859
Log of Borehole: B-7
Date Drilled: 08/01/2024

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Sand Light gray (10YR 7/2) to light brownish gray (10YR 6/2), fine grained, occasional to minor shell fragments.	medium dense	7-12-14	26
		medium dense	9-13-7	20
5	***Silty Sand*** Gray (10YR 6/1), fine grained, minor shell fragments and trace bay bottom.	slightly loose	5-6-3	9
		loose	1-1-3	4
10	***Silty Sand*** Gray (10YR 5/1), fine grained,	dense	12-17-13	30
	Sand Light gray (10YR 7/1), fine grained, occasional shell fragments.			
15		loose	2-2-2	4
	Sand Gray (10YR 6/1), fine grained, common shell fragments, slightly silty.			
20		very loose	1-1-1	2
	Sandy Silt (Bay Bottom) Gray (2.5Y 5/1) to dark gray (2.5Y 4/1), occasional to minor shell fragments, slightly clayey.			
25		very loose	1-1-1	2
30		medium dense	2-2-8	10
	Sand Gray (10YR 6/1), fine grained, minor shell fragments.			
35		dense	14-20-17	37
	Sand Gray (10YR 6/1) to light gray (10YR 7/1), fine grained, abundant shell fragments, common cemented nodules at 45'.			
40		dense	16-14-20	34
45		medium dense	6-5-5	10
50		hard	9-13-19	32
	Sandy Clay Gray (2.5Y 5/1).			
55		very stiff	10-11-12	23
60		very hard	28-33-40	73
	End of Boring			
65				

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: NRCS Designation: Matlacha and St. Augustine soils and Urban land
NRCS SHGWT: 18 to 36 inches
CFTL SHGWT: Tidal
Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

No loss of drill fluid circulation.

Water Table: 4.0' bls (HA)
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

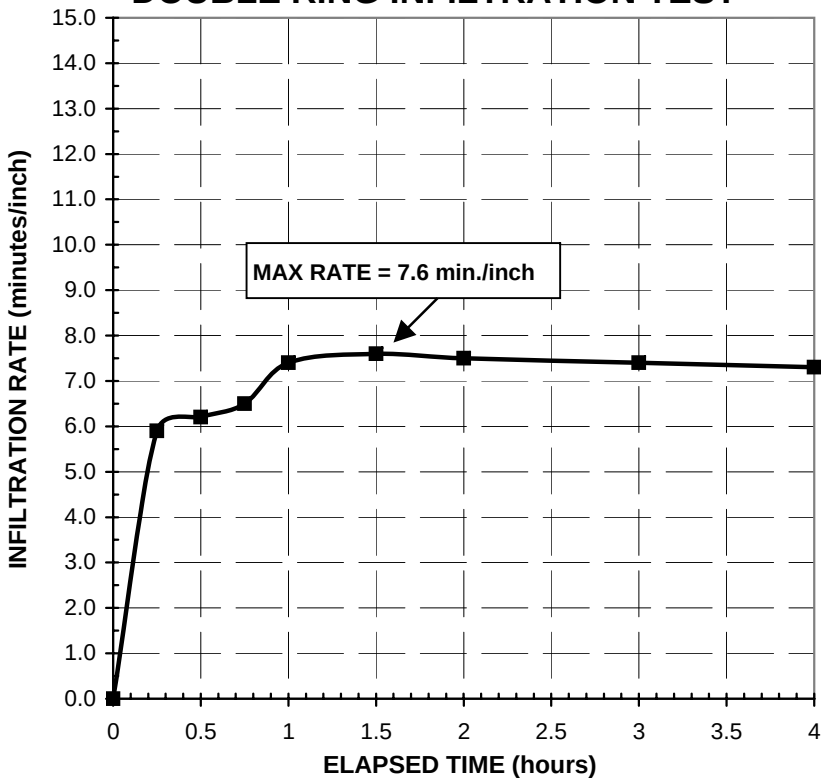
DRI Results

Central Florida Testing Laboratories, Inc.

Testing Development and Research

12625 – 40TH STREET NORTH • CLEARWATER, FL 33762
TAMPA BAY AREA (727) 572-9797 FLORIDA 1-800-248-CFTL FAX (727) 299-0023

DOUBLE RING INFILTRATION TEST



Maximum Infiltration Rate (min./in.): 7.6

EXISTING WATER TABLE DATA

WATER TABLE AT TIME OF TEST (BLS): **4.0'**

EST. SEASONAL HIGH WATER TABLE (BLS): **Tidal**

NRCS WATER TABLE DATA

SOIL TYPE (AT DRI LOCATION):

Matlacha and St. Augustine soils and Urban land

SEASONAL HIGH WATER TABLE: **18 to 36 inches**

Project: **Pirate Square**
175 - 107th Avenue
Treasure Island, Florida 33706

Client: **Pirate Square LLC**

Lab No.: **249859**

DOUBLE RING INFILTRATION DATA

Test Location: **DRI-1**

Test Elevation: **2.0 feet below existing land surface**

Test Date: **August 2, 2024**

Notes ALL DEPTHS REFERENCED FROM EXISTING GROUND

SHALLOW AUGER BORING DATA

Depth (ft.)			Munsel No.	Description
0.0	to	0.5	10YR 4/1	Dark gray fine sand w/small roots
0.5	to	2.8	10YR 6/2	Very pale brown fine sand w/shell
2.8	to	4.0	10YR 7/1	Light gray fine sand
4.0	to	5.6	10YR 6/1	Gray silty sand w/shell, and trace bay bottom
5.6	to	6.0	10YR 6/1	Gray silty sand w/occasional shell

Central Florida Testing Laboratories, Inc.

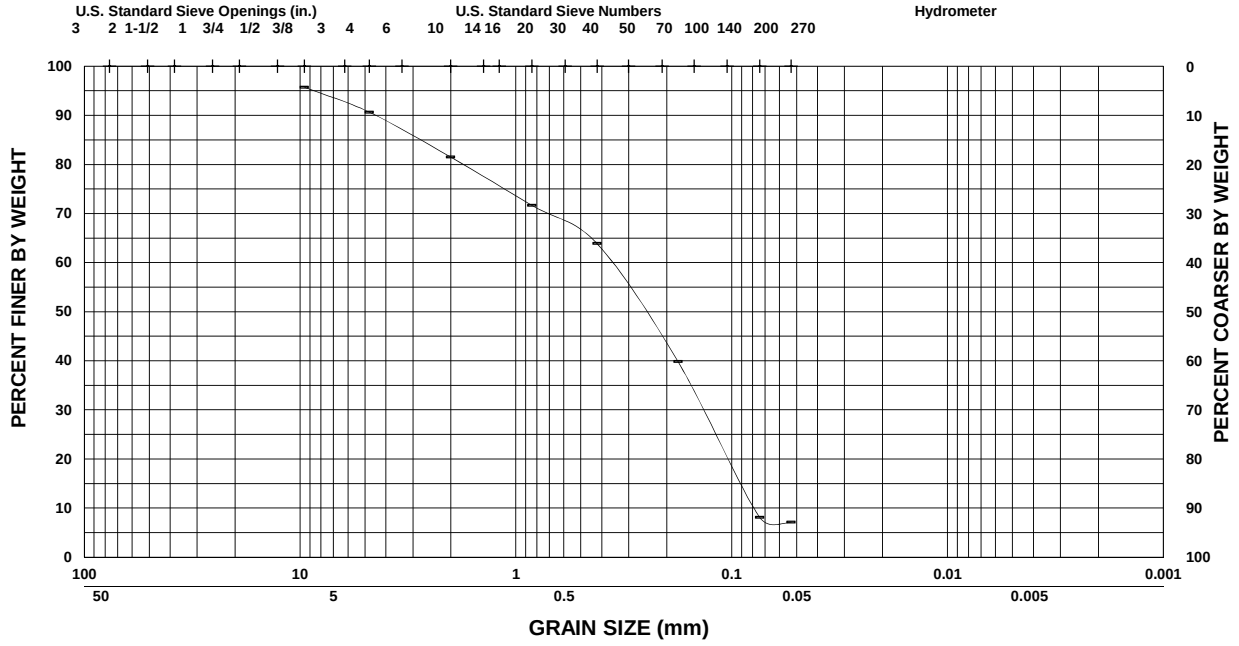
Testing Development and Research

12625 - 40th Street North, Clearwater, Florida 33762

Tampa Bay Area: (727) 572-9797 Florida: 1-800-248-CFTL Fax: (727) 299-0023

Lab No.:	***249589***	Sampled By:	***JM***
Material:	***Light brownish gray fine sand with shell***	Sampled From:	***DRI-1***
Project:	***Pirate Square LLC***	Date Sampled:	***8/7/24***
Source of Supply:	***175 107th Avenue, Treasure Island, FL***	Tested By:	***Lab***
Contractor:		Date Tested:	***8/8 - 8/9/24***
Client:	***Shawn Byrne***	Date Reported:	***8/9/24***
Reports To:	***Shawn Byrne***		

SIEVE ANALYS, ASTM C-136



GRAVEL	SAND		SILT OR SAND
	COARSE	FINE	

Sieve Size:	3/4"	1/2"	3/8"	#4	#10	#20	#40	#80	#200	#270
% Passing:	100.0	96.9	95.7	90.6	81.5	71.6	63.8	39.8	8.0	7.1

POROSITY/VOID RATIO, ASTM D-854

Material: Light brownish gray fine sand with shell

In-situ Density: 100.2 pcf
Specific Gravity: 2.63
Particle Density: 164.3 pcf
Volume of Solids (Vs): 0.61
Volume of Voids (Vv) (porosity): 0.39
Void Ratio (Vv / Vs): 0.64

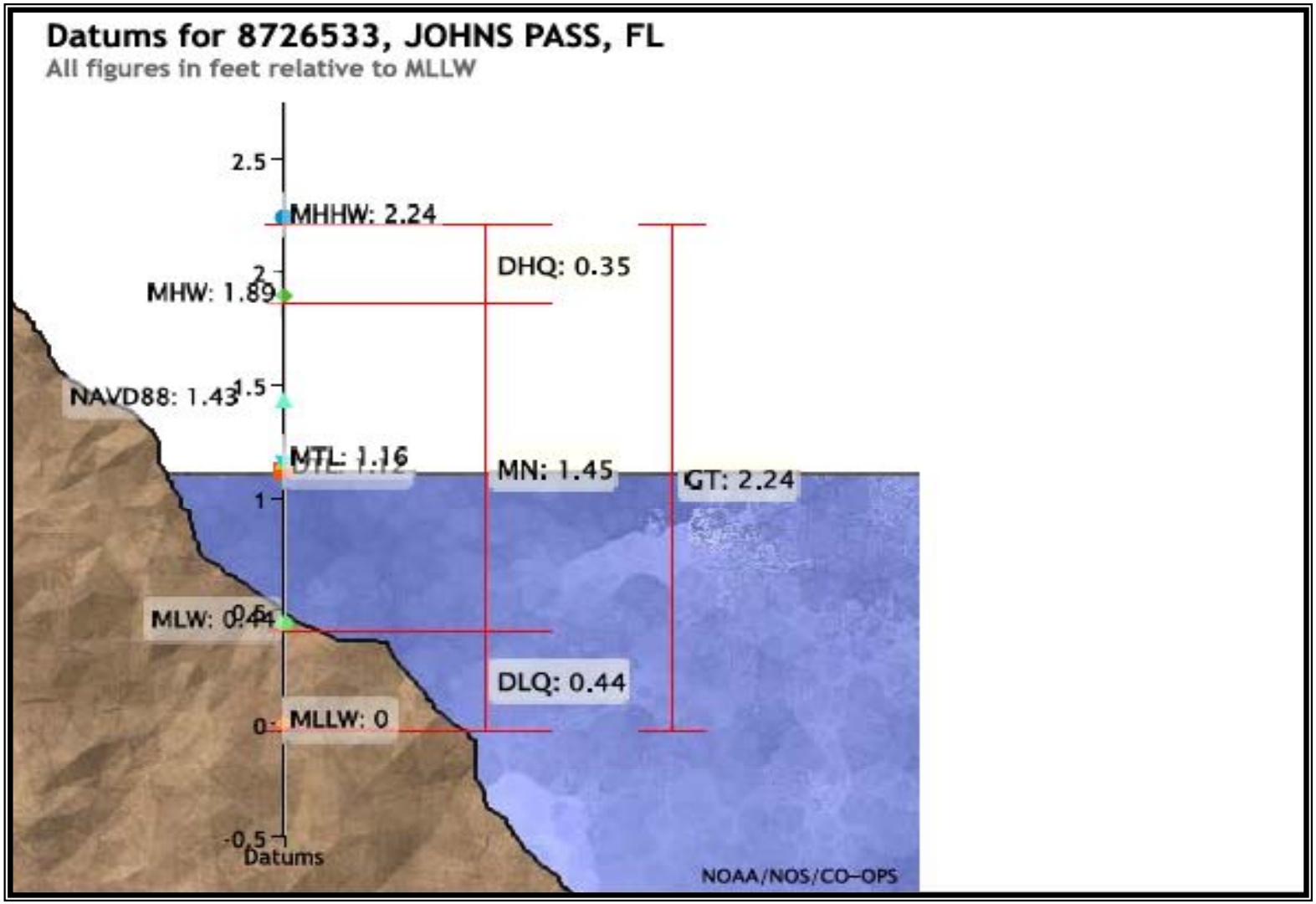
Fillable Porosity = $(0.9\eta) - (\omega\ \gamma_d/\gamma_w)$

η = total porosity
ω = natural moisture content
γ_d = dry unit weight of soil
γ_w = unit weight of water

Fillable Porosity[1] = (0.9 * 0.39) - (0.054 * 100.2/62.4) = **0.26**

[1] Formula from SJRWMD SJ93-SP10 Section 7.2.4.

NOAA MHHW Data



NRCS Data

Soil Map—Pinellas County, Florida
(Pirate Square / 175 - 107th Avenue, Treasure Island)



Map Scale: 1:2,350 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 30 60 120 180

Feet
0 100 200 400 600

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 1:24,000.

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 20, 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 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	0.2	0.7%
16	Matlacha and St. Augustine soils and Urban land	25.9	93.1%
100	Waters of the Gulf of Mexico	1.8	6.3%
Totals for Area of Interest		**27.9**	**100.0%**

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: Ridges on marine terraces, rises 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

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): Interfluve, 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 20, Aug 28, 2023

Jay Gill

From: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Sent: Tuesday, August 27, 2024 9:53 AM
To: Russell Ottenberg
Cc: Jay Gill
Subject: RE: New Project - Pirate Square

Agreed.

From: Russell Ottenberg <russell@planeng.com>
Sent: Tuesday, August 27, 2024 10:39 AM
To: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

[EXTERNAL SENDER] Use caution before opening.
Understood Rob. We plan on keeping the post-development discharge rate at or below the pre-development discharge rate for the 25-year, 24-hour storm. Should we accomplish that, attenuation would not be required, correct?

Sincerely,

Russell Ottenberg
Planeng, Inc.
3737 Lake Joyce Dr.
Land O Lakes, FL 34639
O: 813.962.1752 C: 813.463.3344 F: 866.413.6206

From: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Sent: Tuesday, August 27, 2024 9:55 AM
To: Russell Ottenberg <russell@planeng.com>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

Russell,
The project would need to demonstrate the rate of discharge from the site will not cause adverse impacts, particularly to nearby users that depend on the same stormwater network.

62-330.301 Conditions for Issuance of Individual and Conceptual Approval Permits.
(1) To obtain an individual or conceptual approval permit, an applicant must provide reasonable assurance that the construction, alteration, operation, maintenance, removal, or abandonment of the projects regulated under this chapter:
(a) Will not cause adverse water quantity impacts to receiving waters and adjacent lands;
(b) Will not cause adverse flooding to on-site or off-site property;
(c) Will not cause adverse impacts to existing surface water storage and conveyance capabilities;

From AHVI 3.1:
c. For a project or portion of a project discharging to a tidal water body, the peak discharge requirements of this section are not required, provided that the rate of discharge does not cause adverse impacts. Examples of tidal water bodies are the Gulf of Mexico and the Gulf Intracoastal Waterway, including manmade portions of the Gulf Intracoastal Waterway.

Thanks,
Rob McDaniel, P.E.
ERP Evaluation Manager
Environmental Resource Permit Bureau
Southwest Florida Water Management District
7601 Highway 301 North
Tampa, FL 33637-6759
813-355-0620
813-985-7481 or 800-836-0797 ext. 2039
rob.mcdaniel@swfwmd.state.fl.us

Survey: How Are We Doing



From: Russell Ottenberg <russell@planeng.com>
Sent: Tuesday, August 27, 2024 8:18 AM
To: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

[EXTERNAL SENDER] Use caution before opening.
Rob,

Good morning. Attached is an excerpt of the stormwater system from the City of Treasure Island. As you can see, this system discharges straight into the intracoastal. As a result, I suspect our project should be exempt from providing attenuation volume, as it will still utilize this system. If not, can you please provide the code citation requiring attenuation?

Sincerely,

Russell Ottenberg
Planeng, Inc.
3737 Lake Joyce Dr.
Land O Lakes, FL 34639
O: 813.962.1752 C: 813.463.3344 F: 866.413.6206

From: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Sent: Friday, August 23, 2024 2:49 PM
To: Russell Ottenberg <russell@planeng.com>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

If you have direct discharge to tidal waters, no attenuation is required. If discharge is through a pipe system or otherwise constricted network, then attenuation must be addressed.

From: Russell Ottenberg <russell@planeng.com>
Sent: Friday, August 23, 2024 1:36 PM
To: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

[EXTERNAL SENDER] Use caution before opening.
Understood Rob. Given the proximity to the intracoastal and the Gulf, this should be treatment volume only, yes?

Sincerely,

Russell Ottenberg
Planeng, Inc.
3737 Lake Joyce Dr.
Land O Lakes, FL 34639
O: 813.962.1752 C: 813.463.3344 F: 866.413.6206

From: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Sent: Friday, August 23, 2024 1:35 PM
To: Russell Ottenberg <russell@planeng.com>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

Sounds like an Individual ERP will need to be pursued.
Thanks,
Rob

From: Russell Ottenberg <russell@planeng.com>
Sent: Friday, August 23, 2024 1:32 PM
To: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

[EXTERNAL SENDER] Use caution before opening.
Rob,

Thank you for the quick response. While total impervious area will be significantly reduced, the net, new VUA will be > 4,000 s.f.

Sincerely,

Russell Ottenberg
Planeng, Inc.
3737 Lake Joyce Dr.
Land O Lakes, FL 34639
O: 813.962.1752 C: 813.463.3344 F: 866.413.6206

From: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Sent: Friday, August 23, 2024 1:27 PM
To: Russell Ottenberg <russell@planeng.com>
Cc: Jay Gill <jay@planeng.com>
Subject: RE: New Project - Pirate Square

Russell,
Conceptual Permit No. 46571.000 was issued for this site February 2023. It only documents the existing impervious area on the site.
The project may qualify for an exemption, if total impervious will not be increased by greater than 9,000 sf and vehicular use will not be increased by greater than 4,000 sf.

The receiving waterbody is identified as WBID 1694A1, Boca Ciega Bay (FDEP Map tool). It has an impairment for nutrients. If an Individual Permit is pursued (in the event exemption criteria are exceeded), net improvement for nitrogen and phosphorus must be demonstrated. Due to the developed nature of the site, it is likely that presumptive criteria will govern the water quality treatment design.

Thanks,
Rob McDaniel, P.E.
ERP Evaluation Manager
Environmental Resource Permit Bureau
Southwest Florida Water Management District
7601 Highway 301 North
Tampa, FL 33637-6759
813-355-0620
813-985-7481 or 800-836-0797 ext. 2039
rob.mcdaniel@swfwmd.state.fl.us

Survey: How Are We Doing



From: Russell Ottenberg <russell@planeng.com>
Sent: Friday, August 23, 2024 12:15 PM
To: Rob McDaniel <Rob.McDaniel@swfwmd.state.fl.us>
Cc: Jay Gill <jay@planeng.com>

Subject: New Project - Pirate Square
Importance: High

[EXTERNAL SENDER] Use caution before opening.
Rob,

Good afternoon. I hope all is well with you. We have a new project we are working on and would like some feedback from you/the District. Some notes:

- This is an old, existing shopping center in Treasure Island (see attached survey), it is almost 100% impervious.
- The Owner is looking to demolish the center and replace it with a pay-for-parking parking lot.
- The proposed parking lot will have substantial less impervious area (see attached site plan).
- The intracoastal waterway is just east of the project and the Gulf is west of the project.
- The City of Treasure Island requires one-inch (1") of treatment volume regardless.

Given the above, can you please advise as to how the District will treat this w/r/t permitting?

Also, how do we determine if the receiving waters are subject to impaired basin criteria?

Any questions, please do not hesitate to contact me.

Sincerely,

Russell Ottenberg
Planeng, Inc.
3737 Lake Joyce Dr.
Land O Lakes, FL 34639
O: 813.962.1752 C: 813.463.3344 F: 866.413.6206

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-

Pirate Square
175 - 107th Avenue, Treasure Island
Parcels: 23-31-15-91818-012-0260 & -0140
Pinellas County, Florida
Geotechnical Services
August 2024

Report Number. 249859

Prepared
for

Pirate Square LLC
c/o Mr. Shawn Byrne
11620 - 7th Street East
Treasure Island, Florida 33706

Central Florida Testing Laboratories, Inc.

Testing Development and Research

12625 – 40TH STREET NORTH • CLEARWATER, FL 33762

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

TAMPA BAY AREA (727) 572-9797 FLORIDA 1-800-248-CFTL FAX (727) 299-0023

August 13, 2024

Pirate Square, LLC
11620 – 7th Street East
Treasure Island, FL 33706

Attn: Mr. Shawn Byrne

Re: Geotechnical Investigation for Stormwater Retention System Design for Proposed Pirate Square - 175 – 107th Avenue, Treasure Island, Fla.33706
(Parcels: 23-31-15-91818-012-0260 & -0140, Pinellas County, Florida)
CFTL Report No. 249859

Dear Mr. Byrne,

As authorized, our office has completed the scope of geotechnical testing services requested by Mr. Russell Ottenberg with Plan Eng as outlined in his July 24th, 2024 email. The purpose the testing was to provide recommendations for site preparation, pavement design and soil parameters for use in the design of the stormwater retention system planned for the project.

These services included an additional deep standard penetration test (SPT) boring to supplement the previous six SPT borings conducted over the site. This boring was to fulfil the requirement for two (2) SPT borings to be located within the new retention pond area planned for the southeast corner of the site. An existing shallow retention pond is already in this location.



The purpose of the borings were determine the depth to an impermeable layer as well as provide information relative to pavement design. The boring was drilled in conjunction with a Double Ring Infiltration (DRI) test conducted in the same area which is planned to contain the stormwater retention pond. Finally, laboratory testing was conducted on an undisturbed Shelby Tube sample of the soils to determine the

Fillable Porosity of the soils in the retention pond. The locations of all of the above referenced prior and current tests are shown on the Site Plan of the planned new parking lot included in this report.

Site Description

The subject property comprises approximately 3.5 acres m.o.l. of land located on the south side of 107th Avenue in Treasure Island, Florida. The property has been cleared of its 2-story strip mall and various businesses with the exception of a bank building located at its northeast corner and the bank drive-thru located at its southeast corner. Asphalt pavement remains in areas that surrounded the previous building footprints. The site is bordered by 107th Avenue on its north, 1st Street East on its east side, 106th Avenue on its south side and an existing separate retail strip building on its west side. The west end of the property is approximately 250 east of Gulf Boulevard, while the east end of the property is approximately 850 feet west of the Treasure Island Causeway connecting the barrier island chain and Treasure Island to mainland Pinellas County, Florida.





For additional reference to the site, we are also including an area map showing the property with respect to the surrounding geographical area, and large and small scale aerial photographs of the site prior to demolition of the buildings and NRCS (Natural Resources Conservation Services) data relating to the predominant soil type present on the property and their expected seasonal high water table (SHWT) level.

Test Methods

The SPT borings were completed using sampling intervals in excess of those required by ASTM Specifications, D-1586, describing the Standard Penetration Test or "split-spoon" method of sampling. Four samples were taken in the upper ten feet to provide greater definition within this zone.

The penetration resistance testing and sample taking was accomplished with the use of a 2" O.D. sampler seated six inches into the bottom of the borehole and advanced an additional one foot under the effort of a 140 pound hammer falling freely thirty inches. The number of blows required of the hammer to advance the sampler one foot into undisturbed material was noted as the blow count (N) of that particular stratum. Portions of each soil sample so taken, were classified, sealed in moisture-proof containers and returned to our laboratories for verification of field classification.



The borings were advanced using a truck mounted, rotary drill rig, utilizing a recirculating bentonite drill fluid to maintain the borehole in noncohesive soils and to remove cuttings created by the drill bit. Upon completion all boreholes were sealed in accordance with SWFWMD regulations.

The DRI test was performed in general accordance with the guidelines resented 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.

The accompanying hand auger boring to the DRI test was accomplished with the use of post hole 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, collection and further testing, if needed.

SPT Boring Results

While the boring logs for all six previous SPT borings are included in this report, only boring B-4 was positioned within the new retention pond area. Boring B-7 is our current boring labeled consecutively to the previous borings to provide two

borings within the retention pond area. Due to the existing bank drive-thru the borings were positioned to avoid blocking traffic to the drive-thru and/or boring through the existing asphalt pavement remaining in this area. The profiles of boring B-4 and B-7 will be described below.

Boring B-4, located to the south or rear of the existing bank drive-thru building and in the southeast portion of the site, encountered approximately 20 feet of variable density sandy/silty soils containing shell that ranged in consistency from loose to medium dense. Beginning at 20 feet and continuing to 30 feet was a layer of very loose baybottom silts, which was underlain by slightly loose to dense sands containing abundant shell to 50 feet. Finally, beginning at 50 feet and continuing to 60 feet was a layer very stiff to very hard marine clays. The boring was terminated after the 65 foot sampling interval in very dense sands after recording 3 consecutive refusal N-values represented by a penetration resistance of more than 100 blows per foot on the sampling device. No loss of drilling fluid circulation occurred in the boring. A measurement to the depth of the shallow water table was made in the grass area to the south of the SPT boring location using a hand auger. It measured 4.2 feet below the surface. The grass area is slightly lower than the pavement where the boring was drilled.

Boring B-7, also located in the planned retention pond area, encountered 19 feet of dense to loose sands with shell fragments followed by the baybottom silt layer that continued to 30 feet below the surface. Beginning at 30 feet and continuing to 50 feet were dense or medium dense sands with shell followed by the very stiff to very hard sandy marine clay layer which terminated the boring with the 60-foot sampling interval. Again, no loss of drilling fluid circulation occurred during advancement of the boring and the shallow water table was measured at 4 feet below the surface.

While the baybottom silt layer is partially restrictive to water flow, however in our opinion the actual restrictive layer of soil would be considered the marine clays which began at approximately 50 feet below the surface in both borings.

Double Ring Infiltration Test Results

Soils encountered in the shallow auger boring that accompanied the DRI test consisted of dark gray surficial sands with small roots associated with the grass lined existing retention pond, followed by non-cohesive light colored sands containing varying amounts of shell fragments. These sands extended to a depth of at least 6 feet consistent with the SPT boring profiles. **The static shallow water table was measured at a depth of approximately -4.0 feet below the surface.** In our opinion,



the soils show no indicator of a historic seasonal high water table (SHWT) level but do reflect potential filling activities associated with most if not all of the barrier island properties. With the Town of Treasure Island surrounded by sea water to the east and west its water table is expected to be tidally influenced and will most likely fluctuate on a daily basis with the tidal levels in the Gulf of Mexico to the west and/or the Intercoastal Waterway to the east.

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, which is for Johns Pass (1.25 miles 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.

Based on Google Earth® elevations, the entire site is at an elevation of approximately +5' NAVD88. With the depth to the static water table being measured at -4.2', this would equate to an elevation of +0.8' and correspond very closely with the NOAA information. Therefore, we estimate the SHWT level to be at a depth of approximately -4.0' below the surface and be tidally influenced.

The maximum infiltration rate at DRI-1 was determined to be a fairly rapid 7.6 minutes per inch (7.9 inches/hr.) after 4 hours of testing with the test apparatus seated approximately 2 feet below the ground surface. The infiltration rate from the DRI test is considered to represent "K_v" or the vertical hydraulic conductivity. "K_h" or the horizontal hydraulic conductivity is assumed by SWFWMD at 1.5 times the vertical. Therefore:

K_v = 7.9 inches/hr. = 15.8 ft./day
K_h = 1.5 x 15.8 ft./day = 23.7 ft./day

Fillable Porosity

Fillable porosity is the amount of void space present within the soil matrix after accounting for the space taken by the soils in-situ moisture content. No ASTM procedure is present to determine it, however the St. Johns River Water Management District (SJRWMD) in their publication SJ93-SP10, Section 7.2.4 provides a method of determining it. This method is referenced by other publications and its formula was used to calculate a value for Fillable Porosity for the shell laden sands beneath the retention pond area. At the time of our sampling, the in-situ moisture was determined to be 5.4% be weight and the in-

situ density of the soils was determined to be 100.2 pounds per cubic foot (pcf).

The overall Volume of Voids or total porosity was found to be 0.39, while the Fillable Porosity was calculated to be 0.26 or 26%.

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 one predominant type of soils. This type is Mapping Unit #16 soils which are described as *Matlacha and St. Augustine soils and Urban land.* Both *Matlacha and St. Augustine soils and Urban land.* These soils have a parent material listed as "sandy mine spoil or earthen fill". This represents the dredge and fill activities and associated spoils that were used to create the uplands along the barrier island chain. The depth to the water table is referenced as between 24 and 36 inches below the surface. *Urban land* has no listed SHWT due to soil disturbances from years of past development and additional filling, such as has taken place on this site. Both these classifications appear generally accurate and consistent with the soils found on the site.

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

Recommendations

In consideration of all of the above information, our recommendations for a pavement section for the planned new parking lot would be consistent with that designated for a light residential street or roadway. This should be consistent with the existing asphalt pavement that covers the site but is in need of repair or reconstruction.

Typical minimum Roadway Pavement Guidelines and associated Structural Numbers for varying traffic volumes are provided in the table below.



The Town of Treasure Island may have slightly different pavement section thicknesses than those shown and if

different municipal specifications would take precedence for proposed pavement areas.

	Arterial	**Collector (Major/Minor) Commercial / Industrial**	**Residential Medium Traffic**	**Residential Light Traffic**
Structural Number	**4.17**	**3.28**	**3.06**	**2.46**
Asphalt Superpave Surface	Type SP-12.5 Fine, Traffic Level "C" 3" min. thick (2 lifts) (0.44) (1.32 Total)	Type SP-12.5 Fine, Traffic level "C" 2" min. thick (0.44) (0.88 Total)	Type SP-9.5 Fine, Traffic Level "C" 1-$^1/_2$" min. thick (0.44) (0.66 Total)	Type SP-9.5 Fine, Traffic level "C" 1-1/2" min, thick (0.44) (0.66 Total)
Base (Compacted 98% of AASHTO T-180)	Limerock 10 $^1/_2$" Min. Thickness (Min. 100 LBR) (0.18) (1.89 Total)	Limerock 8" Min. thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 8" Min. thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 6" Min. thickness (Min. 100 LBR) (0.18) (1.08 Total)
Sub-Base (Compacted 98% of AASHTO T-180)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08)	9" min. thickness (Stab. w/min, 40 LBR) (0,08) (0.72 Total)

Structural Layer Coefficients for Optional Bases: Superpave Type B-12.5 Base = 0.30, Crushed Concrete Base is equivalent with Layer Coefficient = 0.18 if LBR = 150

We would assume that your parking lot project would come under "Residential Light Traffic" for its interior pavement with a Structural Number of at least 2.46, while its entrances onto 107th Avenue and 106th Avenue would need to meet the existing section thicknesses and Structural Number of these streets, which would most likely be either a SN of 3.06 or 3.28.

To be more specific regarding pavement section recommendations, more information regarding traffic volumes and traffic types would have to be known.

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 boring.

It is not intended to predict or accept responsibility for sinkhole development. Additional other means of subsurface investigations including, but not limited to, deep structural borings, rock coring, geophysical studies, ground penetrating radar or resistivity surveys are used for sinkhole potential determinations and are out of the scope of this investigation.

Generally accepted soil mechanics and foundation 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.

This report is for the exclusive use of our client and may not contain sufficient information for other uses, such as quantity take-offs, or for interpretation by other parties for bidding purposes. 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.

If borings were not staked by a registered land surveyor but were located by our drill crews, the following method was used:

Distances are generally measured using a 100 foot tape measure with right angle approximation used to turn corners. Scaling from prints or surveys with reference points shown on the plan or geographical references will produce a degree of accuracy that is typically +/- 5% for length and +/- 10 degrees for angles.

Soil strata delineations are estimated in the field by color changes, texture differences and penetration resistance values. These may be more gradual transitions than those shown on the boring log representations of strata delineations.

The ground water depth determination shown on the bottom of the boring log was measured in the bore hole at the time of drilling, unless noted otherwise. This depth does not reflect seasonal high water levels and would fluctuate as expected with variations in rainfall or other factors not present at the time of our soils investigation.

The boring data represents only that data obtained during this investigation at the approximate locations shown on the site schematic or plan.

Should significant variations of soil or subsurface conditions exist between boring locations and be encountered by future exploratory work or site preparation efforts, our office should be notified so that supplemental borings or data gathering determinations can be made to update our report and recommendations at a minimal expense to our client. It is the responsibility of our client to inform our office of these variations if possible modifications of the report is warranted.

This report is general in nature, unless specific geotechnical data or recommendations were asked to be addressed. However, we would be pleased to answer any questions concerning comments or recommendations made in this

report.

We appreciate the opportunity to have been of service. If any further evaluation of the site or testing services are needed, either prior to design or during construction, please do not hesitate to contact our office.

Sincerely,

CENTRAL FLORIDA TESTING LABORATORIES, INC.



This item has been electronically signed and sealed by George C. Sinn, Jr., P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

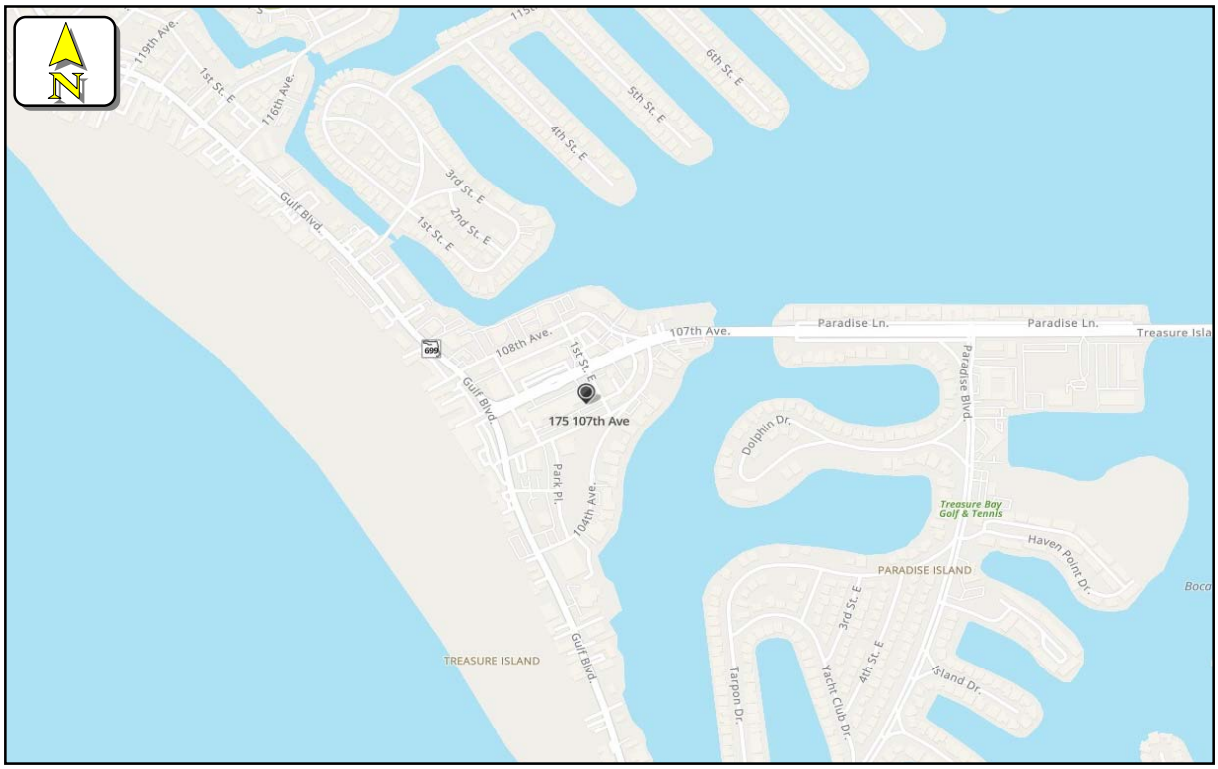
Digitally signed by: George C Sinn, Jr.
Date: 2024.08.14 15:47:10 -04'00'

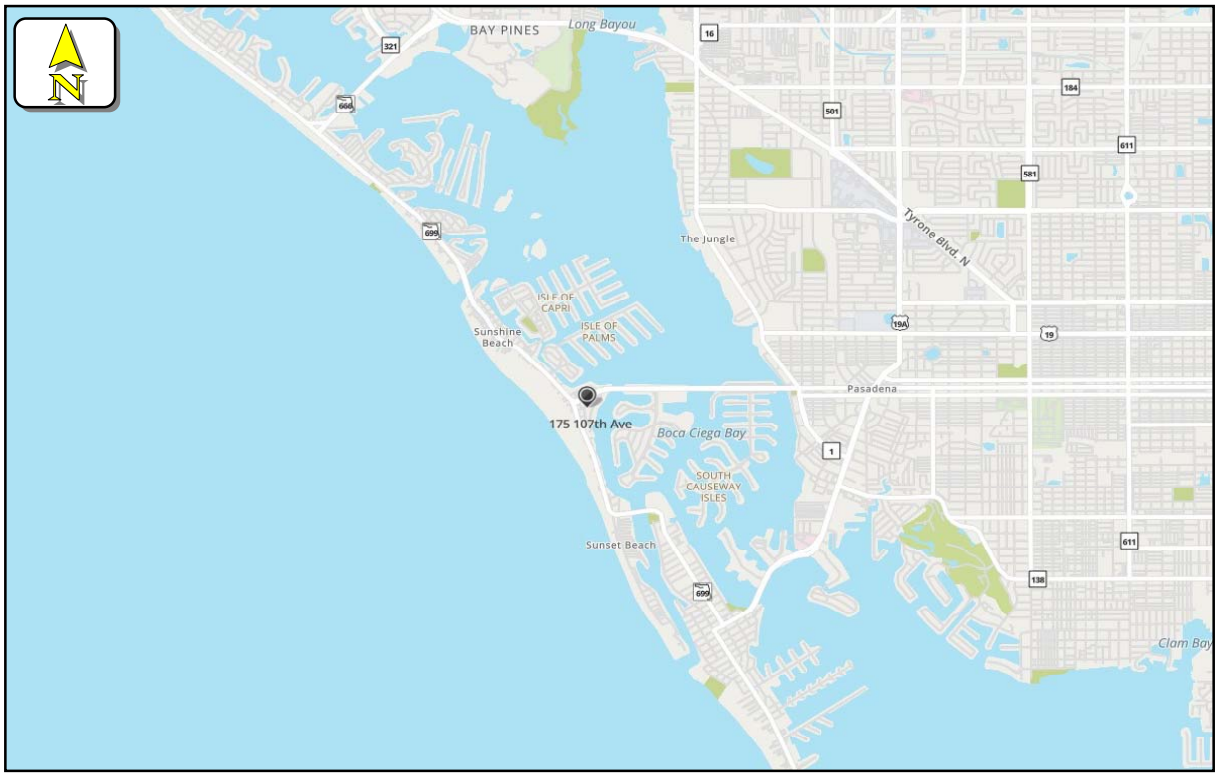
George C. Sinn, Jr., P.E.
President/Principal Engineer
FLN 16911
GCS/gs
Attachments

cc: Russell Ottenberg (email)

Maps

Various





Central Florida Testing Laboratories, Inc.

Pirate Square
175 - 107th Avenue
Treasure Island, Florida 33706
Report No: 249859

Legend

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

Figure 1 - Location

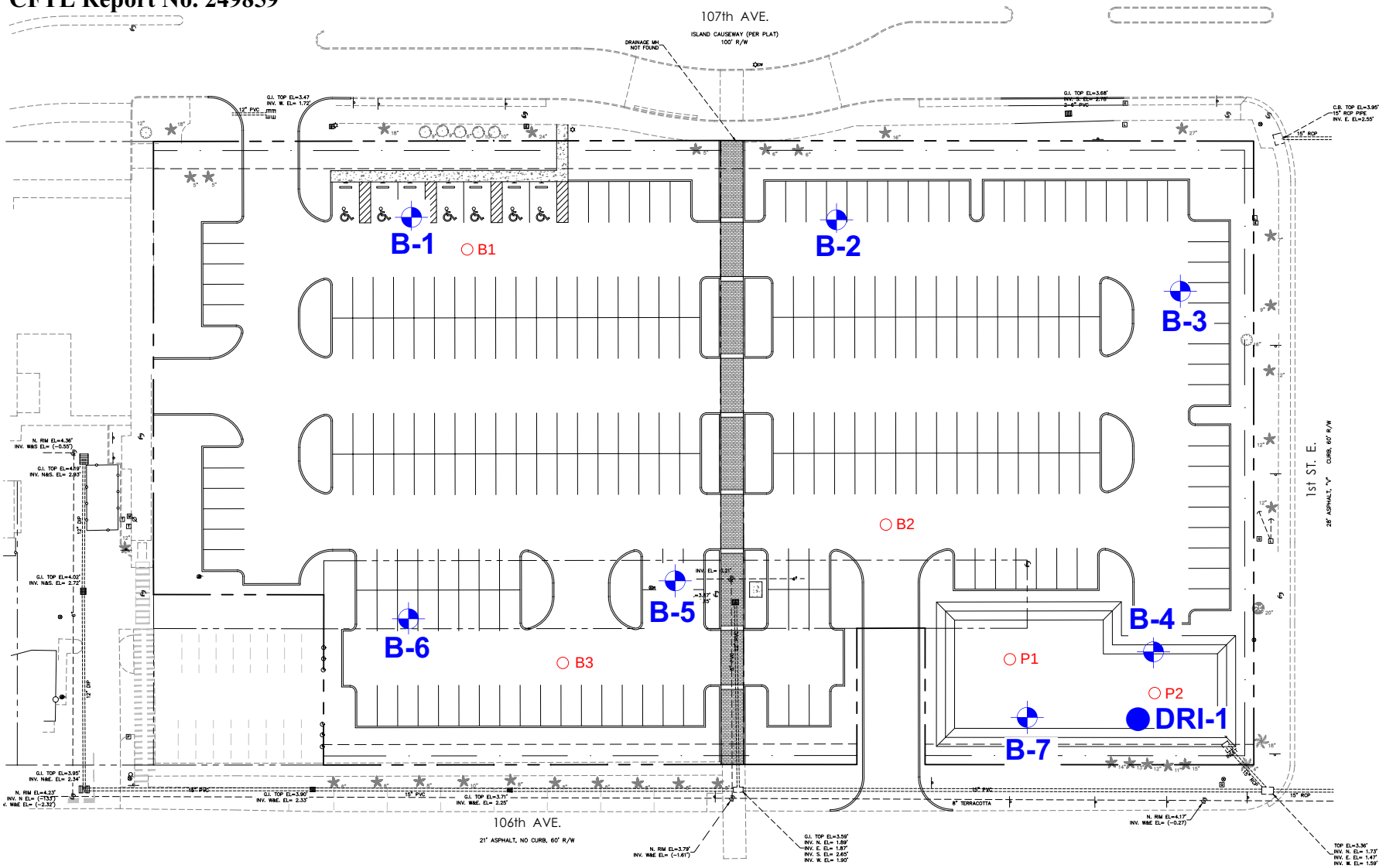
2023 County Aerial Photograph of Site



2023 County Aerial Photograph of Site



Pirate Square / 175 - 107th Avenue, Treasure Island
Approximate Test Locations
CFTL Report No. 249859



Site Boring Exhibit

PLANNING INC
Board of Professional Engineers
Certificate of Authorization
No. 26432

Pensacola:
501 Fitzgerald Street
Pensacola, FL 32505
T (850) 444.9493

Tampa:
3737 Lake Joyce Dr
Land O Lakes, FL 34639
T (813) 962.1752

Issue / Revisions

NORTH

Scale 1" = 20'

Pirate Square
Treasure Island, Florida

Date

Reviewed by JMG/RMO

Plan Description
Parking Lot Plan

Sheet No.
P1

2023-0509TRIcom baseI .dwg
CAD date 7/22/2024

SPT Boring Results

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-1
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Asphalt with Limerock Base	medium dense	7-8-12	20
	Sand Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained, occasional shell fragments.	medium dense	5-6-7	13
5		medium dense	3-4-7	11
		loose	4-4-2	6
	Sand Light brownish gray (10YR 6/2), fine grained.			
10		medium dense	6-8-9	17
15		very loose	WOH-1/12"	1
	Sandy Silt (Bay Bottom) Light brownish gray (10YR 6/2), fine grained, trace to minor shell fragments, slightly clayey, with silty sand seams.			
20		very loose	WOH-1/12"	1
25		very loose	WOH-1-1	2
	Silty Sand Light brownish gray (10YR 6/2), fine grained.			
30		loose	3-3-2	5
	Sand Light gray (10YR 7/2) to very pale brown (10YR 7/3), fine grained.			
35		very dense	24-22-32	54
40	***Clayey Sand*** Light brownish gray (10YR 6/2), fine grained.	medium dense	9-7-12	19
45		stiff	5-7-8	15
50		hard	8-13-19	32
55	***Sandy Clay*** Light brownish gray (2.5Y 6/2).	very hard	30-38-50/4"	100+
60		very hard	18-22-38	60
65		very hard	29-50/5"	100+
	End of Boring			
70				

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

WOH = Weight of Hammer
No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Sheet 1 of 1

386

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-2
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value
0		Ground Surface			
		Asphalt with Limerock Base	medium dense	10-11-12	23
		Sand Light gray (10YR 7/1), fine grained, minor shell fragments.	medium dense	3-4-7	11
5			medium dense	7-12-8	20
		Sand Light gray (10YR 7/1) to gray (10YR 6/1), fine grained, slightly silty.	slightly loose	2-3-4	7
10			slightly loose	2-3-4	7
15		***Silty Sand*** Light gray (10YR 7/1), fine grained.	very loose	5-2-1	3
20		***Sandy Silt (Bay Bottom)*** Light brownish gray (10YR 6/2), fine grained, occasional shell fragments, with silty sand seams.	very loose	1/12"-1	1
25			very loose	1/12"-1	1
30		***Sand*** Light brownish gray (10YR 6/2), fine grained.	medium dense	5-5-7	12
35		***Sand*** Light brownish gray (10YR 6/2), fine grained, slightly silty.	medium dense	6-7-8	15
40		***Sand*** Gray (10YR 6/1), fine grained.	medium dense	8-8-9	17
45		***Sandy Clay*** Gray (5Y 6/1).	very stiff	10-12-14	26
50		***Clayey Sand*** Gray (5Y 6/1), fine grained.	slightly loose	4-4-4	8
55		***Sand*** Gray (10YR 6/1), fine grained, slightly clayey.	very dense	50/3"	100+
60			very dense	12-23-46	69
65			very dense	14-24-50/5"	100+
		End of Boring			
70					

Standard Penetration Test (blows/ft)
0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

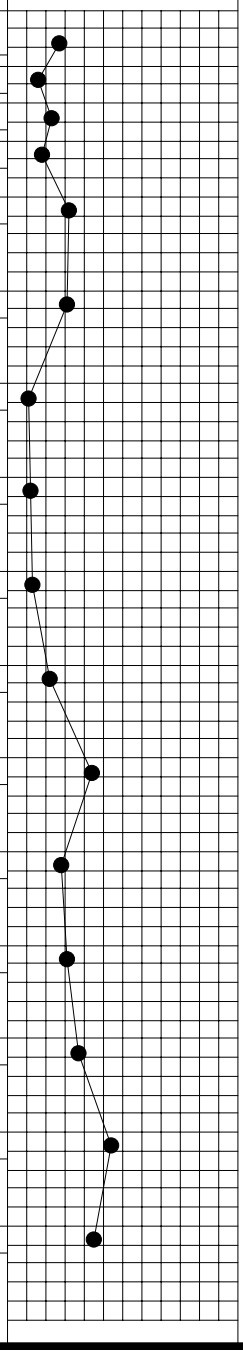
Report No: 242644
Log of Borehole: B-3
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Asphalt with Limerock Base	medium dense	11-8-9	17
	Sand Light gray (10YR 7/1) to light gray (10YR 7/2), fine grained, trace to minor shell fragments.	loose	4-3-3	6
5		medium dense	3-5-8	13
	Sand Gray (10YR 6/1), fine grained, slightly clayey.	slightly loose	1/12"-8	8
10		medium dense	8-13-9	22
	Sand Light gray (10YR 7/1), fine grained.	medium dense	15-16-5	21
20		very loose	1/12"-1	1
25	***Sandy Silt (Bay Bottom)*** Gray (10YR 6/1) to gray (10YR 5/1), fine grained, with silty sand seams.	very loose	1-1-1	2
30		very loose	2-1-2	3
35		medium dense	1-3-9	12
40	***Sand*** Light gray (10YR 7/1) to gray (10YR 6/1), fine grained, common cemented nodules at 35'.	dense	12-17-17	34
45		medium dense	6-7-11	18
50		very stiff	8-10-11	21
55	***Sandy Clay*** Light brownish gray (2.5Y 6/2).	very stiff	8-11-16	27
60		hard	13-19-25	44
	Sandy Clay Light gray (10YR 7/2).			
65		hard	18-17-18	35
	End of Boring			
70				

Standard Penetration Test (blows/ft)
0 20 40 60 80 100

Lab/ Notes



Notes: FEMA Flood Zone Designation:
Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation.

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-4
Date Drilled: 09/23/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value	Standard Penetration Test (blows/ft) 0 20 40 60 80 100	Lab/ Notes
0		Ground Surface					
		Asphalt with Limerock Base					
		Sand Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained.		Hand Auger			
5			slightly loose	1-3-6	9		
		Silty Sand Light brownish gray (10YR 6/2), fine grained.	very loose	6-1-2	3		
10			medium dense	9-13-11	24		
		Sand Light gray (10YR 7/1) light brownish gray (10YR 6/2), fine grained, common shell fragments.					
15			loose	7-4-2	6		
20			very loose	1/12"-1	1		
		Sandy Silt (Bay Bottom) Gray (2.5Y 6/1), fine grained, minor shell fragments, slightly clayey, with silty sand seams.					
25			very loose	1/18"	0		
30			medium dense	4-5-6	11		
35			slightly loose	1-2-6	8		
		Sand Light gray (10YR 7/1) to light brownish gray (10YR 6/2), fine grained, abundant to common shell fragments to 40', abundant cemented nodules at 45'.					
40			dense	31-20-14	34		
45			medium dense	7-5-7	12		
50			very stiff	9-11-13	24		
		Sandy Clay Gray (2.5Y 6/1).					
55			very hard	7-17-50/4"	100+		
60			very dense	32-50/5"	100+		
		Sand Light gray (10YR 7/1), fine grained, slightly clayey.					
65			very dense	31-50/5"	100+		
		End of Boring					
70							

Notes: NRCS Designation: Matlacha and St. Augustine soils and Urban land
NRCS SHGWT: 18 to 36 inches
CFTL SHGWT: Tidal
Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

No loss of drill fluid circulation

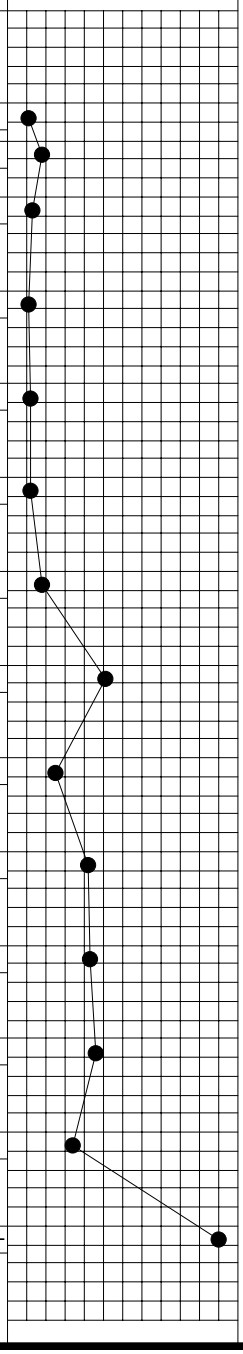
Water Table: 4.2' bls (HA)
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-5
Date Drilled: 09/23/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
0	***Asphalt with Limerock Base***		Hand Auger	
5	***Sand*** Light gray (10YR 7/1) to light gray (10YR 7/2), fine grained.	very loose	1-1/12"	1
		slightly loose	3-4-4	8
10	***Clayey Silt (Bay Bottom)*** Gray (2.5Y 6/1), trace shell fragments.	soft	1-1-2	3
15		very loose	1/12"-1	1
20	***Sandy Silt (Bay Bottom)*** Gray (2.5Y 6/1) to grayish brown (10YR 5/2), fine grained, occasional shell fragments, slightly clayey, with silty sand seams.	very loose	1-1-1	2
25		very loose	1/12"-2	2
30		slightly loose	2-1-7	8
35	***Sand*** Gray (10YR 5/1), fine grained.	dense	15-20-21	41
40	***Sand*** Light gray (10YR 7/1), fine grained, abundant cemented nodules, slightly silty.	medium dense	8-7-8	15
45		hard	15-17-15	32
50		hard	12-15-18	33
55	***Sandy Clay*** Light olive gray (5Y 6/2) to gray (5Y 6/1), cemented at 65'.	hard	15-13-23	36
60		very stiff	5-8-16	24
65		very hard	50/0"	100+
	End of Boring			
70				



Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-6
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value	Standard Penetration Test (blows/ft) 0 20 40 60 80 100	Lab/ Notes
0		Ground Surface					
		Asphalt with Limerock Base		Hand Auger			
5		***Sand*** Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained.	medium dense	1-6-5	11		
			loose	2-3-1	4		
10			medium dense	4-8-10	18		
15			very loose	1/12"-1	1		
20		***Sandy Silt (Bay Bottom)*** Light brownish gray (10YR 6/2) to grayish brown (10YR 5/2), fine grained, trace to minor shell fragments, with silty sand seams.	very loose	1/12"-1	1		
25			very loose	1/12"-1	1		
30			very loose	1-1-1	2		
35		***Sand*** Light gray (10YR 7/2), fine grained, occasional shell fragments.	dense	16-18-19	37		
40			medium dense	4-7-7	14		
45		***Sandy Clay*** Light olive gray (5Y 6/2) to light brownish gray (10YR 6/2).	hard	14-19-23	42		
50			very stiff	9-11-13	24		
55		***Sandy Clay*** Light brownish gray (10YR 6/2).	stiff	5-6-9	15		
60			very hard	50/3"	100+		
65			very hard	24-34-50/5"	100+		
		End of Boring					
70							

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Pirate Square LLC
Project: Pirate Square
Location: 175 - 107th Avenue
City / State: Treasure Island, Florida

Report No: 249859
Log of Borehole: B-7
Date Drilled: 08/01/2024

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Sand Light gray (10YR 7/2) to light brownish gray (10YR 6/2), fine grained, occasional to minor shell fragments.	medium dense	7-12-14	26
		medium dense	9-13-7	20
5	***Silty Sand*** Gray (10YR 6/1), fine grained, minor shell fragments and trace bay bottom.	slightly loose	5-6-3	9
		loose	1-1-3	4
10	***Silty Sand*** Gray (10YR 5/1), fine grained,	dense	12-17-13	30
	Sand Light gray (10YR 7/1), fine grained, occasional shell fragments.			
15	***Sand*** Gray (10YR 6/1), fine grained, common shell fragments, slightly silty.	loose	2-2-2	4
20	***Sandy Silt (Bay Bottom)*** Gray (2.5Y 5/1) to dark gray (2.5Y 4/1), occasional to minor shell fragments, slightly clayey.	very loose	1-1-1	2
25		very loose	1-1-1	2
30	***Sand*** Gray (10YR 6/1), fine grained, minor shell fragments.	medium dense	2-2-8	10
35		dense	14-20-17	37
40	***Sand*** Gray (10YR 6/1) to light gray (10YR 7/1), fine grained, abundant shell fragments, common cemented nodules at 45'.	dense	16-14-20	34
45		medium dense	6-5-5	10
50	***Sandy Clay*** Gray (2.5Y 5/1).	hard	9-13-19	32
55		very stiff	10-11-12	23
60		very hard	28-33-40	73
65	End of Boring			

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: NRCS Designation: Matlacha and St. Augustine soils and Urban land
NRCS SHGWT: 18 to 36 inches
CFTL SHGWT: Tidal
Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

No loss of drill fluid circulation.

Water Table: 4.0' bls (HA)
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

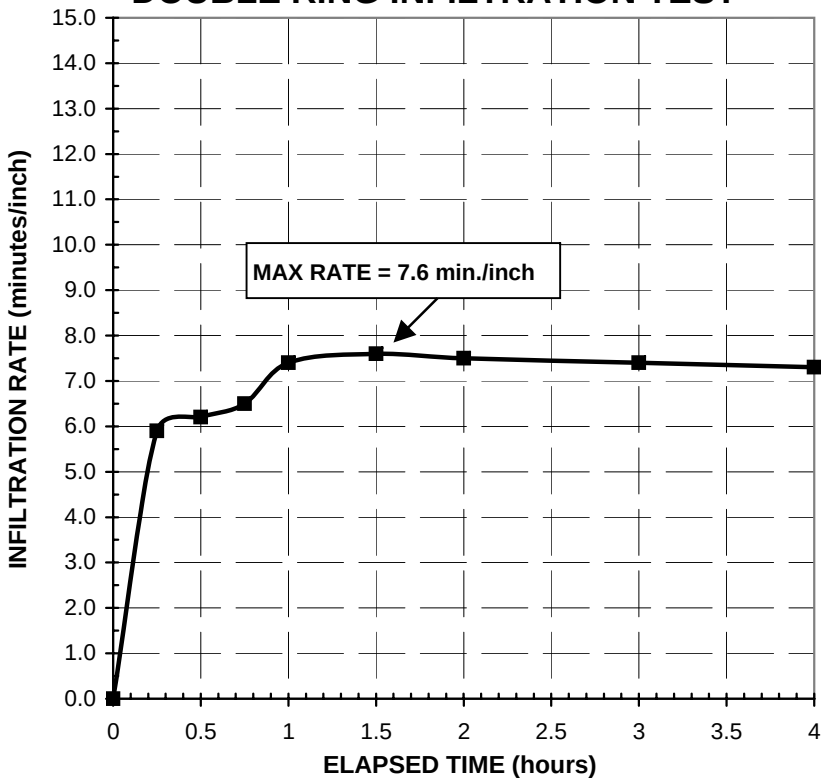
DRI Results

Central Florida Testing Laboratories, Inc.

Testing Development and Research

12625 – 40TH STREET NORTH • CLEARWATER, FL 33762
TAMPA BAY AREA (727) 572-9797 FLORIDA 1-800-248-CFTL FAX (727) 299-0023

DOUBLE RING INFILTRATION TEST



Maximum Infiltration Rate (min./in.): 7.6

EXISTING WATER TABLE DATA

WATER TABLE AT TIME OF TEST (BLS): **4.0'**

EST. SEASONAL HIGH WATER TABLE (BLS): **Tidal**

NRCS WATER TABLE DATA

SOIL TYPE (AT DRI LOCATION):

Matlacha and St. Augustine soils and Urban land

SEASONAL HIGH WATER TABLE: **18 to 36 inches**

Project: **Pirate Square**
175 - 107th Avenue
Treasure Island, Florida 33706

Client: **Pirate Square LLC**

Lab No.: **249859**

DOUBLE RING INFILTRATION DATA

Test Location: **DRI-1**

Test Elevation: **2.0 feet below existing land surface**

Test Date: **August 2, 2024**

Notes ALL DEPTHS REFERENCED FROM EXISTING GROUND

SHALLOW AUGER BORING DATA

Depth (ft.)			Munsel No.	Description
0.0	to	0.5	10YR 4/1	Dark gray fine sand w/small roots
0.5	to	2.8	10YR 6/2	Very pale brown fine sand w/shell
2.8	to	4.0	10YR 7/1	Light gray fine sand
4.0	to	5.6	10YR 6/1	Gray silty sand w/shell, and trace bay bottom
5.6	to	6.0	10YR 6/1	Gray silty sand w/occasional shell

Central Florida Testing Laboratories, Inc.

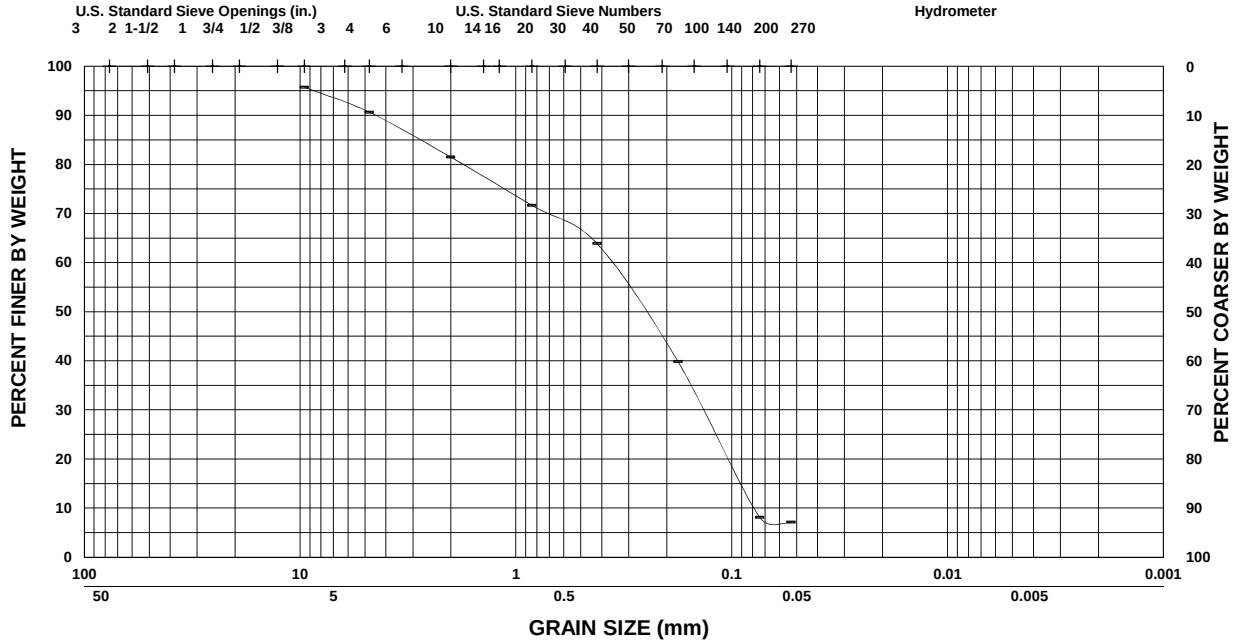
Testing Development and Research

12625 - 40th Street North, Clearwater, Florida 33762

Tampa Bay Area: (727) 572-9797 Florida: 1-800-248-CFTL Fax: (727) 299-0023

Lab No.:	***249589***	Sampled By:	***JM***
Material:	***Light brownish gray fine sand with shell***	Sampled From:	***DRI-1***
Project:	***Pirate Square LLC***	Date Sampled:	***8/7/24***
Source of Supply:	***175 107th Avenue, Treasure Island, FL***	Tested By:	***Lab***
Contractor:		Date Tested:	***8/8 - 8/9/24***
Client:	***Shawn Byrne***	Date Reported:	***8/9/24***
Reports To:	***Shawn Byrne***		

SIEVE ANALYS, ASTM C-136



GRAVEL	SAND		SILT OR SAND
	COARSE	FINE	

Sieve Size:	3/4"	1/2"	3/8"	#4	#10	#20	#40	#80	#200	#270
% Passing:	100.0	96.9	95.7	90.6	81.5	71.6	63.8	39.8	8.0	7.1

POROSITY/VOID RATIO, ASTM D-854

Material: Light brownish gray fine sand with shell

In-situ Density: 100.2 pcf
Specific Gravity: 2.63
Particle Density: 164.3 pcf
Volume of Solids (Vs): 0.61
Volume of Voids (Vv) (porosity): 0.39
Void Ratio (Vv / Vs): 0.64

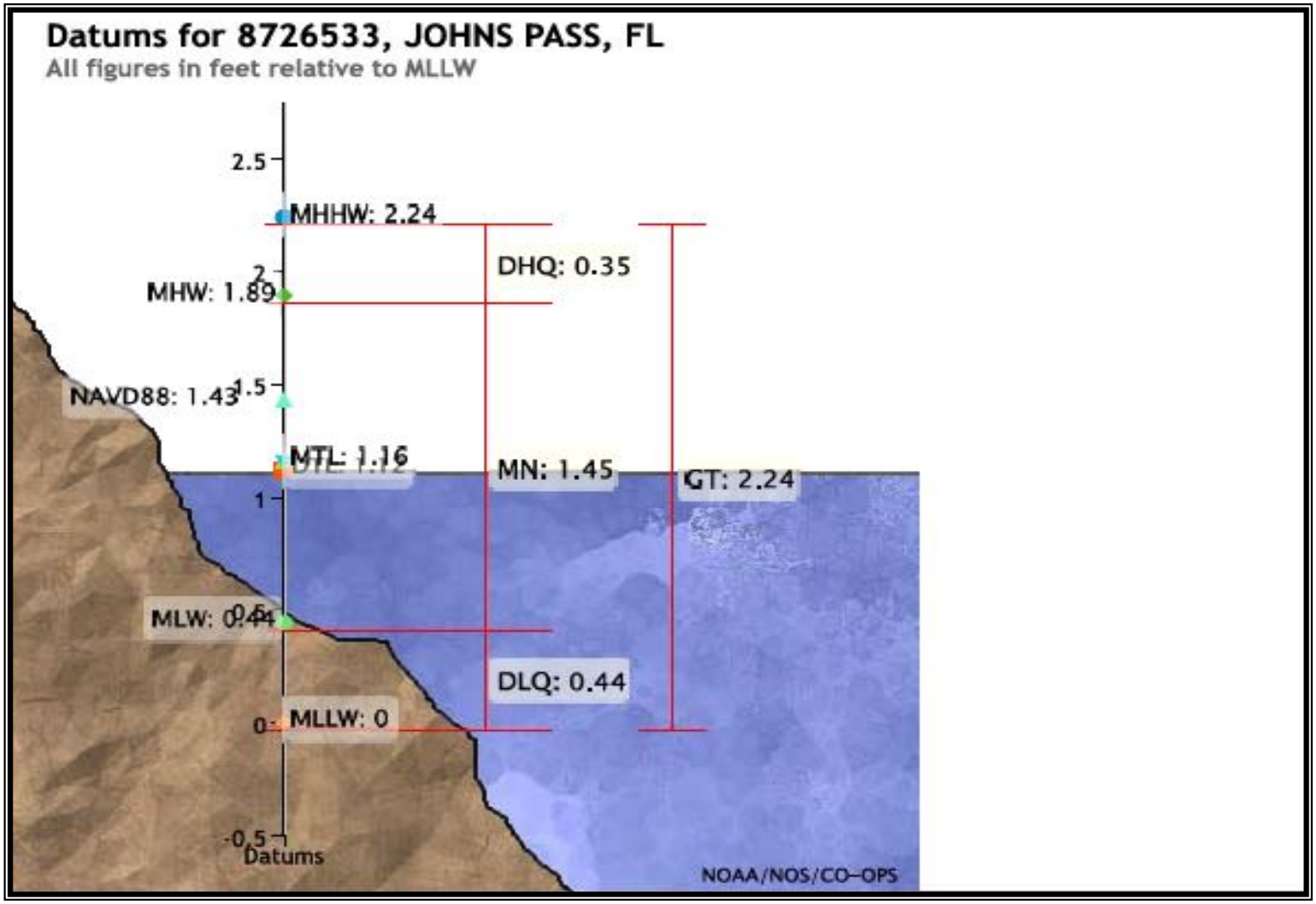
Fillable Porosity = $(0.9\eta) - (\omega\ \gamma_d/\gamma_w)$

η = total porosity
ω = natural moisture content
γ_d = dry unit weight of soil
γ_w = unit weight of water

Fillable Porosity$_1$ = (0.9 * 0.39) - (0.054 * 100.2/62.4) = **0.26**

[1] Formula from SJRWMD SJ93-SP10 Section 7.2.4.

NOAA MHHW Data



NRCS Data

Soil Map—Pinellas County, Florida
(Pirate Square / 175 - 107th Avenue, Treasure Island)



Map Scale: 1:2,350 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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 1:24,000.

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 20, 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 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	0.2	0.7%
16	Matlacha and St. Augustine soils and Urban land	25.9	93.1%
100	Waters of the Gulf of Mexico	1.8	6.3%
Totals for Area of Interest		**27.9**	**100.0%**

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: Ridges on marine terraces, rises 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

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): Interfluve, 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 20, Aug 28, 2023

June 5, 2025

Mr. Jesse Miller
Principal Planner
City of Treasure Island
10451 Gulf Blvd.
Treasure Island, FL 33706
Via email: jmiller@mytreasureisland.org

Re: Pirate Square
Site Plan Application SITE-000401-2023

Jesse:

Pursuant to Sec. 68-410.52 and on behalf of the Applicant, we respectfully request a waiver from Sec. 68-410.59(d) of the City's code. This waiver request is to continue to allow the use of the existing driveway at the NW corner of the subject property which connects to 107th Avenue. Towards that goal, following are the City's criteria for evaluating waivers (in *italics*) followed by our responses (in **bold**):

Shall not damage the character or quality of the neighborhood in which it is located, or hinder the proper future development of the surrounding properties.

The requested waiver will not damage the character or quality of the neighborhood in which it is located as the driveway in question is an existing driveway serving the subject property. [Note the proposed parking lot will be closing the existing driveway towards the NE corner of the subject property.] As this is an existing driveway it will not hinder the future development of surrounding parcels.

Shall not generate excessive vehicular traffic.

The proposed development is a commercial parking lot; it is not in and of itself a traffic generator. It replaces an aging strip shopping center that was a traffic generator. Consequently, the proposed development will not generate excessive vehicular traffic and maintaining the existing NW driveway will not have an adverse impact.

Shall not create a vehicular parking or pedestrian/traffic circulation problem.

Maintaining the existing driveway towards the NW corner of the subject property will not create a vehicular parking or pedestrian / traffic circulation problem. In fact, maintaining said driveway will avoid the creation of such problems as demonstrated below.

Eliminating the existing (and proposed to remain) western driveway along 107th Avenue would preclude all reasonable access to the property from a functional/operational (i.e., traffic circulation) standpoint, as follows, whereas maintaining it improves traffic circulation, as follows.

Functional/Operational (i.e., Traffic Circulation) Necessity of 107th Avenue Driveway
The proposed parking lot contains 243 parking spaces. While not all of those spaces will necessarily be occupied all the time, it is likely that, given the City's deficit in public parking availability, many if not most of the proposed spaces will be filled. During tourist season and summer (non-school) periods, it is likely the parking lot will be mostly if not completely occupied. The same holds true should there be special events in the vicinity.

Consequently, it would be operational malpractice to confine the parking lot to the single driveway along 106th Avenue as that would concentrate all inbound and outbound traffic for the parking lot to that single entrance. This would lead to heavier traffic along 1st Street East (a local road) for those trying to get to 107th Avenue. Since it is only one block along 1st Street East between 106th Ave. and 107th Ave., it is likely that traffic would backup on 1st Street East, causing motorists to divert onto 104th Ave. to get to 107th Ave. 104th Ave. is a residential street and as such, said traffic should be able to avoid 104th Street if possible, i.e., via the proposed driveway along 107th Ave.

In addition to the above, the two proposed driveways have been placed as far apart as practical. From an operational standpoint, this provides maximum dispersion of traffic. Not only are the exits in opposite directions; they are essentially catty-corner to one another. Furthermore, this arrangement allows motorists to avoid congesting local streets (e.g., 1st Street E.) and also avoid residential streets (e.g., 104th Ave.). The foregoing represents some of the reasons the existing western driveway was selected to remain rather than the existing eastern driveway.

Shall not compromise the health, safety, and welfare of the public.

Eliminating the existing (and proposed to remain) western driveway along 107th Avenue would preclude all reasonable access to the property from a health, safety and welfare standpoint, as follows, whereas maintaining it improves health safety and welfare, as follows.

Life Safety Necessity for 107th Avenue Driveway
In addition to the above, eliminating the 107th Avenue driveway poses a life safety risk. Should the single (106th Avenue) driveway (and internal drive aisles) become backed up due to a 2nd driveway not being available, EMS and/or the fire department may be stymied from entering the site, thereby risking life and property. Likewise, should the 106th Ave. driveway become blocked, access to and egress from the site will be impossible thus stranding motorists already parked in the parking lot.

The 2nd driveway along 107th Avenue addresses these issues allowing EMS and/or the fire department to access the parking lot should the 106th Ave. driveway be compromised in any way.

Shall be consistent with the purpose and intent of the city's downtown design criteria.

Maintaining the existing driveway towards the NW corner of the subject property is consistent with the purpose and intent of the City's downtown design criteria as it promotes accessibility, efficient traffic circulation as well as enhancing the health, safety and welfare of the public.

On a related note, it is our understanding the City suggested relocating the driveway from 107th Ave. to 1st Street East. Though possible, relocating the driveway to 1st Street East will not alleviate the operational constraints that location poses, all of which are described above. Namely:

- **A driveway on 1st Street E. will be functionally too close to the 106th Ave. driveway; it will cause traffic to be concentrated in the eastern section of the site.**
- **A driveway on 1st Street E. will discharge traffic in generally the same direction as the 106th Ave. driveway, backing up 1st Street E. (again, a local road) and potentially driving traffic to 104th Ave., a residential street.**
- **By concentrating the driveways along the eastern portion of the site, it greatly reduces the life/safety benefits of a 2nd driveway due to the reasons stated above.**

Consequently, the optimal solution from a parking lot and roadway operational standpoint, as well as a life/safety standpoint, is to maintain the driveways as depicted on the site civil CDs. Thus, we respectfully request approval of this waiver.

If you have any questions regarding the above, do not hesitate to contact me.

Sincerely,
Planeng, Inc.



Russell M. Ottenberg
Vice President

RMO:ro

AGENDA ITEM NO. 10.B

Item Cover Page

PLANNING & ZONING BOARD AGENDA ITEM REPORT

DATE:	June 19, 2025
SUBMITTED BY:	Jesse Miller, Community Development
ITEM TYPE:	Public Hearings
AGENDA SECTION:	PRESENTATION OF ITEMS
SUBJECT:	SITE-000505-2025- 10700 Gulf Blvd- Site Plan approval request for a hotel consisting of 106 units.
BACKGROUND:	See attached Staff Report.
POLICY/PURPOSE:	N/A
STRATEGIC PLAN RELEVANCE:	N/A
ANALYSIS/DISCUSSION:	See attached Staff Report.
FUNDING:	N/A
MOTION:	See attached Staff Report.

ATTACHMENTS:
1. Staff Report.docx
2. Application.pdf
3. Affidavit to Authorize Agent.pdf
4. Warranty Deed.pdf
5. Survey.pdf
6. Architectural Plans.pdf
7. Civil Plans.pdf
8. Landscape Plans.pdf
9. Drainage Report.pdf

CITY OF TREASURE ISLAND
PLANNING AND ZONING BOARD
10451 Gulf Blvd, Treasure Island, Florida 33706
Telephone (727) 547-4575; Fax (727) 547-4584

CASE NO. SITE-000505-2025
STAFF REPORT
THURSDAY, JUNE 19, 2025, AT 2:00 P.M.

DESCRIPTION: Site plan approval request for a hotel, consisting of 106 units.

SITE LOCATION: 10700 and 10750 Gulf Blvd.
Treasure Island, FL 33706



PARCEL ID #: 23-31-15-91926-010-0042
23-31-15-91926-010-0050

LEGAL DESCRIPTION: PARCEL 1: THAT PART OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, BETWEEN THE NORTHERLY BOUNDARY OF SAID LOT 4 AND A LINE PARALLEL TO AND 200 FEET SOUTH AT RIGHT ANGLES FROM SAID NORTHERLY BOUNDARY OF SAID LOT 4.

PARCEL 2: THAT PART OF TRACT 7, TREASURE ISLAND UNIT NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 23, PAGE 34, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

FROM THE MOST NORTHERLY CORNER OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, RUN BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 156.22 FEET, CHORD SOUTH 32 DEGREES 27 MINUTES 10 SECONDS EAST, 156.08 FEET TO A POINT OF BEGINNING; THENCE BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 45.01 FEET CHORD SOUTH 27 DEGREES 11 MINUTES 40 SECONDS EAST, 45 FEET; THENCE SOUTH 64 DEGREES 14 MINUTES 33 SECONDS WEST, 43.31 FEET; THENCE NORTH 27 DEGREES 59 MINUTES 29 SECONDS WEST, 45.05 FEET; THENCE NORTH 64 DEGREES 14 MINUTES 33 SECONDS EAST, 43.92 FEET TO THE POINT OF BEGINNING.

PARCEL 3: LOT 5, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

LOT 5, BLOCK J, CITY OF TREASURE ISLAND – BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

PROPERTY OWNER: Thunderbird TI Holdings, LLC
4100 North 28th Terrace
Hollywood, FL 33020-1116

AGENT/APPLICANT: Alex Plisko
800 Drew Street
Clearwater, FL 33755

GENERAL INFORMATION:

Land Use: RFH (Resort Facilities High)

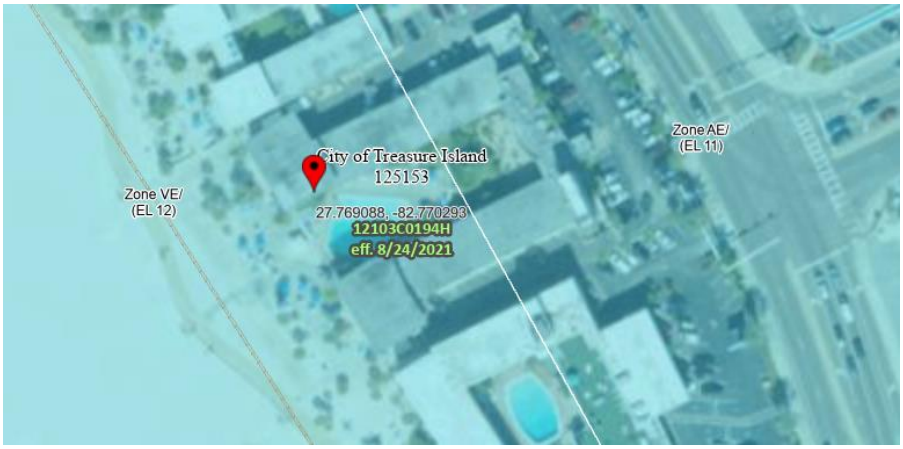
Zoning: RFH-50 (Resort Facilities High)

Adjacent Property (Use):

North: 10800 Gulf Boulevard – Hotel/Motel
West: Gulf of Mexico- Public Beach
South: 10650 Gulf Boulevard – Hotel/Motel
East: Gulf Boulevard

Site Area: 80,339 sq. ft. (1.84 acres)

Flood Zone: Coastal AE-11 (Coastal A) and VE-12, Flood Insurance Rate Map Community Panel No. 12103C0194H, August 24, 2021.



PROPERTY SUMMARY AND BACKGROUND:

The subject property contains an existing hotel located on two parcels, 10700 Gulf Blvd. and 10750 Gulf Blvd. There are a total of 106 hotel units across both parcels, with 64 units located at 10700 Gulf Blvd. and 42 units located at 10750 Gulf Blvd. The existing hotel is nonconforming with respect to the allowable density.

On February 5, 2013, the City Commission adopted Resolution No. 13-07 to authorize the execution of an agreement between the City and Thunderbird, Inc, for the construction of an additional beach trail access node.

On March 17, 2022, the Planning and Zoning Board approved Case No. SMOD-000201-2022 to allow the addition of a 240 sq. ft. electrical room on the second story.

The applicants are proposing to redevelop the hotel as a three-story structure over ground-level parking. The proposed development includes 106 hotel rooms, approximately 1,000 square feet of meeting space, and a pool area.

The subject property has sustained damage resulting from a natural disaster; therefore, the provisions of Division 4 – Nonconforming Uses, specifically Section 68-512 of the Land Development Regulations, are applicable to the review and consideration of the proposed 106-unit redevelopment.

TREASURE ISLAND CODE OF ORDINANCES:

CHAPTER 68- ZONING REGULATIONS
ARTICLE I.- IN GENERAL
Sec. 68-2- Definitions

Building height means the vertical distance from the average finished grade of all exterior corners to the highest point of the building, not including those structures specifically permitted to extend beyond the height of the building. On any site where construction is required to adhere to the base flood elevation, as established for the National Flood Insurance Act of 1968, the building height is the vertical distance from the first living level or the tidal floodplain, whichever is lower, to the highest point of the building not including those structures specifically permitted to extend beyond the height of the building.

Development means any man-made change to improved or unimproved real estate, including but not limited to, buildings or other structures, tanks, temporary structures, temporary or permanent storage of equipment or materials, mining, dredging, filling, grading, paving, excavations, drilling operations or any other land altering or land disturbing activities. For example development includes:

(1) Construction, clearing, filling, excavating, grading, paving dredging, mining, drilling or otherwise significantly disturbing the soil of a site.
(2) Building, installing, enlarging, replacing or substantially restoring a structure, impervious surface, or water management system, and including the long-term storage of materials.
(3) Subdividing land into two or more parcels.
(4) A tree removal for which authorization is required under this Code.
(5) Erection of a sign for which authorization is required under this Code.
(6) Alteration of a historic property for which authorization is required under this Code.
(7) Changing the use of a site so that the need for parking is increased.
(8) Construction, elimination or alteration of a driveway onto a public street.

Fence means any construction of wood, metal, plastic, chain link or other industry standard fence materials, erected for the purpose of privacy, protection or ornamentation.

Fence, open means a fence with horizontal or vertical openings not less than 3.5-inches and such that a 4-inch-diameter sphere cannot pass through any opening, between intermediate pickets not greater than 1-1/2-inch cross sections. Any solid perimeter supporting rails shall not exceed 6-inches.

Grade, finished means the finished elevation of a site after all fill, land balancing or site preparations have been completed. The finished elevation shall be inclusive of all grasses, landscaping, decks, patios, slabs or other ground coverings.

Grade, natural means the grade unaffected by construction techniques such as filling, landscaping or berming.

Guard means a required railing as defined by the Florida Building Code.
Hedge means a dense row of shrubs or bushes forming a boundary.

Hotel or motel means a building or buildings, collectively, "facility," containing individual guest rooms, units or efficiencies for which daily, weekly or monthly lodging is provided as transient accommodations.

Hotel or motel unit means a room or group of rooms within a hotel or motel, as defined, with individual sleeping facilities having one entrance door.

ARTICLE VI. – ZONING DISTRICT REGULATIONS
DIVISION 5. – RFH-50 (RESORT HIGH) ZONING DISTRICT.
Sec. 68-302. – Uses Permitted.

The following uses shall be allowed within an RFH-50 zoning district as permitted, special exception or accessory uses as set forth herein:

1) *Permitted uses*. The following permitted uses shall be allowed within an RFH-50 zoning district:
   a) Hotel and Motel

Sec. 68-431. - Schedule of lot and bulk regulations.
The restrictions and controls intended to regulate the property development characteristics of each zoning district are set forth in the following schedule of lot and bulk regulations supplemented by other sections of this chapter:

Zoning District/Land Use	Minimum Lot Width (Feet)	Minimum Lot Depth (Feet)	Minimum Lot Area (Square Feet)	Maximum Density Dwelling Units (Per Acre)	Maximum Building Height (Above BFE +2 feet of freeboard)	Floor Area Ratio (%)
RFM-50/Resort Facilities High						
Hotel/Motel	70	90	9,000	50 (5 living levels max.)	60	120
Maximum lot coverage: 50%						
Impervious surface ratio—RFM-50:		Multifamily residential: 70% Nonresidential uses: 95%				

Sec. 68-454. – Intersection/driveway visibility. At all street intersections and at the intersection of any street, driveway, or alley, no obstruction to vision (other than existing buildings posts or tree trunks with a maximum diameter of 12 inches, or existing buildings) between 30 inches and seven feet in height above the established grade of the street at the property line shall be erected or maintained on any lot within the triangle formed by the street, driveway, or alley frontage of such lot and a line drawn between the points along such street, driveway, or alley frontage 50 feet distant from their point of street intersection or ten feet distant from their point of intersection with driveways and alleys. Existing trees must be cleared between 30 inches and seven feet.

Sec. 68-458. Garden walls, retaining walls, fences and hedges.

(a) *Generally.* All walls, retaining walls and fences shall be located completely within the limits of the property lines Walls and fences shall have equal architectural treatment on both sides; i.e. the side facing abutting properties, streets, etc., shall be finished. See also section 68-462, Screening regulations. All fees pursuant to this section, shall be set by the city commission in appendix A.

In all cases the height is measured from the lowest of the two adjacent grades, based on natural or finished grade, whichever is lower as determined by a survey. Adjacent shall mean in the case of a retaining wall, the finished grade at the wall face.
Retaining wall height is limited to 6-inches above finished grade. In any case where a fence or wall is allowed to exceed the retaining wall height, the retaining wall plus the fence or wall as outlined below may be combined to meet the maximum height allowed. Where a guard is required by the Florida Building Code, the combined height of the retaining wall and guard may exceed the maximum fence and wall height shown below. If the guard exceeds the allowable height shown below, then the guard shall meet the spacing requirements for an open fence.

All hedges shall be maintained at or below the maximum height shown and in compliance with the landscaping standards of this code. For this section's purpose, vegetation is considered a hedge when planted and maintained to create an open space less than two-feet wide by seven-feet high between each plant.
All walls, retaining walls, fences and hedges must meet the visibility triangle requirements of this code.

(b) *Street Side yard.*

1. Walls and fences,within the required street side yard shall not exceed 3-foot solid or 4-foot open fence.
2. Chain link type fences are specifically prohibited in street side yards.
3. Hedges shall not exceed 4-feet in height.
4. Guards must meet the spacing requirements for an open fence.

(c) Secondary street side yards.

1. For purposes of this section only, on a lot with one or more street side yards, the secondary street side yards may have lesser setbacks. The primary yard will be the one matching the predominant front yard pattern on the block face of the streets.

2. On a secondary street side yard the wall, retaining wall or fence setback to be used will be half of the normally required street side yard setback shown in Sec. 68-541.

(d) Side and nonwaterfront rear yards.

1. All walls, fences or hedges located within the required side or nonwaterfront rear yard shall not exceed seven feet in height,

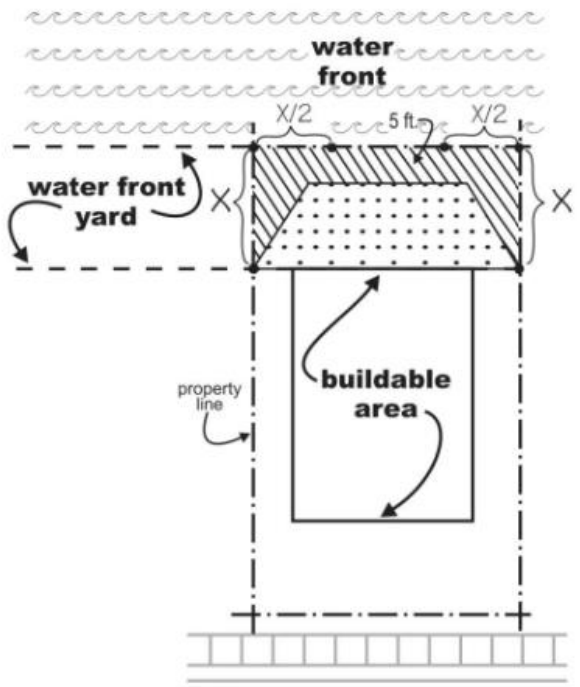
2. Guards may be solid.

(e) *Waterfront yards.*

1. All walls or fences within a waterfront yard shall not exceed 3-foot solid or 4-foot open fence.
2. Retaining walls in the waterfront yard are limited to 30 inches-in height.
3. Guards must meet the spacing requirements for an open fence.

4. Exception for fence height within the inner waterfront yard. Within the dotted area shown in Exhibit A below, fence heights are measured from lowest adjacent grade at the fence location. The Inner waterfront yard is within the waterfront yard setback, and measured as follows: 1) 5 feet from the waterfront property line and 2) measuring from each side property line at the waterfront and extending across waterfront property line at least 1/2 the distance of the waterfront setback, then from that point extending to the point where the side property line meets the waterfront setback line, as shown in Exhibit A below.

Exhibit A – Waterfront Yard View Setback Line



(f) All yards.

1. Decorative post caps may be installed on structural posts of the fence but shall not extend more than ten inches above the top rail.
2. Decorative gate may be installed, but shall not exceed more than 10 inches above the top rail of the abutting fence.

(g) *Right-of-way.*

(1) No walls or fences are permitted to be constructed within or upon any dedicated right-of-way. Planters and decorative rocks not exceeding two-feet in height, and mailboxes as excluded from the definition of "structure" in section 68-2, shall be permitted upon the untraveled

(2) Vegetation and ornamental plantings are permitted upon the untraveled portion of the dedicated right-of-way beyond front yard setback areas so long as such vegetation or landscaping does not obstruct visibility and hedges do not exceed 30-inches in height.

(3) A mailbox, as allowed and permitted for by this section, shall not be deemed a structure, and when permitted, shall be allowed to be placed in the right-of-way. Such mailbox shall be supported by nothing stronger than a single four-inch by four-inch wooden support post, or shall be designed to be of breakaway material, in order not to be a hazard to vehicles or pedestrians. Such mailbox shall be a total height of no more than 60 inches, a total width of no more than 20 inches, and a total depth of no more than 32 inches. An applicant for any mailbox who desires such mailbox not to be considered a structure when such mailbox otherwise would be considered a structure, shall obtain a permit for such mailbox from the building department, and shall include with such application for permit a survey or sketch of the property, showing the location of such mailbox. Such mailbox shall be allowed only in locations where the mailbox would not obstruct visibility or traffic.

Sec. 68-461. - Height regulations.

(a) General application. No building or structure shall have an aggregate height of a greater number of feet than is permitted in the zoning district in which such building or structure is located, except as noted in subsection (b). Height shall be defined as in section 68-2, Building height.

(b) Permitted exceptions. No exceptions to height regulations shall be permitted except enclosed stairways and elevator machinery or shafts not including an elevator exit which shall not exceed a height of seven feet above the roof of the structure and one community television antenna per principal structure shall be allowed but in no instance shall such antenna extend more than 13 feet above the roof of the structure.

Sec. 68-483. Swimming pools.

Swimming pools may be constructed within yard areas except the front yard, provided however, that no part of the pool structure may protrude more than 12 inches above the higher of natural or finished grade level and that the outside of the pool walls shall be at least ten feet from all lot lines except where a greater setback is required under the building code as set out in chapter 64. In determining the percentage of coverage of a lot by buildings, swimming pools which are not enclosed shall not be counted in such

computation. In calculating required pervious space swimming pools shall be considered impervious.

Sec. 68-486. – Off-street parking.

a) *Number and description of parking spaces required*

	Use	Minimum Spaces Required
(2)	Hotels, motels and motor inns	2 spaces for the first unit and 1 space per hotel/motel unit. Restaurants, lounges, meeting rooms and other assembly areas: 1 space per 5 occupants, calculated at 20 square feet of net usable area per occupant.

g) *Utilization of yards.*

(2) In all zoning districts, for all other permitted uses, approved permitted uses with site plan review or approved special exception uses, required front, side or rear yards may be used for off-street parking except as limited herein. A maximum of 80 percent of a required front yard may be used for off-street parking. All parking areas shall have each parking space and aisle marked and shall be landscaped in conformance with the paved area landscape requirements in chapter 72, article II.

(3) In all zoning districts, parking area surfaces shall not extend closer than three feet from any abutting property line.

Sec. 68-541. - Setback classifications.

No building shall be erected, converted, enlarged, reconstructed or structurally altered, unless it shall comply with the following setback classifications.

Terrain Modification Setback Adjustment Factor: A setback encroachment is allowed for stairs not more than 8-feet wide. This is calculated using the mathematical difference between the highest natural grade on a property and the resultant base floor when incorporating the requirements of the City of Treasure Island Terrain Modification Manual located in appendix B. This setback encroachment equals the Terrain Modification Height Adjustment Factor divided by 0.63.

Street: 25 feet
Side: 7.5 feet
Waterfront: 5 feet

ARTICLE IX – ALTERNATE SETBACK SYSTEM

Sec. 68-561. - Alternate setback system procedures.

(a) *Application and exceptions.*

(1) This article shall be the alternative methods of determining all building setback requirements. The section or subsection which results in the greatest amount of setback shall apply for any given property.
(2) The following categories are exempt from the application of the vertical ratio setback system set out in this article:
a. Single-family dwellings including townhouses;
b. Duplex dwellings;
c. All totally commercial buildings located in the CG zoning districts.
d. All buildings located in the PR-MU Core zoning district.
e. All buildings located in the PR-MU Gulf Blvd. zoning district.

(b) *Vertical setback ratio.* All buildings, not otherwise excepted from this article, shall be set back from all property lines 30 percent of the height of building above the higher of natural or finished grade. Notwithstanding this provision, the minimum setback from the waterfront property line on properties bordering the Gulf of Mexico or the public beach shall be five feet.
(c) *Properties bordering on the Gulf* of *Mexico or public beach.* For properties bordering on the Gulf of Mexico or public beach, the following additional building setback and open space requirements shall be applicable:
(1) The minimum required setback shall be five feet from the waterfront property line. No construction shall be permitted seaward of the coastal construction control line except by permit from the state department of environmental protection and the city.
(2) Total open space between side lot lines shall be not less than 30 percent of the width of the lot but no less than the minimum designated in the setback chart, article VIII.
(3) Interior open space between buildings or towers shall equal a distance of 30 percent of the combined height above the higher of natural or finished existing grade of the two structures or towers.

ANALYSIS OF LAND DEVELOPMENT REGULATIONS AND THE COMPREHENSIVE PLAN:

The criteria for reviewing a site plan for approval, approval with conditions, or denial are contained in the City of Treasure Island Land Development Regulations – Sec. 70-92

1) **In what respects the plan is or is not consistent with the Comprehensive Plan and the purpose and intent of the zoning district in which it is located.**
The subject property is located in the RFH (Resort Facilities High) Land Use Category and is located within the RFH-50 (Resort Facilities High) Zoning District. The proposed use is not in conflict with the goals, objectives, and policies of the Comprehensive Plan and supports the purpose and intent of the RFH-50 zoning district.

2) **In what respects the plan is or is not in conformance with all the applicable regulations of the zoning district in which it is located.**
The proposed site plan is consistent with all applicable provisions of the RFH-50 zoning district. Notwithstanding this compliance, the subject property has sustained damage

resulting from a natural disaster; therefore, the provisions of Division 4 – Nonconforming Uses, specifically Section 68-512 of the Land Development Regulations, are applicable to this site plan.
Please see table below.

	Land Development Regulations	**Proposed Site Plan**
Lot Width (min.)	70 ft	103 ft
Lot Depth (min.)	90 ft	246 ft.- N Property Line 256 ft.- S Property Line
Lot Area (min.)	9,000 sq. ft.	80,339 sq. ft.
Density	Hotel/Motel- 50 dwelling units per acre (5 living levels max.)	106 dwelling units Density is grandfathered in per Sec.68-512
Lot Coverage (max.)	50%	36.7%
ISR (max.)	RFH-50- 95%	RFH-50- 85.1%
FAR	96,407 sq. ft.	89,475 sq. ft.
Building Height **Max. above DFE** **From Grade**	 60’ 30% of the Building Height	 36’ from DFE 48’ from grade
Height Encroachment	7’ above roof	N/A
Setbacks **Front– Gulf Blvd.** **Rear** **Side** **Alternate Setbacks** **Greater of above setbacks apply.**	 25’ 5’ 7.5’ Open Space/Side: 30% of Lot Width 30% of Building Height above Grade All Sides	 45.7’ 15.8’ 15’ 310 x .30 = 93 ’ (divided among two sides) North Side- 15’ South Side- 80’ 48 x .30 = 14.4’ All Four Sides
Design Elevation	14’ NAVD Lowest Horizontal Structural Member	14’ NAVD Lowest Horizontal Structural Member
Loading Berths	3	3
Parking Spaces **Total Spaces** **Standard** **Compact/Motorcycle** **ADA-accessible** **Bicycle**	 117 112 0 5 1 Bike Rack (5 spaces per rack)	 124 111 10 5 2 Bike Rack (5 spaces per rack)

3) In what respects the plan is or is not in conformance with the City’s subdivision regulations and all other applicable City requirements including the design

and construction of streets, utility facilities and other essential services.
N/A- The proposed site plan does not include the subdivision of property.

4) In what respects the plan is or is not consistent with good design standards with respect to all internal or external relationships, including but not limited to:

a. Provisions to ensure compatibility with the planned character of the zoning district where the proposed development is to be located, and with existing development surrounding the site.
The proposed site plan complies with all applicable standards and requirements of the RFH-50 Zoning District. Furthermore, the proposed development is consistent with the stated purpose and intent of the RFH-50 Zoning District, and it will not adversely affect the compatibility or established planning character of the surrounding area within the RFH-50 District.

b. Internal or external circulation patterns, for vehicles, bicycles, and pedestrians; provisions for the separation of on-site pedestrian and vehicular traffic; provisions for the safe and convenient storage of bicycles, where applicable.
The proposed site plan has been designed to safely and efficiently accommodate vehicular, pedestrian, and bicycle circulation throughout the site. The plan includes designated parking areas for vehicles, motorcycles, and bicycles, all of which meet the City's applicable parking requirements. Drive aisle widths, parking space dimensions (including width and length), and circulation patterns have been designed to ensure safe maneuverability and adequate access.

c. Disposition of open space, effective use of screening or buffering to reduce the impacts of incompatible and/or nonconforming uses, preservation of acceptable existing trees and other natural features, and protection of existing environmentally sensitive areas and their ecological functions.
The proposed site plan is in conformance with landscaping requirements set forth in Chapter 72- Resources; Vegetation and Environmentally Sensitive Lands. However, any proposed landscaping within the Gulf Blvd (S.R. 699) right-of-way could require either an amendment to the existing Maintenance Memorandum of Agreement (PMOA #02-08) or the execution of a new agreement with the Florida Department of Transportation.

No development is being proposed seaward of the Coastal Construction Control Line or in the Preservation (P) Zoning District. Any existing features will remain.

d. Building arrangements, both between buildings in the proposed development and in relation to those on properties adjacent to the site.
The proposed building complies with the setback requirements stated in Sec. 68-541 and Sec. 68-561.

e. Provisions to ensure continued public use of existing public beach or waterfront access ways, if any. Also, proposed new or enhanced public

beach or waterfront access ways, if identified as a requirement during the conference(s) between the applicant and city staff (see Section 70-53).
N/A- The proposed site plan will not impact the use of the existing public beach or access to the waterfront.

f. Protection of historically/architecturally significant structures or archaeological sites, if any, on or near the proposed development site from any adverse effects of the proposed development.
N/A – There are no known officially designated historically/architecturally significant structures or archaeological sites on the subject property.

It is worth noting that an ordinance for historical signs will be proposed, which will permit the continued use of the iconic Thunderbird sign, as depicted on Sheet A-4 of the architectural plans.

g. Suitability and design of proposed on-site recreation areas and improvements, or of other lands to be dedicated for public recreational purposes.
N/A – There are no on-site recreation areas, improvements, or lands to be dedicated for public recreational purposes.

5) In what respects the plan is or is not in conformance with city policies regarding sufficiency of ownership, guarantees for completion of all required improvements, and guarantees for continued maintenance.
The Public Works Department will evaluate the proposed development during the permit review process to determine whether any new or upgraded public infrastructure improvements will be required. Furthermore, any landscaping proposed within the Gulf Boulevard (S.R. 699) right-of-way may necessitate either an amendment to the existing Maintenance Memorandum of Agreement (PMOA #02-08) or the execution of a new maintenance agreement with the Florida Department of Transportation (FDOT).

6) Where applicable, in what respects the plan is or is not in conformance with the regulations of the Southwest Florida Water Management District, the Tampa Bay Regional Planning Council, and state and federal agencies. The issuance of permits or letters of intent-to-approve by these agencies may be considered evidence of such conformance.
The proposed site plan will require a permit or exemption from the Southwest Florida Water Management District. No review or approvals are required from the Tampa Bay Regional Planning Council.

The proposed site plan requires a drainage permit, utility permit, and a landscape permit from the Florida Department of Transportation (FDOT) and a possible amendment to the existing Maintenance Memorandum of Agreement (PMOA #02-08) or execution of a new agreement with FDOT.

7) **In the case of rehabilitation or redevelopment of an existing nonconforming use, per Section 68-512(3), whether the overall degree of nonconformity on the site is significantly reduced and additional adverse impacts are not created, and whether an exemption from variance requirements for any or all remaining nonconformities should be granted.**
The existing structure has sustained damage resulting from a natural disaster; therefore, the provisions of Division 4 – Nonconforming Uses, are applicable, and the redevelopment of the 106 units is permitted.

STAFF RECOMMENDATION:

Staff has reviewed the proposed site plan and determined that it satisfies the applicable criteria set forth in Section 70-92 of the Land Development Code. Staff recommends the proposed site plan be **APPROVED WITH THE FOLLOWING CONDITIONS:**

1. All building permits and construction associated with this development proposal shall be subject to all current regulations within the Florida Building Code, Floodplain Management Regulations, Land Development Regulations, and the Florida Fire Prevention Code in effect at the time of the building permit application process.

2. Where necessary to accommodate the proposed development, the property owner shall be responsible for the removal/relocation of any and all public utilities located on the subject site. This is regardless of whether the public utilities are known at the time of site plan approval or discovered after such approval. Any removal or relocation will require the approval of the City's Public Works Department and/or Pinellas County Utilities Department.

3. All applicable state and federal permits and/or exemptions shall be submitted to the City prior to the first inspection.

4. The existing 3' utility easement (Per PB 27, PG 16) that transects the middle of the site will need to be vacated prior to development.

5. The proposed iconic Thunderbird sign shall be permitted to be reused upon the adoption of the vintage signage ordinance.

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JUNE 19, 2025
PLANNING AND ZONING BOARD
DEVELOPMENT ORDER

CASE NO. SITE-000505-2025
LOCATION: 10700 AND 10750 GULF BLVD., TREASURE ISLAND, FL 33706

The Planning and Zoning Board has made a motion to:

[ ] APPROVE [ ] DENY
[ ] CONTINUE [ ] APPROVE WITH CONDITIONS

Site plan approval request for a hotel, consisting of 106 units.

CONDITIONS:

1. All building permits and construction associated with this development proposal shall be subject to all current regulations within the Florida Building Code, Floodplain Management Regulations, Land Development Regulations, and the Florida Fire Prevention Code in effect at the time of the building permit application process.

2. Where necessary to accommodate the proposed development, the property owner shall be responsible for the removal/relocation of any and all public utilities located on the subject site. This is regardless of whether the public utilities are known at the time of site plan approval or discovered after such approval. Any removal or relocation will require the approval of the City's Public Works Department and/or Pinellas County Utilities Department.

3. All applicable state and federal permits and/or exemptions shall be submitted to the City prior to the first inspection.

4. The existing 3' utility easement (Per PB 27, PG 16) that transects the middle of the site will need to be vacated prior to development.

5. The proposed iconic Thunderbird sign shall be permitted to be reused upon the adoption of the vintage signage ordinance.

_____ _____
Richard Harris, Chair Date
Planning & Zoning Board

Pursuant to Section 70-92(f), if within 12 months of the date of approval of an application for site plan review, a building permit has not been applied for, the approved site plan shall expire; provided, however, that the original approving body and applicant may jointly agree to extend such period of approval.

Case Number: _____

City of Treasure Island
Development Review Application

Please use blue or black ink only. Failure to complete this form in its entirety will result in this application being returned without review. Note: A separate application is required for each request.

Property Owners: THUNDERBIRD TI HOLDINGS LLC

Address: 4100 N 28TH TERRACE HOLLYWOOD, FL 33020

Phone: 954-608-2565

Fax: _____

Email: GILAD@SURF-STYLE.COM

Agent: ALEX PLISKO

Address: 800 DREW ST CLEARWATER, FL 33755

Phone: 727-804-6000

Fax: _____

Email: PLISKOARCHITECTURE@GMAIL.CO

List all Legal Owner(s) of Property: ELIYAHU LEVY, DORON MALINASKY, AVRAHAM OVAKNIN, GILAD OVAKNIN, S. ZISLIN

Complete legal description (may be placed on attached separate page): SIGNED AND SEALED SURVEY IS INCLUDED WITH APPLICTION

Development Name: THUNDERBIRD BEACH RESORT

Site Location/Address: 10700 GULF BLVD.

Area of Development (Acreage or Square Feet) 80,339 SF

Parcel Identification Number (list all): 23-31-15-91926-010-0042

Application Request: DEMOLISH EXISTING THUNDERBIRD AND CONSTRUCT A NEW THUNDERBIRD BEACH RESORT

Future Land Use Designation: RESORT FACILITIES HIGH

Proposed Future Land Use: RESORT FACILITIES HIGH

Current Zoning: RFH-50

Proposed Zoning: RFH-50

I certify that I have reviewed the Land Development Regulations and that my submission meets all requirements. The only exceptions are those items to which I am requesting variances to or waivers from certain sections of the code and understand that they must be listed on the plans individually and on the attached transmittal. I understand that if an item does need a variance, it will be necessary to file through the appropriate review entity.

Signature must be original (No copies, scans, faxes or e-mails)

Owner/Agent

3-20-25
Date

AFFIDAVIT TO AUTHORIZE AGENT

STATE OF FLORIDA
COUNTY OF PINELLAS

Thunderbird TI Holding LLC
NAME OF OWNER(S) being duly sworn, depose(s) and say(s):

PROPERTY ADDRESS(ES): 10700 Gulf Blvd. Treasure Island, 33706

Parcel I.D. Number(s).: 23-31-15-91926-010-0042

1. That this property constitutes the property for which request for permits and approvals from the City of Treasure Island, as necessary, are being applied for.

2. That the undersigned (has/have) appointed Alex Plisko
as (his/their) agent(s) to represent the above-described property and serve as the applicant/agent for development applications/modifications, at the Planning and Zoning Board meeting and execute any permits or other documents necessary to affect such permit(s).

3. That this affidavit has been executed to induce appropriate state agency in Florida to consider, and act on the above-described property.

4. That (I/we), the undersigned authority, hereby certify that the foregoing is true and correct.

PRINTED NAME OF PROPERTY OWNER(S): Gilad Ovaknin

SIGNATURE OF PROPERTY OWNER(S): _____

DATE: 3/14/25

STATE OF: Florida
COUNTY OF: Broward
The foregoing instrument was acknowledged before me this 14 day of March, 25, by (company/agent) Thunderbird TI Holding LLC by (persons name) Gilad Ovaknin, it's (title) MG member who is personally known to me, or who has produced _____ as identification and who _____did _____did not take an oath.

_____
(Print, Type, or Stamp Commissioned Name of Notary Public)
Commission Number: HH 308228
Commission Expires: 12/30/26

LAUREN WEEKS
Notary Public - State of Florida
Commission # HH 308228
My Comm. Expires Dec 30, 2026
Bonded through National Notary Assn.

I#: 2021196074 BK: 21580 PG: 1579, 06/14/2021 at 02:07 PM, RECORDING 2 PAGES $18.50 D DOC STAMP COLLECTION $178500.00 KEN BURKE, CLERK OF COURT AND COMPTROLLER PINELLAS COUNTY, FL BY DEPUTY CLERK: CLK102878

Prepared by and return to:
David F. Wilsey, Esq.
1000 16th Street North
St. Petersburg, FL 33705

Property Appraiser's ID #: 23-31-15-91926-010-0042

WARRANTY DEED

This Warranty Deed is executed this 11th day of June, 2021, by David M. King, a single man, as Successor Trustee of the Henry Giddens King and Patricia Ann King Trust Agreement Dated July 2, 1994, as amended, ("Grantor") whose post office address is 1405 NANCE AVE., Tampa, FL 33606 to Thunderbird TI Holdings LLC., a Florida limited liability company, ("Grantee") whose post office address is 4100 N. 28TH TERRACE, Hollywood, FL 33020.

"Grantor" and "Grantee" are used for singular or plural, as context requires.

Witnesseth, that Grantor, for the sum of $10 and other good and valuable consideration, the receipt of which is hereby acknowledged, hereby grants, bargains, sells, aliens, remises, releases, conveys and confirms unto Grantee the following described property:

Parcel 1:
That part of Lot 4, Block J, CITY OF TREASURE ISLAND - BLOCK J and K, according to the plat thereof, recorded in Plat Book 27, Pages 16 and 17, Public Records of Pinellas County, Florida, between the Northerly boundary of said Lot 4 and a line parallel to and 200 feet South at right angles from said Northerly boundary of said Lot 4.

Parcel 2:
That part of Tract 7, TREASURE ISLAND UNIT NO. 1, according to the plat thereof, recorded in Plat Book 23, Page 34, Public Records of Pinellas County, Florida, described as follows:

From the most Northerly corner of Lot 4, Block J, CITY OF TREASURE ISLAND - BLOCK J and K, according to the plat thereof, recorded in Plat Book 27, Pages 16 and 17, Public Records of Pinellas County, Florida, run by a curve to the right, radius 1096.28 feet, arc 156.22 feet, chord South 32 degrees 27 minutes 10 seconds East, 156.08 feet to a POINT OF BEGINNING; thence by a curve to the right, radius 1096.28 feet, arc 45.01 feet, chord South 27 degrees 11 minutes 40 seconds East, 45 feet; thence South 64 degrees 14 minutes 33 seconds West, 43.31 feet; thence North 27 degrees 59 minutes 29 seconds West, 45.05 feet; thence North 64 degrees 14 minutes 33 seconds East, 43.92 feet to the POINT OF BEGINNING.

This conveyance is subject to easements, restrictions, reservations, and limitations of record, if any, **and together with** all the tenements, hereditaments and appurtenances thereto belonging or in anywise appertaining, to have and to hold the same in fee simple forever, without reimposing the same.

[*signature page to follow*]

Initials _____

And, Grantor hereby covenants with Grantee that Grantor is lawfully seized of said land in fee simple; that Grantor has good right and lawful authority to sell and convey said land; that Grantor hereby fully warrants the title to said land; and that Grantor will defend the same against the lawful claims of all persons whomever, and that said land is free of all encumbrances, except taxes accruing subsequent to December 31, 2020.

The subject property is not and never was the homestead of the Grantor.

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

Signed, sealed and delivered as to all Grantors in the presence of:

The Henry Giddens King and Patricia Ann King Trust Agreement Dated July 2, 1994, as amended

By: _____
David M. King, Successor Trustee

_____
Signature of Witness 1

David Wilsey
Print Name of Witness 1

_____
Signature of Witness 2

Abigail Wilsey
Print Name of Witness 2

State of FLORIDA
County of PINELLAS

The foregoing instrument was acknowledged before me, a Notary Public, by physical presence, this 11th day of June, 2021 by David M. King, as Successor-Trustee of the Henry Giddens King and Patricia Ann King Trust Agreement Dated July 2, 1994, who was/were personally known to me, or ( ) presented the following identification: _____.

My Commission Expires:

Notary Public State of Florida
Abigail M Wilsey
My Commission HH 064986
Expires 11/18/2024

_____
Signature of Notary

BOUNDARY & TOPOGRAPHIC SURVEY
-FOR-
THUNDERBIRD TI HOLDINGS LLC
THUNDERBIRD BEACH RESORT
SECTION 23, TOWNSHIP 31 SOUTH, RANGE 15 EAST
PINELLAS COUNTY, FLORIDA
10700 & 10750 GULF BLVD, TREASURE ISLAND, FL 33706

LEGAL DESCRIPTION:

PARCEL 1:

THAT PART OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND – BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, BETWEEN THE NORTHERLY BOUNDARY OF SAID LOT 4 AND A LINE PARALLEL TO AND 200 FEET SOUTH AT RIGHT ANGLES FROM SAID NORTHERLY BOUNDARY OF SAID LOT 4.

PARCEL 2:

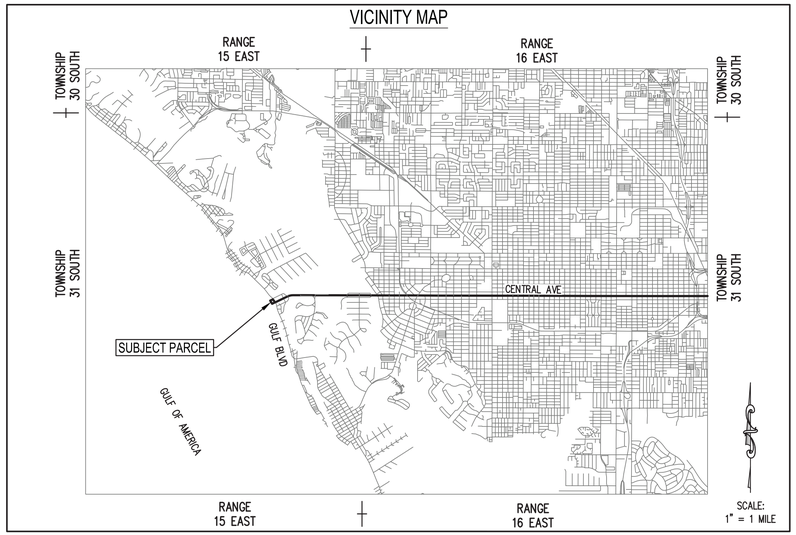
THAT PART OF TRACT 7, TREASURE ISLAND UNIT NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 23, PAGE 34, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

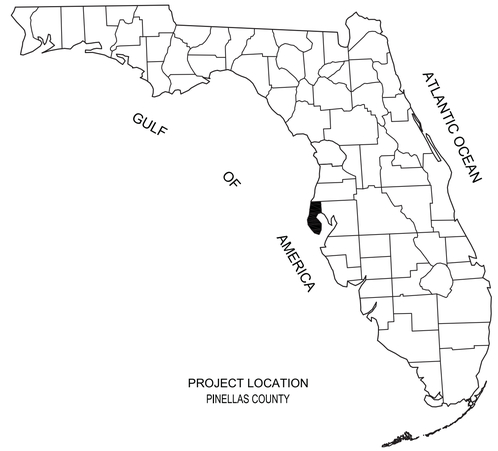
FROM THE MOST NORTHERLY CORNER OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND – BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, RUN BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 156.22 FEET, CHORD SOUTH 32 DEGREES 27 MINUTES 10 SECONDS EAST, 156.08 FEET TO A POINT OF BEGINNING; THENCE BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 45.01 FEET CHORD SOUTH 27 DEGREES 11 MINUTES 40 SECONDS EAST, 45 FEET; THENCE SOUTH 64 DEGREES 14 MINUTES 33 SECONDS WEST, 43.31 FEET; THENCE NORTH 27 DEGREES 59 MINUTES 29 SECONDS WEST, 45.05 FEET; THENCE NORTH 64 DEGREES 14 MINUTES 33 SECONDS EAST, 43.92 FEET TO THE POINT OF BEGINNING.

PARCEL 3:

LOT 5, BLOCK J, CITY OF TREASURE ISLAND – BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

VICINITY MAP





INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	BOUNDARY SURVEY
3	TOPOGRAPHIC DETAILS

LEGEND

±	MORE OR LESS
BFE	BASE FLOOD ELEVATION
CCCL	COASTAL CONSTRUCTION CONTROL LINE
CONC	CONCRETE
CPB	CONDOMINIUM PLAT BOOK
NO.	NUMBER
ID	IDENTIFICATION
LB	LICENSED BUSINESS
MISC	MISCELLANEOUS
ORB	OFFICIAL RECORDS BOOK
PG	PAGE
PB	PLAT BOOK
PRM	PERMANENT REFERENCE MONUMENT
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
CI	CAST IRON
PVC	POLYVINYL CHOLRIDE
CPP	CORRUGATED PLATIC PIPE
INV	INVERT
FF	FINISHED FLOOR ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIRM	FLOOD INSURANCE RATE MAP
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FPC	FLORIDA POWER CORPORATION
R/W	RIGHT OF WAY
W/	WITH
(C)	CALCULATED MEASUREMENT
(M)	FIELD MEASUREMENT
(P)	PLAT MEASUREMENT
(D)	DEED MEASUREMENT
NLY, ELY, SLY, & WLY	GENERAL CARDINAL DIRECTION (NORTHERLY, ETC)
■	FOUND CONCRETE MONUMENT (AS NOTED)
◎	FOUND NAIL & DISK (AS NOTED)
○	FOUND IRON PIPE (AS NOTED)
◉	SET NAIL & DISK (LB 8498)
Ⓢ	SANITARY MANHOLE
⊗	SANITARY CLEANOUT
⋈	SEWER VALVE
Ⓓ	STORM MANHOLE
Ⓖ	GREASE TRAP
Ⓣ	TELEPHONE MANHOLE
	FLOOD LIGHT
	IRRIGATION CONTROL VALVE
Ⓦ	WATER METER
	WATER VALVE
	BACKFLOW PREVENTOR
	FIRE HYDRANT
	FAUCET
	PEDESTRIAN TRAFFIC SIGNAL POLE
	POST (NON-FENCE)
	REFLECTOR
Ⓡ	RECLAIMED WATER METER
	LIGHT POLE
	SIGN
Ⓑ	BOLLARD
	ELECTRIC RISER
	ELECTRIC TRANSFORMER
Ⓔ	ELECTRIC METER
	ELECTRIC OUTLET
E	PULLBOX (ELECTRIC)
T	PULLBOX (TRAFFIC)
?	PULLBOX (UNKNOWN)
	TELEVISION RISER
	UNDERGROUND FIBER OPTIC CABLE MARKER
G	GAS METER
Ⓖ	GATE POST
VLT	VAULT
——×——	WROUGHT IRON FENCE
——○——	CHAIN LINK FENCE
——□——	VINYL FENCE
- - - 6 - - -	EXISTING CONTOUR
	LINE BREAK
x 10.00	SPOT ELEVATION (HARD SURFACE)
x 10.0	SPOT ELEVATION (GROUND)

TREE LEGEND

	MISC DECIDUOUS
	PALM

SCHEDULE B, SECTION II EXCEPTIONS:
(SEE SURVEY NOTE #5)

ITEMS 1–4: NOT ADDRESSED (STANDARD EXCEPTIONS)

5. EASEMENT AND RIGHT OF WAY AS SET FORTH ON THE PLAT OF TREASURE ISLAND UNIT NO. 1 RECORDED IN PLAT BOOK 23, PAGE 34 (AS TO PARCEL 2 ONLY). **[PARCEL 2 IS DESCRIBED AS BEING A PORTION OF TRACT 7 OF SAID PLAT, WHICH IS DEPICTED AS "RIGHT OF WAY FOR TREASURE ISLAND CAUSEWAY" PER COUNTY DEED BOOK 806, PAGE 24, ON SAID PLAT. IT IS UNKNOWN IF THE RIGHTS/INTERESTS AS PUBLIC RIGHT OF WAY OF THIS PORTION OF TRACT 7 WERE EXTINGUISHED]**
6. INTENTIONALLY DELETED.
7. EASEMENT IN FAVOR OF FLORIDA POWER CORPORATION RECORDED IN OFFICIAL RECORDS BOOK 86, PAGE 452 (AS TO PARCEL 3). **[AFFECTS PARCEL 3 – PLOTTED HEREON; IT IS UNKNOWN IF THE UNDERGROUND CONDUIT AND/OR TRANSFORMER VAULT AS DESCRIBED IN SAID DOCUMENT STILL EXIST OR HAVE BEEN ABANDONED]**
8. EASEMENT IN FAVOR OF FLORIDA POWER CORPORATION RECORDED IN OFFICIAL RECORDS BOOK 165, PAGE 241 (AS TO PARCELS 1 AND 2). **[NOT PLOTTED – POOR DOCUMENT QUALITY; SKETCH OF EASEMENT NOT LEGIBLE]**
9. INTENTIONALLY DELETED.
10. UNRECORDED AMENDED AND RESTATED GROUND LEASE BY AND BETWEEN GIDDENS KING, LESSOR, AND TRI-KING, INC., A FLORIDA CORPORATION, LESSEE, DATED NOVEMBER 1, 1987, AS EVIDENCED BY MEMORANDUM OF LEASE RECORDED IN OFFICIAL RECORDS BOOK 6616, PAGE 674 (AS TO PARCELS 1 AND 2). **[AFFECTS PARCELS 1 AND 2 – NO PLOTTABLE ITEMS]**
11. UNRECORDED LEASE BY AND BETWEEN TAHITIAN TREASURE ISLAND, LLC, LESSOR, AND MAC-GRAY SERVICES, INC., LESSEE, AS EVIDENCED BY MEMORANDUM OF LEASE RECORDED IN OFFICIAL RECORDS BOOK 17330, PAGE 1586 (AS TO PARCEL 3). **[AFFECTS PARCEL 3 – NO PLOTTABLE ITEMS]**
12. RIGHTS OF TENANTS IN POSSESSION AS TENANT ONLY, UNDER UNRECORDED LEASES WITH NO RIGHT OF FIRST REFUSAL OR OPTION TO PURCHASE. **[NOT A MATTER OF SURVEY]**
13. INTENTIONALLY DELETED.
14. INTENTIONALLY DELETED.
15. INTENTIONALLY DELETED.
16. INTENTIONALLY DELETED.
17. ALL MATTERS AS SHOWN ON THE SURVEY PREPARED BY KENNETH J. OSBORNE, DATED 5/20/2021, UNDER JOB NUMBER 481055. **[NOT A MATTER OF THIS SURVEY]**

SURVEY NOTES:

1. THIS IS A BOUNDARY & TOPOGRAPHIC SURVEY, AS DEFINED IN CHAPTER 5J-17.050 (11) FLORIDA ADMINISTRATIVE CODE.
2. BEARINGS SHOWN HEREON ARE BASED ON GRID NORTH AS ESTABLISHED BY THE NATIONAL OCEAN SERVICE (NOS) THROUGH ITS PROGRAM OFFICE NATIONAL GEODETIC SURVEY (NGS) AND THE NORTH LINE OF LOT 5, BLOCK J (CITY OF TREASURE ISLAND BLOCKS J & K, PER PLAT BOOK 27, PAGE 16, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA) BEING NORTH 64°11'55" EAST.
3. COORDINATES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM OF 1983, 2011 ADJUSTMENT (NAD83/11).
4. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP (FIRM) NUMBER 12103C0194H, CITY OF TREASURE ISLAND, FLORIDA, MAP REVISED DATE OF AUGUST 24, 2021, THE PROPERTY DESCRIBED HEREON LIES PARTIALLY WITHIN ZONE "VE" WITH A BASE FLOOD ELEVATION OF 12 FEET AND PARTIALLY WITHIN ZONE "AE" WITH A BASE FLOOD ELEVATION OF 11 FEET (REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988). APPLICABLE FLOOD HAZARD ZONE LINES HAVE BEEN SCALED AND DEPICTED HEREON.
5. THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE COMMITMENT PREPARED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, ISSUED BY FISHER & WILSEY, P.A., ORDER NUMBER 9449078, REVISION NUMBER "REV. #4 – ARG – 6/8/2021", COMMITMENT DATE OF MAY 13, 2021 AT 5:00 P.M. THE DESCRIPTION OF THE LAND CONTAINED IN THIS BOUNDARY SURVEY IS PER EXHIBIT "A" OF SAID COMMITMENT. SEE SCHEDULE B-II EXCEPTION NOTES HEREON.
6. NORTH-SOUTH AND EAST-WEST TIES TO FOUND MONUMENTATION AND IMPROVEMENTS ARE BASED ON CARDINAL DIRECTION, UNLESS ENDING IN "-LY" (NLY, ELY, SLY, WLY) WHICH ARE PERPENDICULAR TIES TO THE BOUNDARY LINE.
7. THE SCOPE OF THIS SURVEY DOES NOT ADDRESS ENVIRONMENTAL MATTERS, JURISDICTIONAL BOUNDARIES SUCH AS WETLANDS, OR HAZARDOUS WASTES CONCERNS SHOULD ANY OF THE FOREGOING EXIST.
8. UNDERGROUND UTILITIES AND IMPROVEMENTS WERE NOT LOCATED EXCEPT AS SHOWN HEREON.
9. THIS SURVEY MAP AND REPORT (IF APPLICABLE) OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER (IF A HARD COPY), OR THE ADOBE PDF CONTAINING THE ELECTRONIC SIGNATURE HAS NOT BEEN VALIDATED TO BE THE ORIGINAL SIGNED AND SEALED VERSION (IF AN ELECTRONIC FILE). IF AN ELECTRONIC FILE, PRINTED COPIES OF THE SURVEY MAP ARE NOT CONSIDERED TO BE A VALID SIGNED AND SEALED COPY.
10. RECORDING REFERENCES (SUCH AS OFFICIAL RECORDS BOOK AND PAGE, AND PLAT BOOK AND PAGE) SHOWN HEREON, REFER TO DOCUMENTS RECORDED IN THE OFFICIAL RECORDS OF PINELLAS COUNTY, FLORIDA.
11. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED BY POST-PROCESSED STATIC GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) OBSERVATIONS ON SITE CONTROL USING CORRECTIONS FROM FLORIDA DEPARTMENT OF TRANSPORTATION'S (FDOT) FLORIDA PERMANENT REFERENCE NETWORK (FPRN) OF FIXED REFERENCE BASE STATIONS. ADDITIONALLY, THE ORTHOMETRIC HEIGHTS (ELEVATIONS) WERE DERIVED FROM APPLYING THE NGS "GEOID18" GEOID MODEL TO ESTABLISHED ELLIPSOID HEIGHTS. CONTOURS SHOWN HEREON ARE DISPLAYED IN 1' INTERVALS.
12. THE AERIAL IMAGE DEPICTED HEREON IS DATED JANUARY 14, 2025 AND WAS OBTAINED BY THIS FIRM.
13. DISTANCES AND ACREAGES SHOWN HEREON ARE MEASURED IN U.S. SURVEY FEET AND DECIMALS THEREOF. MEASUREMENTS DEPICTED HEREON ARE FIELD DERIVED UNLESS OTHERWISE NOTED.
14. THE SUBJECT PARCEL CONTAINS 80,339.2 SQUARE FEET OR 1.84 ACRES, MORE OR LESS.
15. THE PROJECT SITE CONTAINS A CLOSED/INACTIVE HOTEL RESORT NAMED "THUNDERBIRD BEACH RESORT", WHICH WAS EVIDENTLY IMPACTED BY COASTAL/STORM SURGE FLOODING ASSOCIATED WITH TROPICAL CYCLONE(S) IN 2024. DURING THE COURSE OF THIS SURVEY, THE PROJECT SITE WAS OBSERVED TO HAVE EXTENSIVE DAMAGE TO MANY EXISTING IMPROVEMENTS, AND DESCRIPTIONS OF THEIR RESPECTIVE CONDITIONS MAY NOT BE ACCURATE DUE TO THEIR SUBJECTIVE NATURES.
16. IT IS THE UNDERSTANDING OF THIS OFFICE THAT THE EXISTING IMPROVEMENTS MAPPED HEREON ARE PROPOSED TO BE DEMOLISHED FOR NEW SITE DEVELOPMENT(S). FOR THE PURPOSES OF THIS SURVEY, CERTAIN BUILDING DETAILS (ASIDE FROM THEIR FOOTPRINTS/DIMENSIONS AT GROUND LEVEL) WERE NOT MEASURED OR SHOWN HEREON (I.E. ROOF OVERHANGS, RAILINGS, COVERED PORCHES, ELEVATED BUILDING FLOOR DETAILS, ETC.).
17. THE "PROPOSED PARCEL" SHOWN ON SHEET 2 HEREON WAS INCORPORATED PER REQUEST, IS DEPICTED FOR INFORMATIONAL PURPOSES ONLY, AND IS PER A SKETCH OF DESCRIPTION PREPARED BY DEUEL & ASSOCIATES (LB 107), WORK ORDER #2005-100, DATED 1/18/2022.

CERTIFIED TO:

1) THUNDERBIRD TI HOLDINGS LLC

SURVEYOR'S CERTIFICATE:

I CERTIFY THIS SURVEY MEETS THE APPLICABLE "STANDARDS OF PRACTICE" AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN RULE 5J17.050-.052, FLORIDA ADMINISTRATIVE CODE.

Digitally signed by Matthew W Simpson
Date: 2025.02.19 14:18:59 -05'00'

MATTHEW W. SIMPSON, FLORIDA LICENSED SURVEYOR & MAPPER
FLORIDA REGISTRATION NO. 7251

CFB | EVANS FARMER BARLEY SURVEYING
CLEARWATER, FLORIDA 33765 | (727) 515-1700 | EBSUR

REVISIONS	DATE
ADD BOUNDARY, PROPOSED PARCEL, MISC. NOTES	02.19.2025

CLIENT: THUNDERBIRD TI HOLDINGS LLC
JOB NO.: SP2024.05492 — DATE OF SURVEY: 02.19.2025
DRAWING DATE: 01.30.2025 — CHECKED BY: MWS
DRAWN BY: MJL
FIELD BOOK: AJ-105; MWS-01; JA-01; PAGE: ---

THUNDERBIRD BEACH RESORT
SECTION 23, TOWNSHIP 31 SOUTH, RANGE 15 EAST
PINELLAS COUNTY, FLORIDA

BOUNDARY & TOPOGRAPHIC SURVEY FOR THUNDERBIRD TI HOLDINGS LLC

SHEET 01 OF 03

DWG: M:\JOBS\SP2024.05492 - THUNDERBIRD BEACH RESORT\SURVEY\DWG\SP2024.05492 - THUNDERBIRD BEACH RESORT.DWG | XREF: | PLOTTED: 2/19/2025 3:14 PM BY: MATTHEW SIMPSON

INDEX	
SHEET	*DESCRIPTION*
1	COVER SHEET
2	BOUNDARY SURVEY
3	TOPOGRAPHIC DETAILS

CURVE TABLE					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	1096.28'	16°26'14"	314.50'	S34°16'50"E	313.43'
C2	1096.28'	2°21'06"	44.99'	S27°14'16"E	44.99'
C3	1096.28'	8°09'53"	156.22'	N32°29'45"W	156.09'
C4	1960.08'	6°04'11"	207.65'	N47°46'18"W	207.55'
C5	1096.28'	8°18'29"	158.97'	N46°39'12"W	158.83'
C6	1096.28'	5°55'16"	113.29'	N39°32'19"W	113.24'
C7	1096.28'	17°28'37"	334.40'	S17°19'25"E	333.10'
C8	1960.08'	2°09'29"	73.82'	S09°39'51"E	73.82'
C9	1096.28'	6°06'41"	116.93'	N45°33'17"W	116.88'
C10	1960.08'	17°13'26"	589.23'	S17°11'49"E	587.01'

CURVE TABLE (P)					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C3	1096.28'	8°09'53"	156.22'	S32°27'07"E	156.09'
C4	1960.08'	6°04'11"	207.65'	S47°43'40"E	207.55'
C6	1096.28'	5°55'16"	113.29'	N39°29'42"W	113.24'
C7	1096.28'	17°28'37"	334.40'	S17°16'47"E	333.10'
C8	1960.08'	2°08'49"	73.44'	S09°38'53"E	73.44'
C9	1096.28'	6°06'41"	116.93'	N45°30'40"W	116.88'
C10	1960.08'	17°12'58"	588.96'	S17°08'58"E	586.75'

CURVE TABLE (D)					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C2	1096.28'	2°21'08"	45.01'	N27°11'40"W	45.00'
C3	1096.28'	8°09'53"	156.22'	S32°27'07"E	156.09'

(PROPOSED PARCEL) CURVE TABLE (C)					
CURVE TAG	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C11	332.36'	10°17'37"	59.71'	N47°58'50"W	59.63'
C12	108.31'	40°29'48"	76.55'	N34°44'14"W	74.97'
C13	196.05'	19°30'30"	66.75'	N24°31'16"W	66.43'
C14	85.95'	35°46'08"	53.66'	N19°53'00"W	52.79'
C15	115.34'	31°12'38"	62.83'	N20°36'46"W	62.06'

1 inch = 30 feet

CFB | EVANS FLANNER BARLEY SURVEYING
CLEARWATER, FLORIDA 33765 (727) 535-5502 EB#28

REVISIONS	DATE:
ADD BOUNDARY, PROPOSED PARCEL, MISC. NOTES	02.19.2025

CLIENT:	THUNDERBIRD TI HOLDINGS LLC
JOB NO.:	SP2024.05492
DRAWING DATE:	01.30.2025
DRAWN BY:	MJL
FIELD BOOK:	AJL-105, MWS-01, JA-01, PAGE: ---, ---
DATE OF SURVEY: 02.19.2025	
CHECKED BY: MWS	

THUNDERBIRD BEACH RESORT
SECTION 23,
TOWNSHIP 31 SOUTH, RANGE 15 EAST
PINELLAS COUNTY, FLORIDA

BOUNDARY & TOPOGRAPHIC SURVEY
FOR
THUNDERBIRD TI HOLDINGS LLC

SHEET 02 OF 03

DWG FILE: K:\SURVEY\PROJECTS\SURVEYS - BOUNDARY\SP2024.05492 - THUNDERBIRD BEACH RESORT\DWG\SP2024.05492 - TOPO.DWG, 2/19/2025 3:15:16 PM, EFP

INDEX	
SHEET	*DESCRIPTION*
1	COVER SHEET
2	BOUNDARY SURVEY
3	TOPOGRAPHIC DETAILS

MATCHLINE "A"

LOT 7, BLOCK J (PB 27, PG 16)

LOT 6, BLOCK J (PB 27, PG 16)

APPROXIMATE COASTAL CONSTRUCTION CONTROL LINE (CCCL) (PER FDEP R-120 DATED 09/28/1978)

ELECTRIC TRANSFORMER ON CONCRETE

ELECTRIC METER ON POST

CATCH BASIN
TOP = 5.32'
TOP WIER/BAFFLE = 4.28'
NE INV (12" CPP) = 2.26'
NE INV (12" CPP) = 3.04'
(NW INVERTS NOT VISIBLE)

ELECTRIC GATE BOX

6' VINYL FENCE

APPROXIMATE SANITARY SEWER LINE (NOT VERIFIED)

SANITARY MANHOLE
NORTH RIM = 3.57'
NW INV (6" PVC) = 0.06'
NE INV (6" PVC) = 0.09'
S INV (6" CI) = 0.04'

ASPHALT

SIGN WITH 10" STEEL SUPPORT "THUNDERBIRD BEACH RESORT"

ZONE AE (BFE = 11')
ZONE VE (BFE = 12')

N64°11'55"E 245.57'

WALL (ON-LINE)

-PARCEL 3-
LOT 5, BLOCK J
(PB 27, PG 16)

5' UTILITY EASEMENT (PER PB 27, PG 16)

7.5' BUILDING SETBACK (PER PB 27, PG 16)

2-STORY HOTEL BUILDING

5' CHAIN LINK FENCE

FOUND NAIL & DISK (RLS 4926 HALE) (0.09'S, 0.40'W)

CONC WALL

3-STORY HOTEL BUILDING

FIBER-OPTIC FAULT

PLANTER

BRICK PLANTER

STAIRS

CATWALK

BRICK PAVERS

POST W/ SHOWER

SAND

CONCRETE

N24°30'00"W 124.23'

BUILDING ON-LINE

FOUND 1/2" IRON PIPE (NO ID) (0.42'S, 0.24'W)

FOUND NAIL & DISK (LB 107) (0.37'S, 0.13'W)

PUBLIC BEACH AS RECORDED BY ORDINANCE, DATED JUNE 1, 1971 IN OFFICIAL RECORDS BOOK 2117 PAGE 1670 (AS NOTED IN THE ORDINANCE)

BENCHMARK
SET NAIL & DISK "CFB CONTROL"
NORTHING: 1249629.80'
EASTING: 407154.58'
(NAVD88) EL = 4.74'

POOL

BRICK PAVERS

6' WOOD FENCE

PAVERS

-TPO EASEMENT (ORB 86, PG 452) B-2 ITEM #7

SUBJECT PARCEL
(ORB 21580, PG 1579 & ORB 21580, PG 1581)
±1.84 ACRES

CITY OF TREASURE ISLAND
- BLOCK J AND K
PB 27, PG 16

GREASE TRAP TOP = 4.83

CONCRETE WALK

EDGE OF PAVEMENT

POST W/ RETAINING WIRE

CY 146

GULF BOULEVARD (STATE ROAD NO 699)
100' RIGHT-OF-WAY PER STATE OF FLORIDA STATE ROAD DEPARTMENT RIGHT-OF-WAY MAP OF STATE ROAD NO 699, SECTION 15010-2510

BENCHMARK
FOUND BRASS DISK STAMPED "15-90-DA-27A"
NORTHING: 1249621.60'
EASTING: 407356.27'
(NAVD88) EL = 4.41'
[NOTE: UNABLE TO RECOVER DATASHEET FOR PUBLISHED CONTROL VALUES OF THIS MARK; IF ANY EXIST – POSSIBLE FDOT REFERENCE MARK]

15' BUILDING SETBACK (PER PB 27, PG 16)

-PARCEL 1-
NORTH 200' OF LOT 4, BLOCK J
(PB 27, PG 16)

ASPHALT

DOUBLE SUPPORT SIGN (DAMAGED)

SANITARY MANHOLE
NORTH RIM = 4.57'

107TH AVENUE

N64°11'55"E 43.92'

-PARCEL 2-
PORTION OF TRACT 7
[PB 23, PG 34]

SET NAIL & DISK (CFB LB8498)

RECLAIMED FAUCET

TELEPHONE MANHOLE
NORTH RIM = 3.45'

ELECTRIC MANHOLE
NORTH RIM = 3.74'

S64°11'55"W 43.92'

PORTION OF TRACT 7
[PB 23, PG 34]

R/W LINE

S64°11'55"W 256.84'

APPROXIMATE FLOOD HAZARD LINE PER FEMA FIRM 12103C0194H, REVISED 08/24/2021

ZONE AE (BFE = 11')
ZONE VE (BFE = 12')

BILMAR BEACH RESORT CONDOMINIUM (CPB 138, PG 60)

N24°30'00"W 197.84'

2-STORY HOTEL BUILDING

FF: 5.45

FF: 5.32

FF: 5.38

FF: 5.42

COVERED BREEZEWAY

COVERED OUTDOOR BAR

WOOD & METAL GAZEBO

HANDICAP LIFT SEAT

HOT TUB

POOL EQUIPMENT

14" STUCCO COLUMN – TYPICAL

BRICK PAVERS

COVERED ENTRY

STUCCO COLUMNS

BRICK PAVERS

POOL

POST W/ SHOWER & FAUCET

WOOD FENCE

CONCRETE

PLANTER

SAND

EDGE OF CONC BLOCK "BASEMENT"

COVERED BASEMENT WITH POOL EQUIPMENT (ELEV 10.00')

WALL ON-LINE

FOUND NAIL & DISK (LB 966 JOHNSTON)

FOUND NAIL & DISK (LB 021 GFY) (0.34'S, 0.95'W) (ON-LINE WITH CCCL)

APPROXIMATE COASTAL CONSTRUCTION CONTROL LINE (CCCL) (PER ORB 11700, PG 2807)

APPROXIMATE SANITARY SEWER LINE BETWEEN CLEANOUTS (UNKNOWN DOWNSTREAM CONNECTION)

METAL HANDHOLE/METER BOX (UNKNOWN, NOT ACCESSIBLE)

6' CHAIN LINK CONSTRUCTION FENCE

DILAPIDATED ASPHALT & SAND

ASPHALT

BACK OF CURB

EDGE OF PAVEMENT

CONCRETE CURB

PUBLIC BEACH AS RECORDED BY ORDINANCE, DATED JUNE 1, 1971 IN OFFICIAL RECORDS BOOK 2117 PAGE 1670 (AS NOTED IN THE ORDINANCE)

0 10 20
1 inch = 20 feet

CFB CIVIL | PLANNER | BARLEY SURVEYING
CLEARWATER, FLORIDA 33759 (727) 531-1900 LB#8498

REVISIONS	DATE
ADD BOUNDARY, PROPOSED PARCEL, MISC NOTES	02.19.2025

CLIENT: THUNDERBIRD TI HOLDINGS LLC
JOB NO.: SP2024.05492 DATE OF SURVEY: 02.19.2025
DRAWING DATE: 01.30.2025 CHECKED BY: MWS
DRAWN BY: MJL
FIELD BOOK: AJL-105; MWS-01; JA-01; PAGE: ---

THUNDERBIRD BEACH RESORT
SECTION 23,
TOWNSHIP 31 SOUTH, RANGE 15 EAST
PINELLAS COUNTY, FLORIDA

BOUNDARY & TOPOGRAPHIC SURVEY
FOR
THUNDERBIRD TI HOLDINGS LLC

SHEET 03 OF 03

DO NOT ALTER OR DELETE THIS SURVEY. - SURVEY NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

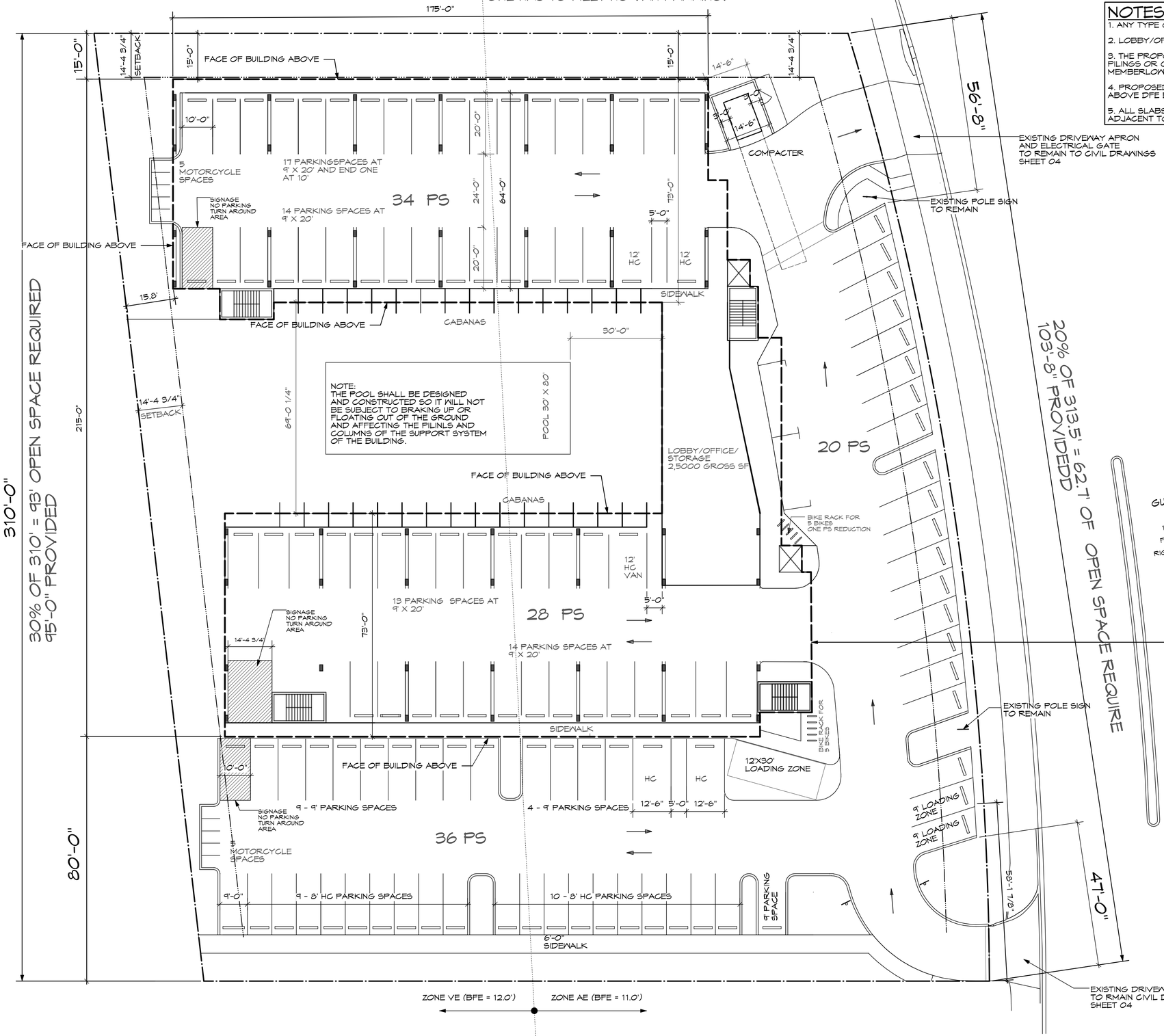
PARKING REQUIRED:

107 SPACES FOR GUESTS - 106 ROOMS + 1
10 SPACES FOR 1,000 SF NET AREA FOR MEETING ROOM

117 REQUIRED PARKING SPACES
124 PROVIDED PARKING SPACES

118TOTAL PARKING SPACES
1 SPACES FOR FOR 1 BIKE RACKS
5 SPACES FOR 10 MOTORCYCLE SPACES
124 SPACES FOR CALCULATIONS

TREASURE ISLAND REFERENCES FL STATUES WHICH REFERNENCE FEDERAL REGULATIONS ACCESSIBLE PARKING: ACCESSIBLE PARKING SPACES PER ADA.GOV
100 TO 150 PARKING SPACES REQUIRES 5 HC SPACES WHICH ONE HAS TO MEET HC VAN PARKING.

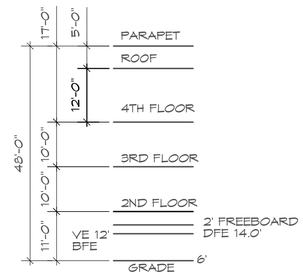


LIST OF DRAWINGS

A-1 SITE AND FIRST FOOR PLAN
A-2 2ND AND THIRD FLOOR PLANS
A-3 4TH FLOOR PLAN
A-4 EAST AND WEST EXTERIOR ELEVATIONS
A-5 NORTH AND SOUTH EXTERIOR ELEVATIONS

NOTES:

1. ANY TYPE OF PROPOSED LIGHTING SHALL MEET SEC. 68-466
2. LOBBY/OFFICE/STORAGE SHALL BE DRY FLOOD PROOFED
3. THE PROPOSED CONSTRUCTION SHALL BE ELEVATED ON PILINGS OR COLUMNS WITH THE LOWEST HORIZONTAL STRUCTURAL MEMBERLOWEST FLOOR AT OR ABOVE DFE.
4. PROPOSED MECHANICAL, PLUMBING, OR ELECTRICAL SHALL BE ABOVE DFE EXCEPT ELECTRIC REQUIRED FOR LIFE SAFETY.
5. ALL SLABS, WALKWAYS ETC.THAT ARE UNDERNEATH OR ADJACENT TO ANY STRUCTURE SHALL BE FRANGIBLE.



48' ESTIMATED BLDG HEIGHT X 30% =
14.4' SETBACK
SIDES AND GULF FRONTAGE

NOTE: LOWEST STRUCTRURAL MEMBER SHALL NOT BE BELOW DFE 14.0'

GULF BOULEVARD (STATE ROAD NO. 699)
100' RIGHT-OF-WAY PER STATE OF FLORIDA STATE ROAD DEPARTMENT RIGHT-OF-WAY MAP OF STATE ROAD NO. 699, SECTION 15100-2510

LOT COVERAGE ALLOWED 50%:
PROPOSED: 36.7%
GROSS BUILDING AREA 29,515 SF
÷LOT AREA 80,339 SF = 36.7 %

FAR ALLOWED 1.2 X LOT AREA 80,339 SF = 96,407 SF
PROPOSED: 89,475 SF
3,330 SF GROSS BUILDING AREA GROUND FLOOR
29,515 SF GROSS BUILDING AREA 2ND FLOOR
29,515 SF GROSS BUILDING AREA 3RD FLOOR
27,115 SF GROSS BUILDING AREA 4TH FLOOR
TOTAL BUILDING AREA

NORTH

SITE AND FIRST FLOOR PLAN

SCALE 1/16" = 1'-0"

REV 06-04-25
REV 05-01-25
03-20-25

AA C 000813

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STATE OF FLORIDA · ALEX PLISKO JR · 5966 · REGISTERED ARCHITECT

Alex Plisko, Jr.
- AR0005966

PLISKO ARCHITECTURE, P.A. AIA
800 DREW STREET CLEARWATER, FL 33755
727-442-7200 727-442-9753 FAX 727-461-0030

RENOVATION TO:
THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33806

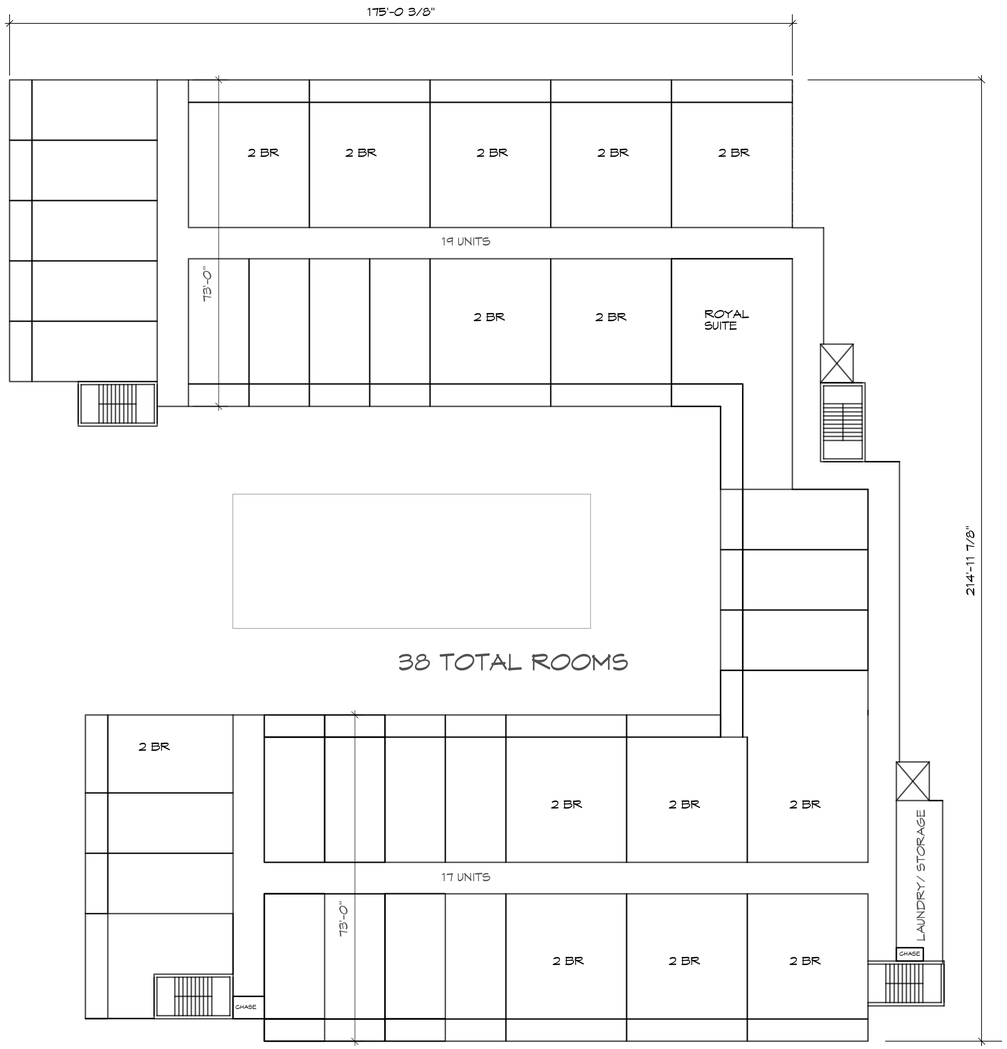
A-1
SITE AND FIRST FLOOR PLAN

ROOM COUNT

SECOND FLOOR - 38 ROOMS

THIRD FLOOR - 38 ROOMS6
FOURTH FLOOR - 30 ROOMS

TOTAL ROOMS 106

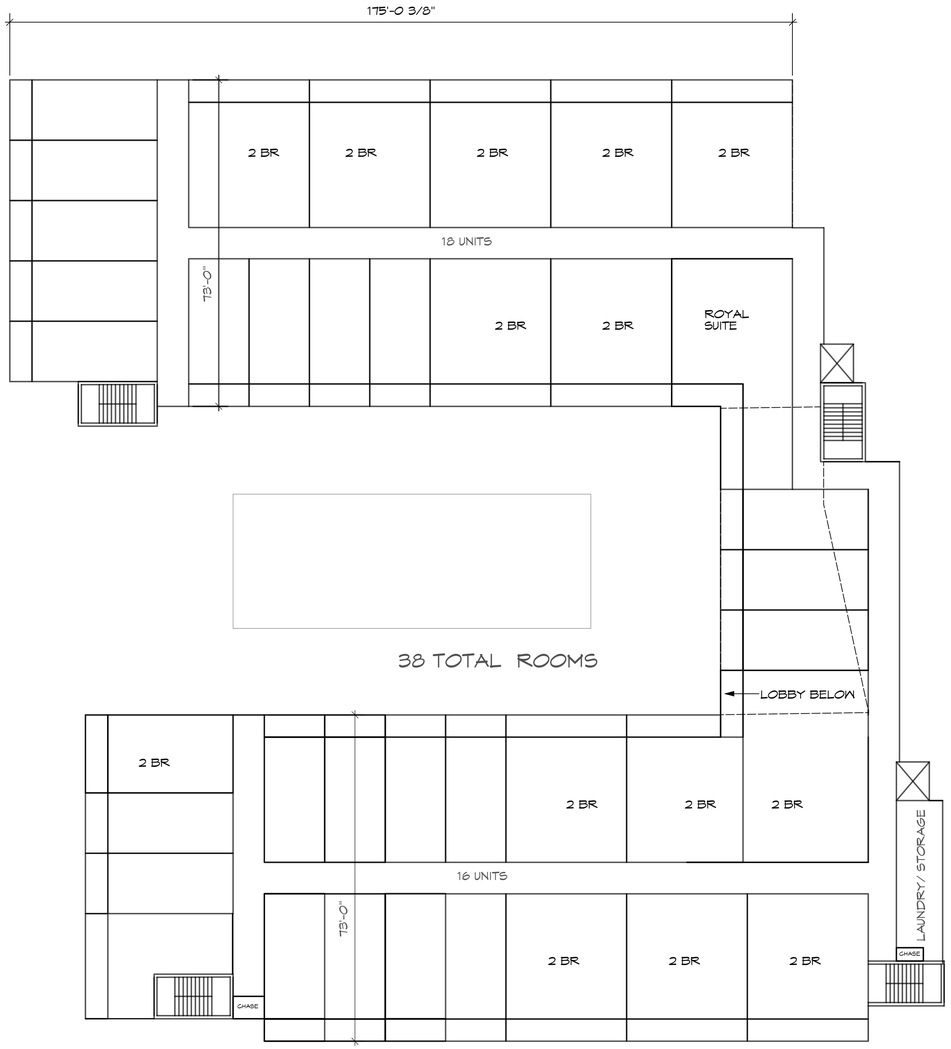


THIRD FLOOR PLAN

SCALE 1/16" = 1'-0"

GROSS BUIDING AREA 29,515 SF

NORTH



SECOND FLOOR PLAN

SCALE 1/16" = 1'-0"

GROSS BUIDING AREA 29,515 SF

NORTH

REV
05-01-25
03-20-25

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RENOVATION TO:
THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

A-2

SECOND AND THIRD FLOOR PLANS



FOURTH FLOOR PLAN

SCALE 1/16" = 1'-0"

GROSS FLOOR AREA 27,115 SF

NORTH

REV
05-01-25
03-20-25

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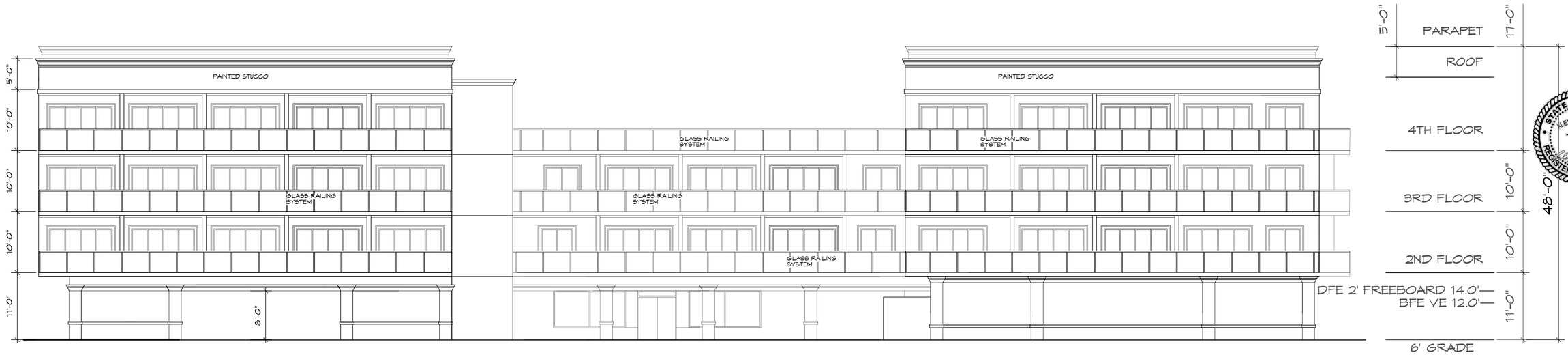
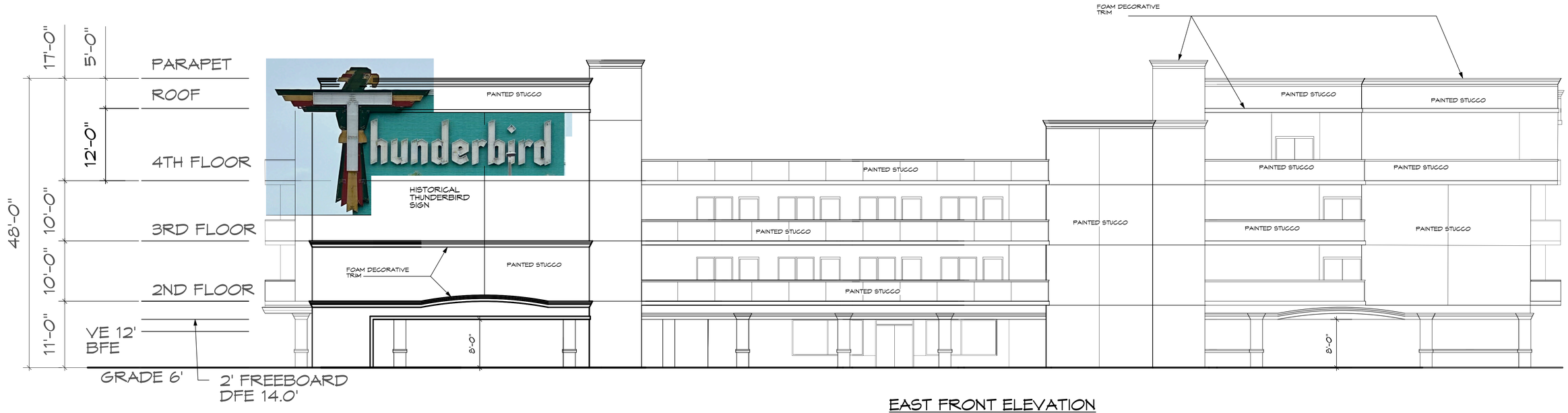
RENOVATION TO:
THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

A-3
FOURTH FLOOR PLAN



WEST ELEVATION

SCALE 1/8" = 1'-0"



EAST FRONT ELEVATION

SCALE 1/8" = 1'-0"

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05-01-25
03-20-25

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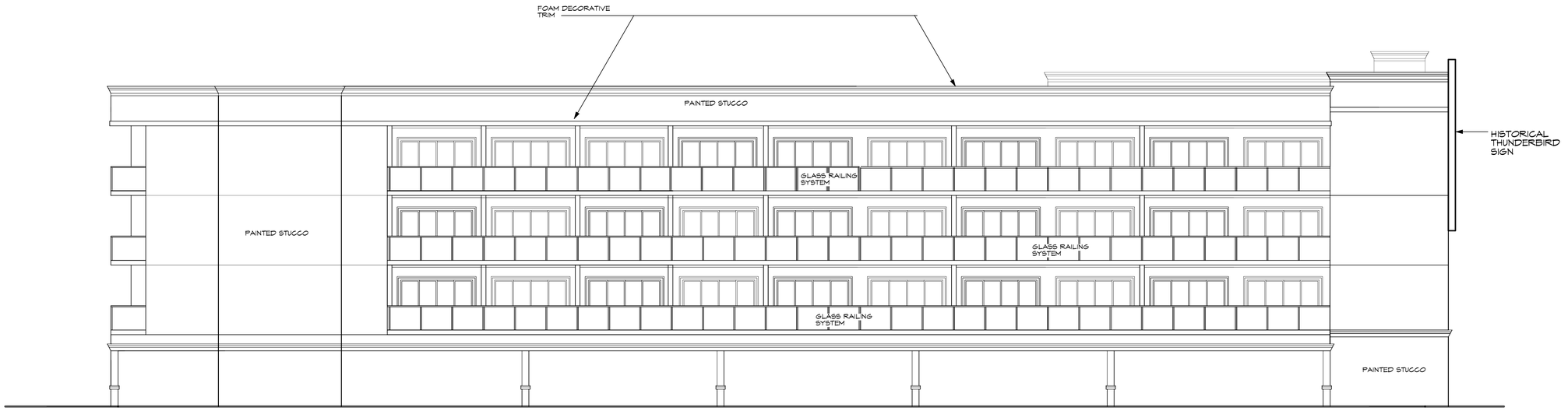
727-442-7200 727-442-9753 FAX 727-461-0030

RENOVATION TO:
THUNDERBIRD BEACH RESORT
10100 GULF BLVD.
TREASURE ISLAND, FL 33806

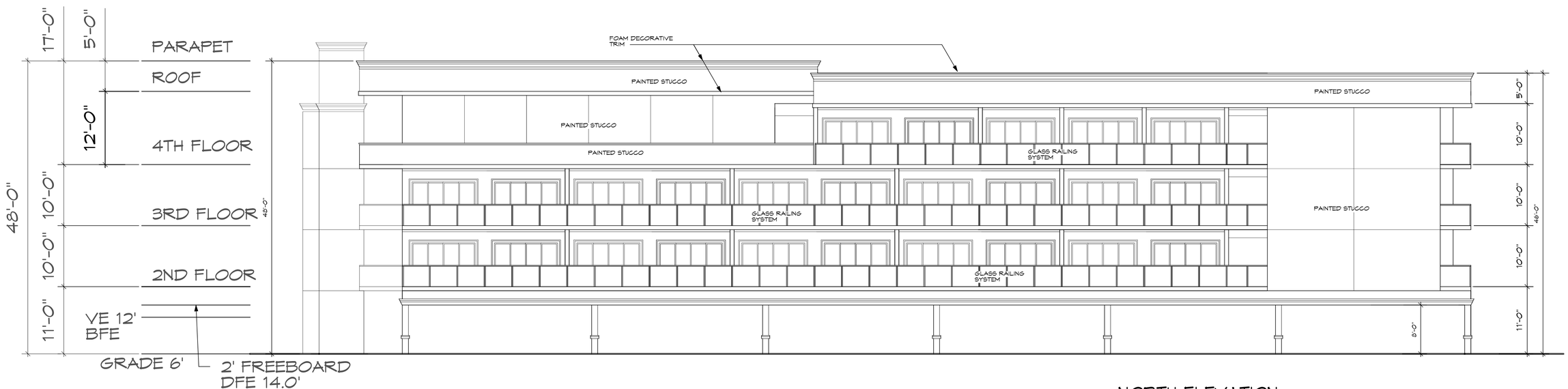
A-4

EAST AND WEST EXTERIOR ELEVATIONS



SOUTH ELEVATION

SCALE 1/8" = 1'-0"



NORTH ELEVATION

SCALE 1/8" = 1'-0"

REV
05-01-25
03-20-25

AA C 000813

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RENOVATION TO:
THUNDERBIRD BEACH RESORT
10100 GULF BLVD.
TREASURE ISLAND, FL 33806

A-5

NORTH AND SOUTH EXTERIOR ELEVATIONS

AGENCY	PERMIT #	SUBMITTED	STATUS
FDOT DRAINAGE PERMIT	2025-D-799-00009	RAI#1 4/16/2025	
FDOT UTILITY PERMIT	2025-H-799-00117	RAI#1 4/9/2025, RAI#2 4/15/2025	
FDOT LANDSCAPE PERMIT	2025-L-799-00001	RAI#1 4/18/2025	
SWFWMD ERP EXEMPTION	APPLICATION #914883	RAI#1 4/21/2025	
PINELLAS COUNTY WATER	UTD-25-00224	RAI#1 4/16/2025	

⚠1

DATE	REVISIONS	BY
4/22/2025	⚠1 REVISED PER COUNTY & FDOT COMMENTS	DES

SITE CONSTRUCTION PLANS FOR THUNDERBIRD BEACH RESORT

10700 GULF BLVD, TREASURE ISLAND, FL 33706

LEGAL DESCRIPTION

PID: 23-31-15-91926-010-0042: BK 21580 PGS 1579-1580:

PARCEL 1: THAT PART OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, BETWEEN THE NORTHERLY BOUNDARY OF SAID LOT 4 AND A LINE PARALLEL TO AND 200 FEET SOUTH AT RIGHT ANGLES FROM SAID NORTHERLY BOUNDARY OF SAID LOT 4.

PARCEL 2: THAT PART OF TRACT 7, TREASURE ISLAND UNIT NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 23, PAGE 34, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

FROM THE MOST NORTHERLY CORNER OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, RUN BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 156.22 FEET, CHORD SOUTH 32 DEGREES 27 MINUTES 10 SECONDS EAST, 156.08 FEET TO A POINT OF BEGINNING; THENCE BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 45.01 FEET CHORD SOUTH 27 DEGREES 11 MINUTES 40 SECONDS EAST, 45 FEET; THENCE SOUTH 64 DEGREES 14 MINUTES 33 SECONDS WEST, 43.31 FEET; THENCE NORTH 27 DEGREES 59 MINUTES 29 SECONDS WEST, 45.05 FEET; THENCE NORTH 64 DEGREES 14 MINUTES 33 SECONDS EAST, 43.92 FEET TO THE POINT OF BEGINNING.

PARCEL 3: LOT 5, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

PID: 23-31-15-91926-010-0050: BK 21580 PGS 1581-1582:

LOT 5, BLOCK J, CITY OF TREASURE ISLAND – BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

NOTE:

THE LEGAL DESCRIPTION PROVIDED HEREON IS FOR PERMITTING AND/OR CONSTRUCTION PURPOSES ONLY AND SHOULD NOT BE USED FOR TRANSFER OF RIGHT, TITLE OR INTEREST.

UTILITY OWNERS

SPECTRUM
ATTENTION: MR. TED BINGHAM
700 CARILLON PARKWAY, SUITE 6
ST. PETERSBURG, FLORIDA 33716-1123
PHONE: (727) 329-2847

FRONTIER COMMUNICATIONS, INC.
ATTENTION: MR. CHRIS BLAUVELT
MC: FLCW5033
1280 CLEVELAND STREET
CLEARWATER, FLORIDA 33782
PHONE: (727) 562-1130

WIDE OPEN WEST (WOW!)
FLSP2144
ATTENTION: MR. JAMES SANDMAN - CONSTRUCTION PROJECT COORDINATOR
3001 GANDY BOULEVARD NORTH
PINELLAS PARK, FLORIDA 33782
PHONE: (727) 239-0224 OFFICE

DUKE ENERGY
ATTENTION: MR. RICO ASHLEY
2166 PALMETTO STREET, BLDG. F
CLEARWATER, FLORIDA 33765
PHONE: (727) 562-5767

WATER/STORM SEWER/RECLAIMED UTILITES
BY PINELLAS COUNTY
ATTENTION: STEVE ALLEN

SANITARY SEWER UTILITIES
BY CITY OF TREASURE ISLAND



VICINITY MAP

N

1" = 500'

SECTION 23; TOWNSHIP 31 SOUTH; RANGE 15 EAST
CITY OF TREASURE ISLAND
PINELLAS COUNTY, FLORIDA
HORIZONTAL DATUM - NAD 1983 (2011 ADJ)
VERTICAL DATUM - NAVD 1988

SHEET INDEX

Sheet Number	Sheet Title
01	COVER SHEET
02	NOTES & SPECIFICATIONS
03	DEMO - EROSION CONTROL PLAN
04	SITE PLAN
05	PAVING GRADING & DRAINAGE PLAN
06	UTILITY PLAN
07	CONSTRUCTION DETAILS
08	CONSTRUCTION DETAILS
09	CONSTRUCTION DETAILS
10	CONSTRUCTION DETAILS
LS01	LANDSCAPE PLAN (UNDER SEPARATE COVER)
LS02	IRRIGATION PLAN, DETAILS & SPECIFICATIONS (UNDER SEPARATE COVER)

NOTE:

REFERENCE SEPARATE LANDSCAPE PLANS FOR THUNDERBIRD BEACH RESORT (COVER SHEET, SHEETS LS01 AND LS02) ⚠1

OWNER/DEVELOPER
THUNDERBIRD TI HOLDINGS, LLC
4100 N. 28TH TERRACE
HOLLYWOOD, FL 33020
ATTN: GILAD OVAKMIN
(954) 924-9779

ENGINEER
CLYMER FARNER BARLEY, Inc.
314 S. MISSOURI AVE, SUITE 101
CLEARWATER, FL 33756
BRIAN A. BARKER, PE
FL. LIC. NO. 56728
(727) 519-1030

SURVEYOR
CLYMER FARNER BARLEY SURVEYING, LLC
314 S. MISSOURI AVE, SUITE 101
CLEARWATER, FL 33756
MATTHEW W. SIMPSON, PSM
FL. REG. NO. 7251
(727) 519-1030

ARCHITECT
PLISKO ARCHITECTURE, P.A. AIA
800 DREW STREET
CLEARWATER, FL 33755
ALEX PLISKO, JR.
REGISTERED ARCHITECT, AR0005966
(727) 442-7200

CLYMER FARNER BARLEY, Inc.
4450 NE 83RD RD. MIDDLETON, FL 34762
(352) 748-3126

THUNDERBIRD BEACH RESORT

(S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\001_T_BIRD_COVER.dwg) PLOT DATE:6/9/2025 9:39 AM SAVE DATE: 6/9/2025 LAST SAVED BY: DSTOVE

GENERAL CONSTRUCTION NOTES

1. ALL RIGHT-OF-WAY INSTALLATIONS WILL BE IN ACCORDANCE WITH PRACTICES REFERENCED IN THE STATE OF FLORIDA UTILITIES ACCOMMODATIONS MANUAL.
2. ALL DESIGN AND CONSTRUCTION MUST CONFORM TO THE MINIMUM STANDARDS SET DOWN IN PINELLAS COUNTY LAND DEVELOPMENT, ZONING AND/OR RELATED ORDINANCES, AND MINIMUM TESTING FREQUENCY REQUIREMENTS.
3. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL CHECK THE PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER'S ENGINEER OF ANY CONFLICTS OR DISCREPANCIES BEFORE PERFORMING ANY WORK IN THE AFFECTED AREA.
5. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES, AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES, IN ORDER TO PERMIT MARKING THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES. IN ADVANCE OF CONSTRUCTION, BY CALLING "SUNSHINE" AT 1-800-432-4770. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES NOT INCLUDED IN THE "SUNSHINE" PROGRAM.
6. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR.
7. ALL UNDERGROUND UTILITIES MUST BE IN PLACE AND TESTED OR INSPECTED PRIOR TO BASE AND SURFACE CONSTRUCTION.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS OF THE VARIOUS GOVERNMENTAL AGENCIES. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION, AND SCHEDULE INSPECTIONS ACCORDING TO AGENCY INSTRUCTION.
9. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL TO THE OWNERS ENGINEER, SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS WHICH ARE FROM THIS SITE. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE. ALL SHOP DRAWINGS ARE TO BE REVIEWED AND APPROVED BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER'S ENGINEER.
10. AT LEAST THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND APPROPRIATE AGENCIES, AND SUPPLY THEM WITH ALL REQUIRED SHOP DRAWINGS, THE CONTRACTOR'S NAME, STARTING DATE, PROJECTED SCHEDULE, AND OTHER INFORMATION AS REQUIRED. ANY WORK PERFORMED PRIOR TO NOTIFYING THE ENGINEER, OR WITHOUT AGENCY INSPECTOR PRESENT, MAY BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
11. BACKFILL MATERIAL SHALL BE SOLIDLY TAMPED AROUND PIPES IN 6" LAYERS UP TO A LEVEL OF AT LEAST ONE FOOT ABOVE THE TOP OF THE PIPE, AS DIRECTED BY THE ENGR. BACKFILL SHALL BE COMPACTED TO 100% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.
12. SITE WORK CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF AT LEAST 3,000 P.S.I. IN 28 DAYS, UNLESS OTHERWISE NOTED.
13. ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. ADDITIONAL COSTS ARE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION IS TO BE ALLOWED.
14. ALL AREAS DISTURBED DURING CONSTRUCTION OR NOT DESIGNATED FOR TREES AND SHRUBS, SHALL BE SODDED TO FDOT STANDARDS AND MAINTAINED UNTIL A SATISFACTORY STAND OF GRASS, ACCEPTABLE TO THE REGULATORY AGENCY AND ENGINEER OF RECORD, HAVE BEEN OBTAINED. ANY WASHOUTS, RE-GRADING, RE-SODDING AND OTHER EROSION CONTROL WORK REQUIRED, WILL BE PERFORMED BY THE CONTRACTOR UNTIL THE SYSTEM IS ACCEPTED FOR MAINTENANCE BY THE REGULATORY AGENCY AND ENGINEER OF RECORD. ⚠1
15. THE SOILS ENGINEER IS TO SUPPLY THE ENGINEER WITH A PHOTOCOPY OF ALL COMPACTION TESTS, AND ASPHALT RESULTS. THE SOILS ENGINEER IS TO CERTIFY TO THE ENGINEER OF RECORD, IN WRITING, THAT ALL TESTING REQUIREMENTS, REQUIRED BY THE LOCAL REGULATORY AGENCY, AND THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT), FOR THE IMPROVEMENTS, AS REQUIRED BY THE ENGINEERING CONSTRUCTION DRAWINGS, HAVE BEEN SATISFIED.
16. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE APPROVED PLANS AND PERMITS AT THE CONSTRUCTION SITE.
17. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS FOR CONSTRUCTION SITE SAFETY.
18. ALL SODDING, SEEDING AND MULCHING SHALL INCLUDE WATERING AND FERTILIZATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THESE AREAS UNTIL THE PROJECT IS COMPLETED AND ACCEPTED BY THE OWNER.
19. SAFE PEDESTRIAN TRAFFIC IS TO BE MAINTAINED AT ALL TIMES.
20. SIGNS AND BARRICADES SHALL BE IN ACCORDANCE WITH THE US DEPARTMENT OF TRANSPORTATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE FLORIDA DEPARTMENT OF TRANSPORTATION'S "DESIGN STANDARDS" INDEXES 600 THROUGH 670 (LATEST EDITIONS).
21. ANY SIDEWALK WHICH BECOMES UNDERMINED MUST BE REMOVED AND REPLACED. SIDEWALKS ARE TO BE RECONSTRUCTED WITHIN THREE (3) DAYS AFTER REMOVAL. WHEN EXISTING SIDEWALK IS REMOVED, IT IS TO BE REMOVED TO THE NEAREST JOINT.
22. PLACE EXPANSION JOINTS WHERE 4" AND 6" CONCRETE ABUT.
23. PLACE EXPANSION JOINT BETWEEN BACK-OF-CURB AND CONCRETE DRIVEWAY.
24. SAW CUT EXISTING EDGE-OF-PAVEMENT PRIOR TO REMOVAL OF CURB AND PLACEMENT OF ASPHALT.
25. COMPACTION FOR PIPE BACKFILL SHALL COMPLY WITH AASHTO T-99 (100 %).
26. DISTURBED AREA WITHIN THE RIGHT-OF-WAY WILL BE COMPACTED TO 100% OF MAXIMUM DENSITY AND SODDED.
27. DO NOT DISTURB EXISTING UNDERDRAIN OR STORM SYSTEMS. IF FILTRATION BED IS DISTURBED, CONTACT THE AREA INSPECTOR WITH THE CITY HIGHWAY DEPARTMENT FOR ASSISTANCE.
28. COORDINATE THE CUTTING OF DRIVEWAYS WITH OWNER PRIOR TO CUT. ALL DRIVEWAYS WILL BE IN PASSABLE CONDITION AT END OF WORK DAY.
29. CONCRETE DRIVEWAYS PERMITTED TO BE CUT ARE TO BE RESTORED WITH 6" OF 3000 PSI CONCRETE WITH 6" X 6' 10 GAUGE WIRE WELDED FABRIC. PLACE 1/2" EXPANSION JOINT BETWEEN BACK OF CURB AND NEW DRIVE. ANY PORTION OF DRIVEWAY AT OR NEAR CUTS THAT BECOMES UNDERMINED WILL BE REMOVED PRIOR TO CONCRETE BEING PLACED. EXISTING CRACKS IN DRIVEWAYS ARE TO BE DOCUMENTED AS PRE-EXISTING OR THAT SECTION REPLACED AT THE CITY HIGHWAY DEPARTMENT'S OPTION. AREA BENEATH PATCH TO BE MECHANICALLY TAMPED PRIOR TO PLACING CONCRETE. MINIMUM REPAIR WIDTH TO BE 5' WITH NO SECTION LEFT SMALLER THAN 5'.
30. ASPHALT DRIVES PERMITTED TO BE CUT ARE TO BE RESTORED UTILIZING THE SAME MATERIAL AS EXISTING BASE WITH MINIMUM 6" THICKNESS, COMPACTED AND PRIMED. ASPHALT IS TO MATCH EXISTING THICKNESS WITH A MINIMUM OF 1 1/2" THICKNESS. ASPHALT TO BE PC-3 OR ALTERNATE APPROVED BY THE COUNTY HIGHWAY DEPARTMENT PRIOR TO USE. ASPHALT IS TO BE COMPACTED TO ACHIEVE DENSITY REQUIREMENTS FOR PC-3. RECEIPTS AND DELIVERY TICKETS SHOULD REFLECT SUPPLIER AND HIS CERTIFICATION AS TO TYPE OF ASPHALT SUPPLIED.
31. TYPE OF SOD USED TO RESTORE OWNER-MAINTAINED AREA IN RIGHT OF WAY SHALL BE COORDINATED WITH OWNER.
32. NO STOCKPILING OF MATERIAL IN ROADWAY OR ON SIDEWALK; ALL DIRT AND DEBRIS WILL BE REMOVED FROM JOB SITE DAILY. ROADS AND SIDEWALK TO BE SWEPT DAILY AS PART OF DAILY CLEAN-UP.
33. ANY PORTION OF THE ROADWAY THAT SUSTAINS EXCESSIVE CONSTRUCTION RELATED DAMAGE, IN THE OPINION OF THE COUNTY HIGHWAY DEPARTMENT, SHALL BE REPAIRED AT CONTRACTOR EXPENSE IN A MANNER SPECIFIED BY THE COUNTY HIGHWAY DEPARTMENT.
34. THE PERMITTEE'S ATTENTION IS DIRECTED TO THE PROVISIONS OF THE TRENCH SAFETY ACT (FLORIDA STATUTES, SECTION 553.60 ET. SEQ.) AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY STANDARDS (29 C.F.R. SECTION 1926.650, SUBPART P) WHICH SHALL APPLY TO CONSTRUCTION, OPERATION AND MAINTENANCE PURSUANT TO THIS PERMIT.
35. NOTIFY PROPERTY OWNERS REGARDING SPRINKLER SYSTEM, PLANTS AND MAIL BOXES THAT WILL BE DISTURBED DURING CONSTRUCTION PRIOR TO STARTING WORK.
36. PRIOR TO COMMENCEMENT OF WORK AND/OR PRIOR TO START OF RESTORATION, COORDINATE THROUGH A "WALK-THROUGH" WITH THE COUNTY HIGHWAY DEPARTMENT REPRESENTATIVE TO ENSURE MUTUAL AGREEMENT REGARDING SUCH MATTERS AS EXTENT OF ROADWAY TO BE OVERLAID AFTER PATCHING, THE EXTENT OF DRIVEWAY REPLACEMENT - ESPECIALLY CONCRETE, ETC.
37. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A SAFE AND EASILY ACCESSIBLE PAVED OR UNPAVED PATHWAY FOR PEDESTRIAN TRAFFIC THROUGH THE WORK ZONE FOR THE DURATION OF THE CONSTRUCTION PROJECT. IF THE PATHWAY LIES ALONG A DESIGNATED SCHOOL-WALKING ROUTE THEN THE CONTRACTOR MUST PROVIDE ADEQUATE SUPERVISION AND/OR GUIDANCE TO THE SCHOOL AGED STUDENTS AS THEY TRAVERSE THRU THE WORK ZONE.

GRADING AND DRAINAGE NOTES

1. ALL DELETERIOUS SUBSTANCE MATERIAL, (I.E. MUCK, PEAT, BURIED DEBRIS), IS TO BE EXCAVATED IN ACCORDANCE WITH THESE PLANS, OR AS DIRECTED BY THE OWNER'S ENGINEER, OR OWNER'S SOIL TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING, OR SHORING, AS NECESSARY. TRENCHES SHALL BE KEPT DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED. DEWATERING SHALL BE USED AS REQUIRED.
3. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON PLANS.
4. PVC STORM PIPE, 12" AND SMALLER SHALL CONFORM TO AWWA C-900, CLASS 150 STANDARDS, UNLESS OTHERWISE NOTED.
5. ALL DRAINAGE STRUCTURE GRATES AND COVERS WITHIN TRAFFIC AREAS SHALL BE TRAFFIC RATED FOR H-20 LOADINGS.
6. THE CONTRACTOR IS TO SOD THE RETENTION/DETENTION POND AS INDICATED ON PLANS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE POND.
7. MATERIALS AND CONSTRUCTION METHODS FOR STREETS AND STORM DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LOCAL REGULATORY AGENCY.

PAVING NOTES

1. PRIOR TO CONSTRUCTING CONCRETE PAVEMENT, THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE OWNER'S ENGINEER FOR APPROVAL.
2. THE CONTRACTOR IS TO PROVIDE A 1/2" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER, AT ABUTMENT OF CONCRETE AND ANY STRUCTURE.
3. ALL PAVEMENT MARKINGS SHALL BE MADE WITH TRAFFIC PAINT IN ACCORDANCE TO FDOT STANDARD SPECIFICATIONS 971-12 OR 971-13. PARKING STALL STRIPING TO BE 4" WIDE PAINTED WHITE STRIPES.
4. THE CONTRACTOR IS TO INSTALL EXTRA BASE MATERIAL WHEN THE DISTANCE BETWEEN THE PAVEMENT ELEVATION AND THE TOP OF THE PIPE OR BELL IS LESS THAN TWELVE (12) INCHES.
5. STANDARD INDEXES REFER TO THE LATEST EDITION OF FDOT "ROADWAY AND TRAFFIC DESIGN STANDARDS".

PAVING, GRADING & DRAINAGE TESTING AND INSPECTION REQUIREMENTS

1. THE STORM DRAINAGE PIPING AND FILTRATION SYSTEM SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S SOILS ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL.
2. THE CONTRACTOR SHALL MAINTAIN THE STORM DRAINAGE SYSTEMS UNTIL FINAL ACCEPTANCE OF THE PROJECT.
3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE TESTING SCHEDULE FOUND IN THE ENGINEERING CONSTRUCTION DRAWINGS. UPON COMPLETION OF THE WORK, THE SOILS ENGINEER MUST SUBMIT CERTIFICATIONS TO THE OWNERS ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.

WATER SYSTEM NOTES

1. ALL WATER MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER.
2. ALL WATER SYSTEM WORK SHALL CONFORM WITH LOCAL REGULATORY STANDARDS AND SPECIFICATIONS.
3. ALL DUCTILE IRON PIPE SHALL BE CLASS 52 IN ACCORDANCE WITH ANSI A 21.50 (AWWA C 150) AND ANSI A 21.31 (AWWA C 151) AND PIPE SHALL RECEIVE EXTERIOR BITUMINOUS COATING IN ACCORDANCE WITH ANSI A 21.6, A 21.8 OR A 21.51 AND SHALL BE MORTAR LINED, STANDARD THICKNESS, AND BITUMINOUS SEALED IN ACCORDANCE WITH ANSI A (AWWA C 104-71).
4. ALL FITTINGS LARGER THAN 2" SHALL BE DUCTILE IRON CLASS 53 IN ACCORDANCE WITH AWWA C-110 WITH A PRESSURE RATING OF 350 PSI. JOINTS SHALL BE MECHANICAL JOINTS IN ACCORDANCE WITH AWWA C-111, FITTINGS SHALL BE CEMENT MORTAR LINED AND COATED IN ACCORDANCE WITH AWWA C-104.
5. ALL PVC WATER MAINS 4" THROUGH 12" SHALL BE IN ACCORDANCE WITH AWWA C-900. PIPE SHALL BE CLASS 150 AND MEET THE REQUIREMENTS OF SDR 18 IN ACCORDANCE WITH ASTM D-2241.
6. WATER MAIN PIPING OF LESS THAN 4" SHALL BE PER PVC SDR26.
7. ALL FITTINGS 2" AND SMALLER SHALL BE PVC SDR21 WITH PUSH ON JOINTS.
8. ALL GATE VALVES 2" OR LARGER SHALL BE RESILIENT SEAT OR RESILIENT WEDGE MEETING THE REQUIREMENTS OF AWWA C509
9. ALL FIRE HYDRANTS SHALL MEET THE REQUIREMENTS OF AWWA C502 AND SHALL BE APPROVED BY THE LOCAL UTILITY AND FIRE MARSHAL.
10. THE CONTRACTOR IS TO INSTALL TEMPORARY BLOW-OFFS AT THE END OF WATER SERVICE LATERALS TO ASSURE ADEQUATE FLUSHING AND DISINFECTION.
11. THRUST BLOCKING SHALL BE PROVIDED AT ALL FITTINGS AND HYDRANTS AS SHOWN ON DETAILS.
12. MATERIALS AND CONSTRUCTION METHODS FOR WATER DISTRIBUTION SYSTEM SHALL BE IN ACCORDANCE WITH THE LOCAL REGULATORY AGENCY CODES.
13. THE IRRIGATION SYSTEM SHALL HAVE COLOR CODED PIPING AND LABELING ON THE PIPE TO INSURE DIFFERENTIATION FROM POTABLE WATER PIPING.
14. ALL NEW UTILITIES SHALL HAVE LOCATOR WIRE INSTALLED.

WATER SYSTEM TESTING AND INSPECTION REQUIREMENTS

THE PERMIT HOLDER SHALL MAKE THE APPLICABLE TESTS PRESCRIBED IN SECTIONS 312.2 THROUGH 312.9 OF THE 2004 FLORIDA BUILDING CODES, AS UPDATED, TO DETERMINE COMPLIANCE WITH THE PROVISIONS OF THIS CODE. THE PERMIT HOLDER SHALL GIVE REASONABLE ADVANCE NOTICE TO THE CODE OFFICIAL WHEN THE PLUMBING WORK IS READY FOR TESTS. THE EQUIPMENT, MATERIAL, POWER AND LABOR NECESSARY FOR THE INSPECTION AND TEST SHALL BE FURNISHED BY THE PERMIT HOLDER, AND THE PERMIT HOLDER SHALL BE RESPONSIBLE FOR DETERMINING THAT THE WORK WILL WITHSTAND THE TEST PRESSURE PRESCRIBED IN THE ABOVE MENTIONED SECTIONS. ALL PLUMBING SYSTEM PIPING SHALL BE TESTED WITH EITHER WATER OR, FOR PIPING SYSTEMS OTHER THAN PLASTIC, BY AIR. AFTER THE PLUMBING FIXTURES HAVE BEEN SET AND THEIR TRAPS FILLED WITH WATER, THE ENTIRE DRAINAGE SYSTEM SHALL BE SUBMITTED TO FINAL TESTS. THE CODE OFFICIAL SHALL REQUIRE THE REMOVAL OF ANY CLEANOUTS IF NECESSARY TO ASCERTAIN WHETHER THE PRESSURE HAS REACHED ALL PARTS OF THE SYSTEM.

ALL COMPONENTS OF THE WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL REMAIN UNCOVERED UNTIL PROPERLY PRESSURE TESTED AND ACCEPTED BY THE OWNERS ENGINEER AND THE CODE OFFICIAL. CONTRACTOR TO NOTIFY OWNER'S ENGINEER AND CODE OFFICIAL 48 HOURS IN ADVANCE OF PERFORMING TESTS.

HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR SEWER FORCE MAINS AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

EXCEPTIONS TO HORIZONTAL AND VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR SEWER FORCE MAINS AND RECLAIMED WATER PIPELINES.

WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS OS 62-555.314(1) OR (2), F.A.C., THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS IF SUPPLIERS OF WATER OR CONSTRUCTION PERMIT APPLICANTS PROVIDE TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDE ALTERNATIVE CONSTRUCTION FEATURES THAT AFFORD A SIMILAR LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION.

-WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE:
(A) USE OF PRESSURE-RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62055.330, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY- OR VACUUM TYPE-TYPE PIPELINE;
(B) USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR
(C) USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

-WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE:
(A) USE OF PIPE, OR CASING PIPE, HAVE HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR BOTH THE WATER MAIN AND FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

SANITARY SEWER NOTES

1. ALL SANITARY SEWER MAINS & LATERALS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER.
2. ALL SANITARY SEWER MAINS & SERVICE LATERALS SHALL BE CONSTRUCTED OF POLYVINYL CHLORIDE PIPE, SDR 35 OR AS OTHERWISE INDICATED ON THE CONSTRUCTION DRAWINGS.
3. ALL SANITARY SEWER WORK SHALL CONFORM WITH LOCAL REGULATORY STANDARDS AND SPECIFICATIONS.
4. PRIOR TO COMMENCING WORK WHICH REQUIRES CONNECTING NEW WORK TO EXISTING LINES OR APPURTENANCES, THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXISTING CONNECTION POINT AND NOTIFY OWNERS ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.
5. PVC PIPE AND FITTINGS SHALL CONFORM TO ASTM SPECIFICATIONS DESIGNATION D-3034-77C, MA SDR 35. INSTALLATION OF SDR 35 PIPE SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF ASTM SPECIFICATION SECTION D2321. ALL SANITARY SEWER PIPELINES SHALL BE SOLID GREEN IN COLOR.
6. ALL PVC FORCE MAINS SHALL BE CLASS 200, SDR 21, COLOR GREEN, WITH A GREEN MAGNETIC TAPE A MINIMUM OF 2" WIDE, PLACED 1 FOOT BELOW THE PROPOSED GRADE. THE PRINTING ON THE MAGNETIC TAPE SHOULD READ "FORCEMAIN".
7. ALL DUCTILE IRON PIPE SHALL BE CLASS 52 IN ACCORDANCE WITH ANSI A 21.50 (AWWA C 150) AND ANSI A21.51 (AWWA C 151). DUCTILE IRON PIPE SHALL RECEIVE INTERIOR AND EXTERIOR BITUMINOUS COATING IN ACCORDANCE WITH ANSI A 21.6, A 21.8, OR A 21.51.
8. ALL SANITARY SEWER GRAVITY MAINS OR SANITARY SEWER FORCEMAINS THAT REQUIRE D.I.P. ARE TO BE POLYLINED OR EPOXY LINED.
9. ALL SANITARY SEWER COVERS SHALL BE TRAFFIC RATED FOR H-20 LOADING.
10. ALL NEW UTILITIES SHALL HAVE LOCATOR WIRE INSTALLED.

SANITARY SEWER TESTING AND INSPECTION REQUIREMENTS

1. ALL GRAVITY SEWER PIPING SHALL BE SUBJECT TO A TELEVISION INSPECTION BY THE OWNER'S CONTRACTOR. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTION.
2. THE CONTRACTOR SHALL PERFORM AN EXFILTRATION TEST ON ALL GRAVITY SEWERS INSTALLED IN ACCORDANCE WITH THE REGULATION AGENCY HAVING JURISDICTION. MAXIMUM ALLOWABLE LEAKAGE RATE: 200 GPD PER INCH PIPE DIAMETER PER MILE. TEST RESULTS ARE TO BE SUBMITTED TO THE REGULATORY AGENCY FOR APPROVAL. COORDINATION AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.
3. ALL FORCE MAINS SHALL BE SUBJECT TO A HYDROSTATIC PRESSURE TEST IN ACCORDANCE WITH THE REGULATORY AGENCY HAVING JURISDICTION. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE REGULATORY AGENCY FOR APPROVAL. COORDINATION AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.

CLEARING AND GRUBBING NOTES

1. PRIOR TO ANY SITE CLEARING, ALL TREES SHOWN TO REMAIN ON THE CONSTRUCTION PLANS SHALL BE PROTECTED IN ACCORDANCE WITH THE LOCAL REGULATORY AGENCY'S TREE ORDINANCE AND DETAILS CONTAINED IN THESE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THESE TREES IN GOOD CONDITION. NO TREES SHOWN TO REMAIN SHALL BE REMOVED WITHOUT WRITTEN APPROVAL FROM THE OWNER.
2. THE CONTRACTOR IS TO PREPARE THE SITE PRIOR TO BEGINNING ACTUAL CONSTRUCTION IN ACCORDANCE, WITH THE SOILS TESTING REPORT. COPIES OF THE SOILS REPORT ARE AVAILABLE THROUGH THE OWNER OR THE SOILS TESTING COMPANY. QUESTIONS REGARDING SITE PREPARATION REQUIREMENTS DESCRIBED IN THE SOILS REPORT ARE TO BE DIRECTED TO THE SOILS TESTING COMPANY.
3. THE CONTRACTOR SHALL CLEAR AND GRUB, ONLY THOSE PORTIONS OF THE SITE, NECESSARY FOR CONSTRUCTION. DISTURBED AREAS WILL BE SEEDED, MULCHED, OR PLANTED WITH OTHER APPROVED LANDSCAPE MATERIAL IMMEDIATELY FOLLOWING CONSTRUCTION.
4. THE TOP 4" TO 6" OF GROUND REMOVED DURING CLEARING AND GRUBBING SHALL BE STOCKPILED AT A SITE DESIGNATED BY THE OWNER TO BE USED FOR LANDSCAPING PURPOSES, UNLESS OTHERWISE DIRECTED BY THE OWNER.
5. ALL CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS. ONLY "GRADING BY HAND" IS PERMITTED WITHIN THE CANOPY LINE OF TREES THAT ARE TO REMAIN.
6. THE CONTRACTOR IS TO OBTAIN ALL NECESSARY PERMITS FOR REMOVING ANY EXISTING STRUCTURES.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES TO DISCONNECT OR REMOVE THEIR FACILITIES PRIOR TO REMOVING OR DEMOLISHING
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING A VISUAL INSPECTION OF THE SITE AND WILL BE RESPONSIBLE FOR THE DEMOLITION AND REMOVAL OF ALL UNDERGROUND AND ABOVE GROUND STRUCTURES THAT WILL NOT BE INCORPORATED WITH THE NEW FACILITIES. SHOULD ANY DISCREPANCIES EXIST WITH THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING THE OWNER AND REQUESTING A CLARIFICATION OF THE PLANS PRIOR TO DEMOLITION.
9. DURING CONSTRUCTION, ALL STORM SEWER INLETS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED BY SEDIMENT TRAPS SUCH AS SECURED HAY BALES, SOD, STONE, ETC., WHICH SHALL BE MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS.
10. ALL EROSION AND SILTATION CONTROL METHODS SHALL BE IMPLEMENTED PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
11. WHEN CONSTRUCTION IS COMPLETED, THE RETENTION/DETENTION AREAS WILL BE RESHAPED, CLEANED OF SILT, MUD AND DEBRIS, AND RE-SODDED IN ACCORDANCE TO THE PLANS.
12. CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENTATION BARRIER (HAY BALES OR SILTATION CURTAIN) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS, WATERWAYS, AND EXISTING WETLANDS.
13. THE SILT FENCE WILL NOT BE TRENCHED IN WHERE ADJACENT TO TREES DESIGNATED TO REMAIN. THE SILT FENCE MUST BE SECURED THROUGH THE PLACEMENT OF FILL OVER THE LOWER LIP OF THE BARRICADE.

NOTICE TO ALL CONTRACTORS AND DEVELOPERS

THE DOMESTIC WATER SYSTEM AND THE STORM DRAIN FILTER SYSTEM FOR THIS PROJECT MUST BE INSPECTED BY OUR OFFICE IN ORDER THAT THEY BE CERTIFIED TO THE APPROPRIATE GOVERNMENTAL AGENCY. IT IS, THEREFORE, IMPERATIVE THAT OUR OFFICE BE NOTIFIED AT LEAST 24 HOURS PRIOR TO BACKFILLING OVER THESE FACILITIES. FAILURE TO DO SO WILL RESULT IN THESE FACILITIES HAVING TO BE UNCOVERED AND INSPECTED BEFORE A CERTIFICATE OF OCCUPANCY IS ISSUED. YOUR CERTIFICATE OF OCCUPANCY WILL BE WITHHELD UNTIL THE MATTER IS RESOLVED.

TRANSYSTEMS (727) 822-4151

PINELLAS COUNTY RIGHT OF WAY NOTES

1. ALL P

LEGEND

±	MORE OR LESS
BFE	BASE FLOOD ELEVATION
CCCL	COASTAL CONSTRUCTION CONTROL LINE
CONC	CONCRETE
CPB	CONDOMINIUM PLAT BOOK
NO.	NUMBER
ID	IDENTIFICATION
LB	LICENSED BUSINESS
MISC	MISCELLANEOUS
ORB	OFFICIAL RECORDS BOOK
PG	PAGE
PB	PLAT BOOK
PRM	PERMANENT REFERENCE MONUMENT
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
CI	CAST IRON
PVC	POLYVINYL CHOLRIDE
CPP	CORRUGATED PLATIC PIPE
INV	INVERT
FF	FINISHED FLOOR ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIRM	FLOOD INSURANCE RATE MAP
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FPC	FLORIDA POWER CORPORATION
R/W	RIGHT OF WAY
W/	WITH
(C)	CALCULATED MEASUREMENT
(M)	FIELD MEASUREMENT
(P)	PLAT MEASUREMENT
(D)	DEED MEASUREMENT
NLY, ELY, SLY, & WLY	GENERAL CARDINAL DIRECTION (NORTHERLY, ETC)
	FOUND CONCRETE MONUMENT (AS NOTED)
	FOUND NAIL & DISK (AS NOTED)
	FOUND IRON PIPE (AS NOTED)
	SET NAIL & DISK (LB 8498)
	SANITARY MANHOLE
	SANITARY CLEANOUT
	SEWER VALVE
	STORM MANHOLE
	GREASE TRAP
	TELEPHONE MANHOLE
	FLOOD LIGHT
	IRRIGATION CONTROL VALVE
	WATER METER
	WATER VALVE
	BACKFLOW PREVENTOR
	FIRE HYDRANT
	FAUCET
	PEDESTRIAN TRAFFIC SIGNAL POLE
	POST (NON-FENCE)
	REFLECTOR
	RECLAIMED WATER METER
	LIGHT POLE
	SIGN
	BOLLARD
	ELECTRIC RISER
	ELECTRIC TRANSFORMER
	ELECTRIC METER
	ELECTRIC OUTLET
	PULLBOX (ELECTRIC)
	PULLBOX (TRAFFIC)
	PULLBOX (UNKNOWN)
	TELEVISION RISER
	UNDERGROUND FIBER OPTIC CABLE MARKER
	GAS METER
	GATE POST
	VAULT
	WROUGHT IRON FENCE
	CHAIN LINK FENCE
	VINYL FENCE
	EXISTING CONTOUR
	LINE BREAK
x 10.00	SPOT ELEVATION (HARD SURFACE)
x 10.0	SPOT ELEVATION (GROUND)

TREE LEGEND

MISC
DECIDUOUS
PALM

TREE TO BE REMOVED

CONSTRUCT TREE BARRICADE

ROOT PRUNE LINE

N

20 10 0 20 40 60
SCALE IN FEET
1" = 20'

ZONING: RFH-50
LAND USE: HOTEL/RESORT

ZONING: PR-MU C
LAND USE: RETAIL

ZONING: PRESERVATION
LAND USE: PARK/BEACH/WALK

APPROXIMATE FLOOD HAZARD LINE PER FEMA FIRM 12103C0194H, REVISED 08/24/2021

APPROXIMATE COASTAL CONSTRUCTION CONTROL LINE (CCCL) (PER ORB 1176, PG 2897)

GULF BOULEVARD (STATE ROAD NO. 699)
100' RIGHT-OF-WAY PER STATE ROAD DEPARTMENT ROAD PLAT MAP OF FLORIDA STATE ROAD NO. 699, SECTION 15060-2501

INLET SEDIMENT FILTER SEE DETAIL THIS SHEET

EXISTING DRIVEWAY APRON (SHADED AREA) AND ELECTRIC GATE & BOX TO REMAIN

ROOT PRUNE LINE 11.5' LENGTHS, TOTAL OF 4 (TYP.)

CONSTRUCT TREE BARRIER 6' DIAMETER AT (11) EXISTING PALMS ALONG GULF BLVD. (SEE SHEET 08 FOR INSTALLATION DETAILS AND SHEET 02 FOR PROTECTION NOTES)

CONSTRUCT TREE BARRIER 6 FT. DIAMETER (TYP.)

SAW CUT ASPHALT AT PROPERTY LINE FOR ON-SITE ASPHALT REMOVAL & PROVIDE ROOT PRUNING

CONTRACTOR TO LOCATE SEWER LATERAL & REMOVE OLD SERVICE LINE UP TO THE MANHOLE

ASPHALT PARKING TO BE REMOVED

ALL FLATWORK TO BE REMOVED

POOL TO BE REMOVED

BUILDING TO BE REMOVED

CONSTRUCT SILT FENCE AT PROPERTY LINE

DUKE EASEMENT RECONFIGURATION TO BE COORDINATED BY OWNER

GREASE TRAP & VALVES TO BE REMOVED

CHAIN LINK FENCE TO BE REMOVED

CLEANOUTS & SANITARY SEWER LINE TO BE REMOVED

EXISTING FIRE HYDRANT ASSEMBLY

CONSTRUCT SILT FENCE AT PROPERTY LINE

EXISTING DRIVEWAY APRON (SHADED AREA) & CURBING TO REMAIN

SAW CUT ASPHALT AT PROPERTY LINE FOR ON-SITE ASPHALT REMOVAL

BENCHMARK
FOUND BRASS DISK STAMPED "15-90-DA-27A"
NORTHING: 1249621.60'
EASTING: 407356.27'
(NAVD88) EL = 4.41'
(NOTE: UNABLE TO RECOVER DATASHEET FOR PUBLISHED CONTROL VALUES OF THIS MARK, IF ANY EXIST – POSSIBLE FDOT REFERENCE MARK)

BENCHMARK
SET NAIL & DISK
"CFB CONTROL"
NORTHING: 1249629.80'
EASTING: 407154.58'
(NAVD88) EL = 4.74'

SUBJECT PARCEL
(ORB 21580, PG 1579 & ORB 21580, PG 1581)
±1.84 ACRES

NORTHERLY BOUNDARY OF LOT 4, BLOCK J

[REMAINDER OF LOT 4, BLOCK J]

BILMAR BEACH RESORT CONDOMINIUM (CPB 138, PG 60)

CITY OF TREASURE ISLAND - BLOCK J AND K PB 27, PG 16

-PARCEL 1-
NORTH 200' OF LOT 4, BLOCK J (PB 27, PG 16)

-PARCEL 2-
PORTION OF TRACT [PB 23, PG 34]

PORTION OF TRACT 7 [PB 23, PG 34]

POINT OF COMMENCEMENT (PARCEL 2) (MOST NORTHERLY CORNER OF LOT 4, BLOCK J)

POINT OF BEGINNING (PARCEL 2)

-PARCEL 3-
LOT 5, BLOCK J (PB 27, PG 16)

SIGN WITH 100' STEEL SUPPORT "THUNDERBIRD BEACH RESORT"

FOUND 1/2" IRON PIPE (NO ID) (0.42'S, 0.24'W)

FOUND NAIL & DISK (LB 107) (0.37'S, 0.13'W)

FOUND NAIL & DISK (LB 966 JOHNSTON)
FOUND NAIL & DISK (LB 021 GFY) (0.34'S, 0.95'W) (ON-LINE WITH CCCL)

APPROXIMATE FLOOD HAZARD LINE PER FEMA FIRM 12103C0194H, REVISED 08/24/2021

ZONE AE (BFE = 11')
ZONE VE (BFE = 12')

N64°14'33"E 260.46'(P)
N64°11'55"E 260.46'

S64°11'55"W 256.84'
S64°11'55"W 78.67'

N27°28'12"W 110.76'(P)
N25°09'39"W 110.76'

N27°30'00"W 200.00'(P)
N27°53'29"W 200.00'

43.92'(D)
43.31'(D)
45.05'(D)

POST OPTIONS: WOOD 2-1/2"Ø MIN.
WOOD 2"X4"
OAK 1-1/2"X1-1/2"
STEEL 1.33 LBS/FT MIN.

PRINCIPAL POST POSITION (20° TOWARD FLOW)

OPTIONAL POST POSITION (VERTICAL)

6" MAX.

15" TO 18"

8"

8" OF FABRIC TO BE BURIED

GRADE

POST TO BE 3' OR MORE IN LENGTH

FILTER FABRIC (IN CONFORMANCE WITH FDOT SPECIFICATIONS, SECTION 985)

ELEVATION

SECTION

TEMPORARY SILT FENCE

COMPACTED SOIL TO PREVENT PIPING

STAKE

AREA TO BE PROTECTED

ENTIRE RUN OFF

SEDIMENT LADEN RUN OFF

TOE OF SLOPE

FLORIDA DOT TYPE III SILT FENCE AND EROSION CONTROL

NOT TO SCALE

8" PERFORATED UNDERDRAIN COVERED WITH FILTER SOCK

SAND BAG (TYP.)

RUNOFF WATER

FILTERED WATER

SECTION A-A

UNDERDRAIN TO FULLY COVER INLET THROAT

8" PERFORATED UNDERDRAIN COVERED WITH FILTER SOCK

OPTION 1 UNDERDRAIN FILTER

SAND BAG (TYP.)

1/2" WIRE MESH

FDOT NO. 1 COARSE AGGREGATE FILTER

12"

FILTERED WATER

SECTION B-B

3-1/2' X 12' FDOT NO 1 COARSE AGGREGATE FILTER

IRON GRATE

OPTION 2 GRAVEL AND WIRE MESH

CURB INLET SEDIMENT FILTER DETAIL

NOT TO SCALE

DATE	BY	DES
5-7-2025	1	REV. PER CITY COMMENTS

REVISIONS

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(352)748-3126

THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

DEMO - EROSION CONTROL PLAN

SAVE DATE	6/6/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	003 - T_BIRD-DEMO-EC

SHEET NUMBER 03

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LEGEND

±	MORE OR LESS
BFE	BASE FLOOD ELEVATION
CCCL	COASTAL CONSTRUCTION CONTROL LINE
CONC	CONCRETE
CPB	CONDOMINIUM PLAT BOOK
NO.	NUMBER
ID	IDENTIFICATION
LB	LICENSED BUSINESS
MISC	MISCELLANEOUS
ORB	OFFICIAL RECORDS BOOK
PG	PAGE
PB	PLAT BOOK
PRM	PERMANENT REFERENCE MONUMENT
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
CI	CAST IRON
PVC	POLYVINYL CHOLRIDE
CPP	CORRUGATED PLATIC PIPE
INV	INVERT
FF	FINISHED FLOOR ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIRM	FLOOD INSURANCE RATE MAP
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FPC	FLORIDA POWER CORPORATION
R/W	RIGHT OF WAY
W/	WITH
(C)	CALCULATED MEASUREMENT
(M)	FIELD MEASUREMENT
(P)	PLAT MEASUREMENT
(D)	DEED MEASUREMENT
NLY, ELY, SLY, & WLY	GENERAL CARDINAL DIRECTION (NORTHERLY, ETC)
	FOUND CONCRETE MONUMENT (AS NOTED)
	FOUND NAIL & DISK (AS NOTED)
	FOUND IRON PIPE (AS NOTED)
	SET NAIL & DISK (LB 8498)
	SANITARY MANHOLE
	SANITARY CLEANOUT
	SEWER VALVE
	STORM MANHOLE
	GREASE TRAP
	TELEPHONE MANHOLE
	FLOOD LIGHT
	IRRIGATION CONTROL VALVE
	WATER METER
	WATER VALVE
	BACKFLOW PREVENTOR
	FIRE HYDRANT
	FAUCET
	PEDESTRIAN TRAFFIC SIGNAL POLE
	POST (NON-FENCE)
	REFLECTOR
	RECLAIMED WATER METER
	LIGHT POLE
	SIGN
	BOLLARD
	ELECTRIC RISER
	ELECTRIC TRANSFORMER
	ELECTRIC METER
	ELECTRIC OUTLET
	PULLBOX (ELECTRIC)
	PULLBOX (TRAFFIC)
	PULLBOX (UNKNOWN)
	TELEVISION RISER
	UNDERGROUND FIBER OPTIC CABLE MARKER
	GAS METER
	GATE POST
	VAULT
	WROUGHT IRON FENCE
	CHAIN LINK FENCE
	VINYL FENCE
	EXISTING CONTOUR
	LINE BREAK
x 10.00	SPOT ELEVATION (HARD SURFACE)
x 10.0	SPOT ELEVATION (GROUND)

TREE LEGEND

MISC
DECIDUOUS
PALM

SITE DATA

1. PROJECT AREA = 1.84 AC. (80,339 SQ. FT.)
2. ZONING: RFH-50 (RESORT FACILITIES HIGH)
3. FUTURE LAND USE: RFH-50 (RESORT FACILITIES HIGH)
4. PARCEL ID#: 23-31-15-91926-010-0042 & 23-31-15-91926-010-0050
5. PROJECT ADDRESS: 10700 GULF BLVD.
   TREASURE ISLAND, FL 33706
6. BUILDING TYPE:
   RESORT - THREE & FOUR STORY STRUCTURE
7. FLOOD ZONE: AE (EL 11) & AE (EL 12)
   MAP PANEL ID: 12103C0194H
   EFFECTIVE DATE: AUGUST 24, 2021
8. BUILDING SETBACKS PROVIDED:

		REQUIRED	PROVIDED
FRONT (EAST) (15 FT. PER PB27, PG16)	=	20 FT.	45.7 FT.
SIDE (NORTH)	=	14.4 FT.	15.0 FT.
SIDE (SOUTH)	=	14.4 FT.	80.0 FT.
REAR (WEST)	=	5 FT.	15.8 FT.

9. MAXIMUM BUILDING HEIGHT: 48 FT.
10. PARKING DATA:

		REQUIRED	PROVIDED
107 SPACES FOR GUESTS (106 ROOMS)	=	107 SPACES	119 SPACES (PARKING) 1
10 SPACES FOR 1000 SF (MEET ROOMS)	=	10 SPACES	2 SPACES (2 BICYCLE RACKS)
			5 SPACES (10 MOTORCYCLE SPACES)
TOTAL SPACES	=	117 SPACES	126 SPACES

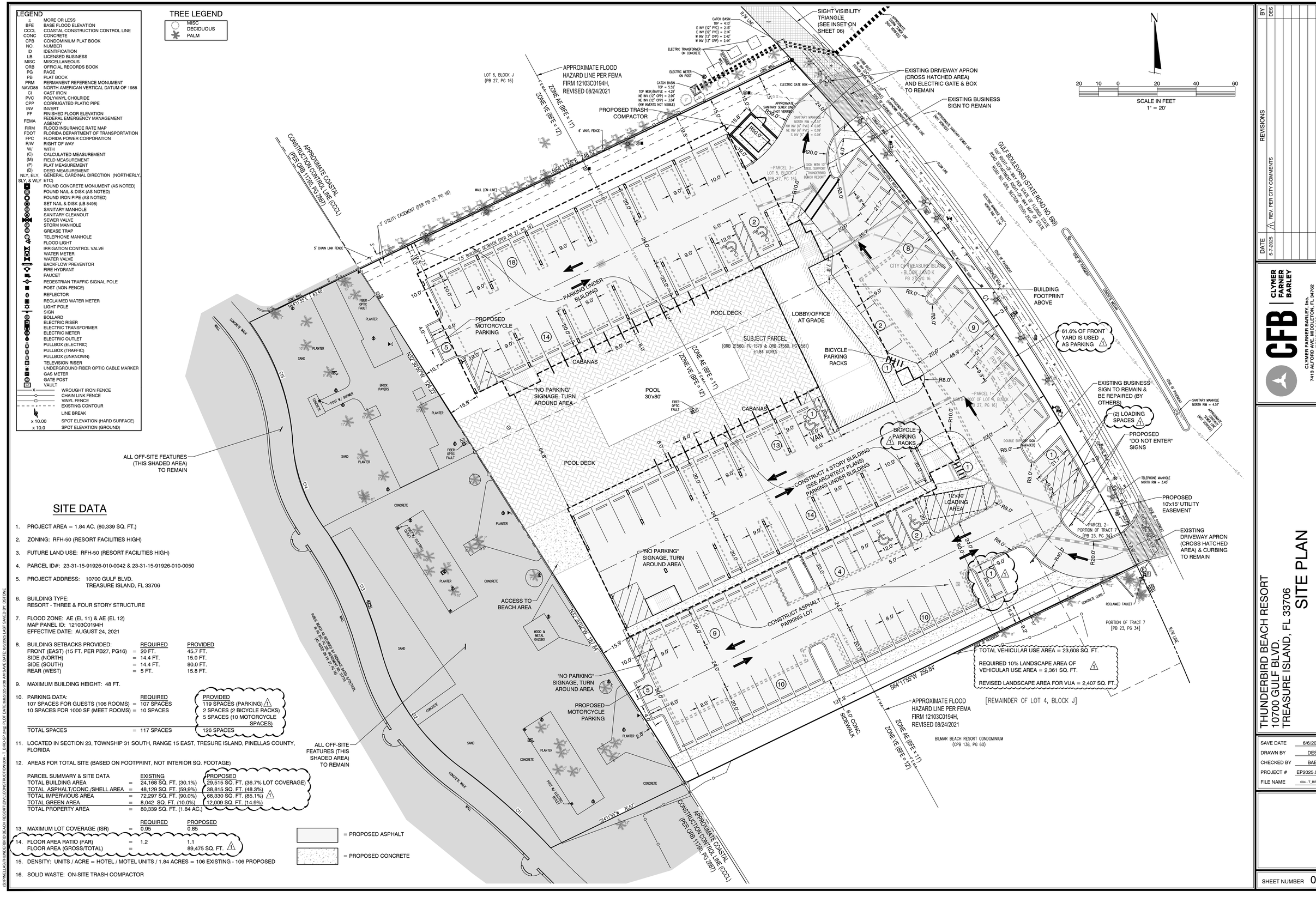
11. LOCATED IN SECTION 23, TOWNSHIP 31 SOUTH, RANGE 15 EAST, TRESURE ISLAND, PINELLAS COUNTY, FLORIDA
12. AREAS FOR TOTAL SITE (BASED ON FOOTPRINT, NOT INTERIOR SQ. FOOTAGE)

PARCEL SUMMARY & SITE DATA		EXISTING	PROPOSED
TOTAL BUILDING AREA	=	24,168 SQ. FT. (30.1%)	29,515 SQ. FT. (36.7% LOT COVERAGE)
TOTAL ASPHALT/CONC./SHELL AREA	=	48,129 SQ. FT. (59.9%)	38,815 SQ. FT. (48.3%)
TOTAL IMPERVIOUS AREA	=	72,297 SQ. FT. (90.0%)	68,330 SQ. FT. (85.1%) 1
TOTAL GREEN AREA	=	8,042 SQ. FT. (10.0%)	12,009 SQ. FT. (14.9%)
TOTAL PROPERTY AREA	=	80,339 SQ. FT. (1.84 AC.)	

		REQUIRED	PROVIDED
13. MAXIMUM LOT COVERAGE (ISR)	=	0.95	0.85
14. FLOOR AREA RATIO (FAR)	=	1.2	1.1
FLOOR AREA (GROSS/TOTAL)	=		89,475 SQ. FT. 1

15. DENSITY: UNITS / ACRE = HOTEL / MOTEL UNITS / 1.84 ACRES = 106 EXISTING - 106 PROPOSED
16. SOLID WASTE: ON-SITE TRASH COMPACTOR

= PROPOSED ASPHALT
= PROPOSED CONCRETE



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(352)748-3126

DATE	REVISIONS	BY
5-7-2025	1 REV. PER CITY COMMENTS	DES

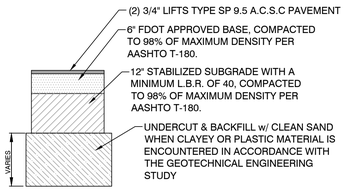
THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

SITE PLAN

SAVE DATE	6/6/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	004 - T_BIRD-SP

SHEET NUMBER 04

(E:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\004 - T_BIRD-SP.dwg) PLOT DATE:6/6/2025 9:36 AM SAVE DATE: 6/6/2025 LAST SAVED BY: DSTONE



PARKING LOT
PAVEMENT SECTION

SPECIAL POOL NOTE: ⚠1

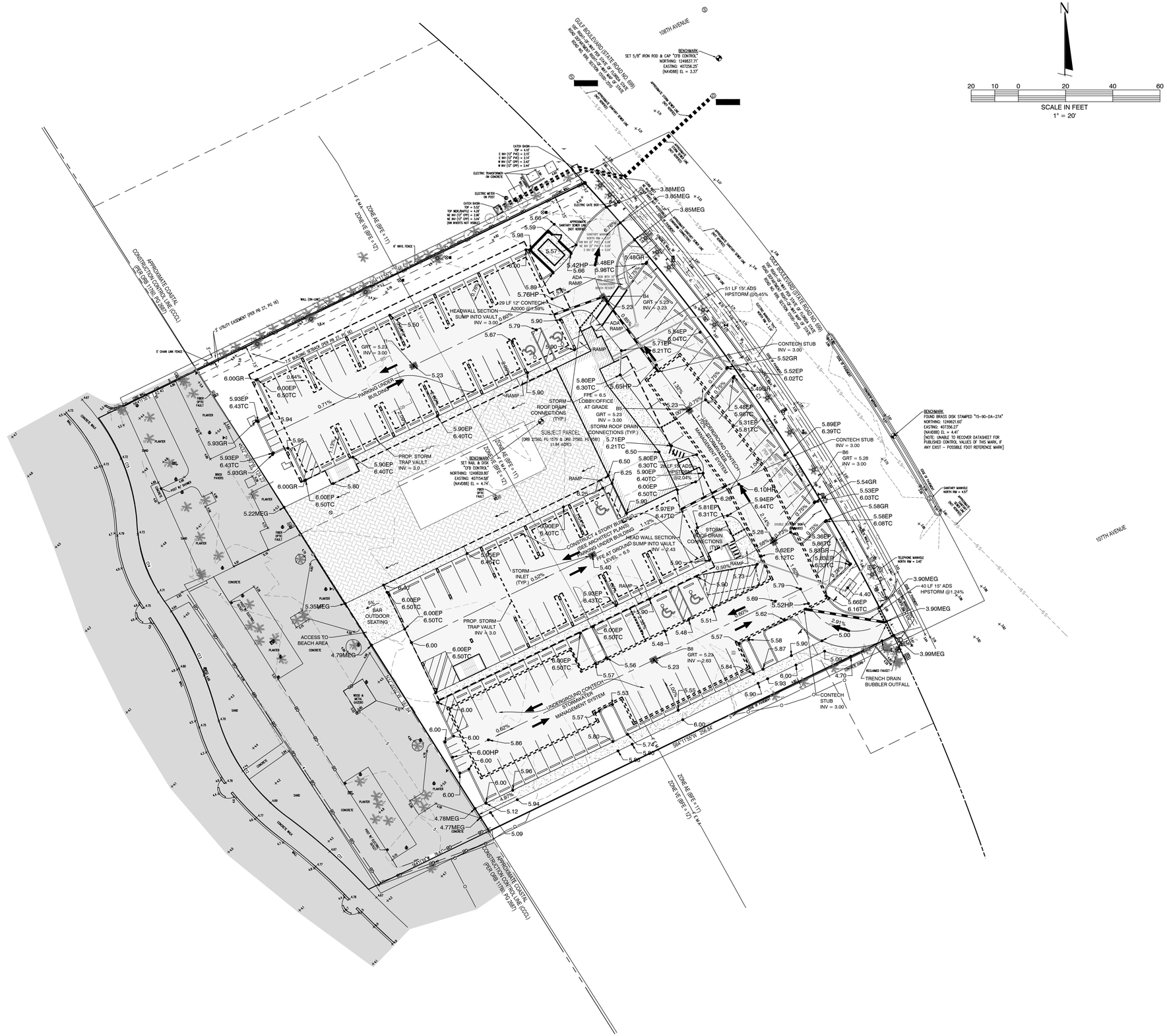
POOL DESIGN AND CONSTRUCTION BY OTHERS. POOL TO BE DESIGNED AND CONSTRUCTED SO IT WILL NOT BE SUBJECT TO BREAKING UP OR FLOATING OUT OF THE GROUND AND AFFECTING THE PILINGS AND COLUMNS OF THE SUPPORT SYSTEM OF THE BUILDING

FLOODPLAIN NOTES:

1. THE LOBBY/OFFICE WILL BE DRY FLOODPROOFED. DRY FLOODPROOFING IS NOT PERMITTED IN THE VE FLOOD ZONE; HOWEVER, THE LOBBY/OFFICE IS LOCATED IN THE COASTAL A ZONE. ⚠1
2. PROPOSED CONSTRUCTION SHALL BE ELEVATED ON PILINGS OR COLUMNS, WITH THE LOWEST HORIZONTAL STRUCTURAL MEMBER OF THE LOWEST FLOOR AT OR ABOVE DESIGN FLOOD ELEVATION (DFE). LOWEST STRUCTURAL MEMBER SHALL NOT BE BELOW DFE 14.0'.
3. ANY PROPOSED MECHANICAL, PLUMBING, OR ELECTRICAL SYSTEMS SHALL BE AT OR ABOVE DFE EXCEPT THAT MINIMUM ELECTRIC SERVICE REQUIRED TO ADDRESS LIFE SAFETY AND ELECTRIC CODE REQUIREMENTS IS PERMITTED BELOW THE DESIGN FLOOD ELEVATION PROVIDED IT CONFORMS TO THE PROVISIONS OF THE ELECTRICAL PART OF BUILDING CODE FOR WET LOCATIONS. THIS WOULD NOT APPLY TO DRY FLOOD-PROOFED AREAS.
4. ALL PROPOSED SLABS, SIDEWALKS ETC. THAT ARE UNDERNEATH OR ADJACENT TO ANY STRUCTURE SHALL BE FRANGIBLE.

LEGEND

- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED PAVEMENT ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED PAVEMENT ELEVATION
- EXISTING ELEVATION
- DIRECTION OF DRAINAGE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING INLET
- PROPOSED INLET
- PROPOSED MANHOLE
- EXISTING MANHOLE
- PROPOSED YARD DRAIN
- D-1 DRAINAGE STRUCTURE NUMBER (PROPOSED)



BY	DES

DATE	REVISIONS
05-07-2025	⚠1 REVISED PER CITY COMMENTS

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(352)748-3126

THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

PAVING GRADING & DRAINAGE PLAN

SAVE DATE	6/4/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	005 - T_BIRD-PGD

SHEET NUMBER 05

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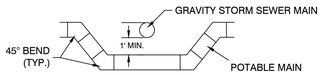
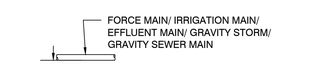


POTABLE & STORM SEWER MAIN CROSSING



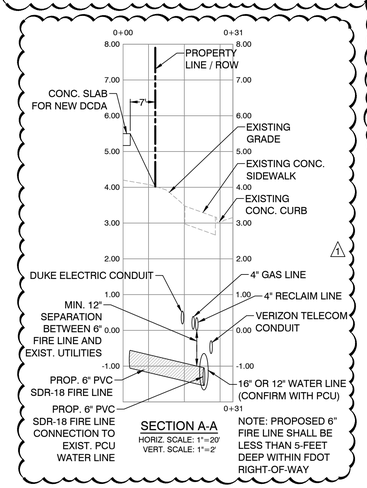
NON-POTABLE PRESSURE MAIN CROSSING DETAIL

LEGEND

- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- EXISTING IRRIGATION MAIN
- PROPOSED IRRIGATION MAIN
- EXISTING VALVE
- PROPOSED VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER SERVICE
- FIRE DEPARTMENT CONNECTION (F.D.C.)
- EXISTING SANITARY SEWER
- EXISTING MANHOLE
- PROPOSED SANITARY SEWER
- PROPOSED MANHOLE
- SAMPLE POINT

UTILITY NOTES:

1. APPURTENANCES EQUAL TO OR LESS THAN 2" TO BE FURNISHED AND INSTALLED BY PINELLAS COUNTY UTILITIES. ⚠1
2. APPURTENANCES GREATER THAN OR EQUAL TO 4" TO BE FURNISHED BY PINELLAS COUNTY UTILITIES AND INSTALLED BY THE CONTRACTOR.
3. GIS MAPPING INFORMATION PROVIDED BY PCU IS NOT A REPLACEMENT FOR LOCATING BURIED UTILITIES BY CONTACTING SUNSHINE 811, PERFORMING FIELD LOCATION AND SUBSURFACE UTILITIES ENGINEERING (SUE). ALL UTILITIES SHALL BE VERIFIED BEFORE CONSTRUCTION COMMENCES.
4. THE PIPELINE CONTRACTOR IS REQUIRED TO CONTACT PINELLAS COUNTY CONSTRUCTION MANAGEMENT PUBLIC WORKS PROJECT COORDINATOR AT (727) 464-8883 72-HOURS PRIOR TO COMMENCING UTILITY CONSTRUCTION FOR INSPECTION.
5. IF UTILITY MODIFICATIONS ARE REQUIRED, PLEASE REFERENCE THESE LINKS:
   ALL PINELLAS COUNTY PIPE DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH:
   PINELLAS COUNTY STANDARD TECHNICAL SPECIFICATIONS
   http://www.pinellas.gov/technical/pdf/eng_tech_specs.pdf
   PINELLAS COUNTY MATERIAL SPECIFICATION MANUAL
   http://www.pinellas.gov/technical/pdf/material-spec-manual.pdf
   PINELLAS COUNTY STANDARD DETAILS
   http://www.pinellas.gov/technical/pdf/std-details.pdf
6. ALL WET TAPS TO BE PERFORMED BY PINELLAS COUNTY UTILITIES.
7. ALL EXCAVATION, LOCAL & STATE RIGHT OF WAY PERMITS AND RESTORATION FOR THIS PROJECT ARE THE RESPONSIBILITY OF THE CONTRACTOR.
8. ALL EXISTING APPURTENANCES TO BE REMOVED WILL BE RETAINED BY PINELLAS COUNTY UTILITIES. ALL RESTORATION FOR THE REMOVAL OF EXISTING UTILITIES AND PERMITTING ARE THE RESPONSIBILITY OF THE CONTRACTOR.

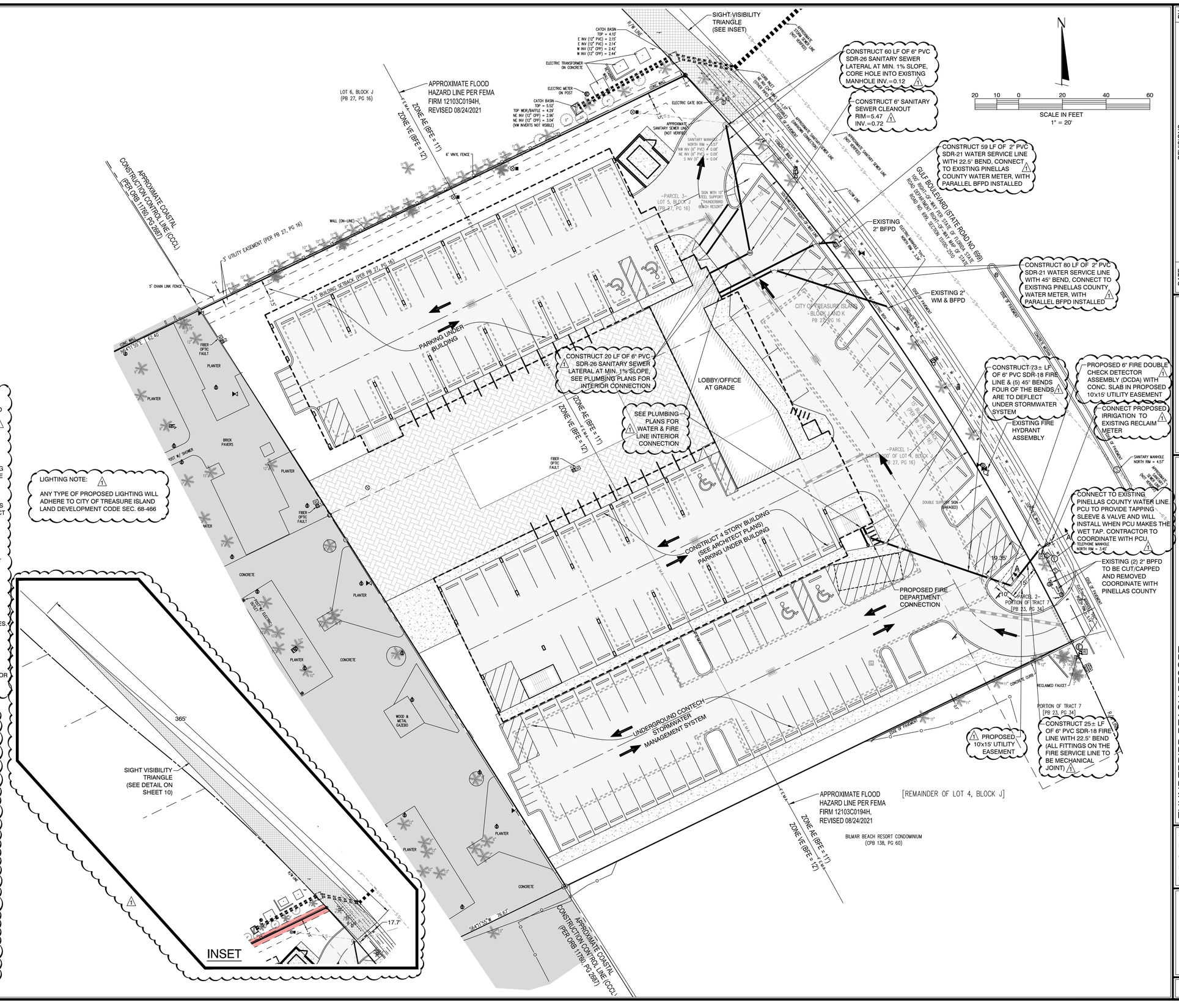


SECTION A-A
HORIZ. SCALE: 1"=20'
VERT. SCALE: 1"=2'

NOTE: PROPOSED 6" FIRE LINE SHALL BE LESS THAN 5-FEET DEEP WITHIN FDOT RIGHT-OF-WAY

LIGHTING NOTE: ⚠1

ANY TYPE OF PROPOSED LIGHTING WILL ADHERE TO CITY OF TREASURE ISLAND LAND DEVELOPMENT CODE SEC. 68-466



REVISIONS		
BY	DES	
DES		
DATE	4/22/2025	
⚠1	REVISED PER COUNTY & FDOT COMMENTS	

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THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

UTILITY PLAN

SAVE DATE	6/6/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	006 - T_BIRD-UTIL

SHEET NUMBER 06

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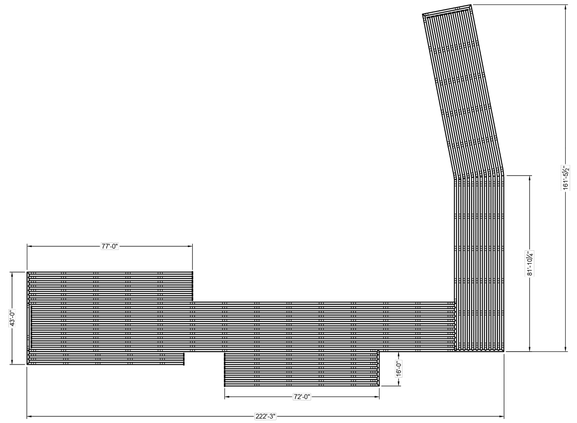
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 5,694 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = N/A CF
- PIPE STORAGE VOLUME = 4,472 CF
- BACKFILL STORAGE VOLUME = 2,922 CF
- TOTAL STORAGE PROVIDED = 7,394 CF
- STONE VOID = 40%

PIPE DETAILS
- DIAMETER = 12"
- CORRUGATION = 2 2/3x1/2
- SYSTEM INVERT = 3.00'
- COATING = ALT2
- WALL TYPE = XFILTRATION
- BARREL SPACING = 12"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"



NOTES
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 30'

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DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
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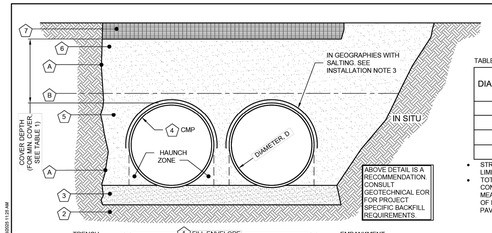
CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

#843,739 Thunderbird Hotel
Saint Petersburg, FL
12" RETENTION SYSTEM

PROJECT No.: 50931	SEQ. No.: 71369	DATE: 05/08/2025
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.:	1	

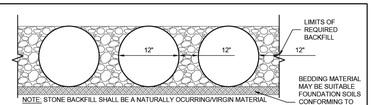


MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT

TABLE 1:

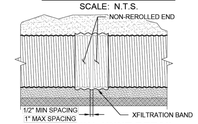
DIAMETER, D	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
>48"-96"	12"	3" x 1", 5" x 1"
>96"	D/8	3" x 1", 5" x 1"

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE.
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.



NOTE: STONE BACKFILL SHALL BE A NATURALLY OCURRING/VIRGIN MATERIAL

TYPICAL SECTION VIEW
SCALE: N.T.S.



XFILTRATION JOINT DETAIL
NOT TO SCALE

TABLE 2:

XFILTRATION® JOINT STANDARD BACKFILL SPECIFICATIONS

	MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1	FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.5D + 12"	MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3.0D PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10'0"
2	FOUNDATION	**AASHTO 26.5.2** - PER ENGINEER OF RECORD	PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND FOUNDATION BROUGHT BACK TO GRADE WITH A FILL MATERIAL APPROVED BY THE ENGINEER OF RECORD.	
3	BEDDING	**AASHTO M 43: 3, 357, 4, 467, 5, 56, 57**	ENGINEER OF RECORD TO DETERMINE IF BEDDING IS REQUIRED. PIPE MAY BE PLACED ON THE TRENCH BOTTOM OF A RELATIVELY LOOSE, NATIVE SUITABLE WELL GRADED GRANULAR MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH. THE BEDDING MATERIAL MAY BE SUITABLE OPEN GRADED GRANULAR BEDDING CONFORMING TO AASHTO SOIL CLASSIFICATIONS A1, A2, OR A3 WITH MAXIMUM PARTICLE SIZE OF 3" PER AASHTO 26.3.8.1	
4	CORRUGATED METAL PIPE			
5	BACKFILL	FREE-DRAINING, ANGULAR, WASHED-STONE PER **AASHTO M 43: 3, 357, 4, 467, 5, 56, 57** OR APPROVED EQUAL *	HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. BACKFILL SHALL BE PLACED IN 8" +/- LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WHERE CONVENTIONAL COMPACTION TESTING IS NOT PRACTICAL, THE MATERIAL SHALL BE MECHANICALLY COMPACTED UNTIL NO FURTHER YIELDING OF MATERIAL IS OBSERVED UNDER THE COMPACTOR. **IN AREAS WITH HIGH WATER TABLE FLUCTUATIONS THAT INTERACT WITH THE PIPE ZONE, CONSIDER INSTALLING A GEOTEXTILE SEPARATION LAYER TO PREVENT SOIL MIGRATION.	
6	COVER MATERIAL	UP TO MIN. COVER - **AASHTO M 145: A-1, A-2, A-3** ABOVE MIN. COVER - PER ENGINEER OF RECORD	COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROADBASE MATERIAL WITHIN MIN COVER LIMITS	
7	RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE)	PER ENGINEER OF RECORD	FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.	
A	SIDE GEOTEXTILE	NONE	GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION WHEN STONE BEDDING IS USED. IF NO STONE BEDDING IS USED, THEN SIDE GEOTEXTILE IS REQUIRED.	
B	GEOTEXTILE BETWEEN LAYERS	NONE	IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE INVERT, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION.	

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
- * APPROVED REGIONAL EQUIVALENTS FOR SECTION 5 INCLUDE MIDOT 6AA, 6A, OR 5Q, PROVIDED THEY MEET THE PARTICLE SIZES INDICATED.

MANUFACTURER RECOMMENDED BACKFILL
NOT TO SCALE

INSTALLATION NOTES
1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
3. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

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DATE	REVISION DESCRIPTION	BY

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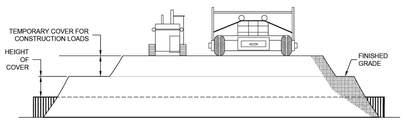
CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

#843,739 Thunderbird Hotel
Saint Petersburg, FL
12" RETENTION SYSTEM

PROJECT No.: 50931	SEQ. No.: 71369	DATE: 05/08/2025
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.:	2	



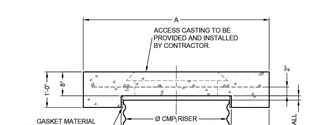
CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

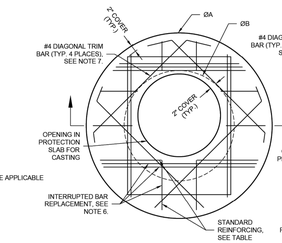
CONSTRUCTION LOADING DIAGRAM
SCALE: N.T.S.



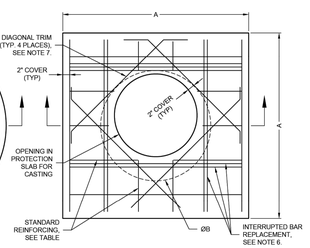
SECTION VIEW

REINFORCING TABLE				
Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	Ø 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	Ø 4'-6" 4'-6"X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	Ø 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	Ø 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	Ø 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:
1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING. BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL
SCALE: N.T.S.

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SHEET NO.:	3	

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE:
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

NOTE:
THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

POLYMER COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745

HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSPS (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

FDOT

FDOT CONSTRUCTION NOTES FOR DEVELOPMENT

1. When work is associated with roadway modifications and/or site development, Contractor is required to have a pre-construction meeting with the FDOT inspector two (2) weeks prior to any work in FDOT right-of-way.
2. All temporary pedestrian pathways must be firm and unyielding. No pedestrian pathway is to be removed, blocked, or disturbed without having a sufficient designated temporary pedestrian pathway with maintenance of traffic signs (FDOT Standard Index 102-660) in-place prior to pathway being affected.
3. The Permittee/EOR shall coordinate with FDOT inspector in advance of any concrete placed within FDOT right-of-way to ensure that the Inspector is onsite during any concrete placement operation.
4. Any curb and/or gutter that is reconstructed or installed within FDOT right-of-way shall meet minimum standards of FDOT Standard Index 520-001 (Curb and Gutter).
5. Any sidewalk fronting the property that is cracked, damaged, or unstable and is creating an ADA trip hazard must be replaced by section and meet the minimum standards of FDOT Standard Index 522-001 (Concrete Sidewalk) and 522-002 (Detectable Warnings and Curb Ramps).
6. Any flared driveway that is reconstructed or installed within FDOT right-of-way shall meet minimum standards of FDOT Standard Index 522-003 (Concrete Flared Driveways).
7. All non-structural concrete placed in the right-of-way shall be a minimum of 6 inches thick and meet the requirements of Section 347 of the FDOT Standard Specifications.
   a. Provide delivery tickets with all required details as outlined in FDOT Standard Specification 347-4.1.
   b. Concrete shall be placed and cured in a manner that meets FDOT Standard Specification requirements to achieve proper strength and durability characteristics.
8. Any curb or sidewalk damaged as a result of work performed by the Permittee or Contractor shall be removed and replaced per FDOT specifications.
9. Any sidewalk disturbed will be replaced by section within 72 hours to FDOT specifications.
10. All materials being placed in the FDOT right-of-way must be on the State's Approved Products List (non-proprietary).
11. All construction and/or maintenance in FDOT right-of-way shall conform to the FHWA Manual on Uniform Traffic Control Devices (MUTCD), FDOT Standard Plans for Road Construction, FDOT Standard Specifications for Road and Bridge Construction, FDOT Florida Design Manual, and the FDOT Drainage Manual.
12. No lane closure of any State roadway is allowed without 48-hour advance notice and approval from FDOT.
13. Lane closures must be limited to Sunday through Thursday, 9:00 pm to 5:30 am, unless otherwise approved by FDOT.
14. Lane closures need to accommodate for a bike lane if the roadway consists of a bike lane.
15. No work shall be performed during the week of any State or federal holiday unless otherwise approved by FDOT.
16. No work requiring lane or sidewalk closure shall be performed during Spring Break on SR 699 (Gulf Boulevard). Spring Break is identified as March 1 through the first Monday following Easter. During this time, lane and sidewalk closures on all State roadways that lead to SR 699 (Gulf Boulevard) will be restricted to night work, Sunday through Thursday, 9:00 pm to 5:30 am.
17. Open cutting of any roadway, driveway, or sidewalk outside those limits identified within the permit are not allowed without prior approval by FDOT.
18. Prior to the removal of any materials abutting the roadway shall be sawcut to prevent any damage to the roadway.

FDOT

19. Contractor shall provide the FDOT Inspector the principal point of contact individual who has authority to administer actions on behalf of the Permittee while activities impacting the right-of-way are taking place to include potential emergency issues.
20. No stockpiling, storing, or semi-permanent use of the right-of-way is authorized unless specifically identified within the permit or approved by FDOT in advance.
21. The permitted work schedule is defined as Monday through Friday, 7:00 am to 5:30 pm, unless otherwise noted within the permit. Any work desired outside of this period must be requested in advance and approved by FDOT before working the alternate schedule.
22. FDOT reserves the right to adjust any permitted method of installation, scope of work, and restoration that may be required to positively support life, safety, and environmental well-being of all users of the transportation system.
23. Roadway restoration shall utilize 100 PSI excavatable flowable fill material and asphalt placed within State right-of-way shall be placed full-depth, two (2) 2.5-inch lifts of SP 12.5 and two (2) 1.5-inch lifts of SP 9.5. Typical sections will need to be provided within the plans for the pavement placement. A stair step method should be incorporated, prior to placing asphalt, to avoid vertical joints. Milling of the patch may be required based on the patched surface performance. The milling shall be utilized for surface leveling to a thickness equal to or greater than the existing friction coarse material. The milling limits are 50-foot of the patch along the longitudinal path of the lane, full lane width, and include any adjacent bike lane, shared path, or urban shoulder section.
24. Any disruptions to a permeable pedestrian path or bike lane along SR 699 (Gulf Boulevard) are to be restored as work continues. All patches shall be full width from outside edge of pedestrian path to white line edge of travel lane with stair step (staggered) joints. Restoration to include backfill with existing sub-grade material and #57 stone as base material (compact in 6-inch lifts) to bottom of existing pervious asphalt base, followed by permeable design mix (if available) or FC-5 (Friction Course) mix with a minimum of two (2) 2-inch and a maximum of two (2) 3-inch lifts. Maintain ingress/egress on all driveways and side streets during construction.
25. If a Permittee is extending and/or connecting to an existing FDOT pipe, District Drainage will review if the pipe system addresses any increase in volume/loading as part of the new development. The new pipe, along with the connection, should be video inspected and provided to FDOT for review to confirm the connection is sufficient and that the existing pipe has not been damaged. FDOT specifications require video inspection of any new pipe 48 inches or less in diameter (Standard Specification 430-4.8 Pipe Inspection, 430-4.8.1 Video Report, and 430-4.8.2 Reinspection).
26. If a Permittee is connecting to an existing FDOT pipe, they will have to clean/desilt the area of the existing pipe they are connecting to so FDOT can ensure the connection was done properly. A proper pipe connection cannot be performed when existing pipe is silted up at the connection point.
27. Pipe culverts shown in the permit must meet FDOT specifications, type, size, and length as described in the permit. Each joint or length of pipe shall have FDOT stamps affixed verifying this approval. All concrete pipe joints other than 1-inch ring joints must be "diapered". All culverts are to be inspected by FDOT prior to placement of fill.
28. Permittee shall notify FDOT of the date of completion, request a final inspection, and request a notice of final acceptance.

***** END OF NOTES *****

Revised 03/10/2025

REVISIONS

BY	DATE

CLYMER FARNER BARLEY

CFB

CLYMER FARNER BARLEY, Inc.
THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.
7413 ALFORD AVE. MIDDLETON, FL 34762
(352)748-3126

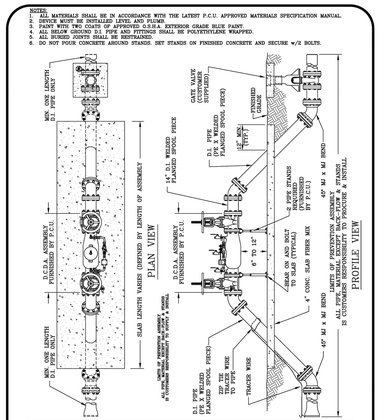
THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

CONSTRUCTION DETAILS

SAVE DATE	6/6/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	009 - T_BIRD-DETAILS

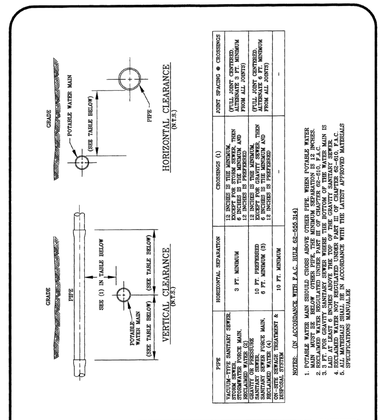
SHEET NUMBER 07

C:\USERS\DAVID.PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\009 - T_BIRD-DETAILS.dwg PLOT DATE:6/6/2025 9:08 AM SAVE DATE: 6/6/2025 LAST SAVED BY: DSTONE



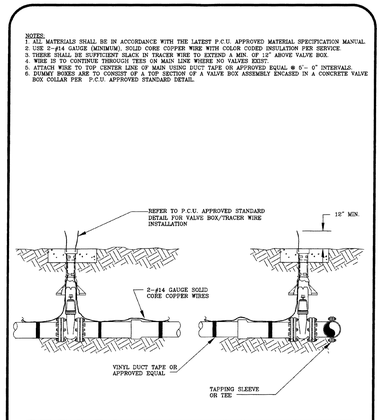
PINELLAS COUNTY
UTILITIES
4", 6", 8" AND 10" DOUBLE CHECK DETECTOR ASSEMBLY FOR FIRE LINE DETAIL

DETAIL INDEX P.C.U.: PCU BF 8
DATE: MAR/2020
REVISION:



PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS
POTABLE WATER SUPPLY MAIN, RECLAIMED WATER MAIN, SANITARY SEWER FORCE MAIN, RECLAIMED WATER CULVERT & SANITARY SEWER GRAVITY MAIN, DISPOSAL SYSTEM	3 FT. MINIMUM	12 INCHES IF THIS MINIMUM CANNOT BE ACHIEVED AND APPROVED BY ENGINEER	FULL JOINT CENTERED ON CROSSING (MINIMUM FROM ALL JOINTS)
STORM SEWER, FORCE MAIN, RECLAIMED WATER CULVERT & SANITARY SEWER GRAVITY MAIN	10 FT. PREFERRED (6 FT. MINIMUM)	12 INCHES IF THIS MINIMUM CANNOT BE ACHIEVED AND APPROVED BY ENGINEER	FULL JOINT CENTERED ON CROSSING (MINIMUM FROM ALL JOINTS)
RECLAIMED WATER CULVERT & SANITARY SEWER FORCE MAIN	10 FT. MINIMUM	12 INCHES IS PREFERRED	
RECLAIMED WATER CULVERT & DISPOSAL SYSTEM	10 FT. MINIMUM		

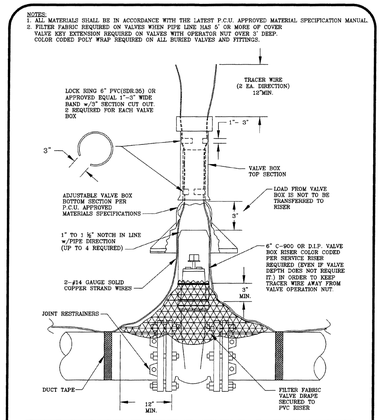
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. USE 2-#14 GAUGE (MINIMUM), SOLID CORE COPPER WIRE WITH COLOR CODED INSULATION PER SERVICE.
3. THERE SHALL BE SUFFICIENT SLACK IN TRACER WIRE TO EXTEND ALONG RISER 2" ABOVE VALVE BOX.
4. TRACER WIRE SHALL START AT THE CLEAN-OUT AND RUN ALONG THE SEWER SERVICE.
5. ATTACH WIRE TO TOP CENTER LINE OF MAIN USING DUCT TAPE OR APPROVED EQUAL @ 6'- 0" INTERVALS.
6. DUMMY BOXES ARE TO CONSIST OF A TOP SECTION OF A VALVE BOX ASSEMBLY ENCASED IN A CONCRETE VALVE BOX COLLAR PER P.C.U. APPROVED STANDARD DETAIL.



PINELLAS COUNTY
TRACER WIRE INSTALLATION DETAIL

DETAIL INDEX P.C.U.: PCU GD 3a
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:

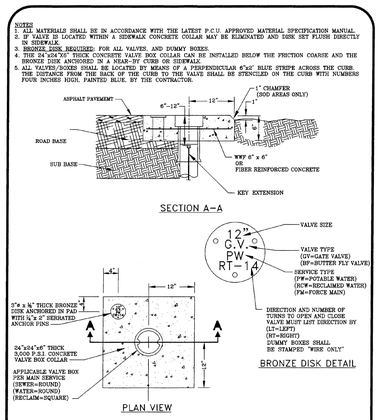
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. IF VALVE KEY EXTENSION REQUIRED ON VALVES WITH OPERATOR NUT OVER 3' DEEP.
3. COLOR CODED POLY WRAP REQUIRED ON ALL BURIED VALVES AND FITTINGS.



PINELLAS COUNTY
VALVE BOX/TRACER WIRE INSTALLION DETAIL

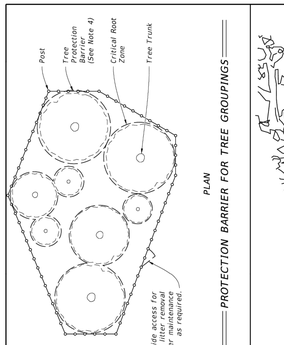
DETAIL INDEX P.C.U.: PCU GD 4
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:

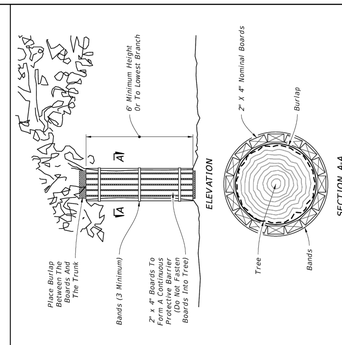
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL AND TECHNICAL SPECIFICATIONS.
2. IF VALVE IS LOCATED WITHIN A SIDEWALK CONCRETE COLLAR MAY BE ELIMINATED AND DISK SET FLUSH DIRECTLY IN SIDEWALK.
3. BRONZE DISK REQUIRED: FOR ALL VALVES, AND DUMMY BOXES.
4. THE 24 3/4"x6" THICK CONCRETE VALVE BOX COLLAR CAN BE INSTALLED BELOW THE FRICTION COARSE AND THE CONCRETE COLLAR CAN BE INSTALLED FLUSH WITH ROADWAY SURFACE.
5. ALL VALVES/BOXES SHALL BE LOCATED BY MEANS OF A PERPENDICULAR 6"x2' BLUE STRIPE ACROSS THE CURB. THE DISTANCE FROM THE BACK OF THE CURB TO THE VALVE SHALL BE STENCILED ON THE CURB WITH NUMBERS FOUR INCHES HIGH, PAINTED BLUE, BY THE CONTRACTOR.



PINELLAS COUNTY
CONCRETE VALVE BOX AND COLLAR DETAIL

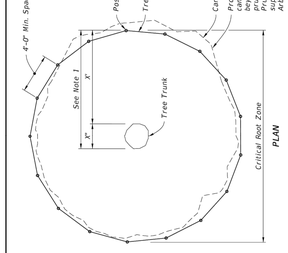
DETAIL INDEX P.C.U.: PCU GD 5
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:

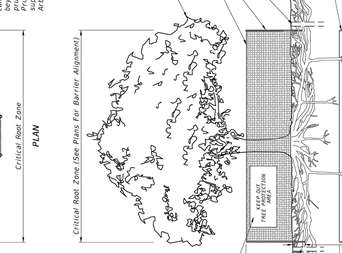


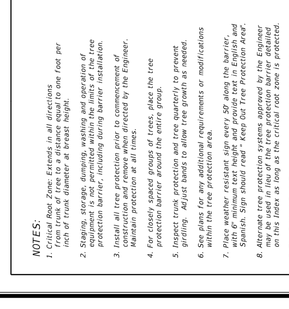


NOTES:
1. Trunk protection may be used when Tree Protection Barrier can not be reasonably erected, when approved by Engineer.
2. See Selective Clearing and Grubbing Plan for location of trunk protection.
3. Adjust bands to allow tree growth (inspect quarterly to prevent girdling).

TRUNK PROTECTION







NOTES:
1. Critical Root Zone Extends in all directions, one foot of tree for a distance equal to one foot per inch of trunk diameter at breast height.
2. Staging, storage, dumping, washing and operation of equipment is prohibited within the limits of the tree protection barrier, including during installation.
3. Install all tree protection prior to commencement of construction and remove when directed by the Engineer. Maintain protection at all times.
4. For closely spaced groups of trees, place the tree protection barrier around the entire group.
5. Inspect, adjust, repair, and maintain as required. Inspect for pest infestation and treat when and as needed.
6. See plans for any additional requirements or modifications within the tree protection area.
7. Place weather resistant sign every 50' along the barrier, with 6" minimum text height and provide text in English and Spanish. Sign should read "Keep Out Tree Protection Area".
8. Alternate tree protection systems approved by the Engineer may be used as long as the critical root zone is protected as described on this index as long as the critical root zone is protected.
9. The Critical Root Zone may be reduced, in the field, by a certified Arborist or Landscape Architect.

TREE PROTECTION BARRIER

FY 2025-26
STANDARD PLANS

FDOT

TREE PROTECTION AND PRESERVATION

DESCRIPTION:	SHEET	1 of 1
REVISION	INDEX	110-100
LAST REVISION 11/01/16		

NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION.
2. P.C.U. APPROVED JOINT RESTRAINERS ARE REQUIRED FOR ALL PRESSURE MAIN INSTALLATIONS. ALL FITTINGS SHALL BE RESTRAINED TO THE LENGTHS INDICATED, AT A MINIMUM.
3. THIS TABLE WAS DEVELOPED USING THE FOLLOWING ASSUMPTIONS:
   - D.I. PIPE WITH POLY WRAP
   - SAFETY FACTOR OF 1.5 TO 1
   - TEST PRESSURE OF 150 P.S.I.
   - SOIL TYPE = S.M.
   - TYPE 3 TRENCH
   - DEPTH OF COVER = 2.5' UP TO 16' AND 3' FOR 20' AND ABOVE.
4. WHEN A TEE HAS A VALVE ON THE RUN, THE BRANCH AND THE RUNS SHALL BE RESTRAINED AS A 90° BEND FOR THE LENGTH OF THE PIPE.
5. ALL SIDE OF VALVES AND VALVES SHALL BE RESTRAINED ON EACH SIDE OF THE FITTING.
6. ALL RESTRAINED PIPE LENGTHS ARE IN FEET.
7. "F" REPRESENTS THE RESTRAINED JOINTS AT THE FITTINGS.
8. RSPR TRANSITION VALVE IS FOR STRAIGHT TIE-IND. IF A BEND IS USED, THE VALVE FOR THE BEND MUST BE ADDED.
9. LINE VALVES SHALL BE RESTRAINED UPSTREAM AND DOWNSTREAM AS A DEAD END.

PIPE SIZE	FITTINGS TEE BRANCH ONLY	90°	45°	22½°	11¼°	DEAD END
2"	F	40	17	F	F	40
4"	19	49	20	10	5	49
6"	33	69	28	14	7	69
8"	58	88	37	18	9	88
10"	76	107	44	21	11	107
12"	93	125	52	25	12	125
14"	110	142	59	28	14	142
16"	127	159	66	32	16	159
18"	143	175	73	35	17	175
20"	132	164	68	33	16	164
24"	159	192	79	38	19	192
30"	195	229	95	46	23	229
36"	230	264	109	53	26	264

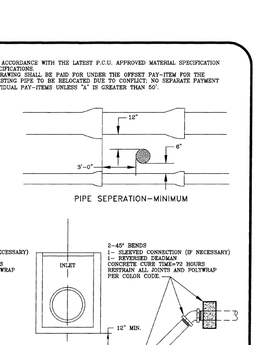
FITTINGS REDUCERS LG. SIZE	SM. SIZE	LENGTH	LARGER PIPE
4"	2"	17"	54
6"	4"	50"	55
8"	4"	91"	54
	6"	53"	57
10"	4"	124"	87
	6"	91"	56
	8"	51"	56
12"	4"	134"	108
	6"	129"	91
	8"	91"	56
	10"	53"	57
14"	6"	160"	113
	8"	129"	91
	10"	91"	56
	12"	53"	57
16"	6"	190"	134
	8"	160"	116
	10"	134"	94
	12"	98"	57
	14"	53"	58
18"	8"	198"	137
	10"	169"	118
	12"	135"	95
	14"	91"	58
	16"	53"	59
20"	10"	179"	123
	12"	149"	103
	14"	117"	82
	16"	82"	58
	18"	44"	60
24"	12"	201"	141
	14"	177"	124
	16"	149"	104
	18"	117"	82
	20"	82"	57
30"	16"	208"	144
	18"	177"	122
	20"	145"	100
	24"	207"	144
36"	20"	177"	122
	24"	145"	100
	30"	114"	80

PRESSURE MAIN RESTRAINED JOINT

PINELLAS COUNTY
PRESSURE MAIN RESTRAINED JOINT DETAIL

DETAIL INDEX P.C.U.: PCU GD 11
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:

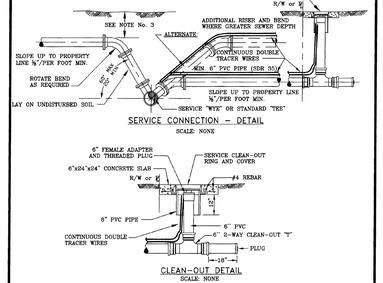
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL AND TECHNICAL SPECIFICATIONS.
2. ALL WORK SHOWN ON THIS DRAWING SHALL BE PAID FOR UNDER THE OFFSET PAY-ITEM FOR THE APPLICABLE SIZE OF THE EXISTING PIPE TO BE RELOCATED DUE TO CONFLICT. NO SEPARATE PAYMENT SHALL BE MADE UNDER INDIVIDUAL PAY-ITEMS UNLESS "A" IS GREATER THAN 50'.



PINELLAS COUNTY
TYPICAL PRESSURE LINE OFFSET RELOCATION DETAIL

DETAIL INDEX P.C.U.: PCU GD 13
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:

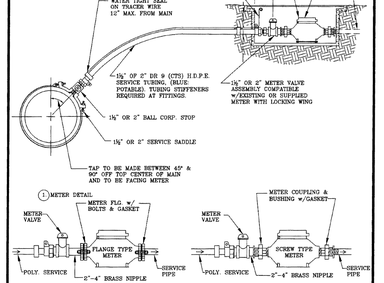
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. SERVICE CONNECTIONS MAY NOT HAVE BEEN SHOWN ON PLAN/PROFILE SHEETS. SERVICE CONNECTION LOCATIONS SHALL BE DETERMINED IN THE FIELD AND CONNECTIONS CONSTRUCTED ACCORDANCE WITH P.C.U. APPROVED STANDARD DETAILS AND SPECIFICATIONS. SEE STANDARD DETAILS FOR NEW DEVELOPMENT. THE SERVICE CONNECTION SHALL BE CONSTRUCTED IN THE CENTER OF LOT.
3. MINIMUM DEPTH UNDER ROADWAY 42" MINIMUM DEPTH AT PROPERTY LINE 36" (OR AS REQUIRED FOR SERVICE).
4. SERVICE LINES SHALL BE A MIN OF 6" TO ALL RESIDENCES
5. NO DOUBLE WYE UNITS SHALL BE PERMITTED ON SERVICE LINE. ALL RESIDENCES SHALL BE SERVED BY A SINGLE SERVICE.
6. RISERS SHALL BE INSTALLED ON ALL WYES (BOTH PRESENT & FUTURE SERVICES).
7. RISERS SHALL PREFERABLY FOLLOW SLOPE OF BANK TO REQUIRED DEPTH.
8. THE TRACER WIRE SHALL START AT THE CLEAN-OUT AND RUN ALONG THE SEWER SERVICE TO THE MAIN AND BACK TO THE CLEAN-OUT AS ONE CONTINUOUS WIRE.



PINELLAS COUNTY
SEWER SERVICE CONNECTION AND CLEAN-OUT DETAIL

DETAIL INDEX P.C.U.: PCU SD 4
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:

NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. CORPORATION STOPS SHALL BE COMPATIBLE WITH DR 9 (C.T.S.) H.D.P.E. TUBING.
3. SERVICE SADDLE REQUIRED FOR ALL TAPS.
4. METER ONLY, TO BE FURNISHED BY P.C.U.
5. METER BOXES SHALL BE INDUSTRIAL SIZE.
6. ALL METER BOXES LOCATED WITHIN VEHICULAR TRAVEL AREAS SHALL BE H-20 LOADING. ALL OTHERS SHALL BE H-10 LOADING.
7. TRACER WIRE REQUIRED ON ALL SERVICES
8. SERVICES OVER 80' IN LENGTH SHALL BE UP-SIZED TO 2".
9. TAP AND METER SHALL BE INSTALLED BY P.C.U. ON ALL PRIVATELY DEVELOPED PROJECTS.



PINELLAS COUNTY
1½" OR 2" POTABLE WATER SERVICE CONNECTION DETAIL

DETAIL INDEX P.C.U.: PCU WD 4
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:

ROOT PRUNING SPECIFICATIONS

WHEN CONSTRUCTION ACTIVITIES AFFECT PROTECTED TREES SO THAT THE CRITICAL ROOT ZONE (SEE FIGURE 1) IS DISTURBED, ADHERENCE TO THE FOLLOWING ARBORICULTURAL TECHNIQUES IS REQUIRED.

UTILITIES SHALL BE ROUTED IN THE CRITICAL ROOT ZONE AREA OF A PROTECTED TREE BY BORING AND AIR SPADING. THESE PROCEDURES WILL PREVENT DAMAGE TO THE TREE'S ROOT SYSTEM.

ROOT PRUNING: WHEN CRITICAL ROOT ZONE AREA IS DISTURBED, AFFECTED ROOTS MUST BE SEVERED BY CLEAN PRUNING CUTS AT THE POINT WHERE CONSTRUCTION IMPACTS THE ROOTS. A STUMP GRINDER, CHAIN SAW, HAND SAW AND LOPPER ARE TOOLS THAT WILL MAKE A CLEAN CUT.

ROOT PRUNING IN THE CRITICAL ROOT ZONE REQUIRES APPROVAL BY THE CITY ARBORIST. ROOT PRUNING SHALL BE DONE A MINIMUM OF 5 (FIVE) TIMES THE TRUNK DIAMETER AND ONLY ON ONE SIDE. LARGER TREES WILL REQUIRE MORE DISTANCE.

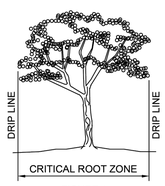


FIGURE 1

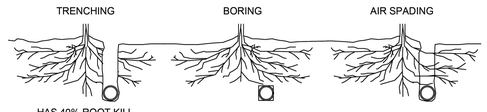


FIGURE 2

REVISIONS	BY
DATE 4/29/2025 ADDED FDOT 546 DETAIL	DES

CFB | CLYMER FARNER BARLEY

CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(352)748-3126

THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

CONSTRUCTION DETAILS

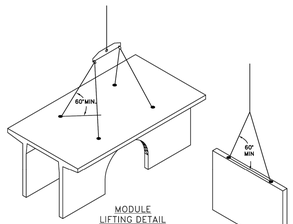
SAVE DATE	6/6/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	009 - T_BIRD.DETAILS

SHEET NUMBER 08

(S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\009 - T_BIRD.DETAILS.dwg) PLOT DATE:4/8/2026 9:39 AM SAVE DATE: 4/8/2026 LAST SAVED BY: DSTONE

STORMTRAP MODULE LIFTING SPECIFICATION

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL (4) CHAINS/CABLES ARE SECURED PROPERLY TO THE LIFTING ANCHORS AND IN EQUAL TENSION WHEN LIFTING THE STORMTRAP MODULE.
2. MINIMUM 7'-0" CHAIN/CABLE LENGTH TO BE USED TO LIFT STORMTRAP MODULES (SUPPLIED BY CONTRACTOR).
3. CONTRACTOR TO ENSURE MINIMUM LIFTING ANGLE IS 60° FROM TOP SURFACE OF STORMTRAP MODULE. SEE DETAIL.
4. IT IS UNDERSTOOD AND AGREED THAT AT ALL TIMES DURING WHICH HOISTING AND RIGGING EQUIPMENT IS BEING SUPPLIED TO THE PURCHASER, OPERATOR OF SUCH EQUIPMENT SHALL BE IN CHARGE OF HIS ENTIRE EQUIPMENT AND SHALL AT ALL TIMES BE THE JUDGE OF THE SAFETY AND PROPERTY OF ANY SUGGESTION TO HIM FROM THE SELLER, ITS AGENTS OR EMPLOYEES. PURCHASER AGREES TO SAVE, INDEMNIFY AND HOLD HARMLESS SELLER FROM ALL LOSS, EXPENSE, DAMAGE OR CAUSE OF ACTION, WHICH MAY ARISE FROM THE EXISTENCE OR OPERATION OF SAID EQUIPMENT.

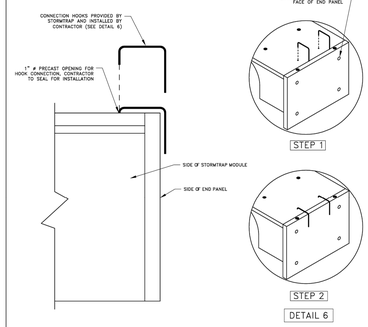


MODULE LIFTING DETAIL

END PANEL LIFTING DETAIL

END PANEL ERECTION/INSTALLATION SPECIFICATION

1. END PANELS WILL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF ROWS.
2. PANELS SHALL BE INSTALLED IN A TILT UP FASHION DIRECTLY ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 2.0 FOR END PANEL LOCATIONS). SIDE WITH LIFTERS INDICATES OUTSIDE FACE.
3. CONNECTION HOOKS WILL BE SUPPLIED WITH END PANELS TO SECURELY CONNECT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONNECTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).



PANEL CONNECTION ELEVATION VIEW

StormTrap
PATENTS LISTED AT: [WWW.STORMTRAP.COM/PATENTS]
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ROMEOVILLE, IL 60446
P:815-941-4548 / F:331-318-5547

ENGINEER INFORMATION:
CFB, INC
314 S MISSOURI AVE
SUITE 101
CLEARWATER, FL
727-519-1030

PROJECT INFORMATION:
THUNDERBIRD
BEACH RESORT
Treasure Island, FL

CURRENT ISSUE DATE:
4/4/2025

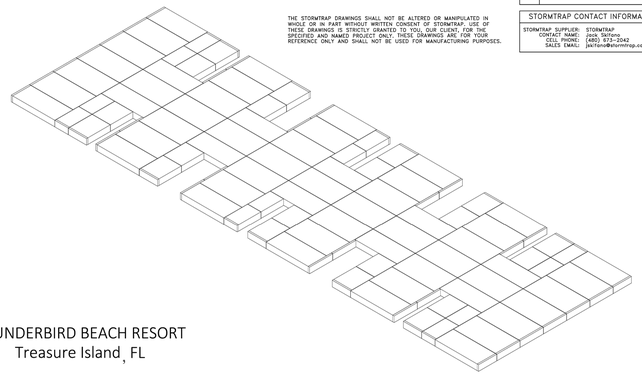
ISSUED FOR:
PRELIMINARY

REV.	DATE:	ISSUED FOR:	DWN BY:
1	04/04/25	PRELIMINARY	BS

SCALE:
NTS

SHEET TITLE:
SINGLETRAP INSTALLATION SPECIFICATION

SHEET NUMBER:
3.1



THUNDERBIRD BEACH RESORT
Treasure Island, FL

StormTrap
MODULAR CONCRETE STORMWATER MANAGEMENT

THE STORMTRAP DRAWINGS SHALL NOT BE ALTERED OR MANIPULATED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT OF STORMTRAP. USE OF THESE DRAWINGS IS STRICTLY CREATED FOR USE BY OUR CLIENT FOR YOUR SPECIFIED AND NAMED PROJECT ONLY. THEY ARE GIVEN FOR YOUR REFERENCE ONLY AND SHALL NOT BE USED FOR MANUFACTURING PURPOSES.

SHEET INDEX

PAGE	DESCRIPTION
0.0	COVER SHEET
1.0	GENERAL NOTES
1.1	SINGLETRAP DESIGN CRITERIA
2.0	SINGLETRAP SYSTEM LAYOUT
3.0	SINGLETRAP INSTALLATION SPECIFICATION
3.1	SINGLETRAP INSTALLATION SPECIFICATION
4.0	SINGLETRAP BACKFILL SPECIFICATION
5.0	PIPE/ACCESS OPENING SPECIFICATION
6.0	SPLASH PAD & GEOWEB DETAILS
7.0	SINGLETRAP MODULE TYPES

STORMTRAP CONTACT INFORMATION

STORMTRAP SUPPLIER: STORMTRAP
CONTACT NAME: Josh Tallano
CELL PHONE: (480) 673-2042
SALES EMAIL: jtallano@stormtrap.com

StormTrap
PATENTS LISTED AT: [WWW.STORMTRAP.COM/PATENTS]
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1	04/04/25	PRELIMINARY	BS

SCALE:
NTS

SHEET TITLE:
COVER SHEET

SHEET NUMBER:
0.0

GENERAL NOTES:

1. STRUCTURE PROXIMITY LOADING DISCLAIMER:

   STORMTRAP MODULES AND FOUNDATION ARE NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADING FROM ANY NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. EXAMPLES OF NEARBY STRUCTURES MAY INCLUDE BUT ARE NOT LIMITED TO BUILDINGS, FOUNDATION ELEMENTS, RETAINING WALLS, LIGHT POLES, BOLLARDS, SIGNPOSTS, FENCES. ADDITIONALLY, STORMTRAP IS NOT RESPONSIBLE FOR INSTALLATION CONFLICTS ARISING FROM ANY OF THESE NEARBY STRUCTURES. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY. FOR LIGHT POLES SHOWN OVER THE TOP OF THE SYSTEM, STORMTRAP WILL PROVIDE A 5'-0" LATERAL DISTANCE CAVITY AROUND THE LIGHT POLE TO ACCOMMODATE IT. THE EOR TO TAKE RESPONSIBILITY FOR ENSURING THE LIGHT POLE IS NOT INFLICTING ANY LOADING ON THE STORMTRAP MODULES AND FOUNDATION.

2. TREE LOADING DISCLAIMER:

   THE NUMBER OF TREES OR WEIGHT OF TOTAL PLANT MATERIAL PRESENT ON TOP OF A SINGLE STORMTRAP MODULE SHALL NOT EXCEED 18,000 LBS. THE REQUIREMENTS LISTED HERE APPLY AT BOTH THE TIME OF INSTALLATION AND FOR THE LIFE OF THE TREES AND PLANTS IN QUESTION. THE EOR AND LANDSCAPE ARCHITECT ARE RESPONSIBLE FOR ENSURING THAT TREE AND OTHER PLANT ROOTS DO NOT INTERFERE WITH OR COMPROMISE THE FUNCTIONAL AND STRUCTURAL INTEGRITY OF STORMTRAP'S UNDERGROUND MODULES. APPROPRIATE MEASURES SHOULD BE TAKEN TO PREVENT ROOT GROWTH INTO THE STORMTRAP SYSTEM FROM ADJACENT OR OVERHEAD TREES. FURTHERMORE, THE ROOTS OF THE TREES MUST BE CONTAINED TO PREVENT FUTURE DAMAGE TO THE STORMTRAP SYSTEM. STORMTRAP ACCEPTS NO LIABILITY FOR DAMAGES CAUSED BY TREES OR OTHER VEGETATION PLACED AROUND OR ON TOP OF THE SYSTEM.

3. PRE-TREATMENT/SEDIMENT/FILTER CHAMBER DISCLAIMER:

   FOR SYSTEMS CONTAINING PRE-TREATMENT, SEDIMENTATION AND/OR FILTER CHAMBERS; IF REQUIRED TO BE SEALED TO PREVENT SAND AND/OR PRE-TREATED WATER FROM MIGRATING INTO ADJOINING MODULES, IT IS THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT THOSE MODULES ARE SEALED.

4. OUTLET CONTROL STRUCTURE DISCLAIMER (IF SHOWN ON THESE PLANS):

   IF A WATERTIGHT SOLUTION IS REQUIRED FOR AN OUTLET CONTROL STRUCTURE, ALL EXTERIOR COLD JOINTS, INCLUDING JOINT BETWEEN TOP AND BASE MODULES, BETWEEN TOP AND BASE OF ADJOINING SYMONS WALLS, AND JOINTS BETWEEN MODULE AND ADJACENT END PANELS WILL BE THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO PROVIDE AND INSTALL THE WATERTIGHT APPLICATION PER THE EOR'S SPECIFICATION.

StormTrap
PATENTS LISTED AT: [WWW.STORMTRAP.COM/PATENTS]
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
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ENGINEER INFORMATION:
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THUNDERBIRD
BEACH RESORT
Treasure Island, FL

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SCALE:
NTS

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
1.0

STRUCTURAL DESIGN LOADING CRITERIA

LIVE LOADING:	AASHTO HS-20 HIGHWAY LOADING
GROUND WATER TABLE:	BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE:	2500PSF
SOIL DENSITY:	120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE:	35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE:	80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES:	ASTM C857 ACI-318
BACKFILL TYPE:	SEE SHEET 4.0 FOR BACKFILL OPTIONS

STORMTRAP SYSTEM INFORMATION

UNIT HEADROOM:	1'-7" SINGLETRAP	
TOTAL STORAGE PROV:	11,779.76	CUBIC FEET
SYSTEM STORAGE PROV @ 3.90':	6,709.99	CUBIC FEET

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/ OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 0.52" MAX. 1.32" CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.

1'-7" SINGLETRAP

StormTrap
PATENTS LISTED AT: [WWW.STORMTRAP.COM/PATENTS]
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4548 / F:331-318-5547

ENGINEER INFORMATION:
CFB, INC
314 S MISSOURI AVE
SUITE 101
CLEARWATER, FL
727-519-1030

PROJECT INFORMATION:
THUNDERBIRD
BEACH RESORT
Treasure Island, FL

CURRENT ISSUE DATE:
4/4/2025

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PRELIMINARY

REV.	DATE:	ISSUED FOR:	DWN BY:
1	04/04/25	PRELIMINARY	BS

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SHEET TITLE:
SINGLETRAP DESIGN CRITERIA

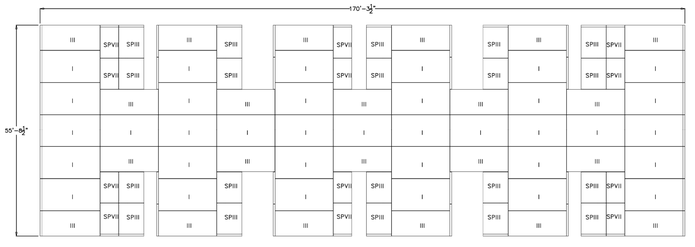
SHEET NUMBER:
1.1

BILL OF MATERIALS

QTY.	UNIT TYPE	DESCRIPTION	WEIGHT
35	I	1'-7" SINGLETRAP	13037
0	II	1'-7" SINGLETRAP	--
22	III	1'-7" SINGLETRAP	10908
0	IV	1'-7" SINGLETRAP	--
0	VII	1'-7" SINGLETRAP	--
0	VII-1	1'-7" SINGLETRAP	--
0	VII-2	1'-7" SINGLETRAP	--
0	VII-3	1'-7" SINGLETRAP	--
0	VII-4	1'-7" SINGLETRAP	--
20	SPIII	1'-7" SINGLETRAP	VARIES
12	SPVII	1'-7" SINGLETRAP	VARIES
28	72 PANEL	8" THICK PANEL	1314
14	74 PANEL	8" THICK PANEL	1035
6	77 PANEL	8" THICK PANEL	755
18	JOINTWRAP	150' PER ROLL	
0	JOINTAPE	14.5' PER ROLL	
TOTAL PIECES = 89			
TOTAL PANELS = 46			
HEAVIEST PICK WEIGHT = 13,037			

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 6.40'
ALLOWABLE MIN GRADE = 5.60'
INSIDE HEIGHT ELEVATION = 4.58'
SYSTEM INVERT = 3.00'

NOTES:
1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP - INDICATES A MODULE WITH MODIFICATIONS.
5. P - INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.
7. IN ORDER FOR STORMTRAP TO GENERATE APPROVAL DRAWINGS, CIVIL ENGINEERING DRAWINGS MUST BE PROVIDED TO STORMTRAP AND SHALL INCLUDE ALL PIPE SIZES, PIPE MATERIAL, PIPE INVERT ELEVATIONS, ACCESS OPENING SIZE AND SHAPE. IN ADDITION, FINAL GRADING PLANS SHALL ALSO INCLUDE MINIMUM AND MAXIMUM GRADES OVER THE TOP OF THE STORMTRAP SYSTEM.



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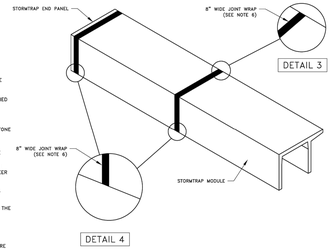
SINGLETRAP SYSTEM LAYOUT

SHEET NUMBER:
2.0

STORMTRAP INSTALLATION SPECIFICATION

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891 (STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES). THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS ARE PROVIDED FOR EMPHASIS. THE MENTION OF THESE ITEMS DOES NOT PRECLUDE THE INSTALLING CONTRACTOR FROM FOLLOWING ASTM C891 IN ITS ENTIRETY AND IMPLEMENTING ALL APPROPRIATE MEASURES. THE INSTALLING CONTRACTOR OWNS AND IS RESPONSIBLE FOR THE STORMTRAP SYSTEM UPON REMOVAL OF THE MODULES FROM THE DELIVERY TRUCK THROUGH "FINAL CONSTRUCTION". FINAL CONSTRUCTION IS ACHIEVED WHEN ALL MODULES ARE SET, FULLY BACKFILLED, AND WHEN FINAL FINISHED GRADES ARE REACHED. THE CONTRACTOR IS RESPONSIBLE FOR ANY COUNTERMEASURES NECESSARY TO RESIST UPLIFT/BUOYANCY BEFORE "FINAL CONSTRUCTION" IS ACHIEVED.
2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO ENSURE THAT PROPER/ADEQUATE EQUIPMENT IS USED TO SET/INSTALL THE MODULES.
3. THE AGGREGATE FOUNDATION HAS BEEN DESIGNED BASED ON THE FOLLOWING ASSUMPTIONS. THESE ASSUMPTIONS WILL NEED TO BE VERIFIED BY A GEOTECHNICAL ENGINEER WHICH WILL NEED TO BE EMPLOYED BY THE OWNER.
   3.1. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO PROVIDE ASSISTANCE IN EVALUATING THE EXISTING SOIL CONDITIONS BELOW THE PROPOSED ENGINEERED STONE FOUNDATION. IF A STONE FOUNDATION DESIGN IS TO BE USED, THE BEARING PRESSURE OF THE SOILS BELOW THE STONE WILL NEED TO MEET OR EXCEED ALLOWABLE CAPACITY. IF THIS IS NOT POSSIBLE, THE STONE FOUNDATION MAY NOT BE AN OPTION FOR THIS LOCATION.
   3.2. A QUALIFIED GEOTECHNICAL ENGINEER WILL BE EMPLOYED, BY OWNER, TO EVALUATE A SOURCE OF STONE AGGREGATES THAT WILL BE PLACED ON PROPERLY COMPACTED SOILS (SEE SHEET 1.1 FOR SOIL BEARING CAPACITY REQUIREMENTS). THE AGGREGATE BASE COURSE FOR WHICH THE STORMTRAP SYSTEM WILL BEAR DIRECTLY ON SHALL CONSIST OF A 3" THICK BED OF ¾" DIAMETER ANGULAR STONE, WELL COMPACTED AND LEVELED, WITH NO FINES; AND A 1'-0" THICK BED OF 3" ANGULAR AGGREGATE (SEE SHEET 4.0 FOR FURTHER DESCRIPTION/EXPLANATION). PLEASE NOTE THAT THESE ARE ONLY MINIMUM RECOMMENDATIONS AND A QUALIFIED GEOTECHNICAL ENGINEER SHALL BE USED TO DETERMINE THE EXACT REQUIREMENTS FOR THE LOCATIONS THAT THE STORMTRAP SYSTEM IS TO BE LOCATED.
   3.3. THE CONTRACTOR SHALL REMOVE ANY AND ALL EXPANDABLE OR COLLAPSIBLE SOILS AT THE DIRECTION OF A QUALIFIED GEOTECHNICAL ENGINEER.
   3.4. THE AGGREGATE FOUNDATION SHALL BE INSTALLED SUCH THAT THE AGGREGATE EXTENDS A MINIMUM OF 2'-0" PAST THE OUTSIDE OF THE SYSTEM (SEE DETAIL 1).
   3.5. THE ¾" AGGREGATE SHALL BE COMPACTED USING A VIBRATING ROLLER WITH ITS' FULL DYNAMIC FORCE APPLIED TO ACHIEVE A FLAT SURFACE.
   3.6. DISK, DRY AND COMPACT THE TOP 8" OF THE SUBGRADE SOILS TO 95% OF THE STANDARD DRY DENSITY AND 110% OPTIMUM MOISTURE CONTENT.
   3.7. AGGREGATE SHALL BE GRADED WITHIN +/- ½" OF THE GRADE SHOWN ON THE PLANS.
   3.8. MINIMUM SOIL BEARING CAPACITY LISTED ON SHEET 1.1 SHALL BE VERIFIED IN FIELD BY OTHERS.
4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MAXIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED ¾" (SEE DETAIL 2). IF THE SPACE EXCEEDS ¾", THE MODULES SHALL BE RESET WITH APPROPRIATE ADJUSTMENT MADE TO LINE AND GRADE TO BRING THE SPACE INTO SPECIFICATION.
5. STORMTRAP MODULES ARE NOT WATERTIGHT. IF A WATERTIGHT SOLUTION IS REQUIRED, CONTACT STORMTRAP FOR RECOMMENDATIONS. THE WATERTIGHT APPLICATION IS TO BE PROVIDED AND IMPLEMENTED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SELECTED WATERTIGHT SOLUTION PERFORMS AS SPECIFIED BY THE MANUFACTURER.
6. ALL EXTERIOR ROOF AND EXTERIOR VERTICAL WALL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 8" WIDE PRE-FORMED COLD-APPLIED, SELF-ADHERING ELASTOMERIC RESIN, FORMED TO A WOVEN , HIGHLY PUNCTURE RESISTANT POLYMER WRAP, CONFORMING TO ASTM C891 AND SHALL BE INTEGRATED WITH PRIMER SEALANT AS APPROVED BY STORMTRAP (SEE DETAILS 2, 3, & 4). THE JOINT WRAP DOES NOT PROVIDE A WATERTIGHT SEAL. THE SOLE PURPOSE OF THE JOINT WRAP IS TO PROVIDE A SLIT AND SOIL TIGHT SYSTEM. THE ADHESIVE EXTERIOR JOINT WRAP SHALL BE INSTALLED ACCORDING TO THE FOLLOWING INSTALLATION INSTRUCTIONS:
   6.1. USE A BRUSH OR WET CLOTH TO THOROUGHLY CLEAN THE OUTSIDE SURFACE AT THE POINT WHERE THE JOINT WRAP IS TO BE APPLIED.
   6.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE (ADHESIVE SIDE DOWN) AROUND THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.
7. IF THE CONTRACTOR NEEDS TO CANCEL ANY SHIPMENTS, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE. IF CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.
8. IF THE STORMTRAP MODULE(S) IS DAMAGED IN ANY WAY PRIOR, DURING, OR AFTER INSTALL, STORMTRAP, MUST BE CONTACTED IMMEDIATELY TO ASSESS THE DAMAGE AND TO DETERMINE WHETHER OR NOT THE MODULE(S) WILL NEED TO BE REPLACED. IF ANY MODULE ARRIVES AT THE JOBSITE DAMAGED DO NOT UNLOAD IT, CONTACT STORMTRAP, IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.
9. STORMTRAP MODULES CANNOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.



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SHEET TITLE:
SINGLETRAP INSTALLATION SPECIFICATION

SHEET NUMBER:
3.0

BY	DES
REVISIONS	
DATE	4/29/2025
	ADDED FDOT S46 DETAIL

CFB | CLYMER FARNER BARLEY
CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(352)/748-3126

THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

CONSTRUCTION DETAILS

SAVE DATE	6/6/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	009 - T_BIRD.DETAILS

SHEET NUMBER 09

(S:\PINELLAS\THUNDERBIRD BEACH RESORT\01_CONSTRUCTION\009 - T_BIRD_DETAILS.dwg) PLOT DATE=6/6/2025 9:49 AM SAVE DATE: 6/6/2025 LAST SAVED BY: DSTONE

ZONE CHART

ZONES	ZONE DESCRIPTIONS	REMARKS
ZONE 1A	FOUNDATION AGGREGATE;	#5 (3") STONE ANGULAR AGGREGATE (SEE NOTE 4 FOR DESCRIPTION)
ZONE 1B	FOUNDATION AGGREGATE (INFILTRATION NOT ALLOWED)	3" RECYCLED CRUSHED CONCRETE (SEE NOTES 3 & 4 FOR DESCRIPTION)
	FOUNDATION AGGREGATE (INFILTRATION ALLOWED)	3" STONE AGGREGATE (SEE NOTE 5)
ZONE 2	BACKFILL	UNIFIED SOILS CLASSIFICATION (GW, GP, SW, SP) OR SEE BELOW FOR APPROVED BACKFILL OPTIONS
ZONE 3	FINAL COVER OVERTOP	MATERIALS NOT TO EXCEED 120 PCF

APPROVED ZONE 2 BACKFILL OPTIONS

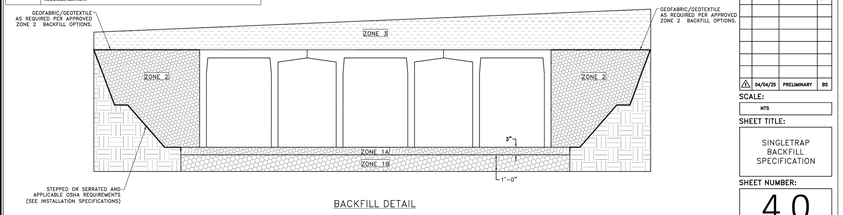
OPTION	REMARKS
3" STONE AGGREGATE	THE STONE AGGREGATE SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR STONE WITH NO MORE THAN 5% PASSING THE #8 SIEVE, PASSING THE #8 SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE, THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL (ASTM SIZE #57) AS DETERMINED BY THE GEOTECHNICAL ENGINEER
SAND	IMPORTED PURE SAND IS PERMITTED TO BE USED AS BACKFILL IF IT IS CLEAN AND FREE DRAINING, THE SAND USED FOR BACKFILLING SHALL HAVE LESS THAN 40% PASSING #40 SIEVE AND LESS THAN 5% PASSING #200 SIEVE, THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE SAND BACKFILL.
CRUSHED CONCRETE AGGREGATE	CLEAN, FREE DRAINING CRUSHED CONCRETE AGGREGATE MATERIAL CAN BE USED AS BACKFILL FOR STORMTRAP'S MODULES, THE SIZE OF THIS MATERIAL SHALL HAVE 100% PASSING THE 1" SIEVE WITH 0% TO 5% PASSING THE #8 SIEVE. THIS MATERIAL SHALL BE SEPARATED FROM NATIVE MATERIAL USING GEOFABRIC AROUND THE PERIMETER OF THE BACKFILL
ROAD PACK	STONE AGGREGATE 100% PASSING THE 1-1/2" SIEVE WITH LESS THAN 12% PASSING THE #200 SIEVE (ASTM SIZE #467). GEOFABRIC AS PER GEOTECHNICAL ENGINEER RECOMMENDATION.

FILL DEPTH	TRACK WIDTH	MAX VEHICLE WEIGHT (KIPS)	MAX GROUND PRESSURE
12"	12"	51.8	1690 psf
	18"	56.1	1219 psf
12"	24"	68.1	1111 psf
	30"	76.7	1000 psf
	36"	85.0	924 psf

NOTE:
TRACK LENGTH NOT TO EXCEED 15'-4".
ONLY TWO TRACKS PER VEHICLE.

STORMTRAP ZONE INSTALLATION SPECIFICATION/PROCEDURE

1. THE FILL PLACED AROUND THE STORMTRAP MODULES MUST BE DEPOSITED ON BOTH SIDES AT THE SAME TIME AND TO APPROXIMATELY THE SAME ELEVATION, AT NO TIME SHALL THE FILL BEHIND ONE SIDE WALL BE MORE THAN 2'-0" HIGHER THAN THE FILL ON THE OPPOSITE SIDE. BACKFILL SHALL EITHER BE COMPACTED AND/OR VIBRATED TO ENSURE THAT BACKFILL AGGREGATE/STONE MATERIAL IS WELL SEATED AND PROPERLY INTER LOCKED. CARE SHALL BE TAKEN TO PREVENT ANY WEDGING ACTION AGAINST THE STRUCTURE, AND ALL SLOPES WITHIN THE AREA TO BE BACKFILLED MUST BE STEPPED OR SERRATED TO PREVENT WEDGING ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISRUPT THE JOINT WRAP FROM THE JOINT DURING THE BACKFILL PROCESS. BACKFILL MUST BE FREE-DRAINING MATERIAL. SEE ZONE 2 BACKFILL CHART ON THIS PAGE FOR APPROVED BACKFILL OPTIONS. IF NATIVE EARTH IS SUSCEPTIBLE TO MIGRATION, CONFIRM WITH GEOTECHNICAL ENGINEER AND PROVIDE PROTECTION AS REQUIRED (PROVIDED BY OTHERS), ALL MODULES MUST BE SET AND ALL SIDES MUST BE FULLY BACKFILLED BEFORE TRAVEL OVERTOP THE SYSTEM IS PERMITTED. SEE NOTE 2 FOR EXCEPTIONS AND LIMITATIONS.
2. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED IN MINIMUM 6" LIFTS. AT NO TIME SHALL MACHINERY OR VEHICLES GREATER THAN THE DESIGN LIVE LOAD LISTED ON SHEET 1.0 TRAVEL OVERTOP THE SYSTEM. IF TRAVEL OVER THE SYSTEM OCCURS BEFORE THE MINIMUM DESIGN COVER IS ACHIEVED, IT MAY BE NECESSARY TO REDUCE THE ULTIMATE LOAD/BURDEN OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE DESIGN CAPACITY OF THE SYSTEM. VEHICLES AND MACHINERY USED TO PLACE FILL MATERIAL ON TOP OF THE SYSTEM SHALL TRAVEL PARALLEL TO THE LONGITUDINAL AXIS OF THE STORMTRAP MODULES WHENEVER POSSIBLE.
3. THE VIBRATORY FUNCTION OF ANY ROLLER, COMPACTOR, VEHICLE, ETC. SHALL NOT BE USED OVERTOP THE SYSTEM WITHOUT PRIOR APPROVAL FROM STORMTRAP. IN SOME CASES, HAND COMPACTION MAY BE NECESSARY TO ENSURE THAT THE ALLOWABLE DESIGN LOADING IS NOT EXCEEDED.
4. FREE DRAINING ANGULAR AGGREGATE – #04 AGGREGATE RETAINED ON 2" SIEVE MAJORITY OF AGGREGATE SIZE BETWEEN 2" AND 1" ONLY 5% OF MATERIAL PASSING #8 SIEVE.
5. FREE DRAINING, NO FINES, 3" ANGULAR AGGREGATE – MAJORITY OF STONE SIZE IN BETWEEN 1½" AND 3" – VERY SIMILAR TO AASHTO (#1, #2, #3, & #24) STONE AGGREGATE GRADATION.
6. CRUSHED CONCRETE AGGREGATE IS KNOWN TO REACT WITH WATER AND CAN INCREASE THE PH VALUE OF THE GROUND WATER. PRIOR TO USING CRUSHED CONCRETE AGGREGATE IN ZONE 1B IT IS IMPERATIVE THAT THE USE OF SUCH MATERIAL SHALL BE VERIFIED BY THE EOR AND/OR THE PROJECT GEOTECHNICAL ENGINEER.



BACKFILL DETAIL

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SHEET TITLE: SINGLETRAP BACKFILL SPECIFICATION

SHEET NUMBER: 4.0

ACCESS OPENING SPECIFICATION

1. A TYPICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'-0" IN DIAMETER. ACCESS OPENINGS LARGER THAN 4'-0" IN DIAMETER NEED TO BE APPROVED BY STORMTRAP. ALL OPENINGS MUST RETAIN AT LEAST 2'-0" OF CLEARANCE FROM THE END OF THE STORMTRAP MODULE UNLESS NOTED OTHERWISE. ALL ACCESS OPENINGS TO BE LOCATED ON INSIDE LEG UNLESS OTHERWISE SPECIFIED. SEE SHEET 2.0 FOR SIZES AND LOCATIONS.
2. UNLESS OTHERWISE SPECIFIED, PLASTIC COATED STEPS ARE PROVIDED INSIDE ANY MODULE WHERE DEEMED NECESSARY. THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A DISTANCE OF 1'-0" FROM THE INSIDE EDGE OF THE STORMTRAP MODULE'S WALL. ALL ENSUING STEPS SHALL BE PLACED AT A DISTANCE BETWEEN 10" MIN AND 14" MAX BETWEEN THEM. STEPS MAY BE MOVED OR ALTERED TO AVOID OPENINGS OR OTHER IRREGULARITIES IN THE MODULE.
3. STORMTRAP LIFTING INSERTS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE RELOCATED TO AVOID INTERFERENCE WITH INLET AND/OR OUTLET PIPE OPENINGS SO PLACEMENT OF STEPS IS ATTAINABLE.
5. ACCESS OPENINGS SHOULD BE LOCATED IN ORDER TO MEET THE APPROPRIATE NATIONAL, STATE AND LOCAL REQUIREMENTS. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS PER SYSTEM FOR ACCESS AND INSPECTION.
6. USE PRECAST ADJUSTING RINGS AS NEEDED TO MEET GRADE. STORMTRAP RECOMMENDS FOR COVER OVER 2' TO USE PRECAST BARREL OR CONE SECTIONS. (PROVIDED BY OTHERS)

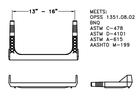
PIPE OPENING SPECIFICATION

1. MINIMUM EDGE DISTANCE FOR AN OPENING ON THE OUTSIDE WALL SHALL BE NO LESS THAN 1'-0".
2. CONNECTING PIPES MAY BE INSTALLED WITH A 1'-0" CONCRETE COLLAR AND AN AGGREGATE CRADLE (AS REQUIRED) FOR AT LEAST ONE PIPE LENGTH (SEE PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON-SHRINK GROUT WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI MAY BE USED.
3. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON-SHRINK GROUT.

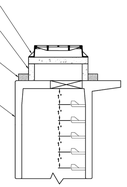
PIPE INSTALLATION INSTRUCTIONS

1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ALLOW NO SHARP EDGES. BEVEL AND LUBRICATE LEAD END OF PIPE.
3. ALIGN CENTER OF PIPE TO CORRECT ELEVATION AND INSERT INTO OPENING.

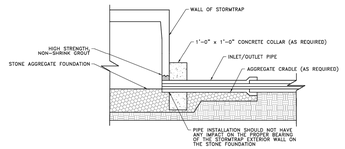
NOTE: ALL ANCILLARY PRODUCTS/SPECIFICATIONS RECOMMENDED AND SHOWN ON THIS SHEET INCLUDING BUT NOT LIMITED TO CONCRETE COLLARS, AGGREGATE CRADLES, GRADE RINGS, RISER SECTIONS, ETC., ARE RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE INSTALLING CONTRACTOR AND/OR PER LOCAL MUNICIPAL CODE/REQUIREMENTS.



STEP DETAIL



RISER/STAIR DETAIL

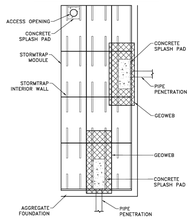


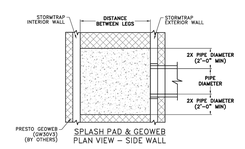
PIPE CONNECTION DETAIL
WHEN PIPE INVERT IS AT
INVERT OF STORMTRAP SYSTEM

GEOWEB AND SPLASH PAD INSTALLATION SPECIFICATION

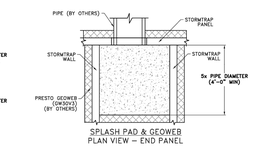
1. THE APPROVED GEOWEB SHALL BE PRESTO GEOWEB (GW30V3). THE GEOWEB NOMINAL DIMENSIONS SHALL BE 9'-7" x 25'-7".
2. THE CONCRETE SPLASH PAD AND GEOWEB SHALL BE INSTALLED PRIOR TO INSTALLATION OF THE STORMTRAP MODULES.
3. THE GEOWEB INFILL MATERIAL SHALL BE #5 AGGREGATE.
4. THE CONCRETE SPLASH PAD SHALL BE INSTALLED WITHIN THE GEOWEB AND IS REQUIRED AT ALL PIPE ENTRY LOCATIONS.
5. THE GEOWEB EDGE SHALL BE INSTALLED 1'-0"† BEYOND THE OUTER PERIMETER OF THE STORMTRAP SYSTEM.
6. THE GEOWEB LONGITUDINAL DIMENSION (25'-0") SHALL BE INSTALLED PARALLEL TO THE STORMTRAP LEGS.
7. THE CONCRETE SPLASH PAD AND GEOWEB SHALL BE CENTERED AT THE PIPE PENETRATION.
8. REFER TO SPLASH PAD LAYOUT FOR CONCRETE SPLASH PAD DIMENSIONS.
9. IF ANY PRODUCT OTHER THAN PRESTO GEOWEB IS TO BE INSTALLED, THE PRODUCT MANUFACTURER IS REQUIRED TO SUBMIT A LETTER STATING THAT THE PRODUCT IS EQUAL OR SUPERIOR TO PRESTO GEOWEB, BOTH IN PERFORMANCE AND IN STRUCTURAL CAPACITY.
10. ALL GEOWEB AND SPLASH PADS TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
11. A CONCRETE SPLASH PAD IS REQUIRED AT ANY ACCESS OPENING THAT HAS AN OPEN GRATE FOR DRAINAGE. THE CONCRETE SPLASH PAD SHALL EXTEND BETWEEN THE UNIT LEG WALLS AND 3'-0" FROM THE CENTERLINE OF THE OPENING ON BOTH SIDES UNLESS SPECIFIED OTHERWISE ON THE SPLASH PAD LAYOUT. GEOWEB IS NOT REQUIRED UNDER ACCESS OPENINGS.

SPLASH PAD CONFIGURATION





SPLASH PAD DETAIL



SPLASH PAD
ELEVATION



SPLASH PAD & GEOWEB
PLAN VIEW – SIDE WALL



SPLASH PAD & GEOWEB
PLAN VIEW – END PANEL

StormTrap
PRODUCTS LISTED AS [WWW.STORMTRAP.COM/PRODUCTS]
1207 WINDSHAW PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4548 / F:331-318-5547

ENGINEER INFORMATION:
CFB, INC
314 S MISSOURI AVE
SUITE 101
CLEARWATER, FL
727-519-1030

PROJECT INFORMATION:
THUNDERBIRD BEACH RESORT
Treasure Island, FL

CURRENT ISSUE DATE:
4/4/2025

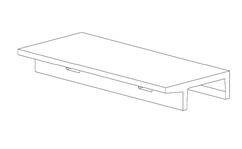
ISSUED FOR:
PRELIMINARY

REV.	DATE:	ISSUED FOR:	DWN BY:
1	04/04/25	PRELIMINARY	BS

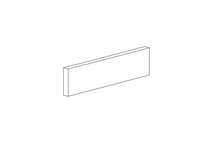
SCALE: NTS

SHEET TITLE: SPLASH PAD & GEOWEB DETAILS

SHEET NUMBER: 6.0



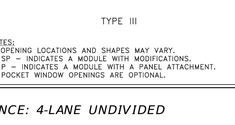
TYPE I



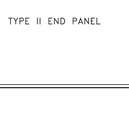
TYPE VII



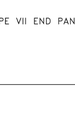
TYPE IV END PANEL



TYPE III



TYPE II END PANEL



TYPE VII END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. SP – INDICATES A MODULE WITH MODIFICATIONS.
3. P – INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WINDOW OPENINGS ARE OPTIONAL.

StormTrap
PRODUCTS LISTED AS [WWW.STORMTRAP.COM/PRODUCTS]
1207 WINDSHAW PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4548 / F:331-318-5547

ENGINEER INFORMATION:
CFB, INC
314 S MISSOURI AVE
SUITE 101
CLEARWATER, FL
727-519-1030

PROJECT INFORMATION:
THUNDERBIRD BEACH RESORT
Treasure Island, FL

CURRENT ISSUE DATE:
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PRELIMINARY

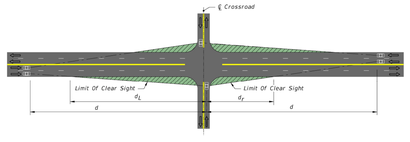
REV.	DATE:	ISSUED FOR:	DWN BY:
1	04/04/25	PRELIMINARY	BS

SCALE: NTS

SHEET TITLE: SINGLETRAP MODULE TYPES

SHEET NUMBER: 7.0

INTERSECTION SIGHT DISTANCE: 4-LANE UNDIVIDED



4-LANE UNDIVIDED

Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	295	210	100
30	335	255	120
35	415	295	135
40	475	335	155
45	530	375	175
50	590	420	195
55	650	460	215
60	705	500	230
65	765	545	250
70	825	585	270

Passenger Vehicle

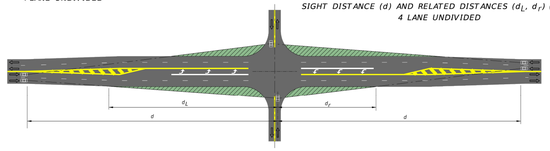
Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	375	265	125
30	430	320	150
35	525	375	175
40	600	425	200
45	675	480	220
50	750	530	245
55	825	585	270
60	900	640	295
65	975	690	320
70	1050	745	345

SU Vehicle

Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	450	320	150
30	540	385	180
35	630	450	205
40	720	510	235
45	810	575	265
50	900	640	295
55	990	700	325
60	1080	765	355
65	1170	830	385
70	1255	890	410

Combination Vehicle

SIGHT DISTANCE (d) AND RELATED DISTANCES (d_L, d_r) (FEET)
4 LANE UNDIVIDED



4-LANE UNDIVIDED WITH LEFT TURN LANE

Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	315	175	90
30	375	205	110
35	440	245	130
40	500	275	145
45	565	310	165
50	625	345	180
55	690	380	200
60	750	410	215
65	815	450	235
70	875	480	255

Passenger Vehicle

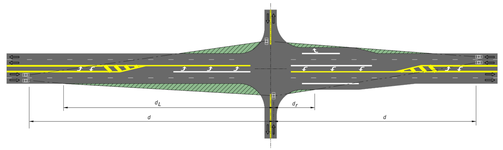
Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	400	220	115
30	480	265	140
35	560	310	165
40	640	350	185
45	720	395	210
50	800	440	230
55	880	485	255
60	960	525	280
65	1040	570	300
70	1120	615	325

SU Vehicle

Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	475	260	140
30	570	315	165
35	665	365	195
40	760	420	220
45	855	470	245
50	950	520	275
55	1045	575	300
60	1140	625	330
65	1235	675	355
70	1330	730	385

Combination Vehicle

SIGHT DISTANCE (d) AND RELATED DISTANCES (d_L, d_r) (FEET)
4-LANE UNDIVIDED WITH LEFT TURN LANE



4-LANE UNDIVIDED WITH LEFT TURN LANE AND OPTIONAL LANE

Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	315	225	70
30	375	265	80
35	440	315	95
40	500	355	110
45	565	400	120
50	625	445	135
55	690	490	150
60	750	530	160
65	815	580	175
70	875	620	190

Passenger Vehicle

Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	405	290	90
30	480	340	105
35	560	400	120
40	640	455	135
45	720	510	155
50	800	570	170
55	880	625	190
60	960	680	205
65	1040	740	220
70	1125	800	240

SU Vehicle

Design Speed (mph)	d (ft.)	d_L (ft.)	d_r (ft.)
≤ 25	475	340	105
30	570	405	125
35	665	470	145
40	760	540	165
45	855	605	185
50	950	675	205
55	1045	740	225
60	1140	810	245
65	1235	875	265
70	1330	945	285

Combination Vehicle

SIGHT DISTANCE (d) AND RELATED DISTANCES (d_L, d_r) (FEET)
4-LANE UNDIVIDED WITH LEFT TURN LANE AND OPTIONAL LANE

LEGEND
Areas Free Of Sight Obstructions

NOTE:
1. See Figure 212.11.1 for origin of clear sight line on the minor road.

NOT TO SCALE

EXHIBIT 212-5
01/01/2025

BY	DES

DATE	REVISIONS
4/29/2025	ADDED FDOT 212-5 DESIGN DETAIL

CLYMER FARNER BARLEY

CFB

CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(352)748-3126

THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

CONSTRUCTION DETAILS

SAVE DATE	6/6/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	009-T_BIRD-DETAILS

SHEET NUMBER 10

(C:\PNEL\LAST\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\009- T_BIRD-DETAILS.dwg) PLOT DATE:6/6/2025 9:36 AM SAVE DATE: 6/6/2025 LAST SAVED BY: DSTONE

AGENCY	PERMIT #	SUBMITTED	STATUS
FDOT DRAINAGE PERMIT	2025-D-799-00009	RAI#1 4/16/2025	UNDER REVIEW
FDOT UTILITY PERMIT	2025-H-799-00117	RAI#1 4/9/2025, RAI#2 4/15/2025	UNDER REVIEW
FDOT LANDSCAPE PERMIT	2025-L-799-00001	RAI#1 4/18/2025	UNDER REVIEW
SWFWMD ERP EXEMPTION	APPLICATION #914883	RAI#1 4/21/2025	UNDER REVIEW
PINELLAS COUNTY WATER	UTD-25-00224	RAI#1 4/16/2025	UNDER REVIEW

DATE	REVISIONS	BY
4/22/2025	1 REVISED PER COUNTY & FDOT COMMENTS	DES
6/04/2025	2 REV PER CITY OF TREASURE ISLAND COMMENTS	LC

LANDSCAPE PLANS
FOR
THUNDERBIRD BEACH RESORT

10700 GULF BLVD, TREASURE ISLAND, FL 33706

LEGAL DESCRIPTION

PID: 23-31-15-91926-010-0042: BK 21580 PGS 1579-1580:

PARCEL 1: THAT PART OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, BETWEEN THE NORTHERLY BOUNDARY OF SAID LOT 4 AND A LINE PARALLEL TO AND 200 FEET SOUTH AT RIGHT ANGLES FROM SAID NORTHERLY BOUNDARY OF SAID LOT 4.

PARCEL 2: THAT PART OF TRACT 7, TREASURE ISLAND UNIT NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 23, PAGE 34, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

FROM THE MOST NORTHERLY CORNER OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, RUN BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 156.22 FEET, CHORD SOUTH 32 DEGREES 27 MINUTES 10 SECONDS EAST, 156.08 FEET TO A POINT OF BEGINNING; THENCE BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 45.01 FEET CHORD SOUTH 27 DEGREES 11 MINUTES 40 SECONDS EAST, 45 FEET; THENCE SOUTH 64 DEGREES 14 MINUTES 33 SECONDS WEST, 43.31 FEET; THENCE NORTH 27 DEGREES 59 MINUTES 29 SECONDS WEST, 45.05 FEET; THENCE NORTH 64 DEGREES 14 MINUTES 33 SECONDS EAST, 43.92 FEET TO THE POINT OF BEGINNING.

PARCEL 3: LOT 5, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

PID: 23-31-15-91926-010-0050: BK 21580 PGS 1581-1582:

LOT 5, BLOCK J, CITY OF TREASURE ISLAND – BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

NOTE:

THE LEGAL DESCRIPTION PROVIDED HEREON IS FOR PERMITTING AND/OR CONSTRUCTION PURPOSES ONLY AND SHOULD NOT BE USED FOR TRANSFER OF RIGHT, TITLE OR INTEREST.

UTILITY OWNERS

SPECTRUM
ATTENTION: MR. TED BINGHAM
700 CARILLON PARKWAY, SUITE 6
ST. PETERSBURG, FLORIDA 33716-1123
PHONE: (727) 329-2847

FRONTIER COMMUNICATIONS, INC.
ATTENTION: MR. CHRIS BLAUVELT
MC: FLCW5033
1280 CLEVELAND STREET
CLEARWATER, FLORIDA 33782
PHONE: (727) 562-1130

WIDE OPEN WEST (WOW!)
FLSP2144
ATTENTION: MR. JAMES SANDMAN - CONSTRUCTION PROJECT COORDINATOR
3001 GANDY BOULEVARD NORTH
PINELLAS PARK, FLORIDA 33782
PHONE: (727) 239-0224 OFFICE

DUKE ENERGY
ATTENTION: MR. RICO ASHLEY
2166 PALMETTO STREET, BLDG. F
CLEARWATER, FLORIDA 33765
PHONE: (727) 562-5767

WATER/STORM SEWER/RECLAIMED UTILITES
BY PINELLAS COUNTY
ATTENTION: STEVE ALLEN

SANITARY SEWER UTILITIES
BY CITY OF TREASURE ISLAND



VICINITY MAP

N

1" = 500'

SECTION 23; TOWNSHIP 31 SOUTH; RANGE 15 EAST
CITY OF TREASURE ISLAND
PINELLAS COUNTY, FLORIDA
HORIZONTAL DATUM - NAD 1983 (2011 ADJ)
VERTICAL DATUM - NAVD 1988

SHEET INDEX

Sheet Number	Sheet Title
01	COVER SHEET
~~02~~	~~NOTES & SPECIFICATIONS~~
~~03~~	~~DEMO - EROSION CONTROL PLAN~~
~~04~~	~~SITE PLAN~~
~~05~~	~~PAVING GRADING & DRAINAGE PLAN~~
~~06~~	~~UTILITY PLAN~~
~~07~~	~~CONSTRUCTION DETAILS~~
~~08~~	~~CONSTRUCTION DETAILS~~
LS01	LANDSCAPE PLAN (UNDER SEPARATE COVER)
LS02	IRRIGATION PLAN, DETAILS & SPECIFICATIONS (UNDER SEPARATE COVER)

2 NOTE: REFERENCE SEPARATE CIVIL SITE CONSTRUCTION PLANS FOR THUNDERBIRD BEACH RESORT PLAN SHEETS 01-10.

OWNER/DEVELOPER
THUNDERBIRD TI HOLDINGS, LLC
4100 N. 28TH TERRACE
HOLLYWOOD, FL 33020
ATTN: GILAD OVAKMIN
(954) 924-9779

ENGINEER
CLYMER FARNER BARLEY, Inc.
314 S. MISSOURI AVE, SUITE 101
CLEARWATER, FL 33756
BRIAN A. BARKER, PE
FL. LIC. NO. 56728
(727) 519-1030

SURVEYOR
CLYMER FARNER BARLEY SURVEYING, LLC
314 S. MISSOURI AVE, SUITE 101
CLEARWATER, FL 33756
MATTHEW W. SIMPSON, PSM
FL. REG. NO. 7251
(727) 519-1030

ARCHITECT
PLISKO ARCHITECTURE, P.A. AIA
800 DREW STREET
CLEARWATER, FL 33755
ALEX PLISKO, JR.
REGISTERED ARCHITECT, AR0005966
(727) 442-7200

Leroy Chin, Jr.

Digitally signed by Leroy Chin, Jr.
DN: CN="Leroy Chin, Jr.", O=Unaffiliated, C=US
Date: 2025.06.05 17:08:47-04'00'

CLYMER FARNER BARLEY

CLYMER FARNER BARLEY, Inc.
4450 NE 83RD RD, MIDDLETON, FL 34762
(352) 748-3126

THUNDERBIRD BEACH RESORT

(S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\01 - T BIRD LANDSCAPE COVER.dwg) PLOT DATE:6/5/2025 4:20 PM SAVE DATE: 6/5/2025 LAST SAVED BY: LCHIN

LEGEND

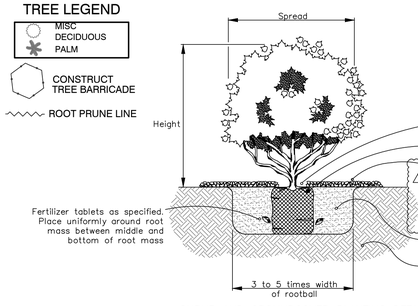
±	MORE OR LESS
BFE	BASE FLOOD ELEVATION
CCCL	COASTAL CONSTRUCTION CONTROL LINE
CONC	CONCRETE
CPB	CONDOMINIUM PLAT BOOK
NO.	NUMBER
ID	IDENTIFICATION
LB	LICENSED BUSINESS
MISC	MISCELLANEOUS
ORB	OFFICIAL RECORDS BOOK
PG	PAGE
PB	PLAT BOOK
PRM	PERMANENT REFERENCE MONUMENT
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
CI	CAST IRON
PVC	POLYVINYL CHOLRIDE
CPP	CORRUGATED PLATIC PIPE
INV	INVERT
FF	FINISHED FLOOR ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIRM	FLOOD INSURANCE RATE MAP
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FPC	FLORIDA POWER CORPORATION
R/W	RIGHT OF WAY
W/	WITH
(C)	CALCULATED MEASUREMENT
(M)	FIELD MEASUREMENT
(P)	PLAT MEASUREMENT
(D)	DEED MEASUREMENT
N'LY, E'LY, S'LY, & W'LY	GENERAL CARDINAL DIRECTION (NORTHERLY, ETC)
	FOUND CONCRETE MONUMENT (AS NOTED)
	FOUND NAIL & DISK (AS NOTED)
	FOUND IRON PIPE (AS NOTED)
	SET NAIL & DISK (LB 8498)
	SANITARY MANHOLE
	SANITARY CLEANOUT
	SEWER VALVE
	STORM MANHOLE
	GREASE TRAP
	TELEPHONE MANHOLE
	FLOOD LIGHT
	IRRIGATION CONTROL VALVE
	WATER METER
	WATER VALVE
	BACKFLOW PREVENTOR
	FIRE HYDRANT
	FAUCET
	PEDESTRIAN TRAFFIC SIGNAL POLE
	POST (NON-FENCE)
	REFLECTOR
	RECLAIMED WATER METER
	LIGHT POLE
	SIGN
	BOLLARD
	ELECTRIC RISER
	ELECTRIC TRANSFORMER
	ELECTRIC METER
	ELECTRIC OUTLET
	PULLBOX (ELECTRIC)
	PULLBOX (TRAFFIC)
	PULLBOX (UNKNOWN)
	TELEVISION RISER
	UNDERGROUND FIBER OPTIC CABLE MARKER
	GAS METER
	GATE POST
	VAULT
X	WROUGHT IRON FENCE
	CHAIN LINK FENCE
	VINYL FENCE
	EXISTING CONTOUR
	LINE BREAK
x 10.00	SPOT ELEVATION (HARD SURFACE)
x 10.0	SPOT ELEVATION (GROUND)

TREE LEGEND

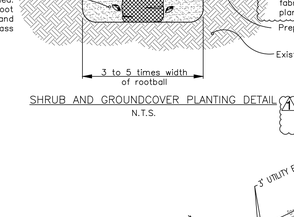
MISC DECIDUOUS PALM

CONSTRUCT TREE BARRICADE

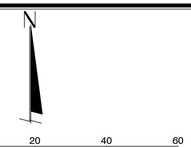
ROOT PRUNE LINE



SHRUB AND GROUNDCOVER PLANTING DETAIL
N.T.S.



PLANT SPACING DETAIL
(NO-OFFSET)



SCALE IN FEET
1" = 20'

PALM PLANTING DETAIL
N.T.S.

PLANT MATERIAL LIST

SYMBOLS	
	TREES
	"STD." GREEN BUTTONWOOD
	Ligustrum Multi–Stem
	Silver Buttonwood Tree 'Std.'
	Slender Silhouette Sweetgum
	PALMS
	Bismark Palm
	Sylvester Palm
	SHRUBS
	Carrisa 'Emerald Blanket'
	Pitch Apple (Autograph Tree)
	Dwarf Silver Buttonwood
	Dwarf Simson's Stopper
	Green Island Ficus
	Dwarf Clusia 'Nana'
	Dwarf Fire Bush
	GROUND COVERS
	Asiatic Jasmine
	Oblong Twinflower
	Seashore Paspalum Sod

⚠1 PLANT MATERIAL LIST

SEE SHEET LS02 FOR LANDSCAPE IRRIGATION INSTALLATION DETAILS, NOTES, AND SPECIFICATIONS

⚠2	COMMON NAME	BOTANICAL NAME	PLANT SIZE	REMARKS
	TREES			
6	'Standard' Green Buttonwood	Lagerstroemia indica 'Muskogee' Std.	Min. 8'–10" Ht., 2.5" Cal., FL GRADE # 1	Native, High Drought, Light FS/PS, Mod Salt single trunk
6	Ligustrum Multi–Stem	Ligustrum japonicum multi stem'	Min. 6'–7" Ht., 2." Cal., FL GRADE # 1	Non–Native, High Drought, Light FS/PS, Mod Salt multi stem
5	Silver Buttonwood Tree 'Std.'	Conocarpus erectus, 'Std.'	Min. 8'–10" Ht., 2.5" Cal., FL GRADE # 1	Native, High Drought, Light FS/PS, Mod Salt single trunk
2	Slender Silhouette Sweetgum	Liquidambar styraciflua 'Slender Silhouette'	Min. 8'–10" Ht., 2.5" Cal., FL GRADE # 1	Native, Mod. Drought, Light FS/PS, Mod Salt
	PALMS			
4	Bismark Palm, (Regenerated)	Bismarkia nibukis (Regenerated Palm)	Min. 10' Clear Trunk (C.T.) FL Grade # 1	Native, High Drought, Light FS/PS, Mod Salt.Regenerated Palm
9	Sylvester Palm	Phoenix sylvestris	Min. 10' Clear Trunk (C.T.) FL Grade # 1	Native, High Drought, Light FS/PS, Mod Salt
	SHRUBS			
62	Carrisa 'Emerald Blanket'	Carrisa macrocarpa 'Emerald Blanket'	Spr. 15" Ht. 18" FL Grade # 1	36" O.C., Non–Native, High Drought, FS/PS; High Salt
46	Pitch Apple (Autograph Tree)	Clusia rosea	Spr. 18" Ht. 24" FL Grade # 1	36" O.C., Native, High Drought, FS/PS; High Salt
77	Dwarf Silver Buttonwood	Conocarpus erectus var. serceus	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; High Salt
41	Dwarf Simson's Stopper	Myrianthes fragrans	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; High Salt
255	Green Island Ficus	Ficus microcarpus 'Green Island'	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; High Salt
86	Dwarf Clusia 'Nana'	Clusia fluminensis 'Nana'	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Non–Native; Mod. Drought, FS/PS; High Salt
40	Dwarf Fire Bush	Hamelia patens	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; Mod. Salt
	GROUND COVERS			
331	Asiatic Jasmine	Trachelospermum asiaticum	Spr.8" Ht. 6" FL Grade # 1	18" O.C. Non–Native; High Drought, FS/PS; High Salt
258	Oblong Twinflower	Dyschoriste oblongifolia	Spr.8" Ht. 6" FL Grade # 1	18" O.C. Native; High Drought, FS/PS; Non Salt
6,842	Seashore Paspalum Sod	Seashore Paspalum Sod	Square Feet	1 foot square Native; Low Drought, FS/PS; High Salt
12 cu yds	1–1.5 inch diameter wash river gravel 2 inch thick shall be washed and free of any dirt. Provide single layer of Geo–tech fabric with 1 ft. overlap and cut cross where plants to be planted.			
8 cu yds	Groundcover beds wash river pea gravel @ 2 inches thick – Note all washed river gravel bed receive single layer of Geo–tech fabric, with 1 ft overlap and cut cross where plants to be planted.			

⚠2 NOTE: REFERENCE SEPARATE CIVIL SITE CONSTRUCTION PLANS FOR THUNDERBIRD BEACH RESORT PLAN SHEETS 01-10.

TREE PLANTING DETAIL
N.T.S.

DATE	REVISIONS	BY
4/23/2025	REVISIONS 1 PER FDOT COMMENTS	LC
5/5/2025	REVISION 2 PER CITY OF TREASURE ISLAND	LC

CFB | CLYMER FARNER BARLEY
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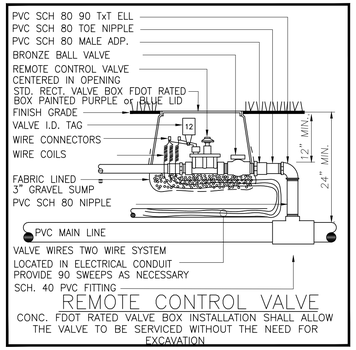
THUNDERBIRD BEACH RESORT RENOVATION
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

LANDSCAPE PLAN

SAVE DATE	3/17/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025-00362
FILE NAME	007 - T_BIRD-LA

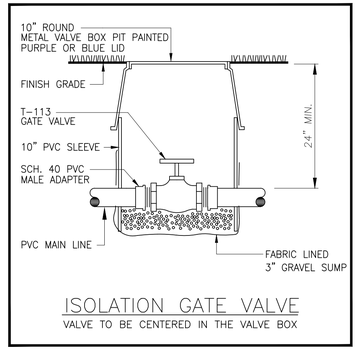
SHEET NUMBER LS01

S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\007 - T_BIRD-LA.dwg PLOT DATE=5/5/2025 5:00 PM SAVE DATE: 4/8/2025 LAST SAVED BY: LOWN



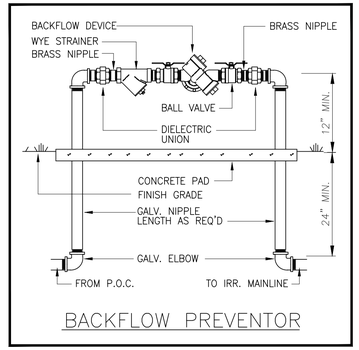
REMOTE CONTROL VALVE

CONC. FDOT RATED VALVE BOX INSTALLATION SHALL ALLOW THE VALVE TO BE SERVICED WITHOUT THE NEED FOR EXCAVATION.

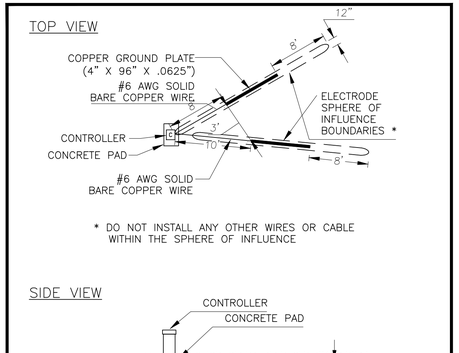


ISOLATION GATE VALVE

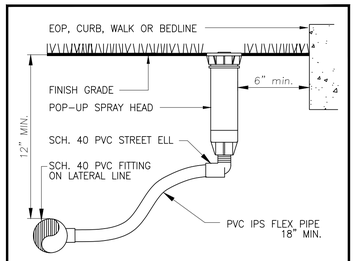
VALVE TO BE CENTERED IN THE VALVE BOX



BACKFLOW PREVENTOR

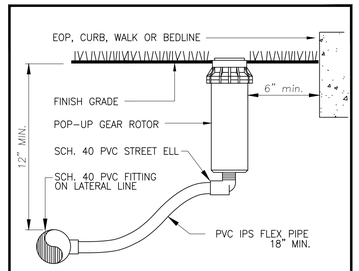


CONTROLLER GROUNDING



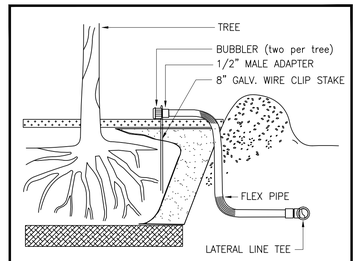
TURF SPRAY HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE



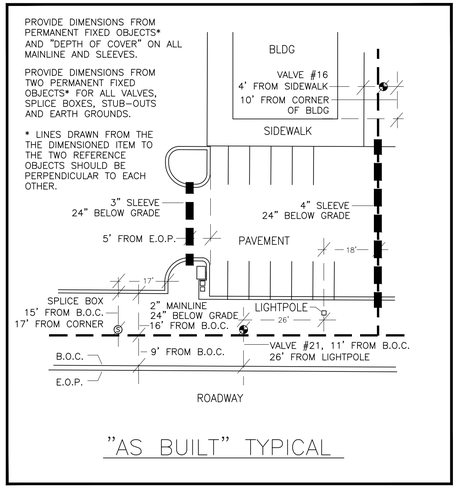
TURF ROTOR HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE

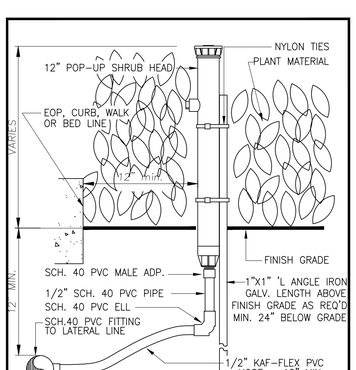


TREE BUBBLER

INSTALL FLEX PIPE (LOCATION AND DEPTH) TO BE PROTECTED FROM MAINTENANCE OPERATIONS (EDGING, MOWING)

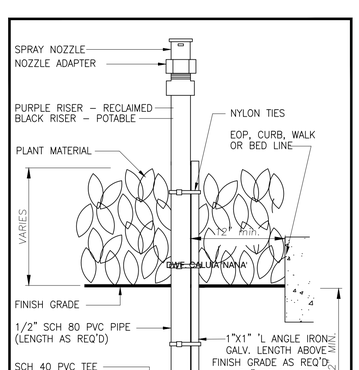


"AS BUILT" TYPICAL



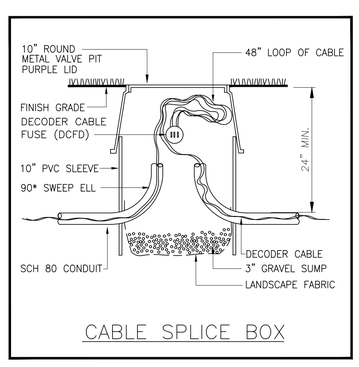
SHRUB SPRAY HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE



SHRUB SPRAY HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE



CABLE SPLICE BOX

Know what's **below.**
Call before you dig.

TICKET NUMBER(S): 005101564
#

FIELD CHANGES:

This Irrigation Design was based on the most recent site and landscape plan available to the Irrigation Designer at the time of the design. The following irrigation principals were incorporated into this design:

- Dedicated bubbler zones for all new trees.
- Dedicated spay zones for all new annual beds.
- Landscape beds and sod are on separate zones.
- Spray heads and rotator / rotors are on separate zones.
- All sprinkler heads within a zone are "matched precipitation rate".
- "Single row" sprinklers (along edge of pavement, fence line, pond bank) are on separate zones from areas covered by "square" or "triangular" spaced sprinklers.

Site and / or Landscape changes that were made after the time of this design will require Field Changes. Field Changes made by the Irrigation Contractor that do not incorporate these irrigation principals will not be accepted and will be corrected at the Irrigation Contractors expense.

Hunter Two Wire – Grounding and Shielding

At the very minimum, the grounding circuit for a decoder will include a copper ground plate and may also include 50 Pounds/22 kg of earth contact material, as defined below and Per the following detail. The copper grounding plate assemblies must meet the minimum requirements of section 250 of the NEC. They are to be made of a copper alloy intended for grounding applications and will have minimum dimensions of 4" x 36" x 0.0625" (100 mm x 1.2 m x 1.58 mm). A 10–foot/3 m continuous length (no splices allowed unless using exothermic welding process) of 10 "AWG/5 mm2 solid bare copper wire is to be attached to the plate using an approved welding process. This wire is to be connected to the decoder's ground wire and 10 AWG/5 mm2 bare copper "shielding wire" as shown in wiring details. A 50–pound/22 kg bag of earth contact material must be spread so that it surrounds the copper plate evenly along its length within a 6"/15 cm wide trench per detail below. Salts, fertilizers and other chemicals are not to be used in an attempt to improve soil conductivity because these materials are corrosive and will cause the copper conductors and electrodes to erode and become less effective with time. Ø Install all grounding circuit components in straight lines. When it is necessary to make bends, do not make sharp turns. To prevent the electrode–discharged energy from re–entering the underground cables, all electrodes shall be installed 6 to 8 feet/2 to 2.5 m away from said cables, and at right angles to the two–wire path. If more than one electrode is used to achieve lower resistance, the spacing between any two electrodes shall be 15 to 20 feet/4.5 to 6 m, so that they don't compete for the same soil. Ø The earth–to–ground resistance of this circuit is to be no more than 10 ohms. If the resistance is more than 10 ohms, then additional ground plates and earth contact material are to be installed in the direction of an irrigated area. It is required that the soil surrounding copper electrodes be kept at a minimum moisture level of 15% at all times by dedicating an irrigation station at each controller location.

IRRIGATION NOTES:

1. Irrigation system design requirements: 30 GPM @ a minimum of 60 PSI at the point of connection 1.5 inch reclaim water meter. The Irrigation Contractor shall verify the available GPM and PSI prior to installation of the system. See site plan for information for reclaim point of connection and location of irrigation controller equipment. Coordinate with General Contractor for electrical service for irrigation controller of the irrigation system. The irrigation contractor shall not deviate installation of the irrigation system base on the specifications and details on this sheet. Design of the irrigation system shall be based on the installation details shown on this sheet and designed by licensed irrigation contractor, certified irrigation designer or by a landscape architect, construction permit shall be amended in providing the irrigation plans for review by the permitting dept.
2. Do not willfully install the irrigation system as shown on the drawings when it is obvious in the field that conditions exist that might not have been considered in the design process. For example : obstructions, grade differences, water levels, dimensional differences, etc. Refer to the Landscape Plan to avoid conflicts with proposed trees or shrubs.
3. Piping may sometimes be indicated as being located in unlikely areas: i.e., under buildings or pavement, outside of property lines, in lakes or ditches, etc. This is done for graphic clarity only. Whenever possible, piping is to be installed in open, green" areas.
4. If required, the Irrigation Contractor shall provide the necessary "Right of Way" use permits.
5. Pipe sizes shall conform to those on the drawings. Substituting with smaller pipe sizes will not be permitted.
6. Mainline is to be installed with a minimum of 18"-24" depth of cover. Lateral lines are to be installed with a minimum of 12" depth of cover.
7. Unless otherwise indicated, all sleeves are to be PVC Sch 40 and two (2) nominal sizes larger than the pipe to be sleeved. For example: The sleeve for a 2" pipe shall be 3". No irrigation sleeve shall be smaller than 2". Sleeves under paved surfaces shall be installed by the SITE CONTRACTOR UNDER ALL PAVED SURFACES. Sleeves shall extend beyond paved surfaces a minimum of 8-inches and end of pipes shall be ducted taped. A 3'x2"x"2 inch stake shall be staked at each end of stake irrigation sleeve. Blue for potable irrigation sleeve; Purple for reclaim sleeves, stake shall be driving a minimum of 1 foot into the ground and 2 feet of above the finish grade. Irrigation contractor shall coordinate location of irrigation sleeves with the site contractor.
8. Wherever practical, install valves in mulched beds and/or out of high traffic areas. All valves and wire splices shall be installed in fiber concrete valve boxes with diamond plated steel lids (available from Ferguson Waterworks):

Remote Control Valves	(16"w x 25"l x 12"h) std. rect. box
Isolation Gate Valves	(16"w x 25"l x 12"h) std. rect. box
Wire Splices	(16"w x 25"l x 12"h) std. rect. box

9. The bottom and sides of the valve boxes shall be lined with landscape fabric. Install a 3" deep bed of gravel on the landscape fabric to create a drainage sump.
10. All valve box are fiber concrete 13" 24"x12" BOX W.CI RDR LID Model No. SP-A0132412M with metal flap LIDS to be painted "PURPLE" for reclaim and painted "BLUE" for irrigation potable water BY IRRIGATION CONTRACTOR provide sample paint colors to Owner for approval prior to painting lids. Unpainted FDOT traffic rated boxes are available from Ferguson Waterworks, FEL-Tampa FL Waterworks #044, 8008 E. Sligh Ave. Tampa, FL. 33610-0000, phone 813-627-1240, fax 813-627-1299. No substitution will be accepted for this line item unless approved by Owner.
11. Refer to Valve Designation Symbols for controller, station number and designed flow rate for each remote control valve.
12. The two-wire path between the controller and the decoders shall be two (2) UL Listed, single strand, type UF 600 Volt control cables (12-1 AWG). Use one (1) RED and one (1) BLUE colored wire to match color coded connections on the Decoders. Maximum distance from the controller to the furthest decoder shall be 1,500'. Install Decoder Cable in a 1" PVC conduit. Provide electrical eels sweeps in solenoid valve boxes and splice boxes.
13. All Decoders shall be installed in the valve box along with the solenoid that they are connected to.
14. All splices to the control wiring shall be made with 3M #DB_6 600 volt, UL Listed direct bury splice kits Use "yellow" or "red" kits as needed. All control wires shall be installed in electrical conduits no small than 1 inch diameter with 90 degree sweeps.
15. All pop-up sprinkler heads shall be installed level and flush to grade. Mount all sprinklers on flexible connections as follows:

1/2" inlet spray heads	18" of ½" Heavy Wall PVC IPS Hose
3/4" inlet rotor heads	18" of ¾" Heavy Wall PVC IPS Hose

16. The tops of all shrub sprinklers shall be installed 12" above the height of the surrounding plant material. For plant heights of 12" or more, support the riser with a 1"x1' galvanized 'L' stake and nylon cable ties. All risers shall be placed a minimum of 12" from any sidewalk, edge of pavement or structure and a minimum of 24" below finish grade ant 2 inches below top of irrigation head..
17. Location of all sprinkler heads shall be site adjusted to minimize water overthrow onto building surfaces and walkways. Throttle valves on spray zones as required to prevent fogging.
18. Exact controller location(s) shall be coordinated with an Owner's Representative prior to installation. Unless otherwise stated, the General Contractor shall provide 110 volt power to the controller location(s). The Irrigation Contractor is responsible for the connection from the power source to the controller(s). For outdoor mounted controllers, the 110 volt service to the irrigation controller shall be in conduit. All 110 volt electrical work shall meet Local Code.
19. At each irrigation controller, install a "secondary surge arrester" to the incoming (120 volt) power supply (Intermatic #AG2401 or equal).
20. At each irrigation controller, install an "supplementary earth ground grid" with a minimum of two (2) 4" x 96" grounding plates. Test the resistance to earth per NFPA Standard #780. A acceptable earth ground should have 10 ohms or less resistance. Use more plates or grounding rods as needed to achieve the desired resistance reading.
21. The wireless rain shutoff device shall be installed to meet local codes and/or minimum manufacturer's recommendations. Obstructions, vandalism and ease of service shall be considered in locating the device.
22. The IRRIGATION CONTRACTOR shall prepare an AS-BUILT drawing on reproducible paper detailing the actual installation of the irrigation system. The AS-BUILT drawings shall locate all main line piping, control wires, wire splices, sleeves and valves by showing exact measurements from permanent features (buildings, edge of pavement, power poles, fire hydrants, etc.). Include depth of cover on mainline and sleeves. AS-BUILT Irrigation drawings shall be provide prior to final payment and reviewed by the Owner and his representative.
23. No product substitutions will be permitted without the written permission of the Owner's Representative. Irrigation Contractor to provide submittals to the Owner's Representative for approval prior to installation.
24. Any other equipment required that is not other wise detailed or specified shall be installed as per manufacturer's recommendations and local code.

BY	DATE	REVISIONS

CLYMER FARNER BARLEY
CFB
CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(863)-465-1166

THUNDERBIRD BEACH RESORT RENOVATION
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

IRRIGATION PLAN, DETAILS & SPECIFICATIONS

SAVE DATE	6/5/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025-00362
FILE NAME	007 - T_BIRD-LA

SHEET NUMBER LS02

G:\PNEL\AS\THUNDERBIRD BEACH RESORT\DWL CONSTRUCTION\007 - T_BIRD-LA.dwg PLOT DATE=6/5/2025 10:07 AM SAVE DATE=6/5/2025 LAST SAVED BY: CHIN

THE THUNDERBIRD, TREASURE ISLAND STORMWATER MANAGEMENT CALCULATIONS

May 2025



Digitally signed by Brian A Barker
Date: 2025.05.09 08:59:30-04'00'

PREPARED BY:

Brian Barker, P.E.

Clymer Farner Barley, Inc

314 S. Missouri Ave, Suite 101

Clearwater, FL 33756

727-519-1030

CFB-Inc.com

TABLE OF CONTENTS

SCOPE OF PROJECT AND BASIS OF ANALYSIS 1
I. SUMMARY

MAPS 2
I. PRE- AND POST-DEVELOPMENT BASIN MAPS

TREATMENT AND ATTENUATION 3
I. PRE- AND POST-DEVELOPMENT CN VALUES AND TREATMENT VOLUME

ICPR MODEL 4
I. BUBBLER FLOW EVALUATION METHODOLOGY
II. ICPR INPUT REPORTS
III. ICPR ANALYSIS RESULTS FOR INFILTRATION AND BUBBLER BLEEDDOWN

APPENDIX

FEMA FIRMette ..... A

SUMMARY

The Thunderbird Hotel, in Treasure Island, FL is proposed to be demolished and rebuilt. The project site is located at 10700 Gulf Blvd, Treasure Island, FL 33706. The project area includes parcels 23-31-15-91926-010-0050 and 23-31-15-91926-010-0042, both under the same ownership. The project falls within FEMA Flood Zone AE with base flood elevation of 11' and Zone VE with base flood elevation of 12'. The FIRMette for the site is included in the appendix. Existing site topography indicates that a majority of the site drains towards Gulf Blvd, an FDOT right of way. In the existing condition, all runoff flows offsite untreated where a majority enters the FDOT stormwater drainage system and flows into Boca Ciega Bay. A small area of the site drains west directly onto the beach. Pre- and post-development drainage patterns are shown in the provided basin maps.

Because it does not exceed the threshold for increased impervious area or vehicle use area, an exemption from Environmental Resource Permitting will be sought from SWFWMD. The site, however, will still be required to meet the drainage requirements for the City of Treasure Island.

Treasure Island requires that the site retain runoff volume equal to 1" depth over the site. This will be stored and recovered in underground chambers. The Contech details in the site construction plans show that this volume is available. The Infiltration analysis results show that the retained volume recovers within the 72-hour limit.

A comparison of pre- and post-development impervious areas indicates that attenuation analysis is not necessary. A reduction in the impervious area will result in less runoff being directed offsite.

In response to the City of Treasure Island comments regarding the stormwater outfall utilizing trench drains in the FDOT ROW we provide analysis that details discharge from the outfall and also a cut/fill analysis that demonstrates that there is not net fill being proposed on the site. Fill on the site is offset by the subsurface stormwater management system.

The site fill and cut volumes were calculated using surfaces in AutoCAD Civil3D. A tally of the cut fill is show in the table below:

Site Cut/Fill Analysis			
	Site Fill (CY)	1962.65	
+	Existing Pools (CY)	539.63	(estimated)
-	Proposed Pool (CY)	533.33	(estimated)
-	Contech Vault (CY)	832.76	
-	StormTrap North (CY)	779.01	
-	StormTrap South CY)	388.00	
=	Net Cut	-30.82	

In addition to a drawdown analysis, ICPR4 was utilized to model both stand-alone and consecutive storms. The full methodology is explained later in the report. The analysis found that for both stand-alone storms and back-to-back storms, the proposed bubbler either has no discharge at all, or ceases to flow near the end of the storm. This indicates reasonable drying times between storms. The existing driveway apron should be in a dry state for nearly the same amount of time as surrounding pavement. It is not expected that utilization of a bubbler will promote biomass growth on the driveway.

PRE-BASIN 1
1.54 ACRES

PRE-BASIN 2
0.31 ACRES

N64°14'33"E 219.92'(P)

LOT 7, BLOCK J
(PB 27, PG 16)

LOT 6, BLOCK J
(PB 27, PG 16)

APPROXIMATE FLOOD
HAZARD LINE PER FEMA
FIRM 12103C0194H,
REVISED 08/24/2021

ZONE AE (BFE = 11')
ZONE VE (BFE = 12')

N32°28'12"W 110.76'(P)

N64°14'33"E 246.50'(P)

5' UTILITY EASEMENT (PER PB 27, PG 16)

7.5' BUILDING SETBACK (PER PB 27, PG 16)

2-STORY HOTEL BUILDING

3-STORY HOTEL BUILDING

5' CHAIN LINK FENCE

FOUND NAIL & DISK
(RLS 4926 HALE)
(0.09'S, 0.40'W)

N64°14'33"E 52.40'

N32°28'12"W 110.76'(P)

N64°14'33"E 260.46'(P)

SUBJECT PARCEL
(ORB 21580, PG 1579 & ORB 21580, PG 1581)
±1.84 ACRES

BENCHMARK
SET NAIL & DISK
"CFB CONTROL"
NORTHING: 1249629.80'
EASTING: 407154.58'
(NAVD88) EL = 4.24'

FOUND 1/2" IRON PIPE (NO ID)
(0.42'S, 0.24'W)

FOUND NAIL & DISK (LB 107)
(0.37'S, 0.13'W)

FOUND NAIL & DISK
(LB 966 JOHNSTON)
FOUND NAIL & DISK (LB 021 GFY) (0.34'S, 0.95'W)
(ON-LINE WITH CCCL)

S64°14'33"W 236.34'

[REMAINDER OF LOT 4, BLOCK J]

BILMAR BEACH RESORT CONDOMINIUM
(CPB 138, PG 60)

NORTHERLY BOUNDARY OF LOT 4, BLOCK J

-PARCEL 3-
LOT 5, BLOCK J
(PB 27, PG 16)

-PARCEL 1-
NORTH 200' OF LOT 4, BLOCK J
(PB 27, PG 16)

-PARCEL 2-
PORTION OF TRACT 7
[PB 23, PG 34]

CITY OF TREASURE ISLAND
- BLOCK J AND K
PB 27, PG 16

GULF BOULEVARD (STATE ROAD NO. 699)
100' RIGHT-OF-WAY PER STATE OF FLORIDA STATE
ROAD DEPARTMENT ROAD OF RECORD MAP
HIGHWAY IMPROVEMENT SECTION 15010-2510

BENCHMARK
FOUND BRASS DISK STAMPED "15-90-DA-27A"
NORTHING: 1249621.60'
EASTING: 407356.27'
(NAVD88) EL = 4.41'
[NOTE: UNABLE TO RECOVER DATASHEET FOR
PUBLISHED CONTROL VALUES OF THIS MARK, IF
ANY EXIST – POSSIBLE FDOT REFERENCE MARK]

POINT OF COMMENCEMENT
(PARCEL 2)
[WEST NORTHERLY CORNER
OF LOT 4, BLOCK J]

POINT OF BEGINNING
(PARCEL 2)

SET NAIL & DISK (CFB LB6938)

N64°14'33"E 43.92'(D)

N27°59'29"W 46.05'(D)

S64°14'33"W 43.31'(D)

N64°11'55"E 43.92'(D)

N64°14'33"E

N27°59'29"W

S64°14'33"W

N64°14'33"E 78.67'

S64°11'55"W 78.67'



DATE	REVISIONS	BY

CFB | CLYMER FARNER BARLEY
CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(352)748-3126

POST-DEVELOPMENT BASIN MAP

THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

SAVE DATE	3/27/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	008 - T_BIRD-BASIN

SHEET NUMBER 02

S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\008 - T_BIRD-BASIN.dwg, 5/8/2025 5:23:14 PM, _AutoCAD PDF (General Documentation).pc3

BASIN SUMMARY TABLE

PRE-DEVELOPMENT BASINS

	BASIN 1			BASIN 2			TOTAL		
	BUILDINGS & PARKING LOT			SOUTH POOL & NORTH COURT					
	Area (SF)	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*
Non-DCIA Area									
Pervious (Typ B Soil)	6,900	0.16	61.00	1,142	0.03	61.00	8,042	0.18	61.00
Impervious	--		98.00			98.00			98.00
Total Non-DCIA & Weighted CN	6,900		61.00	1,142		61.00	8,042		61.00
DCIA			*%DCIA*			*%DCIA*			*%DCIA*
impervious	60,147	1.38		12,150	0.28		72,297	1.66	
pond									
Total DCIA	60,147	1.38	89.71%	12,150	0.28	91.41%	72,297	1.66	89.99%
Total Area (SF) &	**67,047**	**1.54**		**13,292**	**0.31**		**80,339**	**1.84**	
Weighted C Value									

POST-DEVELOPMENT BASINS

	BASIN 1			BASIN 2			TOTAL		
	BUILDINGS & PARKING LOT			POOL & DECK					
	Area (SF)	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*
Non-DCIA									
Pervious (Typ B Soil)	8,043	0.18	61.00	3,355	0.08	61.00	11,398	0.26	--
Impervious			98.00			98.00			--
Total Non-DCIA & Weighted CN	8,043		61.00	3,355		61.00	11,398		--
DCIA			*%DCIA*			*%DCIA*			*%DCIA*
impervious	57,224	1.31		11,717	0.27		68,941	1.58	
pond									
Total DCIA	57,224	1.31	87.68%	11,717	0.27	77.74%	68,941	1.58	85.81%
Total Area (SF) &	**65,267**	**1.50**		**15,072**	**0.35**		**80,339**	**1.84**	
Weighted CN									

Treatment Volume Required x = 1

(x")(Area Sf)(1'/12") = **6,695** **CF**

Notes:
The basin draining towards the FDOT ROW is smaller and has less impervious in the post development condition.
The basin draining towards the Gulf is larger, but has less impervious area in the post development condition.
The overall imperviousness of the site is lower in the post-developmennt condition.

BUBBLER FLOW ANALYSIS

Purpose:
Demonstrate that there will be substantial dry periods where the proposed bubbler will not bleed excessive water over the downstream driveway.

Methodology:

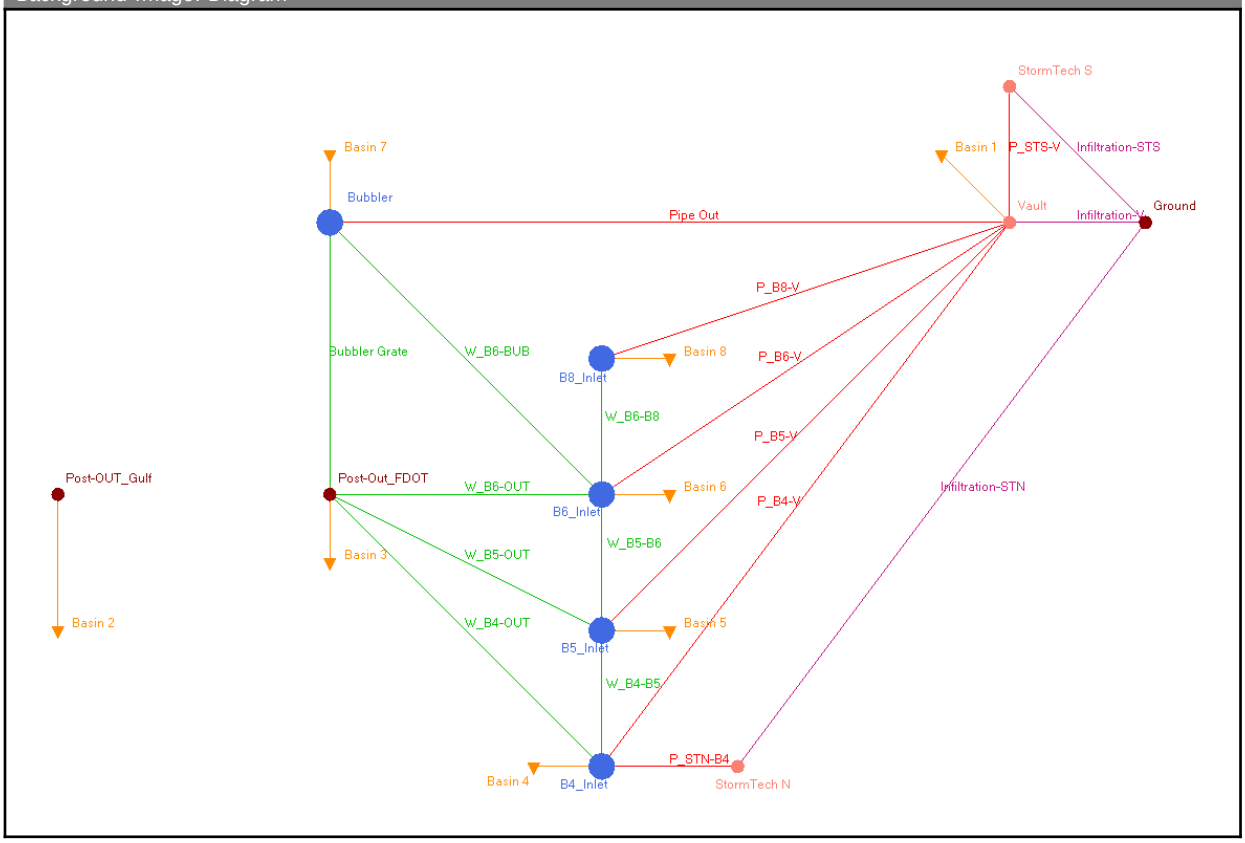
1. Run the following storms to show when flow out of the bubbler goes to 0 CFS: 1. FDOT 2-year storm for the 2-, 4-, and 8-hour durations. 2. The 5 and 10-year 24-hour SWFWMD storms. Show flow rates for the bubbler weir to illustrate the elapsed time after the storm where flow goes to 0.
2. Run the drawdown analysis. In addition to showing that the vault meets recovery criteria, the time/stage curve can be used to set an initial condition for back-to-back storms.
3. Simulate back-to-back afternoon storms typical of Florida summers (i.e., a 2- to 8-hour storm in the afternoon evening, followed by a similar event the next day). To do so, the initial stage for the storm events will be set to the stage in the system 20 hours after the end of the 4-hour event modeled in step 1. Show flow rates for bubbler weir to illustrate elapsed time where flow goes to 0
4. Show infiltration analysis and flow rate analysis for the various storms and draw conclusions.

Conclusions:
A drawdown analysis, which shows recovery of retention volume at the conclusion of the storm shows that about 20 hours after the 4-hour storm, the stage is 3.45'. This is bumped up to 3.5' to be slightly conservative. Note that this also shows that the drawdown is complete at 60 hours, this satisfying the 72-hour recovery rule.

The muli-scenario Flow charts for each storm event show that the bubbler has no discharge for the 2-, 4-, and 8-hour storms. For the 24-hour storms flow rate goes to 0 CFS before the end of the storm event. This occurs due to the percolation rate of the three underground retention systems. This means that for a majority of the storms that the site will see, there will be no increase in the time the downstream driveway is wet when compared to the existing condition.

ICPR4 Scenario Notes:
The ICPR4 Report shows three scenarios. The Proposed Scenario contains the original input data. The initial stage is set to the bottom of each stage/area and stage/volume node. This simulates an event that occurs after a substantial dry period, where full recovery of the retention volume has occurred. The Draw Down scenario imposes a slug load on the system by setting the initial stage in each stage/area and stage/volume node to the weir elevation, with no rainfall analysis. The Consecutive Storms scenario uses the Proposed input with the exception that the initial stage in the nodes is set to show the vault as partially full based on drawdown period between storms.

Background Image: Diagram



Simulation: 002Y002H

Scenario:	Consecutive Storms
Run Date/Time:	5/8/2025 4:56:30 PM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	8.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FDOT-2
Rainfall Amount: 2.71 in
Storm Duration: 2.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 002Y004H

Scenario: Consecutive Storms
Run Date/Time: 5/8/2025 4:56:33 PM

Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: Existing Curve Number

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight Fact: 0.5 dec

dZ Tolerance: 0.0010 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Opt: Global

Rainfall Name: ~FDOT-4

		Rainfall Amount:	3.16 in
Edge Length Option:	Automatic	Storm Duration:	4.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 002Y008H

Scenario: Consecutive Storms
Run Date/Time: 5/8/2025 4:56:38 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:

Unit Hydrograph Folder:		Curve Number Set:	Existing Curve Number
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	Existing Impervious

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.00 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FDOT-8
		Rainfall Amount:	3.71 in
Edge Length Option:	Automatic	Storm Duration:	8.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 005YR-024HR

Scenario:	Consecutive Storms
Run Date/Time:	5/8/2025 4:56:44 PM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	120.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.00	0.10
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CFB CURVE NUMBER SET
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: CFB IMPERVIOUS SET

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 5.50 in
Storm Duration: 24.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 010YR-024HR

Scenario: Consecutive Storms
Run Date/Time: 5/8/2025 4:57:03 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	120.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.00	0.10
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CFB CURVE NUMBER SET
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: CFB IMPERVIOUS SET

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6

IA Recovery Time: 24.00 hr

Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.50 in
Edge Length Option:	Automatic	Storm Duration:	24.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: WQL Drawdown

Scenario: Draw Down
Run Date/Time: 5/8/2025 4:57:28 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.00	0.10
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	2160.00
0	0	0	36.00	1440.00

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	60.00	3600.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CFB CURVE NUMBER SET
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: CFB IMPERVIOUS SET

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: No Rainfall
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 002Y002H

Scenario: PROPOSED
Run Date/Time: 5/8/2025 4:57:36 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00

End Time:	0	0	0	8.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FDOT-2
Rainfall Amount: 2.71 in
Storm Duration: 2.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 002Y004H

Scenario: PROPOSED
Run Date/Time: 5/8/2025 4:57:38 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.00 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FDOT-4
		Rainfall Amount:	3.16 in
Edge Length Option:	Automatic	Storm Duration:	4.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 002Y008H

Scenario: PROPOSED
Run Date/Time: 5/8/2025 4:57:43 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FDOT-8
Rainfall Amount: 3.71 in
Storm Duration: 8.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simple Basin: Basin 1

Scenario: Consecutive Storms
Node: Vault
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.0 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.75 ac
Curve Number: 61.0

% Impervious:	92.04
% DCIA:	92.04
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 2

Scenario:	Consecutive Storms
Node:	Post-OUT_Gulf
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.35 ac
Curve Number:	61.0
% Impervious:	77.74
% DCIA:	77.74
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 3

Scenario:	Consecutive Storms
Node:	Post-Out_FDOT
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.03 ac
Curve Number:	61.0
% Impervious:	47.99
% DCIA:	47.99
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 4

Scenario:	Consecutive Storms
Node:	B4_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	85.54
% DCIA:	85.54
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 5

Scenario:	Consecutive Storms
Node:	B5_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	91.70
% DCIA:	91.70
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 6

Scenario:	Consecutive Storms
Node:	B6_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs

Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.09 ac
Curve Number:	61.0
% Impervious:	89.46
% DCIA:	89.46
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 7

Scenario:	Consecutive Storms
Node:	Bubbler
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.05 ac
Curve Number:	61.0
% Impervious:	60.93
% DCIA:	60.93
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 8

Scenario:	Consecutive Storms
Node:	B8_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.37 ac
Curve Number:	61.0
% Impervious:	84.53
% DCIA:	84.53

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 1

Scenario:	PROPOSED
Node:	Vault
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.75 ac
Curve Number:	61.0
% Impervious:	92.04
% DCIA:	92.04
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 2

Scenario:	PROPOSED
Node:	Post-OUT_Gulf
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.35 ac
Curve Number:	61.0
% Impervious:	77.74
% DCIA:	77.74
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 3

Scenario:	PROPOSED
Node:	Post-Out_FDOT
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.03 ac
Curve Number:	61.0
% Impervious:	47.99
% DCIA:	47.99
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 4

Scenario:	PROPOSED
Node:	B4_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	85.54
% DCIA:	85.54
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 5

Scenario:	PROPOSED
Node:	B5_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs

Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	91.70
% DCIA:	91.70
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 6

Scenario:	PROPOSED
Node:	B6_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.09 ac
Curve Number:	61.0
% Impervious:	89.46
% DCIA:	89.46
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 7

Scenario:	PROPOSED
Node:	Bubbler
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.05 ac
Curve Number:	61.0
% Impervious:	60.93
% DCIA:	60.93

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 8

Scenario: PROPOSED
Node: B8_Inlet
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.0 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.37 ac
Curve Number: 61.0
% Impervious: 84.53
% DCIA: 84.53
% Direct: 0.00
Rainfall Name:

Comment:

Node: B4_Inlet

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	115
5.4	0.01	560

Comment: Inlet for Post-Basin 4

Node: B5_Inlet

Scenario: Consecutive Storms
Type: Stage/Area

Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	62
5.4	0.01	382
5.5	0.02	1060
5.6	0.03	1440

Comment: Inlet for Post-Basin 5

Node: B6_Inlet

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.3 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.3	0.00	12
5.3	0.00	13
5.4	0.00	166
5.7	0.05	2010

Comment: Inlet for Post-Basin 6

Node: B8_Inlet

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	123
5.4	0.01	560
5.5	0.04	1832
5.7	0.12	5341

Comment: Inlet for Post-Basin 8

Node: Bubbler

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 4.5 ft

Comment:

Node: Ground

Scenario: Consecutive Storms
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 2.5 ft
Warning Stage: 2.5 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	2.5
0	0	0	240.00	2.5

Comment:

Node: Post-OUT_Gulf

Scenario: Consecutive Storms
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 0.6 ft
Warning Stage: 0.6 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	0.6
0	0	0	240.00	0.6

Comment:

Node: Post-Out_FDOT

Scenario: Consecutive Storms
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 3.1 ft
Warning Stage: 3.1 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	3.1
0	0	0	240.00	3.1

Comment: crown of downstream pipe

Node: StormTech N

Scenario: Consecutive Storms
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.14	5889
4.6	0.27	11779

Comment:

Node: StormTech S

Scenario: Consecutive Storms
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.08	3556
4.6	0.16	7112

Comment:

Node: Vault

Scenario: Consecutive Storms
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 4.0 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.0	0.17	7395
4.0	0.17	7395
3.9	0.16	6784
3.8	0.14	6315
3.8	0.13	5692
3.7	0.12	5041
3.6	0.10	4373
3.5	0.08	3697
3.4	0.07	3021
3.3	0.05	2353
3.3	0.04	1702
3.2	0.02	1079
3.1	0.01	499
3.0	0.00	0

Comment:

Node: B4_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	115
5.4	0.01	560

Comment: Inlet for Post-Basin 4

Node: B5_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft

Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	62
5.4	0.01	382
5.5	0.02	1060
5.6	0.03	1440

Comment: Inlet for Post-Basin 5

Node: B6_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.3 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.3	0.00	12
5.3	0.00	13
5.4	0.00	166
5.7	0.05	2010

Comment: Inlet for Post-Basin 6

Node: B8_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	123
5.4	0.01	560
5.5	0.04	1832
5.7	0.12	5341

Comment: Inlet for Post-Basin 8

Node: Bubbler

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 4.5 ft

Comment:

Node: Ground

Scenario: Draw Down
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 2.5 ft
Warning Stage: 2.5 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	2.5
0	0	0	240.00	2.5

Comment:

Node: Post-OUT_Gulf

Scenario: Draw Down
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 0.6 ft
Warning Stage: 0.6 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	0.6
0	0	0	240.00	0.6

Comment:

Node: Post-Out_FDOT

Scenario: Draw Down
Type: Time/Stage
Base Flow: 0.0 cfs

Initial Stage: 3.1 ft
Warning Stage: 3.1 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	3.1
0	0	0	240.00	3.1

Comment: crown of downstream pipe

Node: StormTech N

Scenario: Draw Down
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.14	5889
4.6	0.27	11779

Comment:

Node: StormTech S

Scenario: Draw Down
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.08	3556
4.6	0.16	7112

Comment:

Node: Vault

Scenario: Draw Down
Type: Stage/Volume
Base Flow: 0.0 cfs

Initial Stage: 3.9 ft
Warning Stage: 4.0 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.0	0.17	7395
4.0	0.17	7395
3.9	0.16	6784
3.8	0.14	6315
3.8	0.13	5692
3.7	0.12	5041
3.6	0.10	4373
3.5	0.08	3697
3.4	0.07	3021
3.3	0.05	2353
3.3	0.04	1702
3.2	0.02	1079
3.1	0.01	499
3.0	0.00	0

Comment:

Node: B4_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	115
5.4	0.01	560

Comment: Inlet for Post-Basin 4

Node: B5_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12

Stage [ft]	Area [ac]	Area [ft2]
5.2	0.00	12
5.3	0.00	62
5.4	0.01	382
5.5	0.02	1060
5.6	0.03	1440

Comment: Inlet for Post-Basin 5

Node: B6_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.3 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.3	0.00	12
5.3	0.00	13
5.4	0.00	166
5.7	0.05	2010

Comment: Inlet for Post-Basin 6

Node: B8_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	123
5.4	0.01	560
5.5	0.04	1832
5.7	0.12	5341

Comment: Inlet for Post-Basin 8

Node: Bubbler

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 2.4 ft
Warning Stage: 4.5 ft

Comment:

Node: Ground

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 2.5 ft
Warning Stage: 2.5 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	2.5
0	0	0	240.00	2.5

Comment:

Node: Post-OUT_Gulf

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 0.6 ft
Warning Stage: 0.6 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	0.6
0	0	0	240.00	0.6

Comment:

Node: Post-Out_FDOT

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.0 cfs

Initial Stage: 3.1 ft
Warning Stage: 3.1 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	3.1
0	0	0	240.00	3.1

Comment: crown of downstream pipe

Node: StormTech N

Scenario: PROPOSED
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.0 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.14	5889
4.6	0.27	11779

Comment:

Node: StormTech S

Scenario: PROPOSED
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.0 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.08	3556
4.6	0.16	7112

Comment:

Node: Vault

Scenario: PROPOSED
Type: Stage/Volume
Base Flow: 0.0 cfs

Initial Stage: 3.0 ft
Warning Stage: 4.0 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.0	0.17	7395
4.0	0.17	7395
3.9	0.16	6784
3.8	0.14	6315
3.8	0.13	5692
3.7	0.12	5041
3.6	0.10	4373
3.5	0.08	3697
3.4	0.07	3021
3.3	0.05	2353
3.3	0.04	1702
3.2	0.02	1079
3.1	0.01	499
3.0	0.00	0

Comment:

Weir Link: Bubbler Grate

Scenario: Consecutive Storms
From Node: Bubbler
To Node: Post-Out_FDOT
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Horizontal
Geometry Type: Rectangular
Invert: 3.9 ft
Control Elevation: 3.9 ft
Max Depth: 0.25 ft
Max Width: 17.00 ft
Fillet: 0.00 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Percolation Link: Infiltration

Scenario: Consecutive Storms
From Node: Vault
To Node: Ground
Link Count: 1
Flow Direction: Both
Aquifer Base Elevation: -15.0 ft
Water Table Elevation: 2.5 ft

Surface Area Option: User Specified
Bottom Elevation: 3.0 ft
Surface Area: 0.27 ac
Vertical Flow Termination: Horizontal Flow Algorithm
Perimeter 1: 295.00 ft
Perimeter 2: 695.00 ft
Perimeter 3: 4295.00 ft

Annual Recharge Rate:	0 ipy		
Horizontal Conductivity:	37.800 fpd	Distance P1 to P2:	50.00 ft
Vertical Conductivity:	18.900 fpd	Distance P2 to P3:	450.00 ft
Fillable Porosity:	0.290	# of Cells P1 to P2:	10
Layer Thickness:	0.00 ft	# of Cells P2 to P3:	45

Comment:

Percolation Link: Infiltration-STN

Scenario:	Consecutive Storms	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Percolation Link: Infiltration-STS

Scenario:	Consecutive Storms	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Pipe Link: P_B4-V		Upstream		Downstream	
Scenario:	Consecutive Storms	Invert:	3.2 ft	Invert:	3.0 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B4_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft

Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	50.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_B5-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.2 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B5_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	3.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_B6-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.2 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B6_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	3.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_B8-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.2 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B8_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	50.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_STN-B4		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.0 ft	Invert:	3.2 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	StormTech N	Geometry: Circular		Geometry: Circular	
To Node:	B4_Inlet	Max Depth:	12.00 ft	Max Depth:	12.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	29.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_STS-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	2.4 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	StormTech S	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	28.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			

Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: Pipe Out		Upstream		Downstream	
Scenario:	Consecutive Storms	Invert:	3.0 ft	Invert:	2.4 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	Vault	Geometry: Circular		Geometry: Circular	
To Node:	Bubbler	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	47.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: W_B4-B5			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft
To Node:	B5_Inlet	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:	5.5 ft	Discharge Coefficients	
Control Elevation:	5.5 ft	Weir Default:	2.800
Cross Section:	X_B4-B5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B4-OUT			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft

To Node:	Post-Out_FDOT		
Link Count:	1	Op Table:	
Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	5.4 ft	Ref Node:	
Control Elevation:	5.4 ft	Discharge Coefficients	
Max Depth:	999.00 ft	Weir Default:	2.800
Max Width:	26.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-B6

Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	B6_Inlet	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:	5.9 ft	Discharge Coefficients	
Control Elevation:	5.9 ft	Weir Default:	2.800
Cross Section:	X_B5-P6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-OUT

Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	Irregular	Ref Node:	
Invert:	6.0 ft	Discharge Coefficients	
Control Elevation:	6.0 ft	Weir Default:	2.800
Cross Section:	X_B5-OUT	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-B8			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	B8_Inlet	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:	5.6 ft	Discharge Coefficients	
Control Elevation:	5.6 ft	Weir Default:	2.800
Cross Section:	X_B6-B8	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-BUB			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	Bubbler	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:	5.5 ft	Discharge Coefficients	
Control Elevation:	5.5 ft	Weir Default:	2.800
Cross Section:	X_B6-BUB	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-OUT			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	6.0 ft	Discharge Coefficients	
Control Elevation:	6.0 ft	Weir Default:	2.800
Cross Section:	X_B6-OUT	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: Bubbler Grate

Scenario:	Draw Down	**Bottom Clip**	
From Node:	Bubbler	Default:	0.00 ft
To Node:	Post-Out_FDOT	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Horizontal	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	3.9 ft	**Discharge Coefficients**	
Control Elevation:	3.9 ft	Weir Default:	2.800
Max Depth:	0.25 ft	Weir Table:	
Max Width:	17.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	

Comment:

Percolation Link: Infiltration

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	Vault	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.27 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Percolation Link: Infiltration-STN

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft

Water Table Elevation:	2.5 ft		
Annual Recharge Rate:	0 ipy	Perimeter 3:	4295.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P1 to P2:	50.00 ft
Vertical Conductivity:	18.900 fpd	Distance P2 to P3:	450.00 ft
Fillable Porosity:	0.290	# of Cells P1 to P2:	10
Layer Thickness:	0.00 ft	# of Cells P2 to P3:	45

Comment:

Percolation Link: Infiltration-STS

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Pipe Link: P_B4-V

		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B4_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B5-V

		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft

From Node:	B5_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B6-V		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B6_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B8-V		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B8_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STN-B4		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.0 ft	Invert:	3.2 ft
From Node:	StormTech N	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	B4_Inlet	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	12.00 ft	Max Depth:	12.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	29.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STS-V		Upstream		Downstream	
Scenario:	Draw Down	Invert:	2.4 ft	Invert:	3.0 ft
From Node:	StormTech S	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	28.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: Pipe Out		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.0 ft	Invert:	2.4 ft
From Node:	Vault	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Bubbler	Geometry: Circular		Geometry: Circular	

Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	47.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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: Bubbler Grate

Scenario:	PROPOSED	Bottom Clip	
From Node:	Bubbler	Default:	0.00 ft
To Node:	Post-Out_FDOT	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Horizontal	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	3.9 ft	Discharge Coefficients	
Control Elevation:	3.9 ft	Weir Default:	2.800
Max Depth:	0.25 ft	Weir Table:	
Max Width:	17.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	

Comment:

Percolation Link: Infiltration-STN

Scenario:	PROPOSED	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Percolation Link: Infiltration-STS			
Scenario:	PROPOSED	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		
Comment:			

Percolation Link: Infiltration-V			
Scenario:	PROPOSED	Surface Area Option:	User Specified
From Node:	Vault	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.27 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		
Comment:			

Pipe Link: P_B4-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B4_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B5-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B5_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B6-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B6_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B8-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B8_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STN-B4		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.0 ft	Invert:	3.2 ft
From Node:	StormTech N	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	B4_Inlet	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	12.00 ft	Max Depth:	12.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	29.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STS-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	2.4 ft	Invert:	3.0 ft
From Node:	StormTech S	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	28.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: Pipe Out		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.0 ft	Invert:	2.4 ft
From Node:	Vault	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Bubbler	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	47.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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: W_B4-B5			
Scenario:	PROPOSED	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft
To Node:	B5_Inlet	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:	5.5 ft	Discharge Coefficients	
Control Elevation:	5.5 ft	Weir Default:	2.800
Cross Section:	X_B4-B5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B4-OUT			
Scenario:	PROPOSED	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	Rectangular	Ref Node:	
Invert:	5.4 ft	Discharge Coefficients	
Control Elevation:	5.4 ft	Weir Default:	2.800
Max Depth:	999.00 ft	Weir Table:	

Max Width:	26.00 ft		
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-B6

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	B6_Inlet	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:	5.9 ft	**Discharge Coefficients**	
Control Elevation:	5.9 ft	Weir Default:	2.800
Cross Section:	X_B5-P6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-OUT

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	Irregular	Ref Node:	
Invert:	6.0 ft	**Discharge Coefficients**	
Control Elevation:	6.0 ft	Weir Default:	2.800
Cross Section:	X_B5-OUT	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-B8

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	B8_Inlet	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	5.6 ft
Control Elevation:	5.6 ft
Cross Section:	X_B6-B8

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: W_B6-BUB

Scenario:	PROPOSED
From Node:	B6_Inlet
To Node:	Bubbler
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	5.5 ft
Control Elevation:	5.5 ft
Cross Section:	X_B6-BUB

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: W_B6-OUT

Scenario:	PROPOSED
From Node:	B6_Inlet
To Node:	Post-Out_FDOT
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	6.0 ft
Control Elevation:	6.0 ft
Cross Section:	X_B6-OUT

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Cross Section: X_B4-B5

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.5
1	8.47	5.9
2	14.50	5.8
3	29.50	5.7
4	60.50	5.5
5	60.60	6.0

Comment:

Weir Cross Section: X_B5-OUT

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.0
1	25.60	6.0
2	32.20	6.0
3	84.85	6.4

Comment:

Weir Cross Section: X_B5-P6

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.3
1	16.36	6.1
2	47.68	5.9
3	47.69	6.4

Comment:

Weir Cross Section: X_B6-B8

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.7
1	23.57	5.7
2	35.61	5.6
3	35.62	6.0

Comment:

Weir Cross Section: X_B6-BUB

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.6
1	16.67	5.5
2	27.70	5.7
3	27.80	6.2

Comment:

Weir Cross Section: X_B6-OUT

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.4
1	32.00	6.0
2	45.00	6.1
3	73.39	6.3

Comment:

Weir Cross Section: X_B4-B5

Scenario: PROPOSED
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.5
1	8.47	5.9
2	14.50	5.8
3	29.50	5.7
4	60.50	5.5
5	60.60	6.0

Comment:

Weir Cross Section: X_B5-OUT

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.0
1	25.60	6.0
2	32.20	6.0
3	84.85	6.4

Comment:

Weir Cross Section: X_B5-P6

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.3
1	16.36	6.1
2	47.68	5.9
3	47.69	6.4

Comment:

Weir Cross Section: X_B6-B8

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.7
1	23.57	5.7
2	35.61	5.6
3	35.62	6.0

Comment:

Weir Cross Section: X_B6-BUB

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.6
1	16.67	5.5
2	27.70	5.7
3	27.80	6.2

Comment:

Weir Cross Section: X_B6-OUT

Scenario: PROPOSED

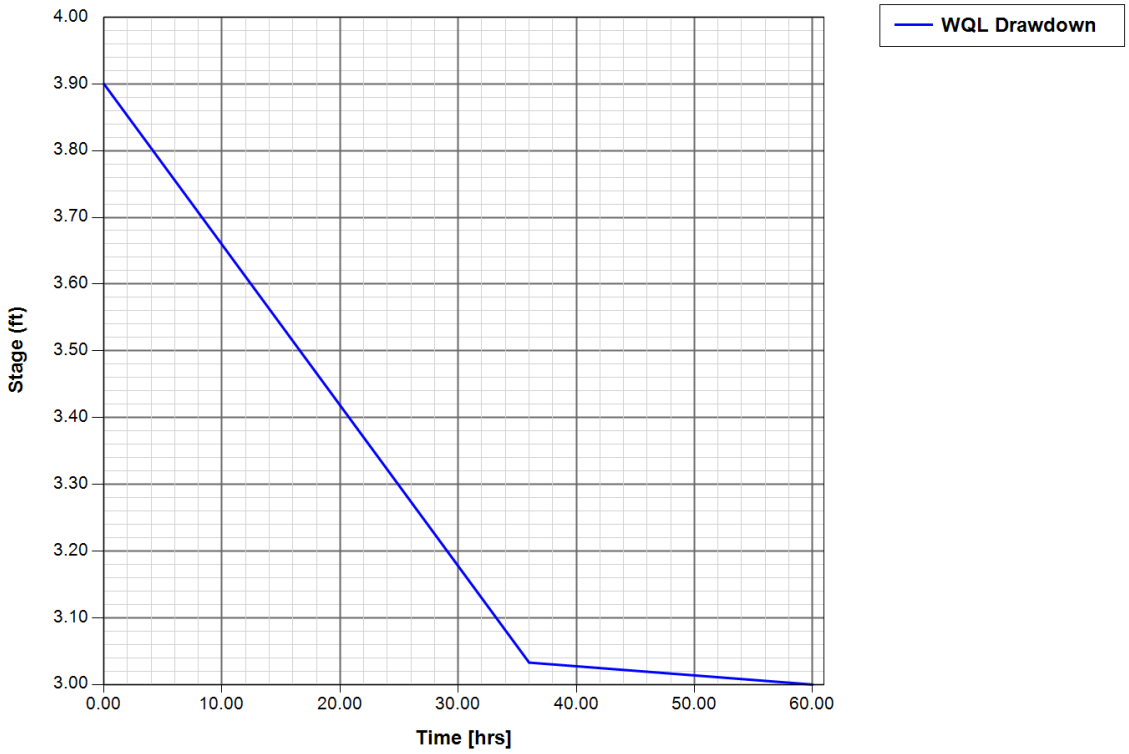
Lid: No

Bottom Point Table

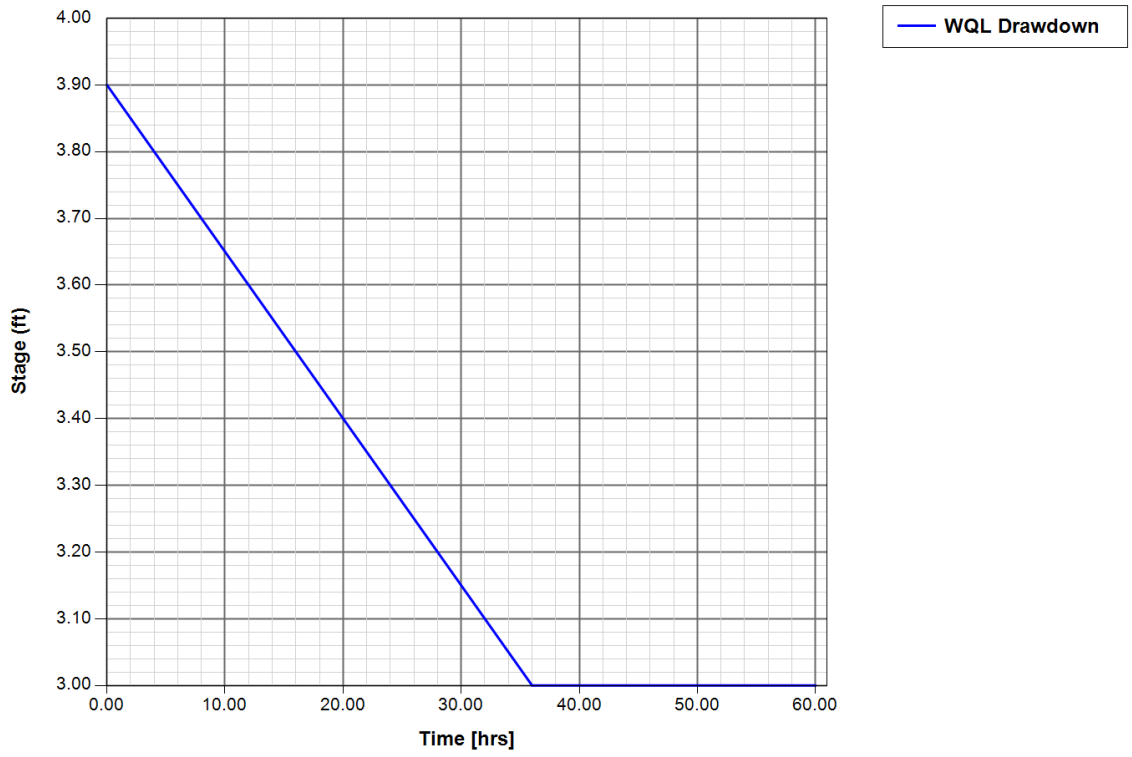
Order	Station [ft]	Elevation [ft]
0	0.00	6.4
1	32.00	6.0
2	45.00	6.1
3	73.39	6.3

Comment:

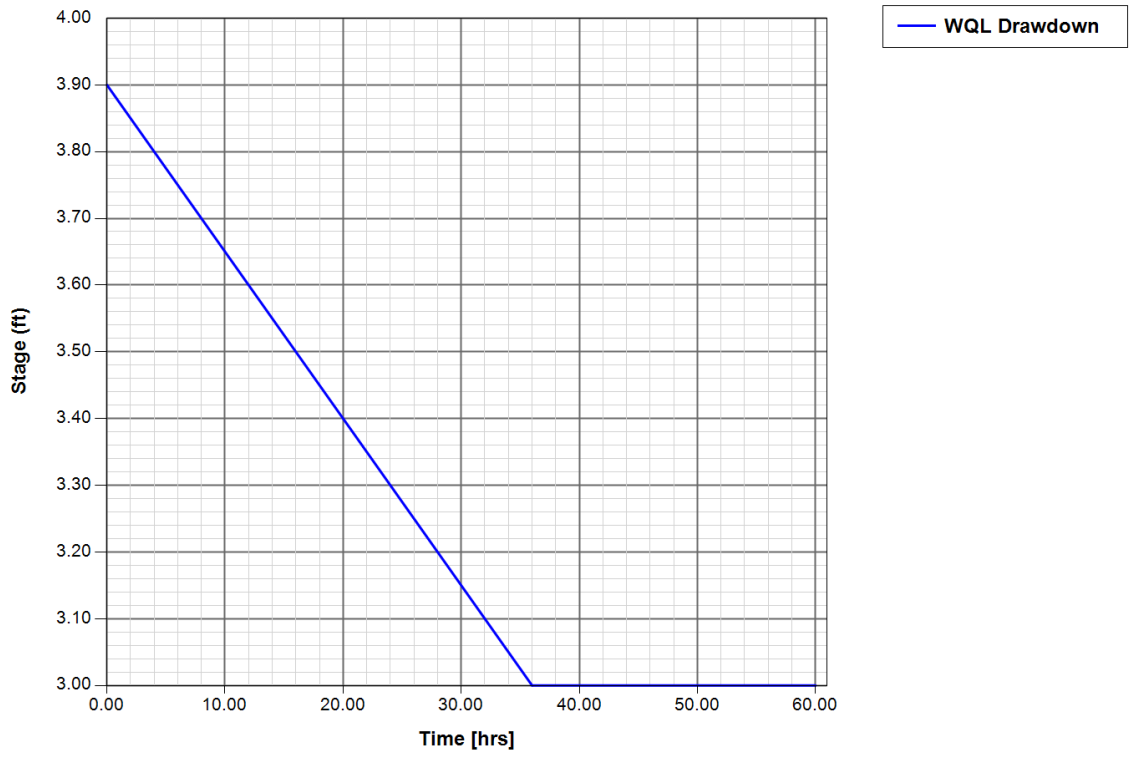
Stage [Node: StormTech N]



Stage [Node: StormTech S]



Stage [Node: Vault]

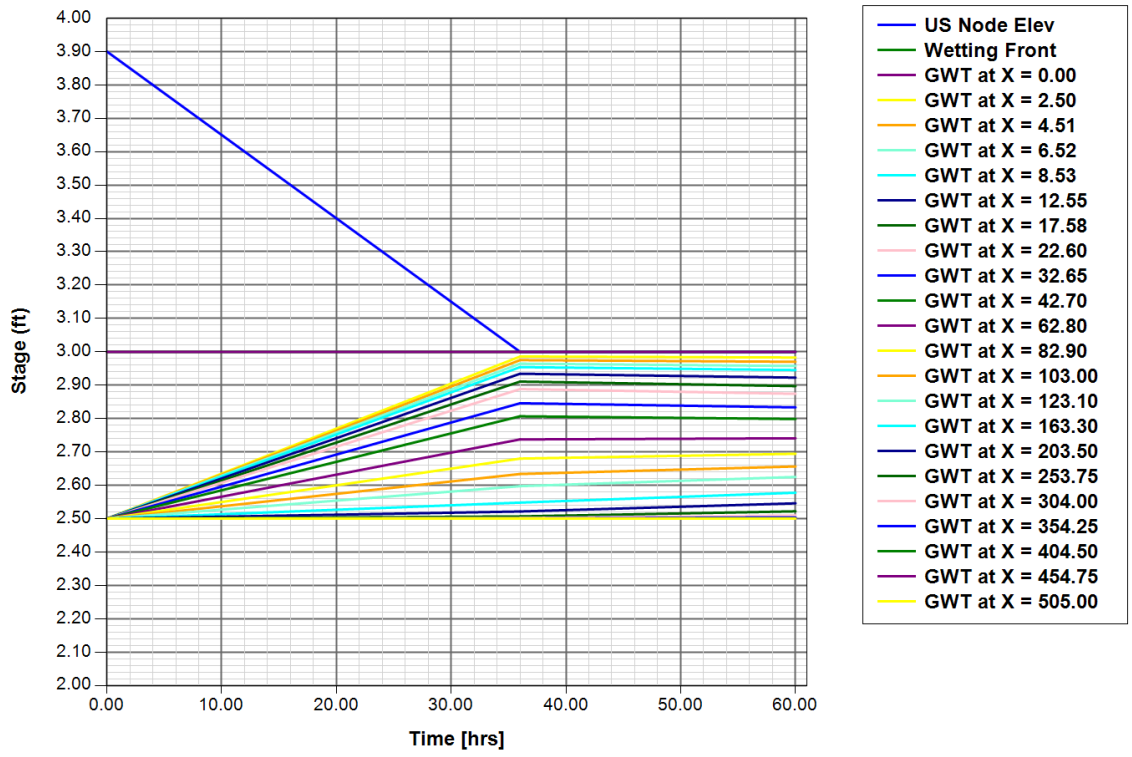


Percolation Link: Infiltration

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	Vault	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.27 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Perc Link: Infiltration (Sim: WQL Drawdown) [Infiltration]

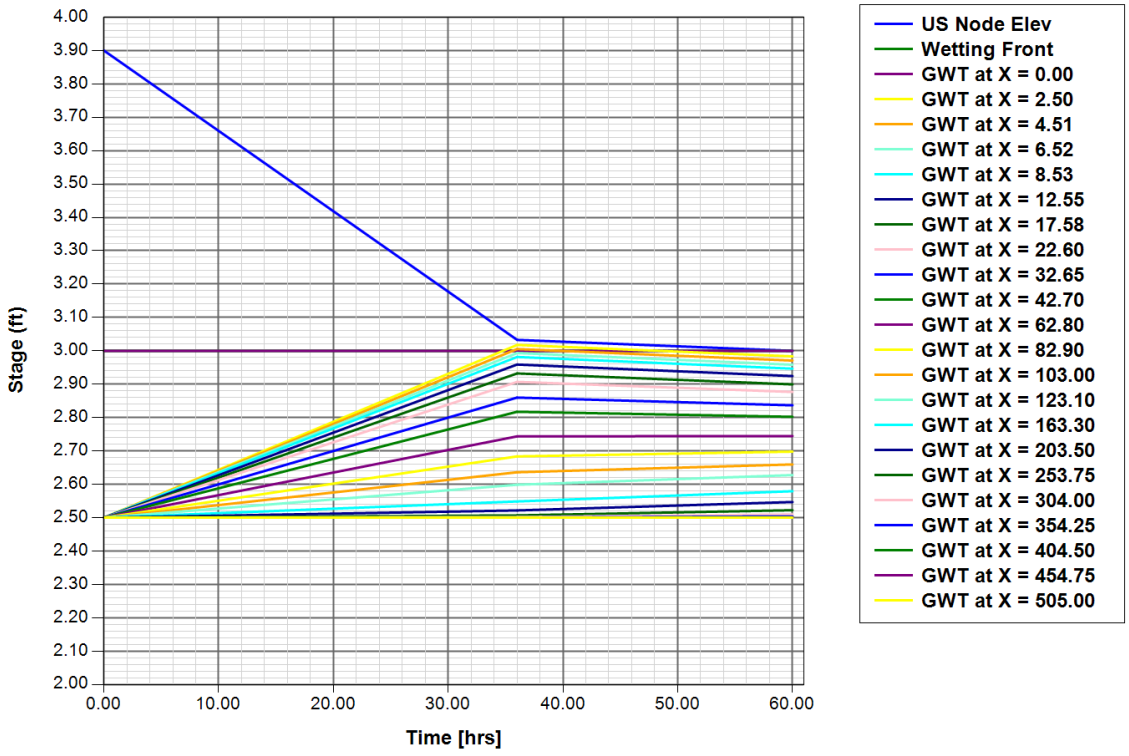


Percolation Link: Infiltration-STN

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Perc Link: Infiltration-STN (Sim: WQL Drawdown) [Infiltration-STN]

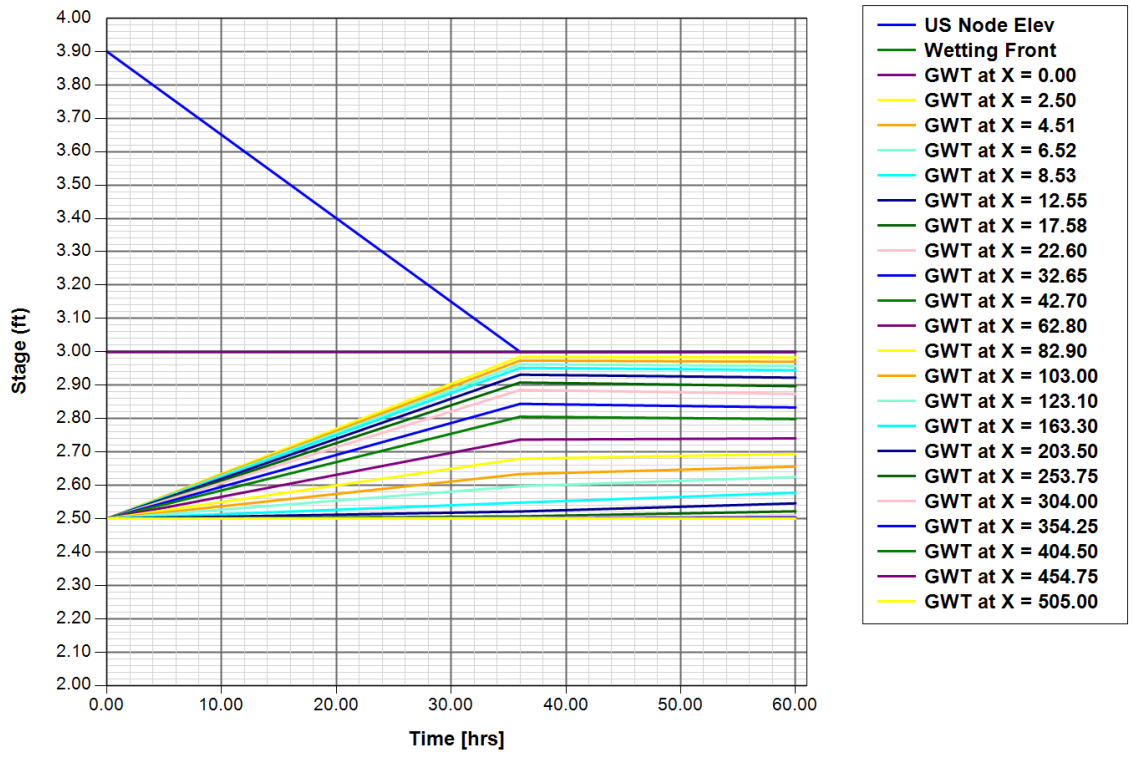


Percolation Link: Infiltration-STS

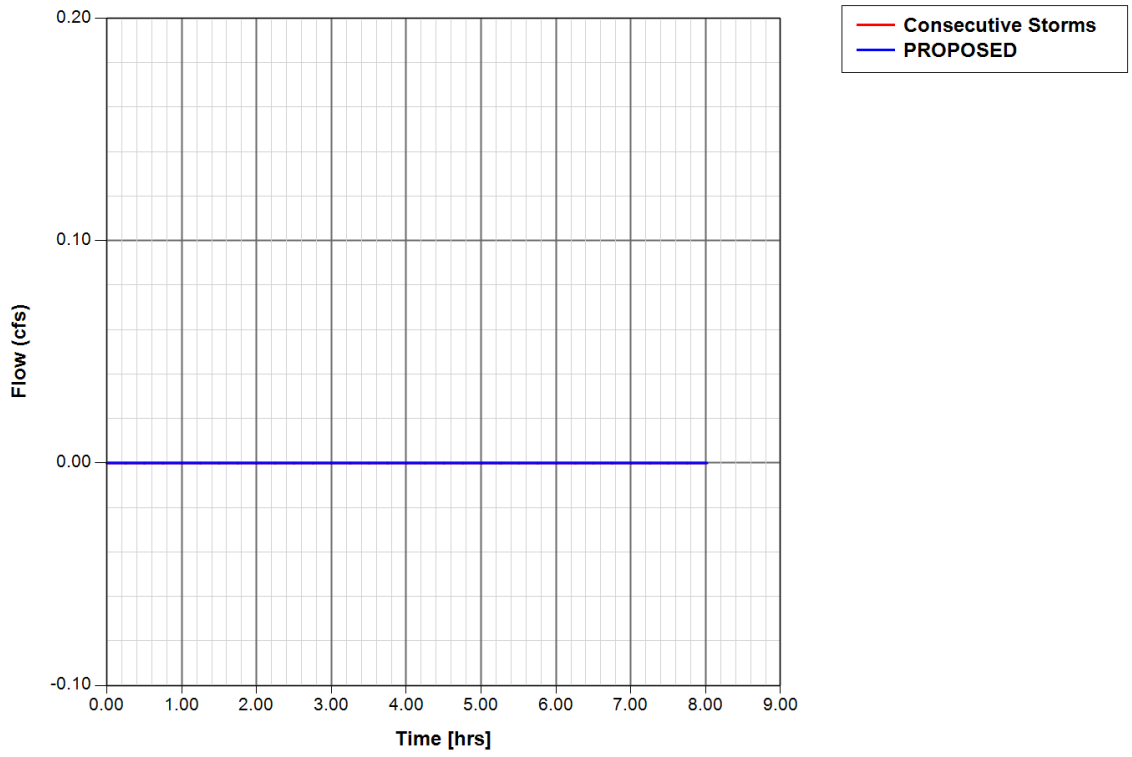
Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

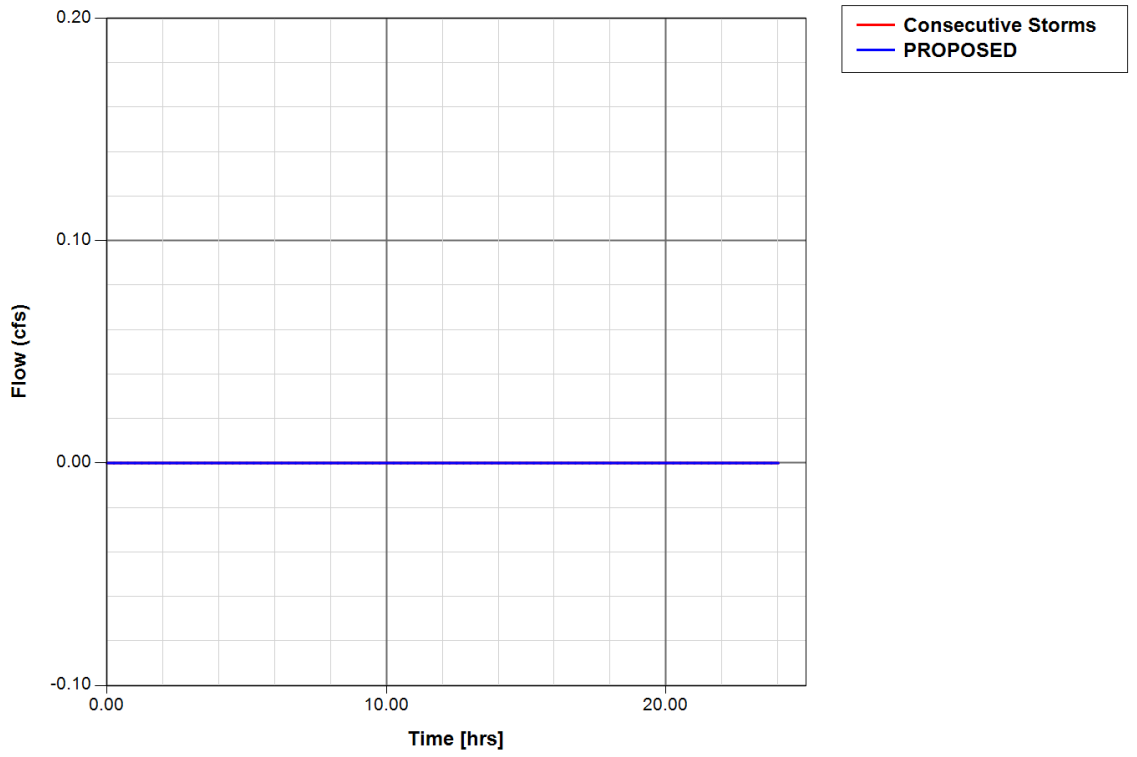
Perc Link: Infiltration-STS (Sim: WQL Drawdown) [Infiltration-STS]



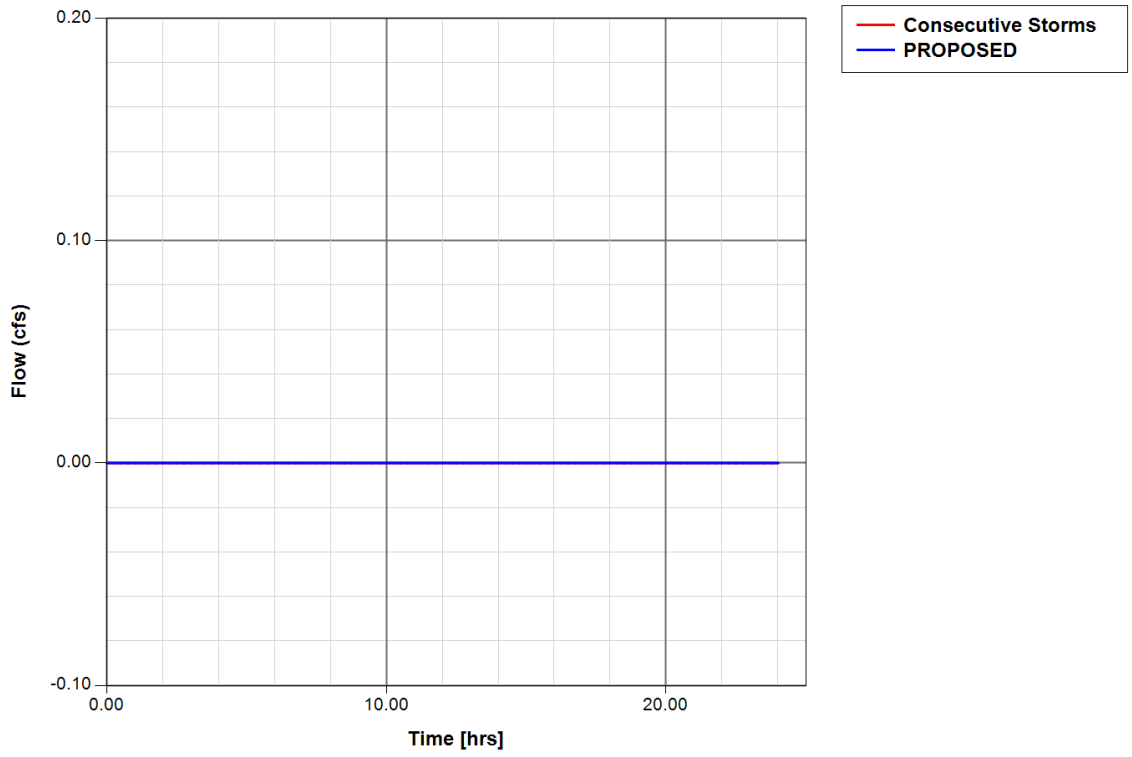
Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 002Y002H



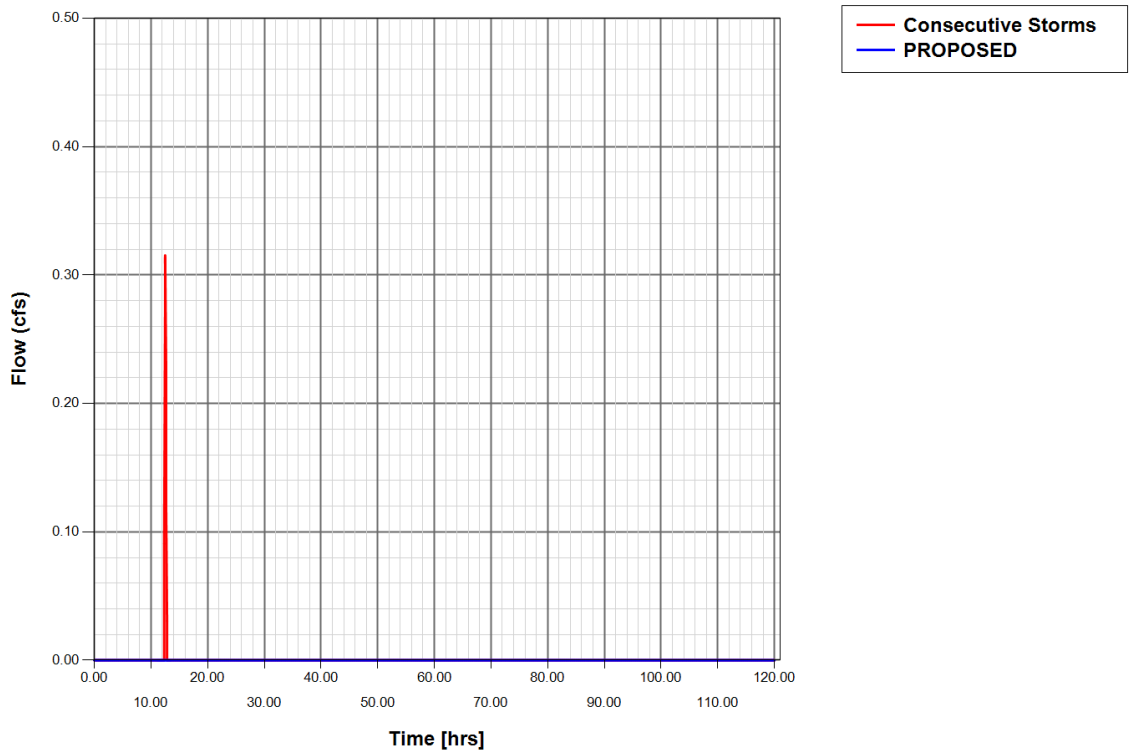
Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 002Y004H



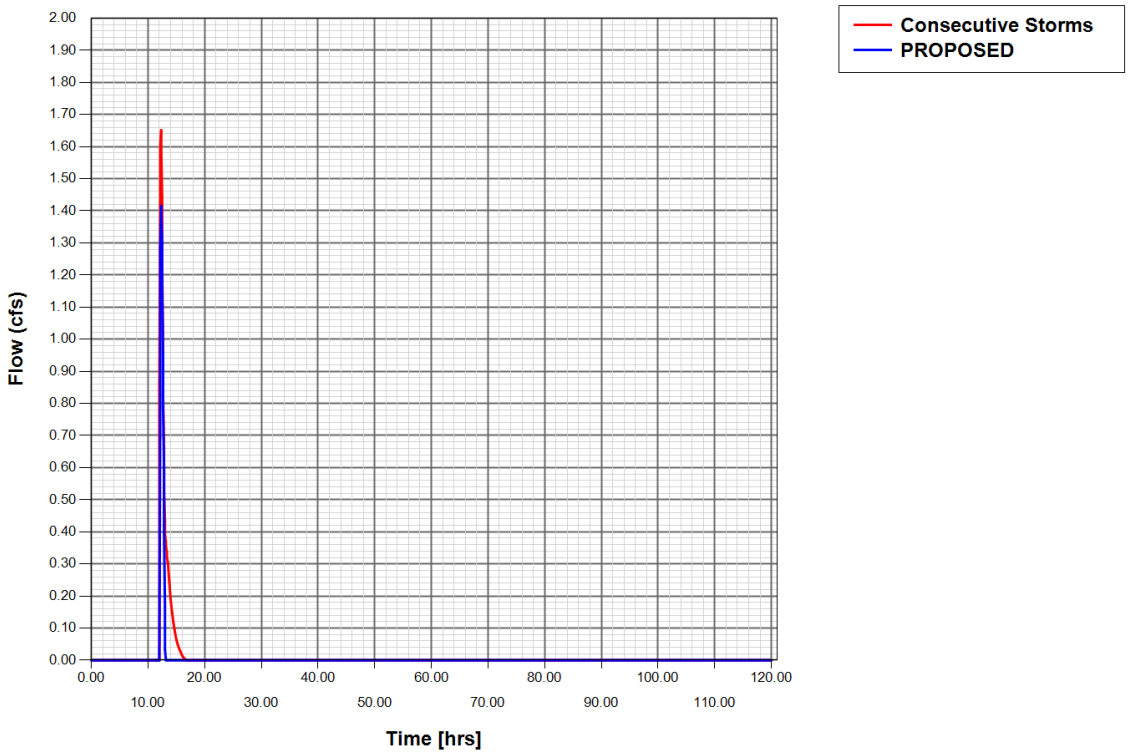
Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 002Y008H



Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 005YR-024HR



Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 010YR-024HR



Node Max Conditions [Consecutive Storms]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
B4_Inlet	002Y002H	5.2	3.8	0.00	0.9	1.1	112
B5_Inlet	002Y002H	5.2	3.8	0.00	0.3	0.2	100
B6_Inlet	002Y002H	5.3	3.8	0.00	0.2	0.2	100
B8_Inlet	002Y002H	5.2	3.9	0.00	0.9	0.9	100
Bubbler	002Y002H	4.5	3.8	0.00	0.1	0.1	100
Ground	002Y002H	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	002Y002H	0.6	0.6	0.00	0.8	0.0	0
Post-Out_FDOT	002Y002H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y002H	5.2	3.8	0.00	1.1	0.9	7538
StormTech S	002Y002H	5.2	3.8	0.00	1.1	0.9	4517
Vault	002Y002H	4.0	3.8	0.00	3.3	1.8	8540
B4_Inlet	002Y004H	5.2	3.8	0.00	0.8	1.1	113
B5_Inlet	002Y004H	5.2	3.8	0.00	0.1	0.2	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
B6_Inlet	002Y004H	5.3	3.8	0.00	0.1	0.2	100
B8_Inlet	002Y004H	5.2	3.8	0.00	0.5	0.5	100
Bubbler	002Y004H	4.5	3.8	0.00	0.1	0.0	100
Ground	002Y004H	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	002Y004H	0.6	0.6	0.00	0.4	0.0	0
Post-Out_FDOT	002Y004H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y004H	5.2	3.8	0.00	1.1	0.9	7539
StormTech S	002Y004H	5.2	3.8	0.00	0.6	0.9	4519
Vault	002Y004H	4.0	3.8	0.00	2.0	1.2	8540
B4_Inlet	002Y008H	5.2	3.8	0.00	0.7	1.0	112
B5_Inlet	002Y008H	5.2	3.8	0.00	0.1	0.2	100
B6_Inlet	002Y008H	5.3	3.8	0.00	0.1	0.2	100
B8_Inlet	002Y008H	5.2	3.8	0.00	0.5	0.5	100
Bubbler	002Y008H	4.5	3.8	0.00	0.1	0.0	100
Ground	002Y008H	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	002Y008H	0.6	0.6	0.00	0.5	0.0	0
Post-Out_FDOT	002Y008H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y008H	5.2	3.8	0.00	1.0	0.9	7537
StormTech S	002Y008H	5.2	3.8	0.00	0.6	0.9	4518
Vault	002Y008H	4.0	3.8	0.00	2.0	1.3	8540
B4_Inlet	005YR-024HR	5.2	3.8	0.00	1.0	1.1	113
B5_Inlet	005YR-024HR	5.2	3.9	0.00	0.3	0.3	100
B6_Inlet	005YR-024HR	5.3	3.9	0.00	0.3	0.2	100
B8_Inlet	005YR-024HR	5.2	3.9	0.00	1.1	1.1	100
Bubbler	005YR-024HR	4.5	3.9	0.00	0.3	0.3	100
Ground	005YR-024HR	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	005YR-024HR	0.6	0.6	0.00	1.0	0.0	0
Post-Out_FDOT	005YR-024HR	3.1	3.1	0.00	0.3	0.0	0
StormTech N	005YR-024HR	5.2	3.8	0.00	1.1	0.9	7539
StormTech S	005YR-024HR	5.2	3.9	0.00	1.3	0.9	4519
Vault	005YR-024HR	4.0	3.9	0.00	4.0	2.0	8541
B4_Inlet	010YR-024HR	5.2	3.9	0.00	1.6	1.6	117
B5_Inlet	010YR-024HR	5.2	4.1	0.00	0.4	0.4	100
B6_Inlet	010YR-024HR	5.3	4.1	0.00	0.4	0.4	100
B8_Inlet	010YR-024HR	5.2	4.2	0.00	1.5	1.5	100
Bubbler	010YR-024HR	4.5	4.0	0.00	1.7	1.7	100
Ground	010YR-024HR	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	010YR-024HR	0.6	0.6	0.00	1.4	0.0	0
Post-Out_FDOT	010YR-024HR	3.1	3.1	0.00	1.7	0.0	0

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
StormTech N	010YR-024HR	5.2	3.9	0.00	1.6	0.9	7545
StormTech S	010YR-024HR	5.2	4.1	0.00	2.2	0.9	4525
Vault	010YR-024HR	4.0	4.1	0.00	5.6	4.9	8541

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
B4_Inlet	002Y002H	5.2	3.4	0.00	0.5	0.5	100
B5_Inlet	002Y002H	5.2	3.6	0.00	0.3	0.3	100
B6_Inlet	002Y002H	5.3	3.6	0.00	0.2	0.3	100
B8_Inlet	002Y002H	5.2	3.8	0.00	0.9	0.9	100
Bubbler	002Y002H	4.5	3.6	0.00	0.1	0.1	100
Ground	002Y002H	2.5	2.5	0.00	0.6	0.0	0
Post-OUT_Gulf	002Y002H	0.6	0.6	0.00	0.8	0.0	0
Post-Out_FDOT	002Y002H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y002H	5.2	3.3	0.00	0.5	0.1	7504
StormTech S	002Y002H	5.2	3.6	0.00	1.4	0.3	4519
Vault	002Y002H	4.0	3.6	0.00	3.3	1.9	8540
B4_Inlet	002Y004H	5.2	3.4	0.00	0.5	0.5	100
B5_Inlet	002Y004H	5.2	3.7	0.00	0.1	0.2	100
B6_Inlet	002Y004H	5.3	3.7	0.00	0.1	0.2	100
B8_Inlet	002Y004H	5.2	3.7	0.00	0.5	0.5	100
Bubbler	002Y004H	4.5	3.7	0.00	0.1	0.0	100
Ground	002Y004H	2.5	2.5	0.00	0.5	0.0	0
Post-OUT_Gulf	002Y004H	0.6	0.6	0.00	0.4	0.0	0
Post-Out_FDOT	002Y004H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y004H	5.2	3.4	0.00	0.5	0.1	7515
StormTech S	002Y004H	5.2	3.7	0.00	1.1	0.2	4519
Vault	002Y004H	4.0	3.7	0.00	2.0	1.5	8541
B4_Inlet	002Y008H	5.2	3.5	0.00	0.5	0.5	100
B5_Inlet	002Y008H	5.2	3.7	0.00	0.1	0.2	100
B6_Inlet	002Y008H	5.3	3.7	0.00	0.1	0.2	100
B8_Inlet	002Y008H	5.2	3.7	0.00	0.5	0.5	100
Bubbler	002Y008H	4.5	3.7	0.00	0.1	0.1	100
Ground	002Y008H	2.5	2.5	0.00	0.4	0.0	0
Post-OUT_Gulf	002Y008H	0.6	0.6	0.00	0.5	0.0	0
Post-Out_FDOT	002Y008H	3.1	3.1	0.00	0.0	0.0	0

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
StormTech N	002Y008H	5.2	3.5	0.00	0.5	0.1	7521
StormTech S	002Y008H	5.2	3.7	0.00	1.1	0.2	4519
Vault	002Y008H	4.0	3.7	0.00	2.0	1.5	8541
B4_Inlet	005YR-024HR	5.2	3.7	0.00	0.9	0.9	107
B5_Inlet	005YR-024HR	5.2	3.9	0.00	0.3	0.3	100
B6_Inlet	005YR-024HR	5.3	3.9	0.00	0.3	0.2	100
B8_Inlet	005YR-024HR	5.2	3.9	0.00	1.1	1.1	100
Bubbler	005YR-024HR	4.5	3.9	0.00	0.1	0.1	100
Ground	005YR-024HR	2.5	2.5	0.00	0.5	0.0	0
Post-OUT_Gulf	005YR-024HR	0.6	0.6	0.00	1.0	0.0	0
Post-Out_FDOT	005YR-024HR	3.1	3.1	0.00	0.1	0.0	0
StormTech N	005YR-024HR	5.2	3.7	0.00	0.9	0.1	7532
StormTech S	005YR-024HR	5.2	3.9	0.00	1.7	0.2	4525
Vault	005YR-024HR	4.0	3.9	0.00	4.1	2.5	8541
B4_Inlet	010YR-024HR	5.2	3.9	0.00	1.5	1.5	115
B5_Inlet	010YR-024HR	5.2	4.1	0.00	0.4	0.4	100
B6_Inlet	010YR-024HR	5.3	4.1	0.00	0.4	0.4	100
B8_Inlet	010YR-024HR	5.2	4.1	0.00	1.5	1.5	100
Bubbler	010YR-024HR	4.5	4.0	0.00	1.4	1.4	100
Ground	010YR-024HR	2.5	2.5	0.00	0.7	0.0	0
Post-OUT_Gulf	010YR-024HR	0.6	0.6	0.00	1.4	0.0	0
Post-Out_FDOT	010YR-024HR	3.1	3.1	0.00	1.5	0.0	0
StormTech N	010YR-024HR	5.2	3.9	0.00	1.5	0.2	7542
StormTech S	010YR-024HR	5.2	4.1	0.00	1.8	0.6	4525
Vault	010YR-024HR	4.0	4.1	0.00	5.6	4.2	8541

APPENDIX

National Flood Hazard Layer FIRMette

FEMA

82°46'31"W 27°46'25"N



82°45'54"W 27°45'53"N

366

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/26/2025 at 6:35 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

THE THUNDERBIRD, TREASURE ISLAND STORMWATER MANAGEMENT CALCULATIONS

May 2025



Digitally signed by Brian A Barker
Date: 2025.05.09 08:59:30-04'00'

PREPARED BY:

Brian Barker, P.E.

Clymer Farner Barley, Inc

314 S. Missouri Ave, Suite 101

Clearwater, FL 33756

727-519-1030

CFB-Inc.com

TABLE OF CONTENTS

SCOPE OF PROJECT AND BASIS OF ANALYSIS 1
I. SUMMARY

MAPS 2
I. PRE- AND POST-DEVELOPMENT BASIN MAPS

TREATMENT AND ATTENUATION 3
I. PRE- AND POST-DEVELOPMENT CN VALUES AND TREATMENT VOLUME

ICPR MODEL 4
I. BUBBLER FLOW EVALUATION METHODOLOGY
II. ICPR INPUT REPORTS
III. ICPR ANALYSIS RESULTS FOR INFILTRATION AND BUBBLER BLEEDDOWN

APPENDIX

FEMA FIRMette ..... A

SUMMARY

The Thunderbird Hotel, in Treasure Island, FL is proposed to be demolished and rebuilt. The project site is located at 10700 Gulf Blvd, Treasure Island, FL 33706. The project area includes parcels 23-31-15-91926-010-0050 and 23-31-15-91926-010-0042, both under the same ownership. The project falls within FEMA Flood Zone AE with base flood elevation of 11' and Zone VE with base flood elevation of 12'. The FIRMette for the site is included in the appendix. Existing site topography indicates that a majority of the site drains towards Gulf Blvd, an FDOT right of way. In the existing condition, all runoff flows offsite untreated where a majority enters the FDOT stormwater drainage system and flows into Boca Ciega Bay. A small area of the site drains west directly onto the beach. Pre- and post-development drainage patterns are shown in the provided basin maps.

Because it does not exceed the threshold for increased impervious area or vehicle use area, an exemption from Environmental Resource Permitting will be sought from SWFWMD. The site, however, will still be required to meet the drainage requirements for the City of Treasure Island.

Treasure Island requires that the site retain runoff volume equal to 1" depth over the site. This will be stored and recovered in underground chambers. The Contech details in the site construction plans show that this volume is available. The Infiltration analysis results show that the retained volume recovers within the 72-hour limit.

A comparison of pre- and post-development impervious areas indicates that attenuation analysis is not necessary. A reduction in the impervious area will result in less runoff being directed offsite.

In response to the City of Treasure Island comments regarding the stormwater outfall utilizing trench drains in the FDOT ROW we provide analysis that details discharge from the outfall and also a cut/fill analysis that demonstrates that there is not net fill being proposed on the site. Fill on the site is offset by the subsurface stormwater management system.

The site fill and cut volumes were calculated using surfaces in AutoCAD Civil3D. A tally of the cut fill is show in the table below:

Site Cut/Fill Analysis			
	Site Fill (CY)	1962.65	
+	Existing Pools (CY)	539.63	(estimated)
-	Proposed Pool (CY)	533.33	(estimated)
-	Contech Vault (CY)	832.76	
-	StormTrap North (CY)	779.01	
-	StormTrap South CY)	388.00	
=	Net Cut	-30.82	

In addition to a drawdown analysis, ICPR4 was utilized to model both stand-alone and consecutive storms. The full methodology is explained later in the report. The analysis found that for both stand-alone storms and back-to-back storms, the proposed bubbler either has no discharge at all, or ceases to flow near the end of the storm. This indicates reasonable drying times between storms. The existing driveway apron should be in a dry state for nearly the same amount of time as surrounding pavement. It is not expected that utilization of a bubbler will promote biomass growth on the driveway.

PRE-BASIN 1
1.54 ACRES

PRE-BASIN 2
0.31 ACRES

N64°14'33"E 219.92'(P)

LOT 7, BLOCK J
(PB 27, PG 16)

LOT 6, BLOCK J
(PB 27, PG 16)

APPROXIMATE FLOOD
HAZARD LINE PER FEMA
FIRM 12103C0194H,
REVISED 08/24/2021

ZONE AE (BFE = 11')
ZONE VE (BFE = 12')

N32°28'12"W 110.76'(P)

N64°14'33"E 246.50'(P)

5' UTILITY EASEMENT (PER PB 27, PG 16)

7.5' BUILDING SETBACK (PER PB 27, PG 16)

2-STORY HOTEL BUILDING

3-STORY HOTEL BUILDING

5' CHAIN LINK FENCE

FOUND NAIL & DISK
(RLS 4926 HALE)
(0.09'S, 0.40'W)

N64°14'33"E 52.40'

N32°28'12"W 110.76'(P)

N64°14'33"E 260.46'(P)

SUBJECT PARCEL
(ORB 21580, PG 1579 & ORB 21580, PG 1581)
±1.84 ACRES

BENCHMARK
SET NAIL & DISK
"CFB CONTROL"
NORTHING: 1249629.80'
EASTING: 407154.58'
(NAVD88) EL = 4.24'

FOUND 1/2" IRON PIPE (NO ID)
(0.42'S, 0.24'W)

FOUND NAIL & DISK (LB 107)
(0.37'S, 0.13'W)

FOUND NAIL & DISK
(LB 966 JOHNSTON)
FOUND NAIL & DISK (LB 021 GFY) (0.34'S, 0.95'W)
(ON-LINE WITH CCCL)

S64°14'33"W 236.34'

[REMAINDER OF LOT 4, BLOCK J]

BILMAR BEACH RESORT CONDOMINIUM
(CPB 138, PG 60)

NORTHERLY BOUNDARY OF LOT 4, BLOCK J

-PARCEL 3-
LOT 5, BLOCK J
(PB 27, PG 16)

-PARCEL 1-
NORTH 200' OF LOT 4, BLOCK J
(PB 27, PG 16)

-PARCEL 2-
PORTION OF TRACT 7
[PB 23, PG 34]

CITY OF TREASURE ISLAND
- BLOCK J AND K
PB 27, PG 16

GULF BOULEVARD (STATE ROAD NO. 699)
100' RIGHT-OF-WAY PER STATE OF FLORIDA STATE
ROAD DEPARTMENT ROAD OF RECORD MAP
HIGHWAY IMPROVEMENT SECTION 15010-2510

BENCHMARK
FOUND BRASS DISK STAMPED "15-90-DA-27A"
NORTHING: 1249621.60'
EASTING: 407356.27'
(NAVD88) EL = 4.41'
[NOTE: UNABLE TO RECOVER DATASHEET FOR
PUBLISHED CONTROL VALUES OF THIS MARK, IF
ANY EXIST – POSSIBLE FDOT REFERENCE MARK]

POINT OF COMMENCEMENT
(PARCEL 2)
[WEST NORTHERLY CORNER
OF LOT 4, BLOCK J]

POINT OF BEGINNING
(PARCEL 2)

SET NAIL & DISK (CFB LB6938)

N64°14'33"E 43.92'(D)

N27°59'29"W 46.05'(D)

S64°14'33"W 43.31'(D)

N64°11'55"E 43.92'(D)

N64°14'33"E

N27°59'29"W

S64°14'33"W

N64°14'33"E 78.67'

S64°11'55"W 78.67'



DATE	REVISIONS	BY

CFB | CLYMER FARNER BARLEY
CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(352)748-3126

POST-DEVELOPMENT BASIN MAP

THUNDERBIRD BEACH RESORT
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

SAVE DATE	3/27/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025.00362
FILE NAME	008 - T_BIRD-BASIN

SHEET NUMBER 02

S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\008 - T_BIRD-BASIN.dwg, 5/8/2025 5:23:14 PM, _AutoCAD PDF (General Documentation).pc3

BASIN SUMMARY TABLE

PRE-DEVELOPMENT BASINS

	BASIN 1			BASIN 2			TOTAL		
	BUILDINGS & PARKING LOT			SOUTH POOL & NORTH COURT					
	Area (SF)	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*
Non-DCIA Area									
Pervious (Typ B Soil)	6,900	0.16	61.00	1,142	0.03	61.00	8,042	0.18	61.00
Impervious	--		98.00			98.00			98.00
Total Non-DCIA & Weighted CN	6,900		61.00	1,142		61.00	8,042		61.00
DCIA			*%DCIA*			*%DCIA*			*%DCIA*
impervious	60,147	1.38		12,150	0.28		72,297	1.66	
pond									
Total DCIA	60,147	1.38	89.71%	12,150	0.28	91.41%	72,297	1.66	89.99%
Total Area (SF) &	**67,047**	**1.54**		**13,292**	**0.31**		**80,339**	**1.84**	
Weighted C Value									

POST-DEVELOPMENT BASINS

	BASIN 1			BASIN 2			TOTAL		
	BUILDINGS & PARKING LOT			POOL & DECK					
	Area (SF)	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*	*Area (SF)*	*Area (Ac)*	*CN*
Non-DCIA									
Pervious (Typ B Soil)	8,043	0.18	61.00	3,355	0.08	61.00	11,398	0.26	--
Impervious			98.00			98.00			--
Total Non-DCIA & Weighted CN	8,043		61.00	3,355		61.00	11,398		--
DCIA			*%DCIA*			*%DCIA*			*%DCIA*
impervious	57,224	1.31		11,717	0.27		68,941	1.58	
pond									
Total DCIA	57,224	1.31	87.68%	11,717	0.27	77.74%	68,941	1.58	85.81%
Total Area (SF) &	**65,267**	**1.50**		**15,072**	**0.35**		**80,339**	**1.84**	
Weighted CN									

Treatment Volume Required x = 1

(x")(Area Sf)(1'/12") = **6,695** **CF**

Notes:
The basin draining towards the FDOT ROW is smaller and has less impervious in the post development condition.
The basin draining towards the Gulf is larger, but has less impervious area in the post development condition.
The overall imperviousness of the site is lower in the post-developmennt condition.

BUBBLER FLOW ANALYSIS

Purpose:
Demonstrate that there will be substantial dry periods where the proposed bubbler will not bleed excessive water over the downstream driveway.

Methodology:

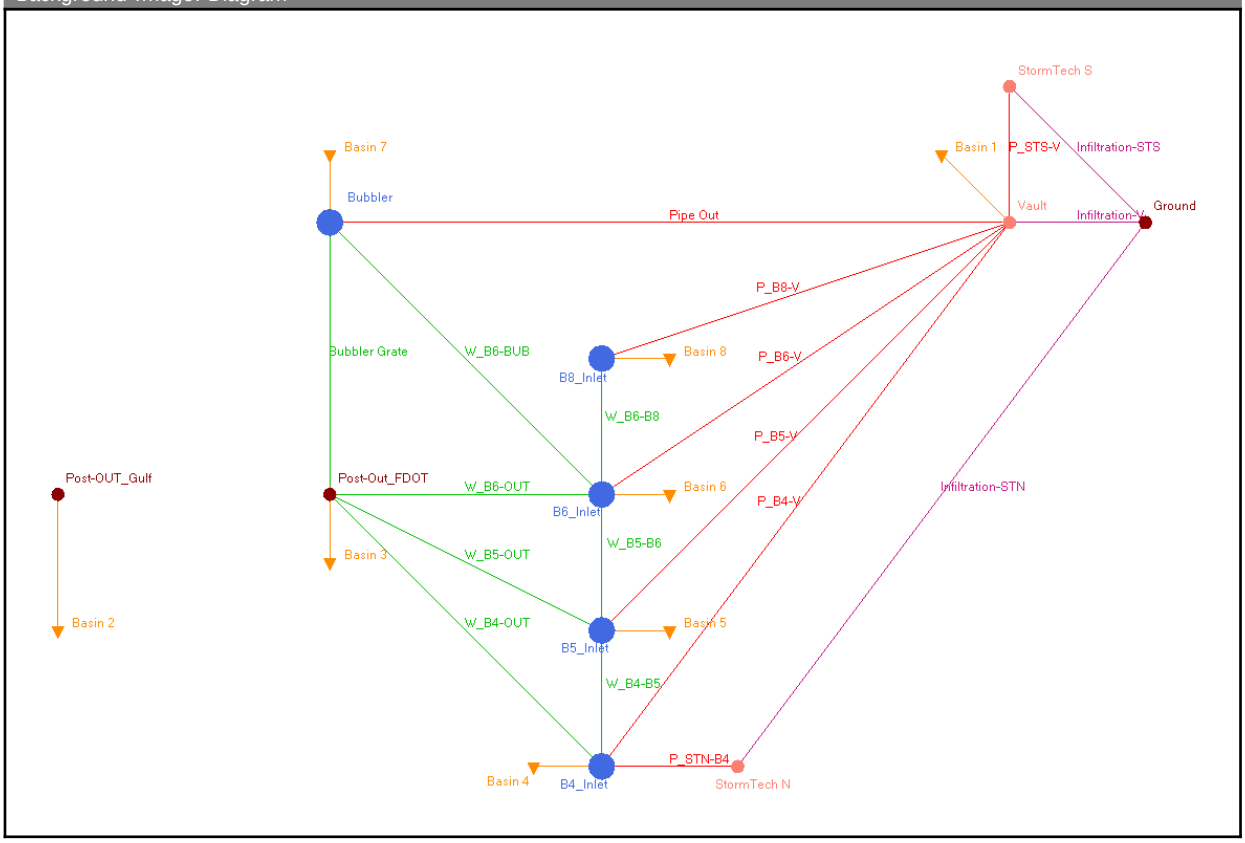
1. Run the following storms to show when flow out of the bubbler goes to 0 CFS: 1. FDOT 2-year storm for the 2-, 4-, and 8-hour durations. 2. The 5 and 10-year 24-hour SWFWMD storms. Show flow rates for the bubbler weir to illustrate the elapsed time after the storm where flow goes to 0.
2. Run the drawdown analysis. In addition to showing that the vault meets recovery criteria, the time/stage curve can be used to set an initial condition for back-to-back storms.
3. Simulate back-to-back afternoon storms typical of Florida summers (i.e., a 2- to 8-hour storm in the afternoon evening, followed by a similar event the next day). To do so, the initial stage for the storm events will be set to the stage in the system 20 hours after the end of the 4-hour event modeled in step 1. Show flow rates for bubbler weir to illustrate elapsed time where flow goes to 0
4. Show infiltration analysis and flow rate analysis for the various storms and draw conclusions.

Conclusions:
A drawdown analysis, which shows recovery of retention volume at the conclusion of the storm shows that about 20 hours after the 4-hour storm, the stage is 3.45'. This is bumped up to 3.5' to be slightly conservative. Note that this also shows that the drawdown is complete at 60 hours, this satisfying the 72-hour recovery rule.

The muli-scenario Flow charts for each storm event show that the bubbler has no discharge for the 2-, 4-, and 8-hour storms. For the 24-hour storms flow rate goes to 0 CFS before the end of the storm event. This occurs due to the percolation rate of the three underground retention systems. This means that for a majority of the storms that the site will see, there will be no increase in the time the downstream driveway is wet when compared to the existing condition.

ICPR4 Scenario Notes:
The ICPR4 Report shows three scenarios. The Proposed Scenario contains the original input data. The initial stage is set to the bottom of each stage/area and stage/volume node. This simulates an event that occurs after a substantial dry period, where full recovery of the retention volume has occurred. The Draw Down scenario imposes a slug load on the system by setting the initial stage in each stage/area and stage/volume node to the weir elevation, with no rainfall analysis. The Consecutive Storms scenario uses the Proposed input with the exception that the initial stage in the nodes is set to show the vault as partially full based on drawdown period between storms.

Background Image: Diagram



Simulation: 002Y002H

Scenario:	Consecutive Storms
Run Date/Time:	5/8/2025 4:56:30 PM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	8.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FDOT-2
Rainfall Amount: 2.71 in
Storm Duration: 2.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 002Y004H

Scenario: Consecutive Storms
Run Date/Time: 5/8/2025 4:56:33 PM

Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: Existing Curve Number

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight Fact: 0.5 dec

dZ Tolerance: 0.0010 ft

Max dZ: 1.00 ft

Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.00 hr

Smp/Man Basin Rain Opt: Global

Rainfall Name: ~FDOT-4

		Rainfall Amount:	3.16 in
Edge Length Option:	Automatic	Storm Duration:	4.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 002Y008H

Scenario: Consecutive Storms
Run Date/Time: 5/8/2025 4:56:38 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:

Unit Hydrograph Folder:		Curve Number Set:	Existing Curve Number
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	Existing Impervious

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.00 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FDOT-8
		Rainfall Amount:	3.71 in
Edge Length Option:	Automatic	Storm Duration:	8.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 005YR-024HR

Scenario:	Consecutive Storms
Run Date/Time:	5/8/2025 4:56:44 PM
Program Version:	ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	120.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.00	0.10
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CFB CURVE NUMBER SET
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: CFB IMPERVIOUS SET

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 5.50 in
Storm Duration: 24.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 010YR-024HR

Scenario: Consecutive Storms
Run Date/Time: 5/8/2025 4:57:03 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	120.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.00	0.10
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CFB CURVE NUMBER SET
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: CFB IMPERVIOUS SET

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6

IA Recovery Time: 24.00 hr

Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.50 in
Edge Length Option:	Automatic	Storm Duration:	24.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: WQL Drawdown

Scenario: Draw Down
Run Date/Time: 5/8/2025 4:57:28 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	80.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.00	0.10
Max Calculation Time:		30.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00
0	0	0	11.00	5.00
0	0	0	13.50	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	2160.00
0	0	0	36.00	1440.00

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	60.00	3600.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: CFB CURVE NUMBER SET
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: CFB IMPERVIOUS SET

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: No Rainfall
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 002Y002H

Scenario: PROPOSED
Run Date/Time: 5/8/2025 4:57:36 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00

End Time:	0	0	0	8.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FDOT-2
Rainfall Amount: 2.71 in
Storm Duration: 2.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simulation: 002Y004H

Scenario: PROPOSED
Run Date/Time: 5/8/2025 4:57:38 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.00 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.00 ft		
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FDOT-4
		Rainfall Amount:	3.16 in
Edge Length Option:	Automatic	Storm Duration:	4.00 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 002Y008H

Scenario: PROPOSED
Run Date/Time: 5/8/2025 4:57:43 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.00
End Time:	0	0	0	24.00

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	130.00	0.05
Max Calculation Time:		130.00

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.00	15.00

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: Existing Curve Number
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: Existing Impervious

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.00 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic

IA Recovery Time: 24.00 hr
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FDOT-8
Rainfall Amount: 3.71 in
Storm Duration: 8.00 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

Simple Basin: Basin 1

Scenario: Consecutive Storms
Node: Vault
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.0 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.75 ac
Curve Number: 61.0

% Impervious:	92.04
% DCIA:	92.04
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 2

Scenario:	Consecutive Storms
Node:	Post-OUT_Gulf
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.35 ac
Curve Number:	61.0
% Impervious:	77.74
% DCIA:	77.74
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 3

Scenario:	Consecutive Storms
Node:	Post-Out_FDOT
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.03 ac
Curve Number:	61.0
% Impervious:	47.99
% DCIA:	47.99
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 4

Scenario:	Consecutive Storms
Node:	B4_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	85.54
% DCIA:	85.54
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 5

Scenario:	Consecutive Storms
Node:	B5_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	91.70
% DCIA:	91.70
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 6

Scenario:	Consecutive Storms
Node:	B6_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs

Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.09 ac
Curve Number:	61.0
% Impervious:	89.46
% DCIA:	89.46
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 7

Scenario:	Consecutive Storms
Node:	Bubbler
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.05 ac
Curve Number:	61.0
% Impervious:	60.93
% DCIA:	60.93
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 8

Scenario:	Consecutive Storms
Node:	B8_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.37 ac
Curve Number:	61.0
% Impervious:	84.53
% DCIA:	84.53

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 1

Scenario:	PROPOSED
Node:	Vault
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.75 ac
Curve Number:	61.0
% Impervious:	92.04
% DCIA:	92.04
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 2

Scenario:	PROPOSED
Node:	Post-OUT_Gulf
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.35 ac
Curve Number:	61.0
% Impervious:	77.74
% DCIA:	77.74
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 3

Scenario:	PROPOSED
Node:	Post-Out_FDOT
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.03 ac
Curve Number:	61.0
% Impervious:	47.99
% DCIA:	47.99
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 4

Scenario:	PROPOSED
Node:	B4_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	85.54
% DCIA:	85.54
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 5

Scenario:	PROPOSED
Node:	B5_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs

Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.10 ac
Curve Number:	61.0
% Impervious:	91.70
% DCIA:	91.70
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 6

Scenario:	PROPOSED
Node:	B6_Inlet
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.09 ac
Curve Number:	61.0
% Impervious:	89.46
% DCIA:	89.46
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: Basin 7

Scenario:	PROPOSED
Node:	Bubbler
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.00 min
Max Allowable Q:	0.0 cfs
Time Shift:	0.00 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.05 ac
Curve Number:	61.0
% Impervious:	60.93
% DCIA:	60.93

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: Basin 8

Scenario: PROPOSED
Node: B8_Inlet
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.00 min
Max Allowable Q: 0.0 cfs
Time Shift: 0.00 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 0.37 ac
Curve Number: 61.0
% Impervious: 84.53
% DCIA: 84.53
% Direct: 0.00
Rainfall Name:

Comment:

Node: B4_Inlet

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	115
5.4	0.01	560

Comment: Inlet for Post-Basin 4

Node: B5_Inlet

Scenario: Consecutive Storms
Type: Stage/Area

Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	62
5.4	0.01	382
5.5	0.02	1060
5.6	0.03	1440

Comment: Inlet for Post-Basin 5

Node: B6_Inlet

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.3 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.3	0.00	12
5.3	0.00	13
5.4	0.00	166
5.7	0.05	2010

Comment: Inlet for Post-Basin 6

Node: B8_Inlet

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	123
5.4	0.01	560
5.5	0.04	1832
5.7	0.12	5341

Comment: Inlet for Post-Basin 8

Node: Bubbler

Scenario: Consecutive Storms
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 4.5 ft

Comment:

Node: Ground

Scenario: Consecutive Storms
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 2.5 ft
Warning Stage: 2.5 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	2.5
0	0	0	240.00	2.5

Comment:

Node: Post-OUT_Gulf

Scenario: Consecutive Storms
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 0.6 ft
Warning Stage: 0.6 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	0.6
0	0	0	240.00	0.6

Comment:

Node: Post-Out_FDOT

Scenario: Consecutive Storms
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 3.1 ft
Warning Stage: 3.1 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	3.1
0	0	0	240.00	3.1

Comment: crown of downstream pipe

Node: StormTech N

Scenario: Consecutive Storms
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.14	5889
4.6	0.27	11779

Comment:

Node: StormTech S

Scenario: Consecutive Storms
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.08	3556
4.6	0.16	7112

Comment:

Node: Vault

Scenario: Consecutive Storms
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.5 ft
Warning Stage: 4.0 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.0	0.17	7395
4.0	0.17	7395
3.9	0.16	6784
3.8	0.14	6315
3.8	0.13	5692
3.7	0.12	5041
3.6	0.10	4373
3.5	0.08	3697
3.4	0.07	3021
3.3	0.05	2353
3.3	0.04	1702
3.2	0.02	1079
3.1	0.01	499
3.0	0.00	0

Comment:

Node: B4_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	115
5.4	0.01	560

Comment: Inlet for Post-Basin 4

Node: B5_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft

Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	62
5.4	0.01	382
5.5	0.02	1060
5.6	0.03	1440

Comment: Inlet for Post-Basin 5

Node: B6_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.3 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.3	0.00	12
5.3	0.00	13
5.4	0.00	166
5.7	0.05	2010

Comment: Inlet for Post-Basin 6

Node: B8_Inlet

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	123
5.4	0.01	560
5.5	0.04	1832
5.7	0.12	5341

Comment: Inlet for Post-Basin 8

Node: Bubbler

Scenario: Draw Down
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 4.5 ft

Comment:

Node: Ground

Scenario: Draw Down
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 2.5 ft
Warning Stage: 2.5 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	2.5
0	0	0	240.00	2.5

Comment:

Node: Post-OUT_Gulf

Scenario: Draw Down
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 0.6 ft
Warning Stage: 0.6 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	0.6
0	0	0	240.00	0.6

Comment:

Node: Post-Out_FDOT

Scenario: Draw Down
Type: Time/Stage
Base Flow: 0.0 cfs

Initial Stage: 3.1 ft
Warning Stage: 3.1 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	3.1
0	0	0	240.00	3.1

Comment: crown of downstream pipe

Node: StormTech N

Scenario: Draw Down
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.14	5889
4.6	0.27	11779

Comment:

Node: StormTech S

Scenario: Draw Down
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.9 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.08	3556
4.6	0.16	7112

Comment:

Node: Vault

Scenario: Draw Down
Type: Stage/Volume
Base Flow: 0.0 cfs

Initial Stage: 3.9 ft
Warning Stage: 4.0 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.0	0.17	7395
4.0	0.17	7395
3.9	0.16	6784
3.8	0.14	6315
3.8	0.13	5692
3.7	0.12	5041
3.6	0.10	4373
3.5	0.08	3697
3.4	0.07	3021
3.3	0.05	2353
3.3	0.04	1702
3.2	0.02	1079
3.1	0.01	499
3.0	0.00	0

Comment:

Node: B4_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	115
5.4	0.01	560

Comment: Inlet for Post-Basin 4

Node: B5_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12

Stage [ft]	Area [ac]	Area [ft2]
5.2	0.00	12
5.3	0.00	62
5.4	0.01	382
5.5	0.02	1060
5.6	0.03	1440

Comment: Inlet for Post-Basin 5

Node: B6_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.3 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.3	0.00	12
5.3	0.00	13
5.4	0.00	166
5.7	0.05	2010

Comment: Inlet for Post-Basin 6

Node: B8_Inlet

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 3.2 ft
Warning Stage: 5.2 ft

Stage [ft]	Area [ac]	Area [ft2]
3.2	0.00	12
5.2	0.00	12
5.3	0.00	123
5.4	0.01	560
5.5	0.04	1832
5.7	0.12	5341

Comment: Inlet for Post-Basin 8

Node: Bubbler

Scenario: PROPOSED
Type: Stage/Area
Base Flow: 0.0 cfs
Initial Stage: 2.4 ft
Warning Stage: 4.5 ft

Comment:

Node: Ground

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 2.5 ft
Warning Stage: 2.5 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	2.5
0	0	0	240.00	2.5

Comment:

Node: Post-OUT_Gulf

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.0 cfs
Initial Stage: 0.6 ft
Warning Stage: 0.6 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	0.6
0	0	0	240.00	0.6

Comment:

Node: Post-Out_FDOT

Scenario: PROPOSED
Type: Time/Stage
Base Flow: 0.0 cfs

Initial Stage: 3.1 ft
Warning Stage: 3.1 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.00	3.1
0	0	0	240.00	3.1

Comment: crown of downstream pipe

Node: StormTech N

Scenario: PROPOSED
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.0 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.14	5889
4.6	0.27	11779

Comment:

Node: StormTech S

Scenario: PROPOSED
Type: Stage/Volume
Base Flow: 0.0 cfs
Initial Stage: 3.0 ft
Warning Stage: 5.2 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.0	0.00	0
3.8	0.08	3556
4.6	0.16	7112

Comment:

Node: Vault

Scenario: PROPOSED
Type: Stage/Volume
Base Flow: 0.0 cfs

Initial Stage: 3.0 ft
Warning Stage: 4.0 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.0	0.17	7395
4.0	0.17	7395
3.9	0.16	6784
3.8	0.14	6315
3.8	0.13	5692
3.7	0.12	5041
3.6	0.10	4373
3.5	0.08	3697
3.4	0.07	3021
3.3	0.05	2353
3.3	0.04	1702
3.2	0.02	1079
3.1	0.01	499
3.0	0.00	0

Comment:

Weir Link: Bubbler Grate

Scenario: Consecutive Storms
From Node: Bubbler
To Node: Post-Out_FDOT
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Horizontal
Geometry Type: Rectangular
Invert: 3.9 ft
Control Elevation: 3.9 ft
Max Depth: 0.25 ft
Max Width: 17.00 ft
Fillet: 0.00 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Percolation Link: Infiltration

Scenario: Consecutive Storms
From Node: Vault
To Node: Ground
Link Count: 1
Flow Direction: Both
Aquifer Base Elevation: -15.0 ft
Water Table Elevation: 2.5 ft

Surface Area Option: User Specified
Bottom Elevation: 3.0 ft
Surface Area: 0.27 ac
Vertical Flow Termination: Horizontal Flow Algorithm
Perimeter 1: 295.00 ft
Perimeter 2: 695.00 ft
Perimeter 3: 4295.00 ft

Annual Recharge Rate:	0 ipy		
Horizontal Conductivity:	37.800 fpd	Distance P1 to P2:	50.00 ft
Vertical Conductivity:	18.900 fpd	Distance P2 to P3:	450.00 ft
Fillable Porosity:	0.290	# of Cells P1 to P2:	10
Layer Thickness:	0.00 ft	# of Cells P2 to P3:	45

Comment:

Percolation Link: Infiltration-STN

Scenario:	Consecutive Storms	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Percolation Link: Infiltration-STS

Scenario:	Consecutive Storms	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Pipe Link: P_B4-V		Upstream		Downstream	
Scenario:	Consecutive Storms	Invert:	3.2 ft	Invert:	3.0 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B4_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft

Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	50.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_B5-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.2 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B5_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	3.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_B6-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.2 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B6_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	3.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_B8-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.2 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	B8_Inlet	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	50.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_STN-B4		Upstream		Downstream	
Scenario:	Consecutive	Invert:	3.0 ft	Invert:	3.2 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	StormTech N	Geometry: Circular		Geometry: Circular	
To Node:	B4_Inlet	Max Depth:	12.00 ft	Max Depth:	12.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	29.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: P_STS-V		Upstream		Downstream	
Scenario:	Consecutive	Invert:	2.4 ft	Invert:	3.0 ft
	Storms	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	StormTech S	Geometry: Circular		Geometry: Circular	
To Node:	Vault	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	28.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			

Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: Pipe Out		Upstream		Downstream	
Scenario:	Consecutive Storms	Invert:	3.0 ft	Invert:	2.4 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	Vault	Geometry: Circular		Geometry: Circular	
To Node:	Bubbler	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	47.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: W_B4-B5			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft
To Node:	B5_Inlet	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:	5.5 ft	Discharge Coefficients	
Control Elevation:	5.5 ft	Weir Default:	2.800
Cross Section:	X_B4-B5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B4-OUT			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft

To Node:	Post-Out_FDOT		
Link Count:	1	Op Table:	
Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	5.4 ft	Ref Node:	
Control Elevation:	5.4 ft	Discharge Coefficients	
Max Depth:	999.00 ft	Weir Default:	2.800
Max Width:	26.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-B6

Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	B6_Inlet	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:	5.9 ft	Discharge Coefficients	
Control Elevation:	5.9 ft	Weir Default:	2.800
Cross Section:	X_B5-P6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-OUT

Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	Irregular	Ref Node:	
Invert:	6.0 ft	Discharge Coefficients	
Control Elevation:	6.0 ft	Weir Default:	2.800
Cross Section:	X_B5-OUT	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-B8			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	B8_Inlet	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:	5.6 ft	Discharge Coefficients	
Control Elevation:	5.6 ft	Weir Default:	2.800
Cross Section:	X_B6-B8	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-BUB			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	Bubbler	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:	5.5 ft	Discharge Coefficients	
Control Elevation:	5.5 ft	Weir Default:	2.800
Cross Section:	X_B6-BUB	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-OUT			
Scenario:	Consecutive Storms	Bottom Clip	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	6.0 ft	Discharge Coefficients	
Control Elevation:	6.0 ft	Weir Default:	2.800
Cross Section:	X_B6-OUT	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: Bubbler Grate

Scenario:	Draw Down	**Bottom Clip**	
From Node:	Bubbler	Default:	0.00 ft
To Node:	Post-Out_FDOT	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Horizontal	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	3.9 ft	**Discharge Coefficients**	
Control Elevation:	3.9 ft	Weir Default:	2.800
Max Depth:	0.25 ft	Weir Table:	
Max Width:	17.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	

Comment:

Percolation Link: Infiltration

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	Vault	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.27 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Percolation Link: Infiltration-STN

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft

Water Table Elevation:	2.5 ft		
Annual Recharge Rate:	0 ipy	Perimeter 3:	4295.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P1 to P2:	50.00 ft
Vertical Conductivity:	18.900 fpd	Distance P2 to P3:	450.00 ft
Fillable Porosity:	0.290	# of Cells P1 to P2:	10
Layer Thickness:	0.00 ft	# of Cells P2 to P3:	45

Comment:

Percolation Link: Infiltration-STS

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Pipe Link: P_B4-V

		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B4_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B5-V

		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft

From Node:	B5_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B6-V		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B6_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B8-V		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B8_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STN-B4		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.0 ft	Invert:	3.2 ft
From Node:	StormTech N	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	B4_Inlet	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	12.00 ft	Max Depth:	12.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	29.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STS-V		Upstream		Downstream	
Scenario:	Draw Down	Invert:	2.4 ft	Invert:	3.0 ft
From Node:	StormTech S	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	28.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: Pipe Out		Upstream		Downstream	
Scenario:	Draw Down	Invert:	3.0 ft	Invert:	2.4 ft
From Node:	Vault	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Bubbler	Geometry: Circular		Geometry: Circular	

Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	47.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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: Bubbler Grate

Scenario:	PROPOSED	Bottom Clip	
From Node:	Bubbler	Default:	0.00 ft
To Node:	Post-Out_FDOT	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Horizontal	Op Table:	
Geometry Type:	Rectangular	Ref Node:	
Invert:	3.9 ft	Discharge Coefficients	
Control Elevation:	3.9 ft	Weir Default:	2.800
Max Depth:	0.25 ft	Weir Table:	
Max Width:	17.00 ft	Orifice Default:	0.600
Fillet:	0.00 ft	Orifice Table:	

Comment:

Percolation Link: Infiltration-STN

Scenario:	PROPOSED	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Percolation Link: Infiltration-STS			
Scenario:	PROPOSED	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		
Comment:			

Percolation Link: Infiltration-V			
Scenario:	PROPOSED	Surface Area Option:	User Specified
From Node:	Vault	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.27 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		
Comment:			

Pipe Link: P_B4-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B4_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B5-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B5_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B6-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B6_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	3.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_B8-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.2 ft	Invert:	3.0 ft
From Node:	B8_Inlet	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STN-B4		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.0 ft	Invert:	3.2 ft
From Node:	StormTech N	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	B4_Inlet	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	12.00 ft	Max Depth:	12.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	29.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: P_STS-V		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	2.4 ft	Invert:	3.0 ft
From Node:	StormTech S	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Vault	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	28.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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:

Pipe Link: Pipe Out		Upstream		Downstream	
Scenario:	PROPOSED	Invert:	3.0 ft	Invert:	2.4 ft
From Node:	Vault	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	Bubbler	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	47.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.50	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	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: W_B4-B5			
Scenario:	PROPOSED	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft
To Node:	B5_Inlet	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:	5.5 ft	Discharge Coefficients	
Control Elevation:	5.5 ft	Weir Default:	2.800
Cross Section:	X_B4-B5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B4-OUT			
Scenario:	PROPOSED	Bottom Clip	
From Node:	B4_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	Rectangular	Ref Node:	
Invert:	5.4 ft	Discharge Coefficients	
Control Elevation:	5.4 ft	Weir Default:	2.800
Max Depth:	999.00 ft	Weir Table:	

Max Width:	26.00 ft		
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-B6

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	B6_Inlet	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:	5.9 ft	**Discharge Coefficients**	
Control Elevation:	5.9 ft	Weir Default:	2.800
Cross Section:	X_B5-P6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B5-OUT

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	B5_Inlet	Default:	0.00 ft
To Node:	Post-Out_FDOT	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:	Irregular	Ref Node:	
Invert:	6.0 ft	**Discharge Coefficients**	
Control Elevation:	6.0 ft	Weir Default:	2.800
Cross Section:	X_B5-OUT	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: W_B6-B8

Scenario:	PROPOSED	**Bottom Clip**	
From Node:	B6_Inlet	Default:	0.00 ft
To Node:	B8_Inlet	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	5.6 ft
Control Elevation:	5.6 ft
Cross Section:	X_B6-B8

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: W_B6-BUB

Scenario:	PROPOSED
From Node:	B6_Inlet
To Node:	Bubbler
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	5.5 ft
Control Elevation:	5.5 ft
Cross Section:	X_B6-BUB

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: W_B6-OUT

Scenario:	PROPOSED
From Node:	B6_Inlet
To Node:	Post-Out_FDOT
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Irregular
Invert:	6.0 ft
Control Elevation:	6.0 ft
Cross Section:	X_B6-OUT

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Cross Section: X_B4-B5

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.5
1	8.47	5.9
2	14.50	5.8
3	29.50	5.7
4	60.50	5.5
5	60.60	6.0

Comment:

Weir Cross Section: X_B5-OUT

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.0
1	25.60	6.0
2	32.20	6.0
3	84.85	6.4

Comment:

Weir Cross Section: X_B5-P6

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.3
1	16.36	6.1
2	47.68	5.9
3	47.69	6.4

Comment:

Weir Cross Section: X_B6-B8

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.7
1	23.57	5.7
2	35.61	5.6
3	35.62	6.0

Comment:

Weir Cross Section: X_B6-BUB

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.6
1	16.67	5.5
2	27.70	5.7
3	27.80	6.2

Comment:

Weir Cross Section: X_B6-OUT

Scenario: Consecutive Storms
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.4
1	32.00	6.0
2	45.00	6.1
3	73.39	6.3

Comment:

Weir Cross Section: X_B4-B5

Scenario: PROPOSED
Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.5
1	8.47	5.9
2	14.50	5.8
3	29.50	5.7
4	60.50	5.5
5	60.60	6.0

Comment:

Weir Cross Section: X_B5-OUT

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.0
1	25.60	6.0
2	32.20	6.0
3	84.85	6.4

Comment:

Weir Cross Section: X_B5-P6

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	6.3
1	16.36	6.1
2	47.68	5.9
3	47.69	6.4

Comment:

Weir Cross Section: X_B6-B8

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.7
1	23.57	5.7
2	35.61	5.6
3	35.62	6.0

Comment:

Weir Cross Section: X_B6-BUB

Scenario: PROPOSED

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	5.6
1	16.67	5.5
2	27.70	5.7
3	27.80	6.2

Comment:

Weir Cross Section: X_B6-OUT

Scenario: PROPOSED

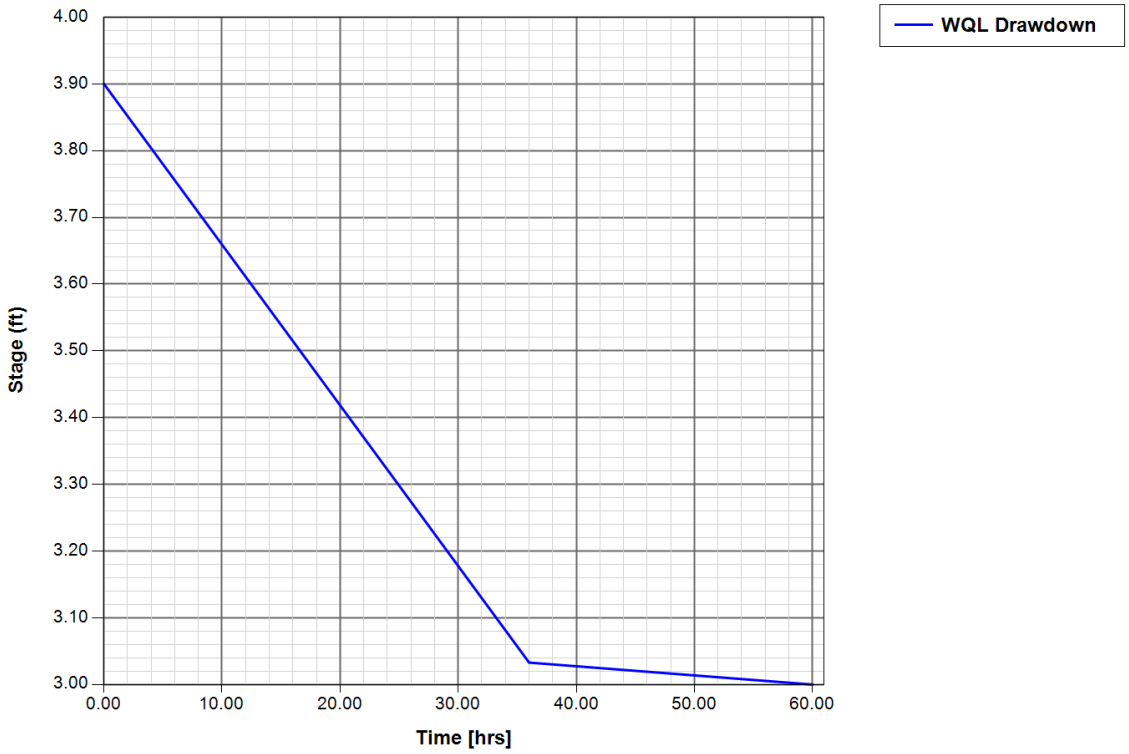
Lid: No

Bottom Point Table

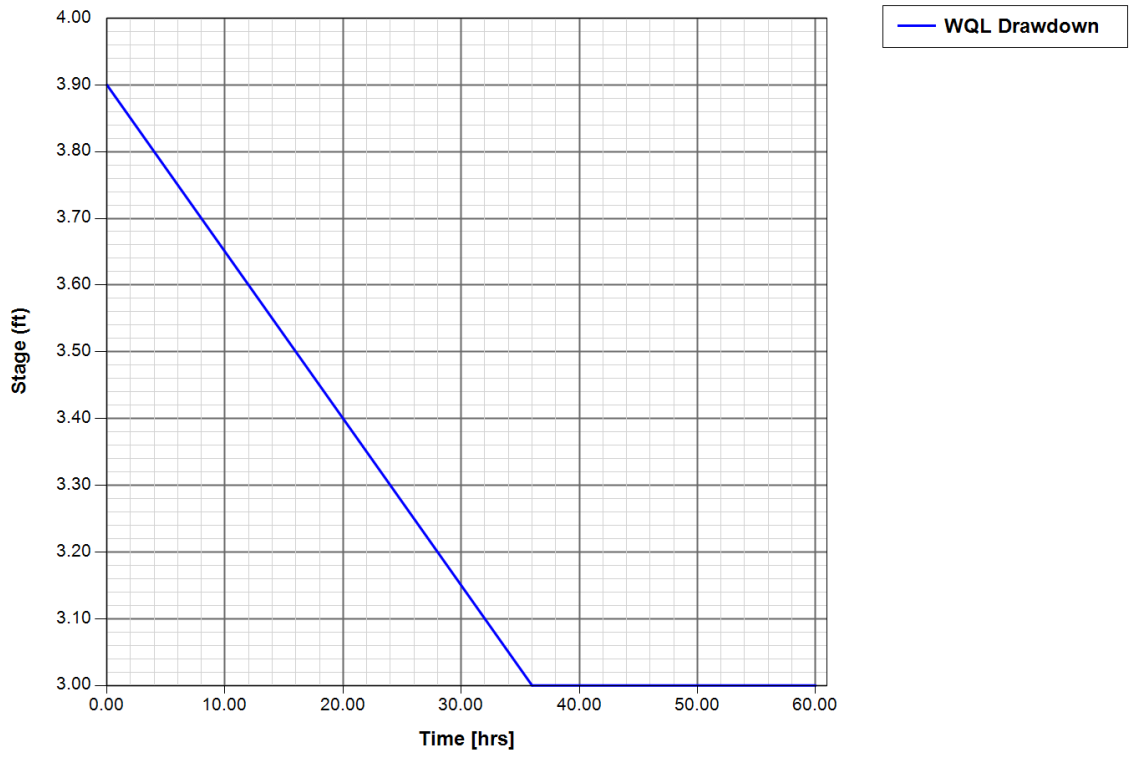
Order	Station [ft]	Elevation [ft]
0	0.00	6.4
1	32.00	6.0
2	45.00	6.1
3	73.39	6.3

Comment:

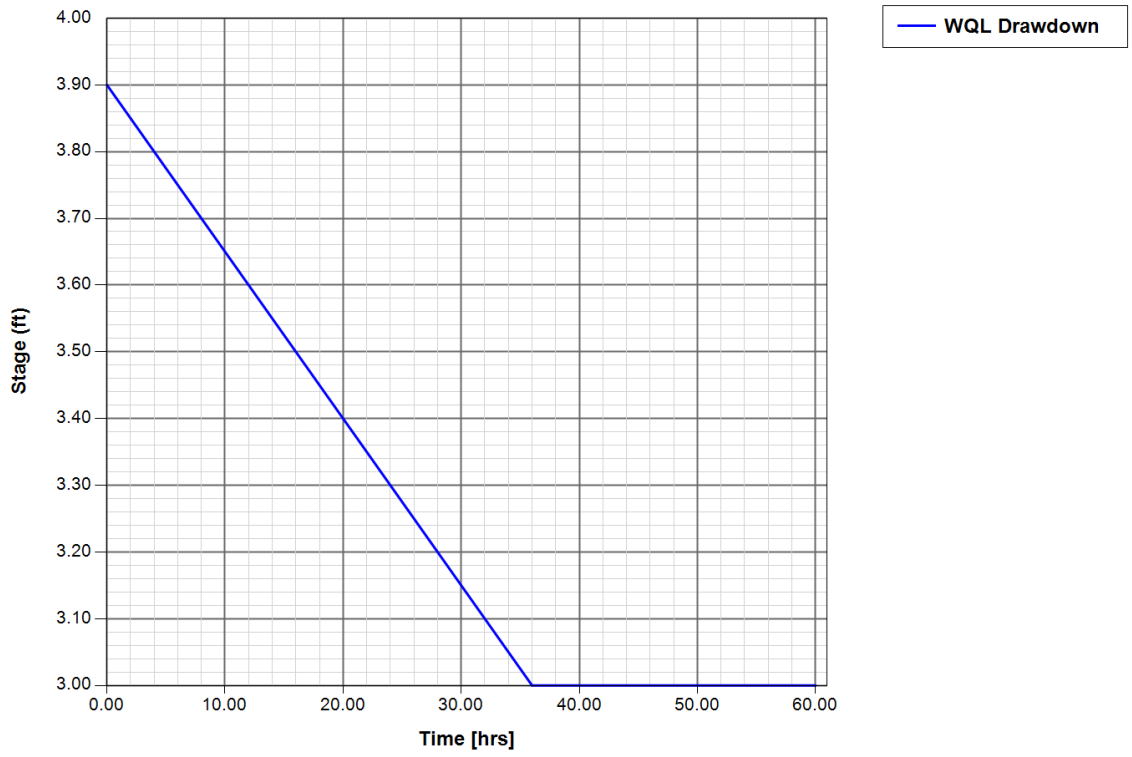
Stage [Node: StormTech N]



Stage [Node: StormTech S]



Stage [Node: Vault]

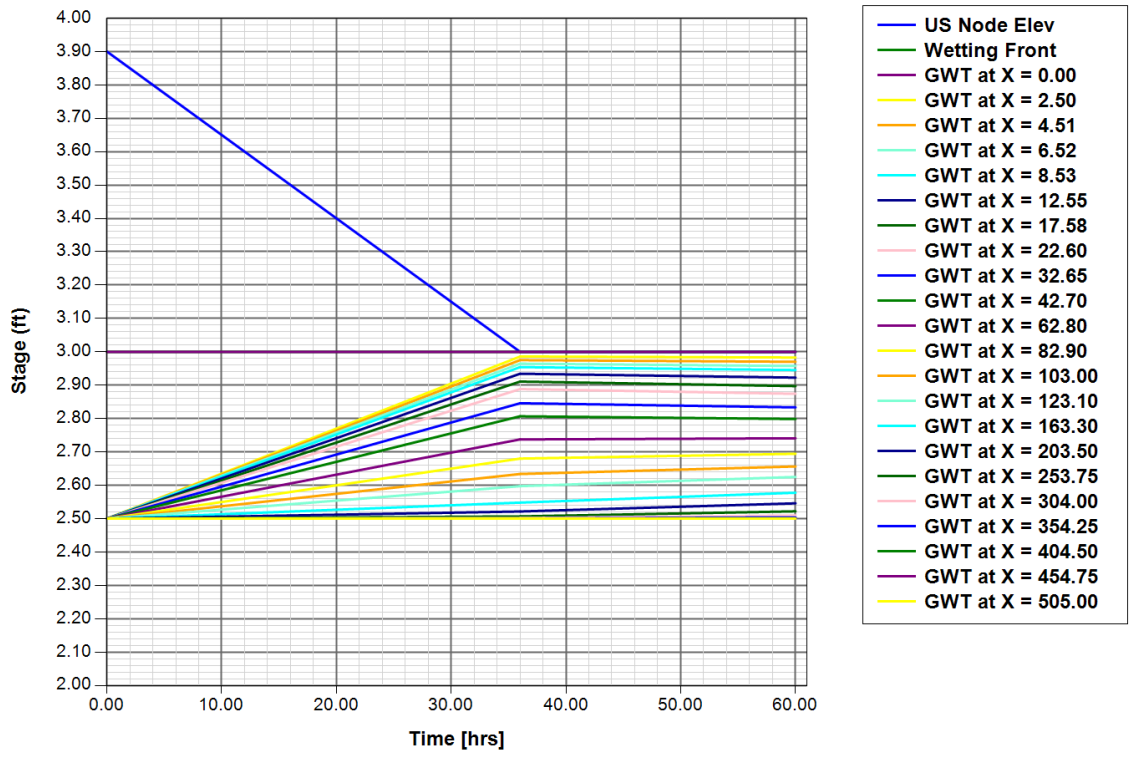


Percolation Link: Infiltration

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	Vault	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.27 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Perc Link: Infiltration (Sim: WQL Drawdown) [Infiltration]

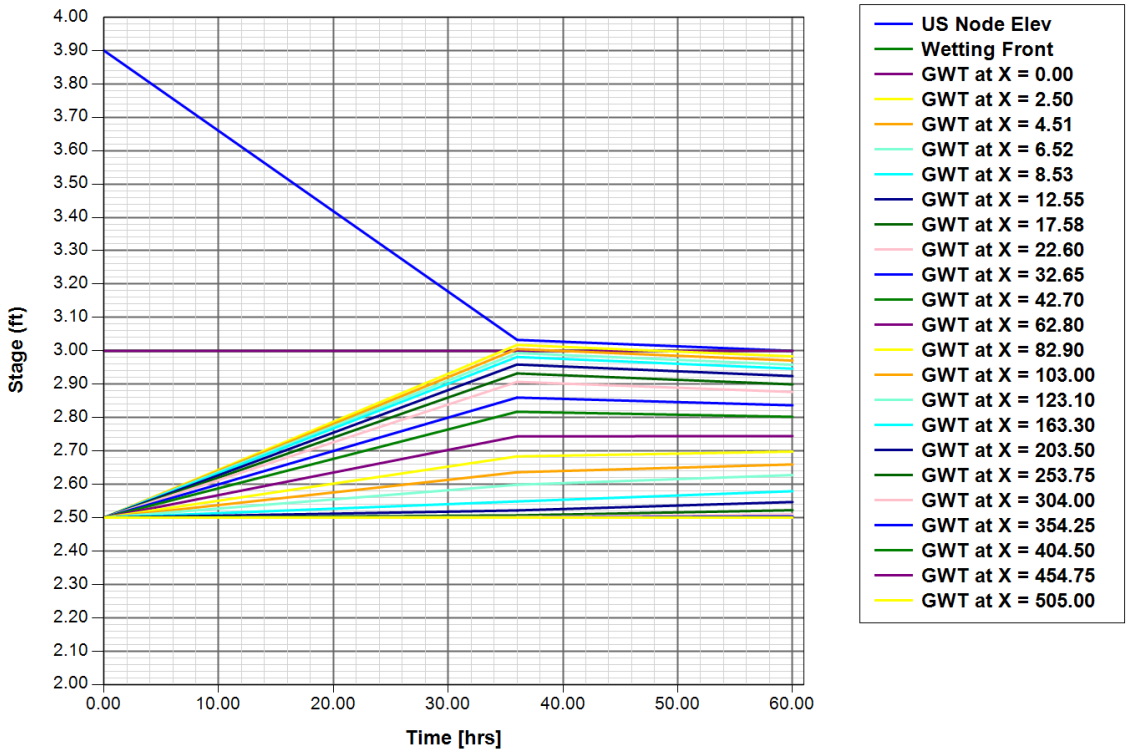


Percolation Link: Infiltration-STN

Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech N	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.20 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

Perc Link: Infiltration-STN (Sim: WQL Drawdown) [Infiltration-STN]

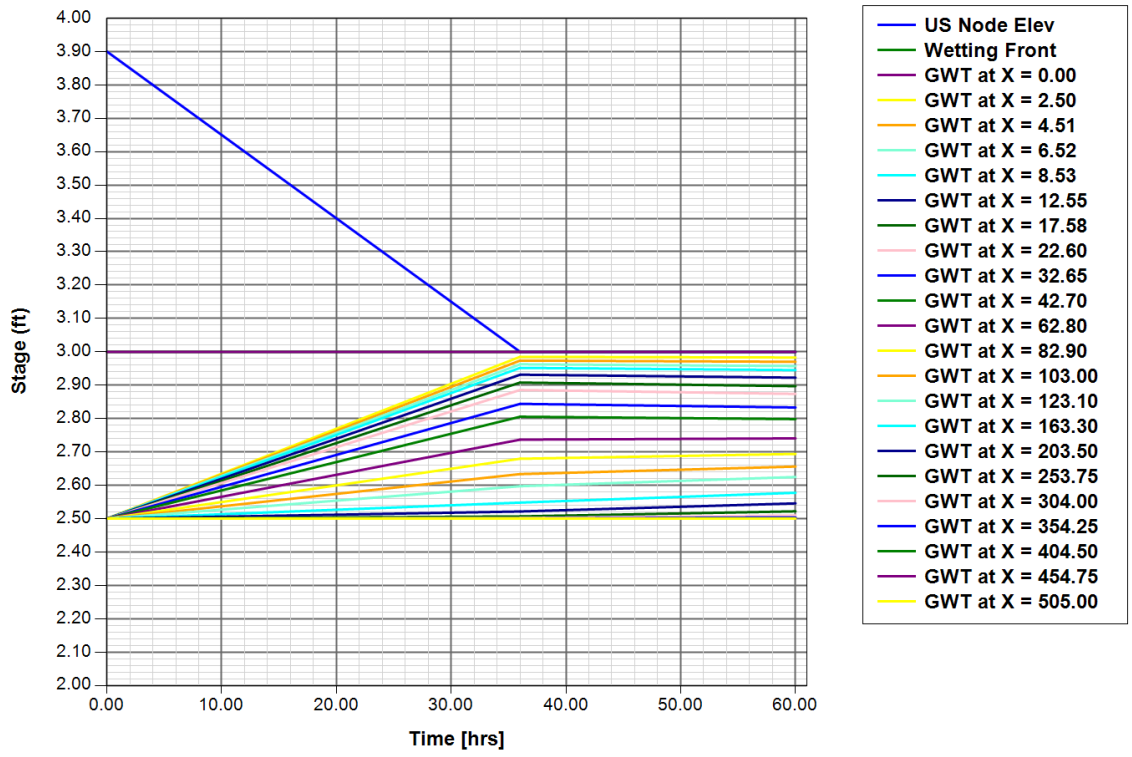


Percolation Link: Infiltration-STS

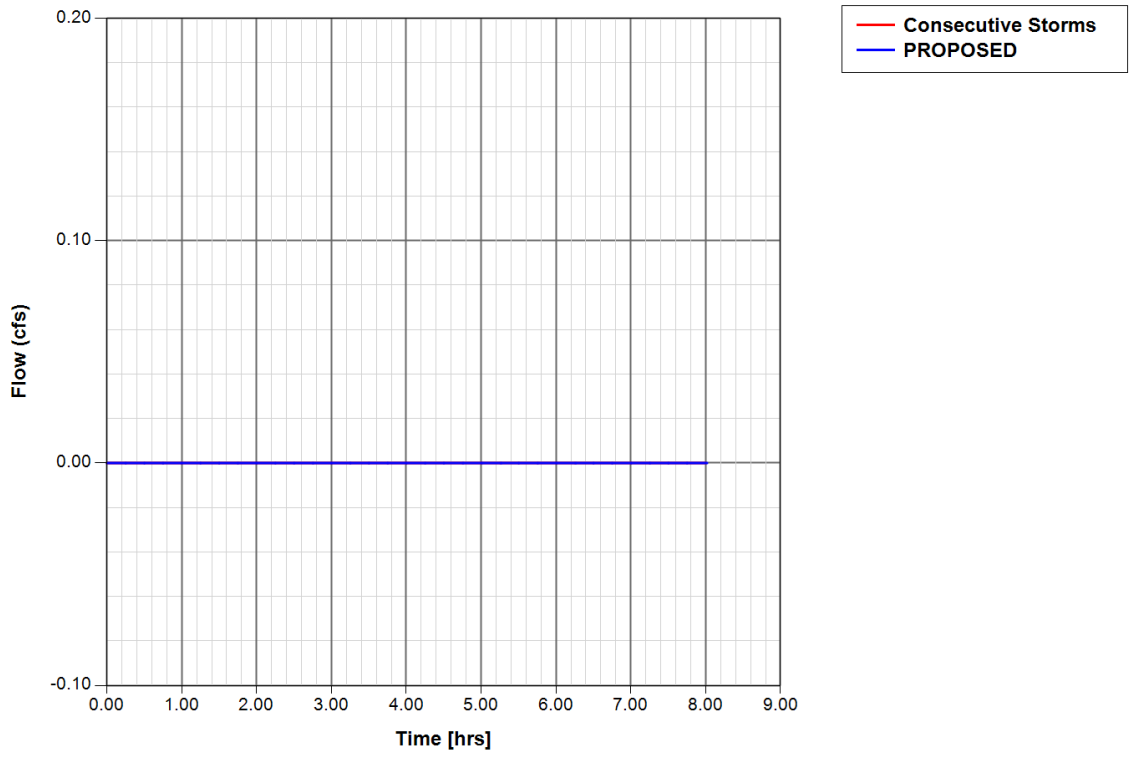
Scenario:	Draw Down	Surface Area Option:	User Specified
From Node:	StormTech S	Bottom Elevation:	3.0 ft
To Node:	Ground	Surface Area:	0.12 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	295.00 ft
Aquifer Base Elevation:	-15.0 ft	Perimeter 2:	695.00 ft
Water Table Elevation:	2.5 ft	Perimeter 3:	4295.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	37.800 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	18.900 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.290	# of Cells P2 to P3:	45
Layer Thickness:	0.00 ft		

Comment:

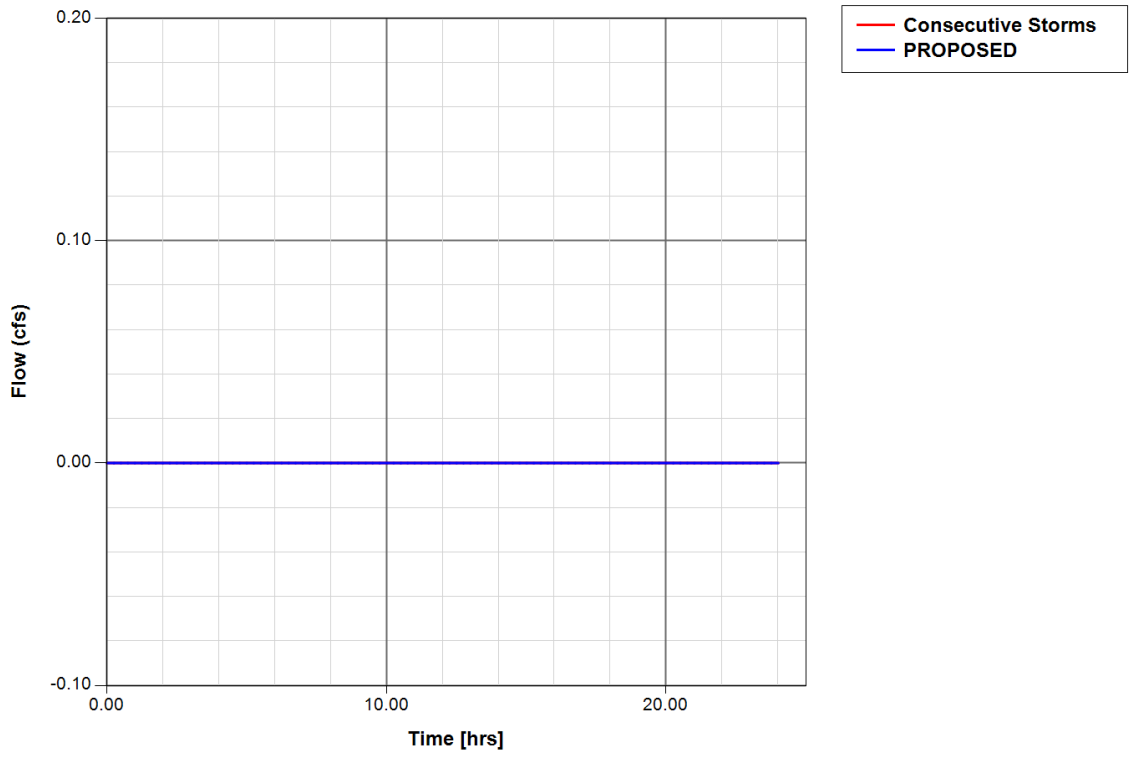
Perc Link: Infiltration-STS (Sim: WQL Drawdown) [Infiltration-STS]



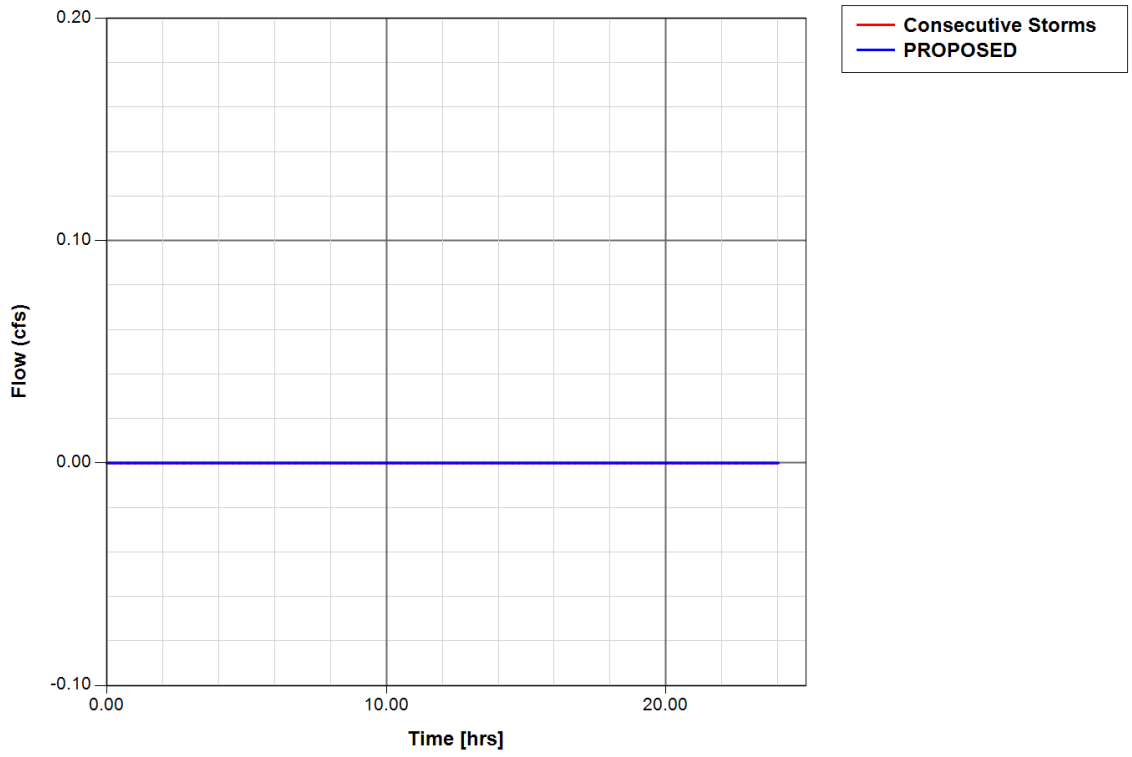
Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 002Y002H



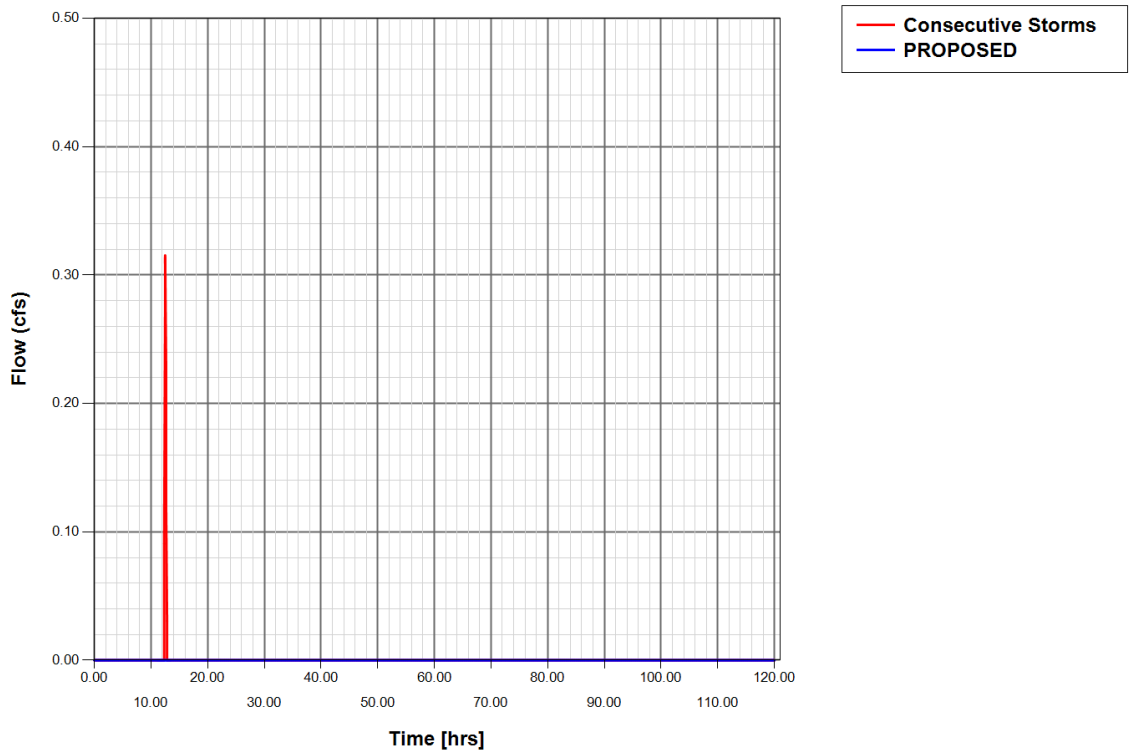
Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 002Y004H



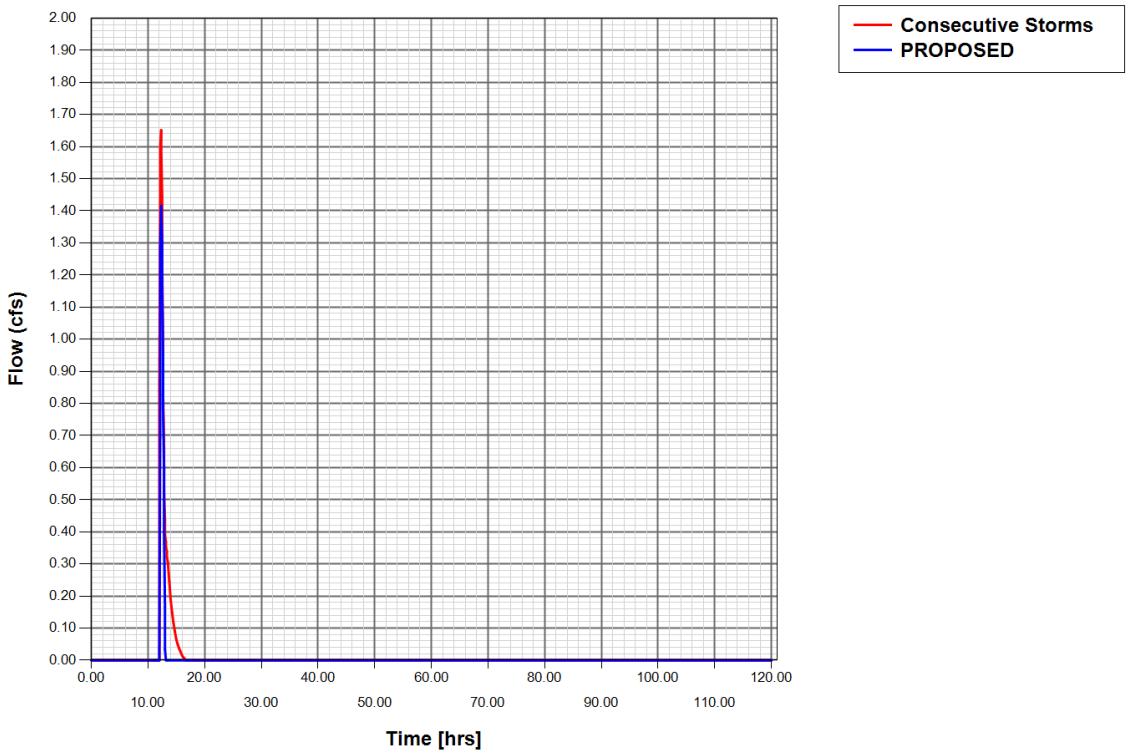
Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 002Y008H



Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 005YR-024HR



Flow | Multi-Scenario [Link: Bubbler Grate] Sim: 010YR-024HR



Node Max Conditions [Consecutive Storms]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
B4_Inlet	002Y002H	5.2	3.8	0.00	0.9	1.1	112
B5_Inlet	002Y002H	5.2	3.8	0.00	0.3	0.2	100
B6_Inlet	002Y002H	5.3	3.8	0.00	0.2	0.2	100
B8_Inlet	002Y002H	5.2	3.9	0.00	0.9	0.9	100
Bubbler	002Y002H	4.5	3.8	0.00	0.1	0.1	100
Ground	002Y002H	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	002Y002H	0.6	0.6	0.00	0.8	0.0	0
Post-Out_FDOT	002Y002H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y002H	5.2	3.8	0.00	1.1	0.9	7538
StormTech S	002Y002H	5.2	3.8	0.00	1.1	0.9	4517
Vault	002Y002H	4.0	3.8	0.00	3.3	1.8	8540
B4_Inlet	002Y004H	5.2	3.8	0.00	0.8	1.1	113
B5_Inlet	002Y004H	5.2	3.8	0.00	0.1	0.2	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
B6_Inlet	002Y004H	5.3	3.8	0.00	0.1	0.2	100
B8_Inlet	002Y004H	5.2	3.8	0.00	0.5	0.5	100
Bubbler	002Y004H	4.5	3.8	0.00	0.1	0.0	100
Ground	002Y004H	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	002Y004H	0.6	0.6	0.00	0.4	0.0	0
Post-Out_FDOT	002Y004H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y004H	5.2	3.8	0.00	1.1	0.9	7539
StormTech S	002Y004H	5.2	3.8	0.00	0.6	0.9	4519
Vault	002Y004H	4.0	3.8	0.00	2.0	1.2	8540
B4_Inlet	002Y008H	5.2	3.8	0.00	0.7	1.0	112
B5_Inlet	002Y008H	5.2	3.8	0.00	0.1	0.2	100
B6_Inlet	002Y008H	5.3	3.8	0.00	0.1	0.2	100
B8_Inlet	002Y008H	5.2	3.8	0.00	0.5	0.5	100
Bubbler	002Y008H	4.5	3.8	0.00	0.1	0.0	100
Ground	002Y008H	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	002Y008H	0.6	0.6	0.00	0.5	0.0	0
Post-Out_FDOT	002Y008H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y008H	5.2	3.8	0.00	1.0	0.9	7537
StormTech S	002Y008H	5.2	3.8	0.00	0.6	0.9	4518
Vault	002Y008H	4.0	3.8	0.00	2.0	1.3	8540
B4_Inlet	005YR-024HR	5.2	3.8	0.00	1.0	1.1	113
B5_Inlet	005YR-024HR	5.2	3.9	0.00	0.3	0.3	100
B6_Inlet	005YR-024HR	5.3	3.9	0.00	0.3	0.2	100
B8_Inlet	005YR-024HR	5.2	3.9	0.00	1.1	1.1	100
Bubbler	005YR-024HR	4.5	3.9	0.00	0.3	0.3	100
Ground	005YR-024HR	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	005YR-024HR	0.6	0.6	0.00	1.0	0.0	0
Post-Out_FDOT	005YR-024HR	3.1	3.1	0.00	0.3	0.0	0
StormTech N	005YR-024HR	5.2	3.8	0.00	1.1	0.9	7539
StormTech S	005YR-024HR	5.2	3.9	0.00	1.3	0.9	4519
Vault	005YR-024HR	4.0	3.9	0.00	4.0	2.0	8541
B4_Inlet	010YR-024HR	5.2	3.9	0.00	1.6	1.6	117
B5_Inlet	010YR-024HR	5.2	4.1	0.00	0.4	0.4	100
B6_Inlet	010YR-024HR	5.3	4.1	0.00	0.4	0.4	100
B8_Inlet	010YR-024HR	5.2	4.2	0.00	1.5	1.5	100
Bubbler	010YR-024HR	4.5	4.0	0.00	1.7	1.7	100
Ground	010YR-024HR	2.5	2.5	0.00	2.7	0.0	0
Post-OUT_Gulf	010YR-024HR	0.6	0.6	0.00	1.4	0.0	0
Post-Out_FDOT	010YR-024HR	3.1	3.1	0.00	1.7	0.0	0

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
StormTech N	010YR-024HR	5.2	3.9	0.00	1.6	0.9	7545
StormTech S	010YR-024HR	5.2	4.1	0.00	2.2	0.9	4525
Vault	010YR-024HR	4.0	4.1	0.00	5.6	4.9	8541

Node Max Conditions [PROPOSED]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
B4_Inlet	002Y002H	5.2	3.4	0.00	0.5	0.5	100
B5_Inlet	002Y002H	5.2	3.6	0.00	0.3	0.3	100
B6_Inlet	002Y002H	5.3	3.6	0.00	0.2	0.3	100
B8_Inlet	002Y002H	5.2	3.8	0.00	0.9	0.9	100
Bubbler	002Y002H	4.5	3.6	0.00	0.1	0.1	100
Ground	002Y002H	2.5	2.5	0.00	0.6	0.0	0
Post-OUT_Gulf	002Y002H	0.6	0.6	0.00	0.8	0.0	0
Post-Out_FDOT	002Y002H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y002H	5.2	3.3	0.00	0.5	0.1	7504
StormTech S	002Y002H	5.2	3.6	0.00	1.4	0.3	4519
Vault	002Y002H	4.0	3.6	0.00	3.3	1.9	8540
B4_Inlet	002Y004H	5.2	3.4	0.00	0.5	0.5	100
B5_Inlet	002Y004H	5.2	3.7	0.00	0.1	0.2	100
B6_Inlet	002Y004H	5.3	3.7	0.00	0.1	0.2	100
B8_Inlet	002Y004H	5.2	3.7	0.00	0.5	0.5	100
Bubbler	002Y004H	4.5	3.7	0.00	0.1	0.0	100
Ground	002Y004H	2.5	2.5	0.00	0.5	0.0	0
Post-OUT_Gulf	002Y004H	0.6	0.6	0.00	0.4	0.0	0
Post-Out_FDOT	002Y004H	3.1	3.1	0.00	0.0	0.0	0
StormTech N	002Y004H	5.2	3.4	0.00	0.5	0.1	7515
StormTech S	002Y004H	5.2	3.7	0.00	1.1	0.2	4519
Vault	002Y004H	4.0	3.7	0.00	2.0	1.5	8541
B4_Inlet	002Y008H	5.2	3.5	0.00	0.5	0.5	100
B5_Inlet	002Y008H	5.2	3.7	0.00	0.1	0.2	100
B6_Inlet	002Y008H	5.3	3.7	0.00	0.1	0.2	100
B8_Inlet	002Y008H	5.2	3.7	0.00	0.5	0.5	100
Bubbler	002Y008H	4.5	3.7	0.00	0.1	0.1	100
Ground	002Y008H	2.5	2.5	0.00	0.4	0.0	0
Post-OUT_Gulf	002Y008H	0.6	0.6	0.00	0.5	0.0	0
Post-Out_FDOT	002Y008H	3.1	3.1	0.00	0.0	0.0	0

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
StormTech N	002Y008H	5.2	3.5	0.00	0.5	0.1	7521
StormTech S	002Y008H	5.2	3.7	0.00	1.1	0.2	4519
Vault	002Y008H	4.0	3.7	0.00	2.0	1.5	8541
B4_Inlet	005YR-024HR	5.2	3.7	0.00	0.9	0.9	107
B5_Inlet	005YR-024HR	5.2	3.9	0.00	0.3	0.3	100
B6_Inlet	005YR-024HR	5.3	3.9	0.00	0.3	0.2	100
B8_Inlet	005YR-024HR	5.2	3.9	0.00	1.1	1.1	100
Bubbler	005YR-024HR	4.5	3.9	0.00	0.1	0.1	100
Ground	005YR-024HR	2.5	2.5	0.00	0.5	0.0	0
Post-OUT_Gulf	005YR-024HR	0.6	0.6	0.00	1.0	0.0	0
Post-Out_FDOT	005YR-024HR	3.1	3.1	0.00	0.1	0.0	0
StormTech N	005YR-024HR	5.2	3.7	0.00	0.9	0.1	7532
StormTech S	005YR-024HR	5.2	3.9	0.00	1.7	0.2	4525
Vault	005YR-024HR	4.0	3.9	0.00	4.1	2.5	8541
B4_Inlet	010YR-024HR	5.2	3.9	0.00	1.5	1.5	115
B5_Inlet	010YR-024HR	5.2	4.1	0.00	0.4	0.4	100
B6_Inlet	010YR-024HR	5.3	4.1	0.00	0.4	0.4	100
B8_Inlet	010YR-024HR	5.2	4.1	0.00	1.5	1.5	100
Bubbler	010YR-024HR	4.5	4.0	0.00	1.4	1.4	100
Ground	010YR-024HR	2.5	2.5	0.00	0.7	0.0	0
Post-OUT_Gulf	010YR-024HR	0.6	0.6	0.00	1.4	0.0	0
Post-Out_FDOT	010YR-024HR	3.1	3.1	0.00	1.5	0.0	0
StormTech N	010YR-024HR	5.2	3.9	0.00	1.5	0.2	7542
StormTech S	010YR-024HR	5.2	4.1	0.00	1.8	0.6	4525
Vault	010YR-024HR	4.0	4.1	0.00	5.6	4.2	8541

APPENDIX

National Flood Hazard Layer FIRMette

FEMA

82°46'31"W 27°46'25"N



82°45'54"W 27°45'53"N

366

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/26/2025 at 6:35 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

AGENCY	PERMIT #	SUBMITTED	STATUS
FDOT DRAINAGE PERMIT	2025-D-799-00009	RAI#1 4/16/2025	UNDER REVIEW
FDOT UTILITY PERMIT	2025-H-799-00117	RAI#1 4/9/2025, RAI#2 4/15/2025	UNDER REVIEW
FDOT LANDSCAPE PERMIT	2025-L-799-00001	RAI#1 4/18/2025	UNDER REVIEW
SWFWMD ERP EXEMPTION	APPLICATION #914883	RAI#1 4/21/2025	UNDER REVIEW
PINELLAS COUNTY WATER	UTD-25-00224	RAI#1 4/16/2025	UNDER REVIEW

DATE	REVISIONS	BY
4/22/2025	1 REVISED PER COUNTY & FDOT COMMENTS	DES
6/04/2025	2 REV PER CITY OF TREASURE ISLAND COMMENTS	LC

LANDSCAPE PLANS
FOR
THUNDERBIRD BEACH RESORT

10700 GULF BLVD, TREASURE ISLAND, FL 33706

LEGAL DESCRIPTION

PID: 23-31-15-91926-010-0042: BK 21580 PGS 1579-1580:

PARCEL 1: THAT PART OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, BETWEEN THE NORTHERLY BOUNDARY OF SAID LOT 4 AND A LINE PARALLEL TO AND 200 FEET SOUTH AT RIGHT ANGLES FROM SAID NORTHERLY BOUNDARY OF SAID LOT 4.

PARCEL 2: THAT PART OF TRACT 7, TREASURE ISLAND UNIT NO. 1, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 23, PAGE 34, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

FROM THE MOST NORTHERLY CORNER OF LOT 4, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, RUN BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 156.22 FEET, CHORD SOUTH 32 DEGREES 27 MINUTES 10 SECONDS EAST, 156.08 FEET TO A POINT OF BEGINNING; THENCE BY A CURVE TO THE RIGHT, RADIUS 1096.28 FEET, ARC 45.01 FEET CHORD SOUTH 27 DEGREES 11 MINUTES 40 SECONDS EAST, 45 FEET; THENCE SOUTH 64 DEGREES 14 MINUTES 33 SECONDS WEST, 43.31 FEET; THENCE NORTH 27 DEGREES 59 MINUTES 29 SECONDS WEST, 45.05 FEET; THENCE NORTH 64 DEGREES 14 MINUTES 33 SECONDS EAST, 43.92 FEET TO THE POINT OF BEGINNING.

PARCEL 3: LOT 5, BLOCK J, CITY OF TREASURE ISLAND - BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

PID: 23-31-15-91926-010-0050: BK 21580 PGS 1581-1582:

LOT 5, BLOCK J, CITY OF TREASURE ISLAND – BLOCK J AND K, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 27, PAGES 16 AND 17, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

NOTE:

THE LEGAL DESCRIPTION PROVIDED HEREON IS FOR PERMITTING AND/OR CONSTRUCTION PURPOSES ONLY AND SHOULD NOT BE USED FOR TRANSFER OF RIGHT, TITLE OR INTEREST.

UTILITY OWNERS

SPECTRUM
ATTENTION: MR. TED BINGHAM
700 CARILLON PARKWAY, SUITE 6
ST. PETERSBURG, FLORIDA 33716-1123
PHONE: (727) 329-2847

FRONTIER COMMUNICATIONS, INC.
ATTENTION: MR. CHRIS BLAUVELT
MC: FLCW5033
1280 CLEVELAND STREET
CLEARWATER, FLORIDA 33782
PHONE: (727) 562-1130

WIDE OPEN WEST (WOW!)
FLSP2144
ATTENTION: MR. JAMES SANDMAN - CONSTRUCTION PROJECT COORDINATOR
3001 GANDY BOULEVARD NORTH
PINELLAS PARK, FLORIDA 33782
PHONE: (727) 239-0224 OFFICE

DUKE ENERGY
ATTENTION: MR. RICO ASHLEY
2166 PALMETTO STREET, BLDG. F
CLEARWATER, FLORIDA 33765
PHONE: (727) 562-5767

WATER/STORM SEWER/RECLAIMED UTILITES
BY PINELLAS COUNTY
ATTENTION: STEVE ALLEN

SANITARY SEWER UTILITIES
BY CITY OF TREASURE ISLAND



VICINITY MAP

N

1" = 500'

SECTION 23; TOWNSHIP 31 SOUTH; RANGE 15 EAST
CITY OF TREASURE ISLAND
PINELLAS COUNTY, FLORIDA
HORIZONTAL DATUM - NAD 1983 (2011 ADJ)
VERTICAL DATUM - NAVD 1988

SHEET INDEX

Sheet Number	Sheet Title
01	COVER SHEET
~~02~~	~~NOTES & SPECIFICATIONS~~
~~03~~	~~DEMO - EROSION CONTROL PLAN~~
~~04~~	~~SITE PLAN~~
~~05~~	~~PAVING GRADING & DRAINAGE PLAN~~
~~06~~	~~UTILITY PLAN~~
~~07~~	~~CONSTRUCTION DETAILS~~
~~08~~	~~CONSTRUCTION DETAILS~~
LS01	LANDSCAPE PLAN (UNDER SEPARATE COVER)
LS02	IRRIGATION PLAN, DETAILS & SPECIFICATIONS (UNDER SEPARATE COVER)

2 NOTE: REFERENCE SEPARATE CIVIL SITE CONSTRUCTION PLANS FOR THUNDERBIRD BEACH RESORT PLAN SHEETS 01-10.

OWNER/DEVELOPER
THUNDERBIRD TI HOLDINGS, LLC
4100 N. 28TH TERRACE
HOLLYWOOD, FL 33020
ATTN: GILAD OVAKMIN
(954) 924-9779

ENGINEER
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314 S. MISSOURI AVE, SUITE 101
CLEARWATER, FL 33756
BRIAN A. BARKER, PE
FL. LIC. NO. 56728
(727) 519-1030

SURVEYOR
CLYMER FARNER BARLEY SURVEYING, LLC
314 S. MISSOURI AVE, SUITE 101
CLEARWATER, FL 33756
MATTHEW W. SIMPSON, PSM
FL. REG. NO. 7251
(727) 519-1030

ARCHITECT
PLISKO ARCHITECTURE, P.A. AIA
800 DREW STREET
CLEARWATER, FL 33755
ALEX PLISKO, JR.
REGISTERED ARCHITECT, AR0005966
(727) 442-7200

Leroy Chin, Jr.

Digitally signed by Leroy Chin, Jr.
DN: CN="Leroy Chin, Jr.", O=Unaffiliated, C=US
Date: 2025.06.05 17:08:47-04'00'

CLYMER FARNER BARLEY

CLYMER FARNER BARLEY, Inc.
4450 NE 83RD RD, MIDDLETON, FL 34762
(352) 748-3126

THUNDERBIRD BEACH RESORT

(S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\01 - T BIRD LANDSCAPE COVER.dwg) PLOT DATE:6/5/2025 4:20 PM SAVE DATE: 6/5/2025 LAST SAVED BY: LCHIN

LEGEND

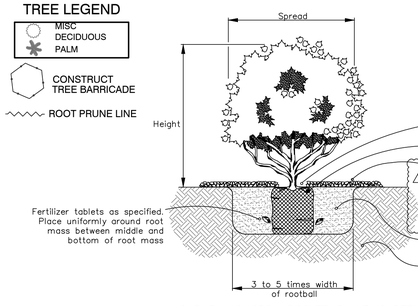
±	MORE OR LESS
BFE	BASE FLOOD ELEVATION
CCCL	COASTAL CONSTRUCTION CONTROL LINE
CONC	CONCRETE
CPB	CONDOMINIUM PLAT BOOK
NO.	NUMBER
ID	IDENTIFICATION
LB	LICENSED BUSINESS
MISC	MISCELLANEOUS
ORB	OFFICIAL RECORDS BOOK
PG	PAGE
PB	PLAT BOOK
PRM	PERMANENT REFERENCE MONUMENT
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
CI	CAST IRON
PVC	POLYVINYL CHOLRIDE
CPP	CORRUGATED PLATIC PIPE
INV	INVERT
FF	FINISHED FLOOR ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FIRM	FLOOD INSURANCE RATE MAP
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FPC	FLORIDA POWER CORPORATION
R/W	RIGHT OF WAY
W/	WITH
(C)	CALCULATED MEASUREMENT
(M)	FIELD MEASUREMENT
(P)	PLAT MEASUREMENT
(D)	DEED MEASUREMENT
N'LY, E'LY, S'LY, & W'LY	GENERAL CARDINAL DIRECTION (NORTHERLY, ETC)
	FOUND CONCRETE MONUMENT (AS NOTED)
	FOUND NAIL & DISK (AS NOTED)
	FOUND IRON PIPE (AS NOTED)
	SET NAIL & DISK (LB 8498)
	SANITARY MANHOLE
	SANITARY CLEANOUT
	SEWER VALVE
	STORM MANHOLE
	GREASE TRAP
	TELEPHONE MANHOLE
	FLOOD LIGHT
	IRRIGATION CONTROL VALVE
	WATER METER
	WATER VALVE
	BACKFLOW PREVENTOR
	FIRE HYDRANT
	FAUCET
	PEDESTRIAN TRAFFIC SIGNAL POLE
	POST (NON-FENCE)
	REFLECTOR
	RECLAIMED WATER METER
	LIGHT POLE
	SIGN
	BOLLARD
	ELECTRIC RISER
	ELECTRIC TRANSFORMER
	ELECTRIC METER
	ELECTRIC OUTLET
	PULLBOX (ELECTRIC)
	PULLBOX (TRAFFIC)
	PULLBOX (UNKNOWN)
	TELEVISION RISER
	UNDERGROUND FIBER OPTIC CABLE MARKER
	GAS METER
	GATE POST
	VAULT
X	WROUGHT IRON FENCE
	CHAIN LINK FENCE
	VINYL FENCE
	EXISTING CONTOUR
	LINE BREAK
x 10.00	SPOT ELEVATION (HARD SURFACE)
x 10.0	SPOT ELEVATION (GROUND)

TREE LEGEND

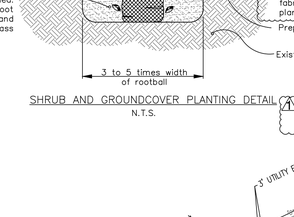
MISC DECIDUOUS PALM

CONSTRUCT TREE BARRICADE

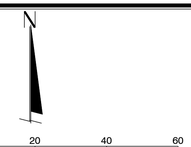
ROOT PRUNE LINE



SHRUB AND GROUNDCOVER PLANTING DETAIL
N.T.S.



PLANT SPACING DETAIL
(NO-OFFSET)



SCALE IN FEET
1" = 20'

PALM PLANTING DETAIL
N.T.S.

PLANT MATERIAL LIST

SYMBOLS	
	TREES
	"STD." GREEN BUTTONWOOD
	Ligustrum Multi–Stem
	Silver Buttonwood Tree 'Std.'
	Slender Silhouette Sweetgum
	PALMS
	Bismark Palm
	Sylvester Palm
	SHRUBS
	Carrisa 'Emerald Blanket'
	Pitch Apple (Autograph Tree)
	Dwarf Silver Buttonwood
	Dwarf Simson's Stopper
	Green Island Ficus
	Dwarf Clusia 'Nana'
	Dwarf Fire Bush
	GROUND COVERS
	Asiatic Jasmine
	Oblong Twinflower
	Seashore Paspalum Sod

⚠1 PLANT MATERIAL LIST

SEE SHEET LS02 FOR LANDSCAPE IRRIGATION INSTALLATION DETAILS, NOTES, AND SPECIFICATIONS

⚠2	COMMON NAME	BOTANICAL NAME	PLANT SIZE	REMARKS
	TREES			
6	'Standard' Green Buttonwood	Lagerstroemia indica 'Muskogee' Std.	Min. 8'–10" Ht., 2.5" Cal., FL GRADE # 1	Native, High Drought, Light FS/PS, Mod Salt single trunk
6	Ligustrum Multi–Stem	Ligustrum japonicum multi stem'	Min. 6'–7" Ht., 2." Cal., FL GRADE # 1	Non–Native, High Drought, Light FS/PS, Mod Salt multi stem
5	Silver Buttonwood Tree 'Std.'	Conocarpus erectus, 'Std.'	Min. 8'–10" Ht., 2.5" Cal., FL GRADE # 1	Native, High Drought, Light FS/PS, Mod Salt single trunk
2	Slender Silhouette Sweetgum	Liquidambar styraciflua 'Slender Silhouette'	Min. 8'–10" Ht., 2.5" Cal., FL GRADE # 1	Native, Mod. Drought, Light FS/PS, Mod Salt
	PALMS			
4	Bismark Palm, (Regenerated)	Bismarkia nibukis (Regenerated Palm)	Min. 10' Clear Trunk (C.T.) FL Grade # 1	Native, High Drought, Light FS/PS, Mod Salt.Regenerated Palm
9	Sylvester Palm	Phoenix sylvestris	Min. 10' Clear Trunk (C.T.) FL Grade # 1	Native, High Drought, Light FS/PS, Mod Salt
	SHRUBS			
62	Carrisa 'Emerald Blanket'	Carrisa macrocarpa 'Emerald Blanket'	Spr. 15" Ht. 18" FL Grade # 1	36" O.C., Non–Native, High Drought, FS/PS; High Salt
46	Pitch Apple (Autograph Tree)	Clusia rosea	Spr. 18" Ht. 24" FL Grade # 1	36" O.C., Native, High Drought, FS/PS; High Salt
77	Dwarf Silver Buttonwood	Conocarpus erectus var. serceus	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; High Salt
41	Dwarf Simson's Stopper	Myrianthes fragrans	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; High Salt
255	Green Island Ficus	Ficus microcarpus 'Green Island'	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; High Salt
86	Dwarf Clusia 'Nana'	Clusia fluminensis 'Nana'	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Non–Native; Mod. Drought, FS/PS; High Salt
40	Dwarf Fire Bush	Hamelia patens	Spr. 15" Ht. 18" FL Grade # 1.	36" O.C. Native; High Drought, FS/PS; Mod. Salt
	GROUND COVERS			
331	Asiatic Jasmine	Trachelospermum asiaticum	Spr.8" Ht. 6" FL Grade # 1	18" O.C. Non–Native; High Drought, FS/PS; High Salt
258	Oblong Twinflower	Dyschoriste oblongifolia	Spr.8" Ht. 6" FL Grade # 1	18" O.C. Native; High Drought, FS/PS; Non Salt
6,842	Seashore Paspalum Sod	Seashore Paspalum Sod	Square Feet	1 foot square Native; Low Drought, FS/PS; High Salt
12 cu yds	1–1.5 inch diameter wash river gravel 2 inch thick shall be washed and free of any dirt. Provide single layer of Geo–tech fabric with 1 ft. overlap and cut cross where plants to be planted.			
8 cu yds	Groundcover beds wash river pea gravel @ 2 inches thick – Note all washed river gravel bed receive single layer of Geo–tech fabric, with 1 ft overlap and cut cross where plants to be planted.			

⚠2 NOTE: REFERENCE SEPARATE CIVIL SITE CONSTRUCTION PLANS FOR THUNDERBIRD BEACH RESORT PLAN SHEETS 01-10.

TREE PLANTING DETAIL
N.T.S.

DATE	REVISIONS	BY
4/23/2025	REVISIONS 1 PER FDOT COMMENTS	LC
5/5/2025	REVISION 2 PER CITY OF TREASURE ISLAND	LC

CFB | CLYMER FARNER BARLEY
CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(352)748-3126

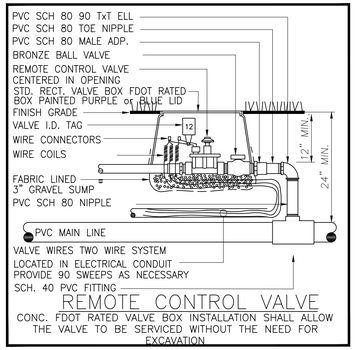
THUNDERBIRD BEACH RESORT RENOVATION
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

LANDSCAPE PLAN

SAVE DATE	3/17/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025-00362
FILE NAME	007 - T_BIRD-LA

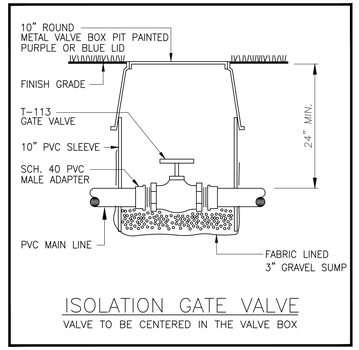
SHEET NUMBER LS01

S:\PINELLAS\THUNDERBIRD BEACH RESORT\CIVIL\CONSTRUCTION\007 - T_BIRD-LA.dwg PLOT DATE=5/5/2025 5:00 PM SAVE DATE: 4/8/2025 LAST SAVED BY: LOWN



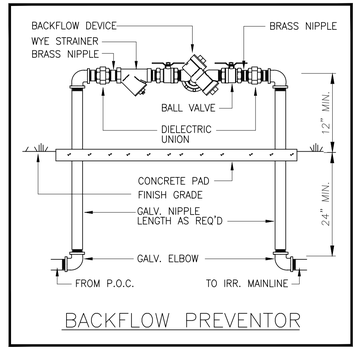
REMOTE CONTROL VALVE

CONC. FDOT RATED VALVE BOX INSTALLATION SHALL ALLOW THE VALVE TO BE SERVICED WITHOUT THE NEED FOR EXCAVATION.

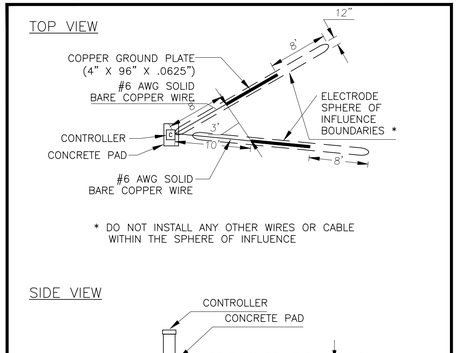


ISOLATION GATE VALVE

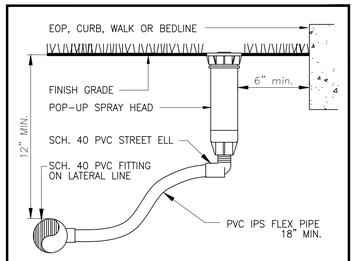
VALVE TO BE CENTERED IN THE VALVE BOX



BACKFLOW PREVENTOR

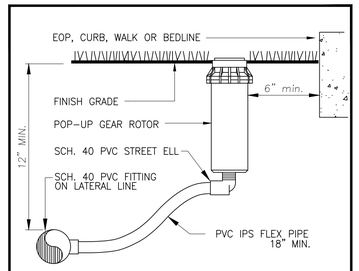


CONTROLLER GROUNDING



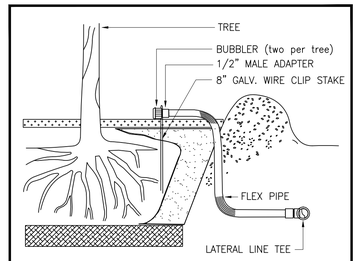
TURF SPRAY HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE



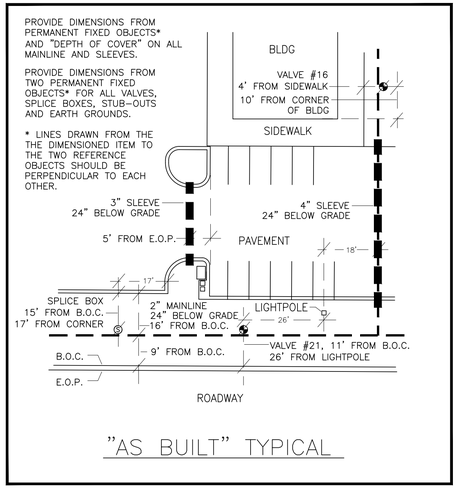
TURF ROTOR HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE

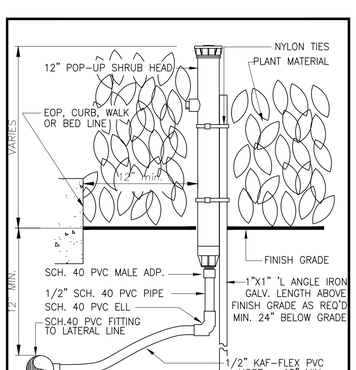


TREE BUBBLER

INSTALL FLEX PIPE (LOCATION AND DEPTH) TO BE PROTECTED FROM MAINTENANCE OPERATIONS (EDGING, MOWING)

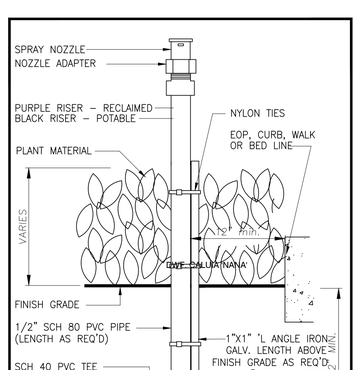


"AS BUILT" TYPICAL



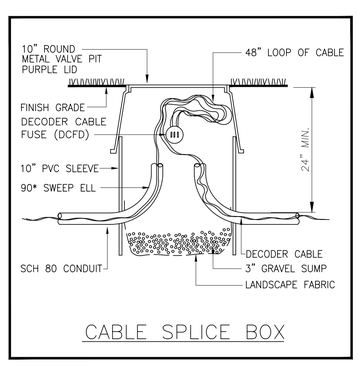
SHRUB SPRAY HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE



SHRUB SPRAY HEAD

PROVIDE 12" MIN. SPACE BETWEEN ALL SPRINKLER HEADS AND ANY WALL OR STRUCTURE



CABLE SPLICE BOX

Know what's **below.**
Call before you dig.

TICKET NUMBER(S): 005101564
#

FIELD CHANGES:

This Irrigation Design was based on the most recent site and landscape plan available to the Irrigation Designer at the time of the design. The following irrigation principals were incorporated into this design:

- Dedicated bubbler zones for all new trees.
- Dedicated spay zones for all new annual beds.
- Landscape beds and sod are on separate zones.
- Spray heads and rotator / rotors are on separate zones.
- All sprinkler heads within a zone are "matched precipitation rate".
- "Single row" sprinklers (along edge of pavement, fence line, pond bank) are on separate zones from areas covered by "square" or "triangular" spaced sprinklers.

Site and / or Landscape changes that were made after the time of this design will require Field Changes. Field Changes made by the Irrigation Contractor that do not incorporate these irrigation principals will not be accepted and will be corrected at the Irrigation Contractors expense.

Hunter Two Wire – Grounding and Shielding

At the very minimum, the grounding circuit for a decoder will include a copper ground plate and may also include 50 Pounds/22 kg of earth contact material, as defined below and Per the following detail. The copper grounding plate assemblies must meet the minimum requirements of section 250 of the NEC. They are to be made of a copper alloy intended for grounding applications and will have minimum dimensions of 4" x 36" x 0.0625" (100 mm x 1.2 m x 1.58 mm). A 10–foot/3 m continuous length (no splices allowed unless using exothermic welding process) of 10 "AWG/5 mm2 solid bare copper wire is to be attached to the plate using an approved welding process. This wire is to be connected to the decoder's ground wire and 10 AWG/5 mm2 bare copper "shielding wire" as shown in wiring details. A 50–pound/22 kg bag of earth contact material must be spread so that it surrounds the copper plate evenly along its length within a 6"/15 cm wide trench per detail below. Salts, fertilizers and other chemicals are not to be used in an attempt to improve soil conductivity because these materials are corrosive and will cause the copper conductors and electrodes to erode and become less effective with time. Ø Install all grounding circuit components in straight lines. When it is necessary to make bends, do not make sharp turns. To prevent the electrode–discharged energy from re–entering the underground cables, all electrodes shall be installed 6 to 8 feet/2 to 2.5 m away from said cables, and at right angles to the two–wire path. If more than one electrode is used to achieve lower resistance, the spacing between any two electrodes shall be 15 to 20 feet/4.5 to 6 m, so that they don't compete for the same soil. Ø The earth–to–ground resistance of this circuit is to be no more than 10 ohms. If the resistance is more than 10 ohms, then additional ground plates and earth contact material are to be installed in the direction of an irrigated area. It is required that the soil surrounding copper electrodes be kept at a minimum moisture level of 15% at all times by dedicating an irrigation station at each controller location.

IRRIGATION NOTES:

1. Irrigation system design requirements: 30 GPM @ a minimum of 60 PSI at the point of connection 1.5 inch reclaim water meter. The Irrigation Contractor shall verify the available GPM and PSI prior to installation of the system. See site plan for information for reclaim point of connection and location of irrigation controller equipment. Coordinate with General Contractor for electrical service for irrigation controller of the irrigation system. The irrigation contractor shall not deviate installation of the irrigation system base on the specifications and details on this sheet. Design of the irrigation system shall be based on the installation details shown on this sheet and designed by licensed irrigation contractor, certified irrigation designer or by a landscape architect, construction permit shall be amended in providing the irrigation plans for review by the permitting dept.
2. Do not willfully install the irrigation system as shown on the drawings when it is obvious in the field that conditions exist that might not have been considered in the design process. For example : obstructions, grade differences, water levels, dimensional differences, etc. Refer to the Landscape Plan to avoid conflicts with proposed trees or shrubs.
3. Piping may sometimes be indicated as being located in unlikely areas: i.e., under buildings or pavement, outside of property lines, in lakes or ditches, etc. This is done for graphic clarity only. Whenever possible, piping is to be installed in open, green" areas.
4. If required, the Irrigation Contractor shall provide the necessary "Right of Way" use permits.
5. Pipe sizes shall conform to those on the drawings. Substituting with smaller pipe sizes will not be permitted.
6. Mainline is to be installed with a minimum of 18"-24" depth of cover. Lateral lines are to be installed with a minimum of 12" depth of cover.
7. Unless otherwise indicated, all sleeves are to be PVC Sch 40 and two (2) nominal sizes larger than the pipe to be sleeved. For example: The sleeve for a 2" pipe shall be 3". No irrigation sleeve shall be smaller than 2". Sleeves under paved surfaces shall be installed by the SITE CONTRACTOR UNDER ALL PAVED SURFACES. Sleeves shall extend beyond paved surfaces a minimum of 8-inches and end of pipes shall be ducted taped. A 3'x2"x"2 inch stake shall be staked at each end of stake irrigation sleeve. Blue for potable irrigation sleeve; Purple for reclaim sleeves, stake shall be driving a minimum of 1 foot into the ground and 2 feet of above the finish grade. Irrigation contractor shall coordinate location of irrigation sleeves with the site contractor.
8. Wherever practical, install valves in mulched beds and/or out of high traffic areas. All valves and wire splices shall be installed in fiber concrete valve boxes with diamond plated steel lids (available from Ferguson Waterworks):

Remote Control Valves	(16"w x 25"l x 12"h) std. rect. box
Isolation Gate Valves	(16"w x 25"l x 12"h) std. rect. box
Wire Splices	(16"w x 25"l x 12"h) std. rect. box

9. The bottom and sides of the valve boxes shall be lined with landscape fabric. Install a 3" deep bed of gravel on the landscape fabric to create a drainage sump.
10. All valve box are fiber concrete 13" 24"x12" BOX W.CI RDR LID Model No. SP-A0132412M with metal flap LIDS to be painted "PURPLE" for reclaim and painted "BLUE" for irrigation potable water BY IRRIGATION CONTRACTOR provide sample paint colors to Owner for approval prior to painting lids. Unpainted FDOT traffic rated boxes are available from Ferguson Waterworks, FEL-Tampa FL Waterworks #044, 8008 E. Sligh Ave. Tampa, FL. 33610-0000, phone 813-627-1240, fax 813-627-1299. No substitution will be accepted for this line item unless approved by Owner.
11. Refer to Valve Designation Symbols for controller, station number and designed flow rate for each remote control valve.
12. The two-wire path between the controller and the decoders shall be two (2) UL Listed, single strand, type UF 600 Volt control cables (12-1 AWG). Use one (1) RED and one (1) BLUE colored wire to match color coded connections on the Decoders. Maximum distance from the controller to the furthest decoder shall be 1,500'. Install Decoder Cable in a 1" PVC conduit. Provide electrical eels sweeps in solenoid valve boxes and splice boxes.
13. All Decoders shall be installed in the valve box along with the solenoid that they are connected to.
14. All splices to the control wiring shall be made with 3M #DB_6 600 volt, UL Listed direct bury splice kits Use "yellow" or "red" kits as needed. All control wires shall be installed in electrical conduits no small than 1 inch diameter with 90 degree sweeps.
15. All pop-up sprinkler heads shall be installed level and flush to grade. Mount all sprinklers on flexible connections as follows:

1/2" inlet spray heads	18" of ½" Heavy Wall PVC IPS Hose
3/4" inlet rotor heads	18" of ¾" Heavy Wall PVC IPS Hose

16. The tops of all shrub sprinklers shall be installed 12" above the height of the surrounding plant material. For plant heights of 12" or more, support the riser with a 1"x1' galvanized 'L' stake and nylon cable ties. All risers shall be placed a minimum of 12" from any sidewalk, edge of pavement or structure and a minimum of 24" below finish grade ant 2 inches below top of irrigation head..
17. Location of all sprinkler heads shall be site adjusted to minimize water overthrow onto building surfaces and walkways. Throttle valves on spray zones as required to prevent fogging.
18. Exact controller location(s) shall be coordinated with an Owner's Representative prior to installation. Unless otherwise stated, the General Contractor shall provide 110 volt power to the controller location(s). The Irrigation Contractor is responsible for the connection from the power source to the controller(s). For outdoor mounted controllers, the 110 volt service to the irrigation controller shall be in conduit. All 110 volt electrical work shall meet Local Code.
19. At each irrigation controller, install a "secondary surge arrester" to the incoming (120 volt) power supply (Intermatic #AG2401 or equal).
20. At each irrigation controller, install an "supplementary earth ground grid" with a minimum of two (2) 4" x 96" grounding plates. Test the resistance to earth per NFPA Standard #780. A acceptable earth ground should have 10 ohms or less resistance. Use more plates or grounding rods as needed to achieve the desired resistance reading.
21. The wireless rain shutoff device shall be installed to meet local codes and/or minimum manufacturer's recommendations. Obstructions, vandalism and ease of service shall be considered in locating the device.
22. The IRRIGATION CONTRACTOR shall prepare an AS-BUILT drawing on reproducible paper detailing the actual installation of the irrigation system. The AS-BUILT drawings shall locate all main line piping, control wires, wire splices, sleeves and valves by showing exact measurements from permanent features (buildings, edge of pavement, power poles, fire hydrants, etc.). Include depth of cover on mainline and sleeves. AS-BUILT Irrigation drawings shall be provide prior to final payment and reviewed by the Owner and his representative.
23. No product substitutions will be permitted without the written permission of the Owner's Representative. Irrigation Contractor to provide submittals to the Owner's Representative for approval prior to installation.
24. Any other equipment required that is not other wise detailed or specified shall be installed as per manufacturer's recommendations and local code.

BY	DATE	REVISIONS

CLYMER FARNER BARLEY
CFB
CLYMER FARNER BARLEY, Inc.
7413 ALFORD AVE. MIDDLETON, FL 34762
(863)-465-1166

THUNDERBIRD BEACH RESORT RENOVATION
10700 GULF BLVD.
TREASURE ISLAND, FL 33706

IRRIGATION PLAN, DETAILS & SPECIFICATIONS

SAVE DATE	6/5/2025
DRAWN BY	DES
CHECKED BY	BAB
PROJECT #	EP2025-00362
FILE NAME	007 - T_BIRD-LA

SHEET NUMBER LS02

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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-

Pirate Square
175 - 107th Avenue, Treasure Island
Parcels: 23-31-15-91818-012-0260 & -0140
Pinellas County, Florida
Geotechnical Services
August 2024

Report Number. 249859

Prepared
for

Pirate Square LLC
c/o Mr. Shawn Byrne
11620 - 7th Street East
Treasure Island, Florida 33706

Central Florida Testing Laboratories, Inc.

Testing Development and Research

12625 – 40TH STREET NORTH • CLEARWATER, FL 33762

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

TAMPA BAY AREA (727) 572-9797 FLORIDA 1-800-248-CFTL FAX (727) 299-0023

August 13, 2024

Pirate Square, LLC
11620 – 7th Street East
Treasure Island, FL 33706

Attn: Mr. Shawn Byrne

Re: Geotechnical Investigation for Stormwater Retention System Design for Proposed Pirate Square - 175 – 107th Avenue, Treasure Island, Fla.33706
(Parcels: 23-31-15-91818-012-0260 & -0140, Pinellas County, Florida)
CFTL Report No. 249859

Dear Mr. Byrne,

As authorized, our office has completed the scope of geotechnical testing services requested by Mr. Russell Ottenberg with Plan Eng as outlined in his July 24th, 2024 email. The purpose the testing was to provide recommendations for site preparation, pavement design and soil parameters for use in the design of the stormwater retention system planned for the project.

These services included an additional deep standard penetration test (SPT) boring to supplement the previous six SPT borings conducted over the site. This boring was to fulfil the requirement for two (2) SPT borings to be located within the new retention pond area planned for the southeast corner of the site. An existing shallow retention pond is already in this location.



The purpose of the borings were determine the depth to an impermeable layer as well as provide information relative to pavement design. The boring was drilled in conjunction with a Double Ring Infiltration (DRI) test conducted in the same area which is planned to contain the stormwater retention pond. Finally, laboratory testing was conducted on an undisturbed Shelby Tube sample of the soils to determine the

Fillable Porosity of the soils in the retention pond. The locations of all of the above referenced prior and current tests are shown on the Site Plan of the planned new parking lot included in this report.

Site Description

The subject property comprises approximately 3.5 acres m.o.l. of land located on the south side of 107th Avenue in Treasure Island, Florida. The property has been cleared of its 2-story strip mall and various businesses with the exception of a bank building located at its northeast corner and the bank drive-thru located at its southeast corner. Asphalt pavement remains in areas that surrounded the previous building footprints. The site is bordered by 107th Avenue on its north, 1st Street East on its east side, 106th Avenue on its south side and an existing separate retail strip building on its west side. The west end of the property is approximately 250 east of Gulf Boulevard, while the east end of the property is approximately 850 feet west of the Treasure Island Causeway connecting the barrier island chain and Treasure Island to mainland Pinellas County, Florida.





For additional reference to the site, we are also including an area map showing the property with respect to the surrounding geographical area, and large and small scale aerial photographs of the site prior to demolition of the buildings and NRCS (Natural Resources Conservation Services) data relating to the predominant soil type present on the property and their expected seasonal high water table (SHWT) level.

Test Methods

The SPT borings were completed using sampling intervals in excess of those required by ASTM Specifications, D-1586, describing the Standard Penetration Test or "split-spoon" method of sampling. Four samples were taken in the upper ten feet to provide greater definition within this zone.

The penetration resistance testing and sample taking was accomplished with the use of a 2" O.D. sampler seated six inches into the bottom of the borehole and advanced an additional one foot under the effort of a 140 pound hammer falling freely thirty inches. The number of blows required of the hammer to advance the sampler one foot into undisturbed material was noted as the blow count (N) of that particular stratum. Portions of each soil sample so taken, were classified, sealed in moisture-proof containers and returned to our laboratories for verification of field classification.



The borings were advanced using a truck mounted, rotary drill rig, utilizing a recirculating bentonite drill fluid to maintain the borehole in noncohesive soils and to remove cuttings created by the drill bit. Upon completion all boreholes were sealed in accordance with SWFWMD regulations.

The DRI test was performed in general accordance with the guidelines resented 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.

The accompanying hand auger boring to the DRI test was accomplished with the use of post hole 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, collection and further testing, if needed.

SPT Boring Results

While the boring logs for all six previous SPT borings are included in this report, only boring B-4 was positioned within the new retention pond area. Boring B-7 is our current boring labeled consecutively to the previous borings to provide two

borings within the retention pond area. Due to the existing bank drive-thru the borings were positioned to avoid blocking traffic to the drive-thru and/or boring through the existing asphalt pavement remaining in this area. The profiles of boring B-4 and B-7 will be described below.

Boring B-4, located to the south or rear of the existing bank drive-thru building and in the southeast portion of the site, encountered approximately 20 feet of variable density sandy/silty soils containing shell that ranged in consistency from loose to medium dense. Beginning at 20 feet and continuing to 30 feet was a layer of very loose baybottom silts, which was underlain by slightly loose to dense sands containing abundant shell to 50 feet. Finally, beginning at 50 feet and continuing to 60 feet was a layer very stiff to very hard marine clays. The boring was terminated after the 65 foot sampling interval in very dense sands after recording 3 consecutive refusal N-values represented by a penetration resistance of more than 100 blows per foot on the sampling device. No loss of drilling fluid circulation occurred in the boring. A measurement to the depth of the shallow water table was made in the grass area to the south of the SPT boring location using a hand auger. It measured 4.2 feet below the surface. The grass area is slightly lower than the pavement where the boring was drilled.

Boring B-7, also located in the planned retention pond area, encountered 19 feet of dense to loose sands with shell fragments followed by the baybottom silt layer that continued to 30 feet below the surface. Beginning at 30 feet and continuing to 50 feet were dense or medium dense sands with shell followed by the very stiff to very hard sandy marine clay layer which terminated the boring with the 60-foot sampling interval. Again, no loss of drilling fluid circulation occurred during advancement of the boring and the shallow water table was measured at 4 feet below the surface.

While the baybottom silt layer is partially restrictive to water flow, however in our opinion the actual restrictive layer of soil would be considered the marine clays which began at approximately 50 feet below the surface in both borings.

Double Ring Infiltration Test Results

Soils encountered in the shallow auger boring that accompanied the DRI test consisted of dark gray surficial sands with small roots associated with the grass lined existing retention pond, followed by non-cohesive light colored sands containing varying amounts of shell fragments. These sands extended to a depth of at least 6 feet consistent with the SPT boring profiles. **The static shallow water table was measured at a depth of approximately -4.0 feet below the surface.** In our opinion,



the soils show no indicator of a historic seasonal high water table (SHWT) level but do reflect potential filling activities associated with most if not all of the barrier island properties. With the Town of Treasure Island surrounded by sea water to the east and west its water table is expected to be tidally influenced and will most likely fluctuate on a daily basis with the tidal levels in the Gulf of Mexico to the west and/or the Intercoastal Waterway to the east.

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, which is for Johns Pass (1.25 miles 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.

Based on Google Earth® elevations, the entire site is at an elevation of approximately +5' NAVD88. With the depth to the static water table being measured at -4.2', this would equate to an elevation of +0.8' and correspond very closely with the NOAA information. Therefore, we estimate the SHWT level to be at a depth of approximately -4.0' below the surface and be tidally influenced.

The maximum infiltration rate at DRI-1 was determined to be a fairly rapid 7.6 minutes per inch (7.9 inches/hr.) after 4 hours of testing with the test apparatus seated approximately 2 feet below the ground surface. The infiltration rate from the DRI test is considered to represent "K_v" or the vertical hydraulic conductivity. "K_h" or the horizontal hydraulic conductivity is assumed by SWFWMD at 1.5 times the vertical. Therefore:

K_v = 7.9 inches/hr. = 15.8 ft./day
K_h = 1.5 x 15.8 ft./day = 23.7 ft./day

Fillable Porosity

Fillable porosity is the amount of void space present within the soil matrix after accounting for the space taken by the soils in-situ moisture content. No ASTM procedure is present to determine it, however the St. Johns River Water Management District (SJRWMD) in their publication SJ93-SP10, Section 7.2.4 provides a method of determining it. This method is referenced by other publications and its formula was used to calculate a value for Fillable Porosity for the shell laden sands beneath the retention pond area. At the time of our sampling, the in-situ moisture was determined to be 5.4% be weight and the in-

situ density of the soils was determined to be 100.2 pounds per cubic foot (pcf).

The overall Volume of Voids or total porosity was found to be 0.39, while the Fillable Porosity was calculated to be 0.26 or 26%.

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 one predominant type of soils. This type is Mapping Unit #16 soils which are described as *Matlacha and St. Augustine soils and Urban land.* Both *Matlacha and St. Augustine soils and Urban land.* These soils have a parent material listed as "sandy mine spoil or earthen fill". This represents the dredge and fill activities and associated spoils that were used to create the uplands along the barrier island chain. The depth to the water table is referenced as between 24 and 36 inches below the surface. *Urban land* has no listed SHWT due to soil disturbances from years of past development and additional filling, such as has taken place on this site. Both these classifications appear generally accurate and consistent with the soils found on the site.

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

Recommendations

In consideration of all of the above information, our recommendations for a pavement section for the planned new parking lot would be consistent with that designated for a light residential street or roadway. This should be consistent with the existing asphalt pavement that covers the site but is in need of repair or reconstruction.

Typical minimum Roadway Pavement Guidelines and associated Structural Numbers for varying traffic volumes are provided in the table below.



The Town of Treasure Island may have slightly different pavement section thicknesses than those shown and if

different municipal specifications would take precedence for proposed pavement areas.

	Arterial	**Collector (Major/Minor) Commercial / Industrial**	**Residential Medium Traffic**	**Residential Light Traffic**
Structural Number	**4.17**	**3.28**	**3.06**	**2.46**
Asphalt Superpave Surface	Type SP-12.5 Fine, Traffic Level "C" 3" min. thick (2 lifts) (0.44) (1.32 Total)	Type SP-12.5 Fine, Traffic level "C" 2" min. thick (0.44) (0.88 Total)	Type SP-9.5 Fine, Traffic Level "C" 1-$^1/_2$" min. thick (0.44) (0.66 Total)	Type SP-9.5 Fine, Traffic level "C" 1-1/2" min, thick (0.44) (0.66 Total)
Base (Compacted 98% of AASHTO T-180)	Limerock 10 $^1/_2$" Min. Thickness (Min. 100 LBR) (0.18) (1.89 Total)	Limerock 8" Min. thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 8" Min. thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 6" Min. thickness (Min. 100 LBR) (0.18) (1.08 Total)
Sub-Base (Compacted 98% of AASHTO T-180)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08)	9" min. thickness (Stab. w/min, 40 LBR) (0,08) (0.72 Total)

Structural Layer Coefficients for Optional Bases: Superpave Type B-12.5 Base = 0.30, Crushed Concrete Base is equivalent with Layer Coefficient = 0.18 if LBR = 150

We would assume that your parking lot project would come under "Residential Light Traffic" for its interior pavement with a Structural Number of at least 2.46, while its entrances onto 107th Avenue and 106th Avenue would need to meet the existing section thicknesses and Structural Number of these streets, which would most likely be either a SN of 3.06 or 3.28.

To be more specific regarding pavement section recommendations, more information regarding traffic volumes and traffic types would have to be known.

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 boring.

It is not intended to predict or accept responsibility for sinkhole development. Additional other means of subsurface investigations including, but not limited to, deep structural borings, rock coring, geophysical studies, ground penetrating radar or resistivity surveys are used for sinkhole potential determinations and are out of the scope of this investigation.

Generally accepted soil mechanics and foundation 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.

This report is for the exclusive use of our client and may not contain sufficient information for other uses, such as quantity take-offs, or for interpretation by other parties for bidding purposes. 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.

If borings were not staked by a registered land surveyor but were located by our drill crews, the following method was used:

Distances are generally measured using a 100 foot tape measure with right angle approximation used to turn corners. Scaling from prints or surveys with reference points shown on the plan or geographical references will produce a degree of accuracy that is typically +/- 5% for length and +/- 10 degrees for angles.

Soil strata delineations are estimated in the field by color changes, texture differences and penetration resistance values. These may be more gradual transitions than those shown on the boring log representations of strata delineations.

The ground water depth determination shown on the bottom of the boring log was measured in the bore hole at the time of drilling, unless noted otherwise. This depth does not reflect seasonal high water levels and would fluctuate as expected with variations in rainfall or other factors not present at the time of our soils investigation.

The boring data represents only that data obtained during this investigation at the approximate locations shown on the site schematic or plan.

Should significant variations of soil or subsurface conditions exist between boring locations and be encountered by future exploratory work or site preparation efforts, our office should be notified so that supplemental borings or data gathering determinations can be made to update our report and recommendations at a minimal expense to our client. It is the responsibility of our client to inform our office of these variations if possible modifications of the report is warranted.

This report is general in nature, unless specific geotechnical data or recommendations were asked to be addressed. However, we would be pleased to answer any questions concerning comments or recommendations made in this

report.

We appreciate the opportunity to have been of service. If any further evaluation of the site or testing services are needed, either prior to design or during construction, please do not hesitate to contact our office.

Sincerely,

CENTRAL FLORIDA TESTING LABORATORIES, INC.



This item has been electronically signed and sealed by George C. Sinn, Jr., P.E. using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

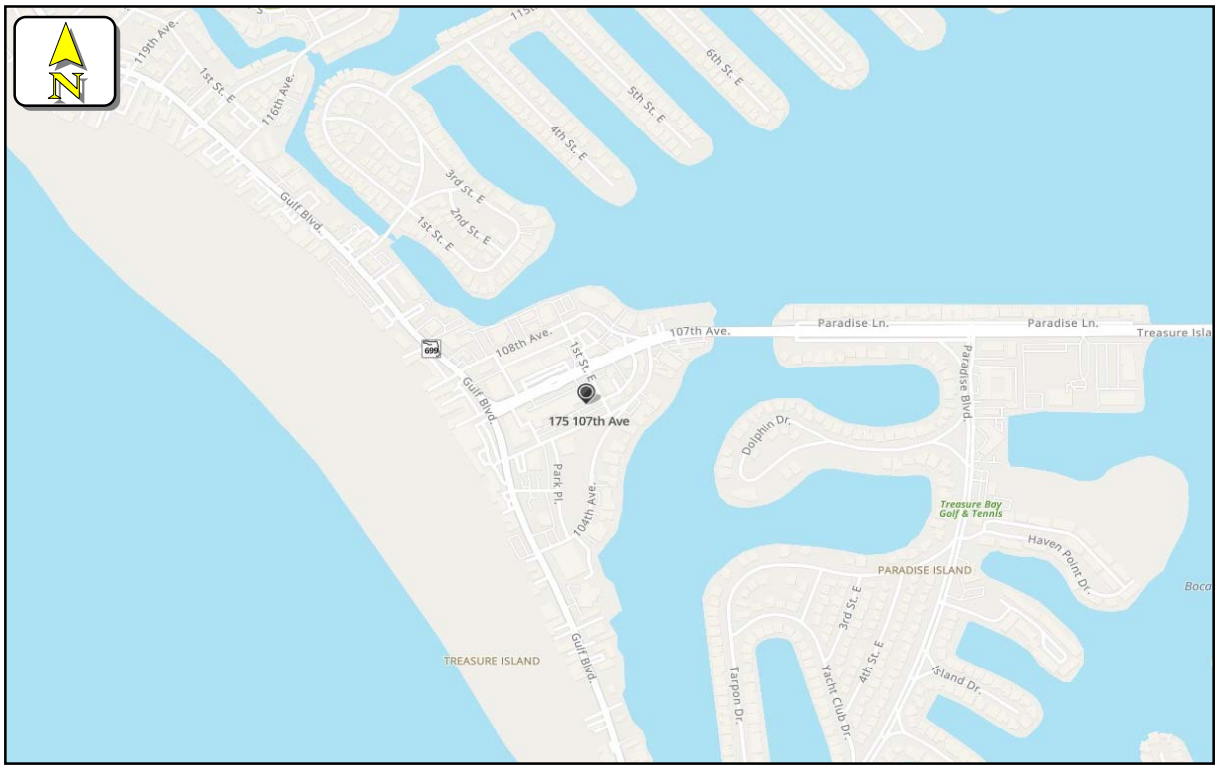
Digitally signed by: George C Sinn, Jr.
Date: 2024.08.14 15:47:10 -04'00'

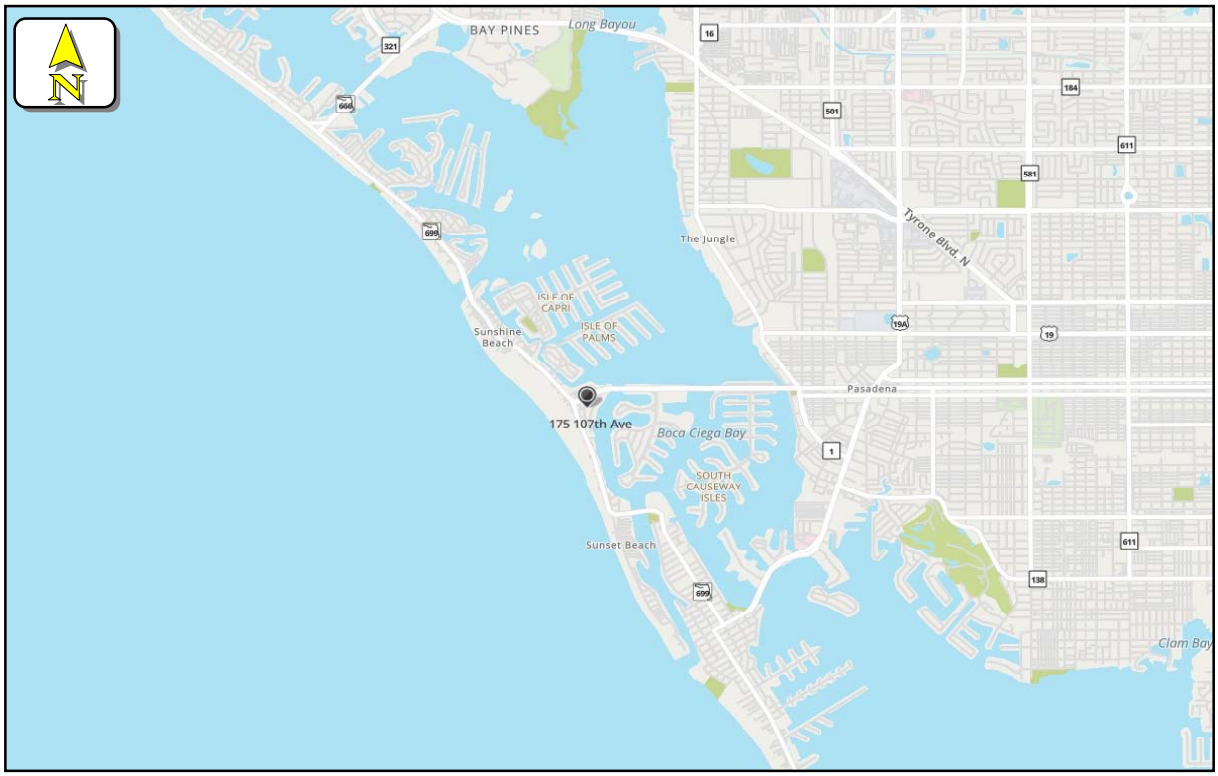
George C. Sinn, Jr., P.E.
President/Principal Engineer
FLN 16911
GCS/gs
Attachments

cc: Russell Ottenberg (email)

Maps

Various





Central Florida Testing Laboratories, Inc.

Pirate Square
175 - 107th Avenue
Treasure Island, Florida 33706
Report No: 249859

Legend

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

Figure 1 - Location

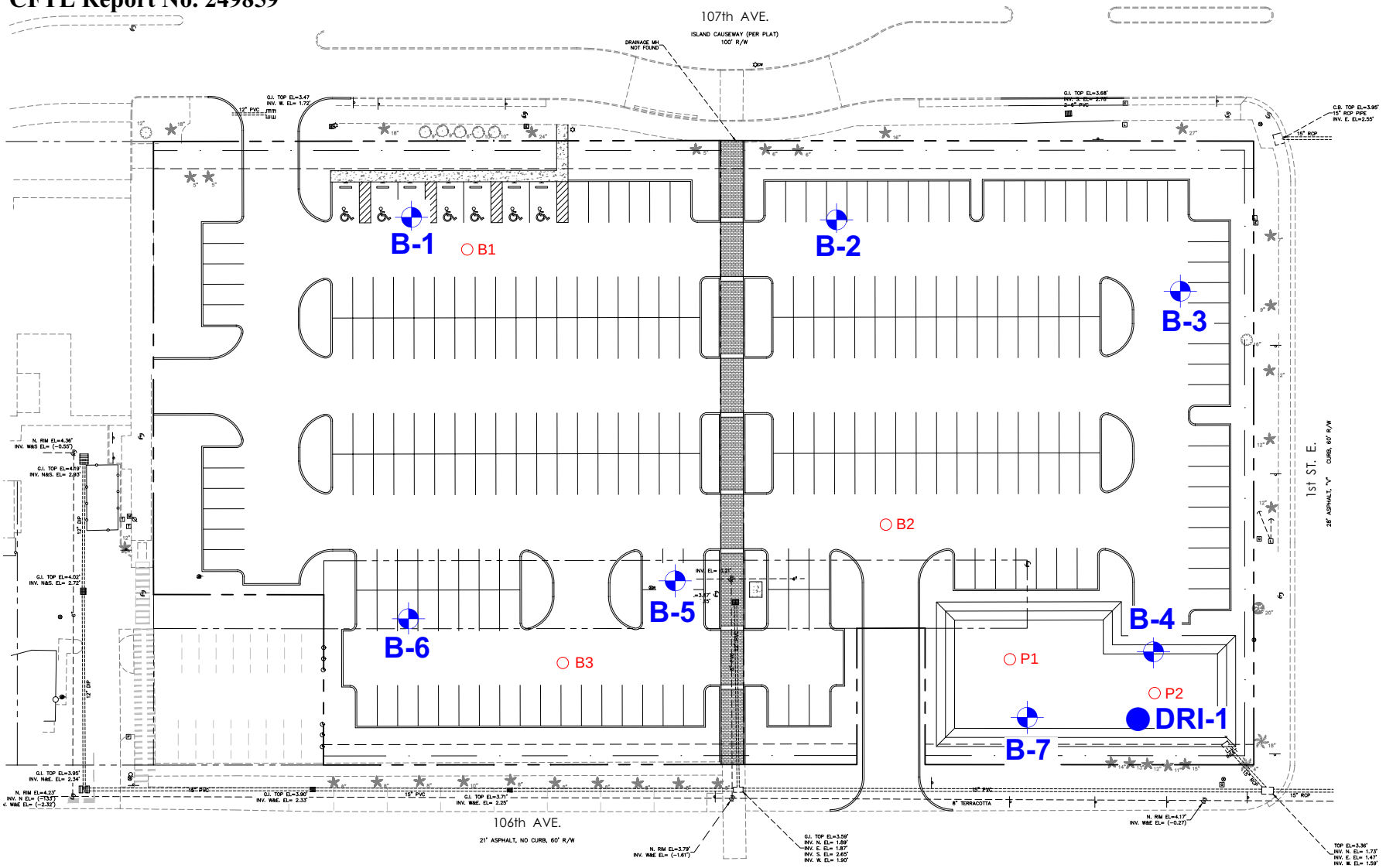
2023 County Aerial Photograph of Site



2023 County Aerial Photograph of Site



Pirate Square / 175 - 107th Avenue, Treasure Island
Approximate Test Locations
CFTL Report No. 249859



Site Boring Exhibit

PLANNING INC
Board of Professional Engineers
Certificate of Authorization
No. 26432

Pensacola:
501 Fitzgerald Street
Pensacola, FL 32505
T (850) 444.9493

Tampa:
3737 Lake Joyce Dr
Land O Lakes, FL 34639
T (813) 962.1752

Issue / Revisions

NORTH

Scale 1" = 20'

Pirate Square
Treasure Island, Florida

Date

Reviewed by JMG/RMO

Plan Description
Parking Lot Plan

Sheet No.
P1

2023-0509TRIcom baseI .dwg
CAD date 7/22/2024

SPT Boring Results

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-1
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Asphalt with Limerock Base	medium dense	7-8-12	20
	Sand Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained, occasional shell fragments.	medium dense	5-6-7	13
5		medium dense	3-4-7	11
		loose	4-4-2	6
	Sand Light brownish gray (10YR 6/2), fine grained.			
10		medium dense	6-8-9	17
15		very loose	WOH-1/12"	1
	Sandy Silt (Bay Bottom) Light brownish gray (10YR 6/2), fine grained, trace to minor shell fragments, slightly clayey, with silty sand seams.			
20		very loose	WOH-1/12"	1
25		very loose	WOH-1-1	2
	Silty Sand Light brownish gray (10YR 6/2), fine grained.			
30		loose	3-3-2	5
	Sand Light gray (10YR 7/2) to very pale brown (10YR 7/3), fine grained.			
35		very dense	24-22-32	54
40	***Clayey Sand*** Light brownish gray (10YR 6/2), fine grained.	medium dense	9-7-12	19
45		stiff	5-7-8	15
50		hard	8-13-19	32
55	***Sandy Clay*** Light brownish gray (2.5Y 6/2).	very hard	30-38-50/4"	100+
60		very hard	18-22-38	60
65		very hard	29-50/5"	100+
	End of Boring			
70				

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

WOH = Weight of Hammer
No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Sheet 1 of 1

386

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-2
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value
0		Ground Surface			
		Asphalt with Limerock Base	medium dense	10-11-12	23
		Sand Light gray (10YR 7/1), fine grained, minor shell fragments.	medium dense	3-4-7	11
5			medium dense	7-12-8	20
		Sand Light gray (10YR 7/1) to gray (10YR 6/1), fine grained, slightly silty.	slightly loose	2-3-4	7
10			slightly loose	2-3-4	7
15		***Silty Sand*** Light gray (10YR 7/1), fine grained.	very loose	5-2-1	3
20		***Sandy Silt (Bay Bottom)*** Light brownish gray (10YR 6/2), fine grained, occasional shell fragments, with silty sand seams.	very loose	1/12"-1	1
25			very loose	1/12"-1	1
30		***Sand*** Light brownish gray (10YR 6/2), fine grained.	medium dense	5-5-7	12
35		***Sand*** Light brownish gray (10YR 6/2), fine grained, slightly silty.	medium dense	6-7-8	15
40		***Sand*** Gray (10YR 6/1), fine grained.	medium dense	8-8-9	17
45		***Sandy Clay*** Gray (5Y 6/1).	very stiff	10-12-14	26
50		***Clayey Sand*** Gray (5Y 6/1), fine grained.	slightly loose	4-4-4	8
55		***Sand*** Gray (10YR 6/1), fine grained, slightly clayey.	very dense	50/3"	100+
60			very dense	12-23-46	69
65			very dense	14-24-50/5"	100+
		End of Boring			
70					

Standard Penetration Test (blows/ft)
0 20 40 60 80 100

Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

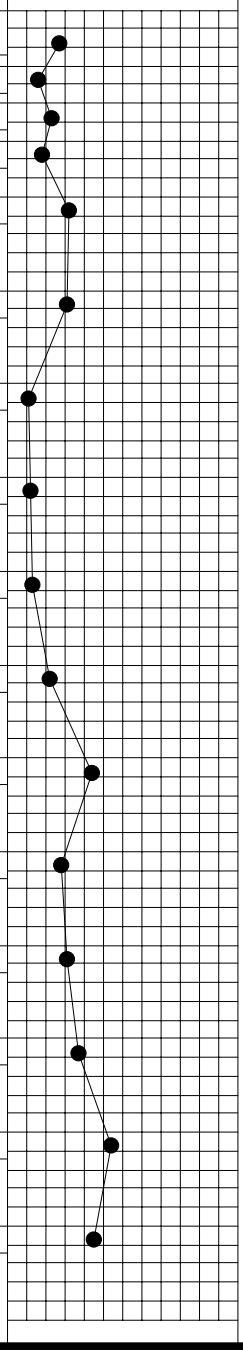
Report No: 242644
Log of Borehole: B-3
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Asphalt with Limerock Base	medium dense	11-8-9	17
	Sand Light gray (10YR 7/1) to light gray (10YR 7/2), fine grained, trace to minor shell fragments.	loose	4-3-3	6
5		medium dense	3-5-8	13
	Sand Gray (10YR 6/1), fine grained, slightly clayey.	slightly loose	1/12"-8	8
10		medium dense	8-13-9	22
	Sand Light gray (10YR 7/1), fine grained.	medium dense	15-16-5	21
20		very loose	1/12"-1	1
25	***Sandy Silt (Bay Bottom)*** Gray (10YR 6/1) to gray (10YR 5/1), fine grained, with silty sand seams.	very loose	1-1-1	2
30		very loose	2-1-2	3
35		medium dense	1-3-9	12
40	***Sand*** Light gray (10YR 7/1) to gray (10YR 6/1), fine grained, common cemented nodules at 35'.	dense	12-17-17	34
45		medium dense	6-7-11	18
50		very stiff	8-10-11	21
55	***Sandy Clay*** Light brownish gray (2.5Y 6/2).	very stiff	8-11-16	27
60		hard	13-19-25	44
	Sandy Clay Light gray (10YR 7/2).			
65		hard	18-17-18	35
	End of Boring			
70				

Standard Penetration Test (blows/ft)
0 20 40 60 80 100

Lab/ Notes



Notes: FEMA Flood Zone Designation:
Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation.

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-4
Date Drilled: 09/23/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value	Standard Penetration Test (blows/ft) 0 20 40 60 80 100	Lab/ Notes
0		Ground Surface					
		Asphalt with Limerock Base					
		Sand Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained.		Hand Auger			
5			slightly loose	1-3-6	9		
		Silty Sand Light brownish gray (10YR 6/2), fine grained.	very loose	6-1-2	3		
10			medium dense	9-13-11	24		
		Sand Light gray (10YR 7/1) light brownish gray (10YR 6/2), fine grained, common shell fragments.					
15			loose	7-4-2	6		
20			very loose	1/12"-1	1		
		Sandy Silt (Bay Bottom) Gray (2.5Y 6/1), fine grained, minor shell fragments, slightly clayey, with silty sand seams.					
25			very loose	1/18"	0		
30			medium dense	4-5-6	11		
35			slightly loose	1-2-6	8		
		Sand Light gray (10YR 7/1) to light brownish gray (10YR 6/2), fine grained, abundant to common shell fragments to 40', abundant cemented nodules at 45'.					
40			dense	31-20-14	34		
45			medium dense	7-5-7	12		
50			very stiff	9-11-13	24		
		Sandy Clay Gray (2.5Y 6/1).					
55			very hard	7-17-50/4"	100+		
60			very dense	32-50/5"	100+		
		Sand Light gray (10YR 7/1), fine grained, slightly clayey.					
65			very dense	31-50/5"	100+		
		End of Boring					
70							

Notes: NRCS Designation: Matlacha and St. Augustine soils and Urban land
NRCS SHGWT: 18 to 36 inches
CFTL SHGWT: Tidal
Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

No loss of drill fluid circulation

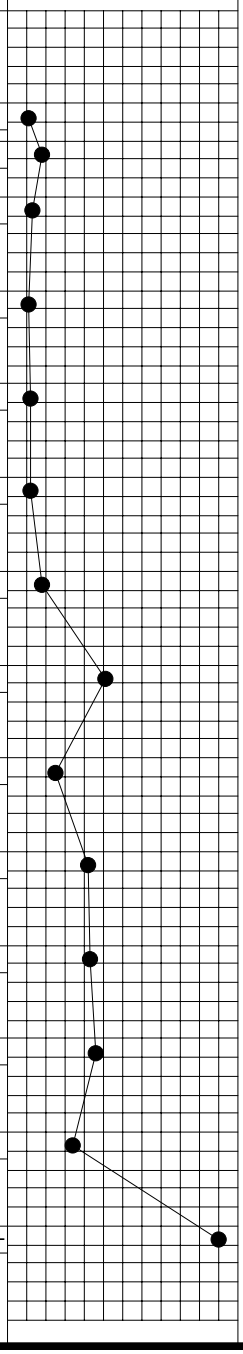
Water Table: 4.2' bls (HA)
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-5
Date Drilled: 09/23/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
0	***Asphalt with Limerock Base***		Hand Auger	
5	***Sand*** Light gray (10YR 7/1) to light gray (10YR 7/2), fine grained.	very loose	1-1/12"	1
		slightly loose	3-4-4	8
10	***Clayey Silt (Bay Bottom)*** Gray (2.5Y 6/1), trace shell fragments.	soft	1-1-2	3
15		very loose	1/12"-1	1
20	***Sandy Silt (Bay Bottom)*** Gray (2.5Y 6/1) to grayish brown (10YR 5/2), fine grained, occasional shell fragments, slightly clayey, with silty sand seams.	very loose	1-1-1	2
25		very loose	1/12"-2	2
30		slightly loose	2-1-7	8
35	***Sand*** Gray (10YR 5/1), fine grained.	dense	15-20-21	41
40	***Sand*** Light gray (10YR 7/1), fine grained, abundant cemented nodules, slightly silty.	medium dense	8-7-8	15
45		hard	15-17-15	32
50		hard	12-15-18	33
55	***Sandy Clay*** Light olive gray (5Y 6/2) to gray (5Y 6/1), cemented at 65'.	hard	15-13-23	36
60		very stiff	5-8-16	24
65		very hard	50/0"	100+
	End of Boring			
70				



Lab/ Notes

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Mr. Shawn Byrne
Project: Pirate Square
Location: 107th Avenue
City / State: Treasure Island, Florida

Report No: 242644
Log of Borehole: B-6
Date Drilled: 09/22/2022

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Strata Symbol	Subsurface Profile Description	Consistency	Blow Count	N value	Standard Penetration Test (blows/ft) 0 20 40 60 80 100	Lab/ Notes
0		Ground Surface					
		Asphalt with Limerock Base		Hand Auger			
5		***Sand*** Light gray (10YR 7/2) to light gray (10YR 7/1), fine grained.	medium dense	1-6-5	11		
			loose	2-3-1	4		
10			medium dense	4-8-10	18		
15			very loose	1/12"-1	1		
20		***Sandy Silt (Bay Bottom)*** Light brownish gray (10YR 6/2) to grayish brown (10YR 5/2), fine grained, trace to minor shell fragments, with silty sand seams.	very loose	1/12"-1	1		
25			very loose	1/12"-1	1		
30			very loose	1-1-1	2		
35		***Sand*** Light gray (10YR 7/2), fine grained, occasional shell fragments.	dense	16-18-19	37		
40			medium dense	4-7-7	14		
45		***Sandy Clay*** Light olive gray (5Y 6/2) to light brownish gray (10YR 6/2).	hard	14-19-23	42		
50			very stiff	9-11-13	24		
55		***Sandy Clay*** Light brownish gray (10YR 6/2).	stiff	5-6-9	15		
60			very hard	50/3"	100+		
65			very hard	24-34-50/5"	100+		
		End of Boring					
70							

Notes: FEMA Flood Zone Designation: Coastal Floodplain AE-10 & AE-11

No loss of drill fluid circulation

Water Table: TBD
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

Client: Pirate Square LLC
Project: Pirate Square
Location: 175 - 107th Avenue
City / State: Treasure Island, Florida

Report No: 249859
Log of Borehole: B-7
Date Drilled: 08/01/2024

ENGINEERING BUSINESS NO. 1066 GEOLOGY BUSINESS NO. 224

Depth	Subsurface Profile Description	Consistency	Blow Count	N value
0	Ground Surface			
	Sand Light gray (10YR 7/2) to light brownish gray (10YR 6/2), fine grained, occasional to minor shell fragments.	medium dense	7-12-14	26
		medium dense	9-13-7	20
5	***Silty Sand*** Gray (10YR 6/1), fine grained, minor shell fragments and trace bay bottom.	slightly loose	5-6-3	9
		loose	1-1-3	4
10	***Silty Sand*** Gray (10YR 5/1), fine grained,	dense	12-17-13	30
	Sand Light gray (10YR 7/1), fine grained, occasional shell fragments.			
15	***Sand*** Gray (10YR 6/1), fine grained, common shell fragments, slightly silty.	loose	2-2-2	4
20	***Sandy Silt (Bay Bottom)*** Gray (2.5Y 5/1) to dark gray (2.5Y 4/1), occasional to minor shell fragments, slightly clayey.	very loose	1-1-1	2
25		very loose	1-1-1	2
30	***Sand*** Gray (10YR 6/1), fine grained, minor shell fragments.	medium dense	2-2-8	10
35		dense	14-20-17	37
40	***Sand*** Gray (10YR 6/1) to light gray (10YR 7/1), fine grained, abundant shell fragments, common cemented nodules at 45'.	dense	16-14-20	34
45		medium dense	6-5-5	10
50	***Sandy Clay*** Gray (2.5Y 5/1).	hard	9-13-19	32
55		very stiff	10-11-12	23
60		very hard	28-33-40	73
65	End of Boring			

Standard Penetration Test (blows/ft) 0 20 40 60 80 100

Lab/ Notes

Notes: NRCS Designation: Matlacha and St. Augustine soils and Urban land
NRCS SHGWT: 18 to 36 inches
CFTL SHGWT: Tidal
Drill Method: Rotary
Sampling Method: Splitspoon ASTM D-1586

No loss of drill fluid circulation.

Water Table: 4.0' bls (HA)
Ground Elevation: Existing
Drilled by: AC
Compiled by: JM

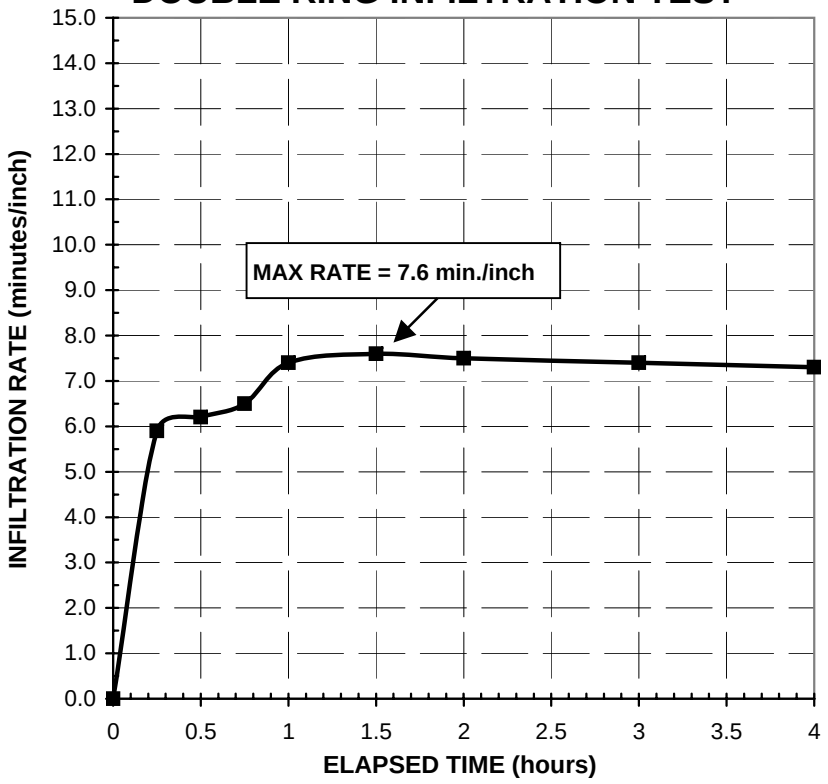
DRI Results

Central Florida Testing Laboratories, Inc.

Testing Development and Research

12625 – 40TH STREET NORTH • CLEARWATER, FL 33762
TAMPA BAY AREA (727) 572-9797 FLORIDA 1-800-248-CFTL FAX (727) 299-0023

DOUBLE RING INFILTRATION TEST



Maximum Infiltration Rate (min./in.): 7.6

EXISTING WATER TABLE DATA

WATER TABLE AT TIME OF TEST (BLS): **4.0'**

EST. SEASONAL HIGH WATER TABLE (BLS): **Tidal**

NRCS WATER TABLE DATA

SOIL TYPE (AT DRI LOCATION):

Matlacha and St. Augustine soils and Urban land

SEASONAL HIGH WATER TABLE: **18 to 36 inches**

Project: **Pirate Square**
175 - 107th Avenue
Treasure Island, Florida 33706

Client: **Pirate Square LLC**

Lab No.: **249859**

DOUBLE RING INFILTRATION DATA

Test Location: **DRI-1**

Test Elevation: **2.0 feet below existing land surface**

Test Date: **August 2, 2024**

Notes ALL DEPTHS REFERENCED FROM EXISTING GROUND

SHALLOW AUGER BORING DATA

Depth (ft.)			Munsel No.	Description
0.0	to	0.5	10YR 4/1	Dark gray fine sand w/small roots
0.5	to	2.8	10YR 6/2	Very pale brown fine sand w/shell
2.8	to	4.0	10YR 7/1	Light gray fine sand
4.0	to	5.6	10YR 6/1	Gray silty sand w/shell, and trace bay bottom
5.6	to	6.0	10YR 6/1	Gray silty sand w/occasional shell

Central Florida Testing Laboratories, Inc.

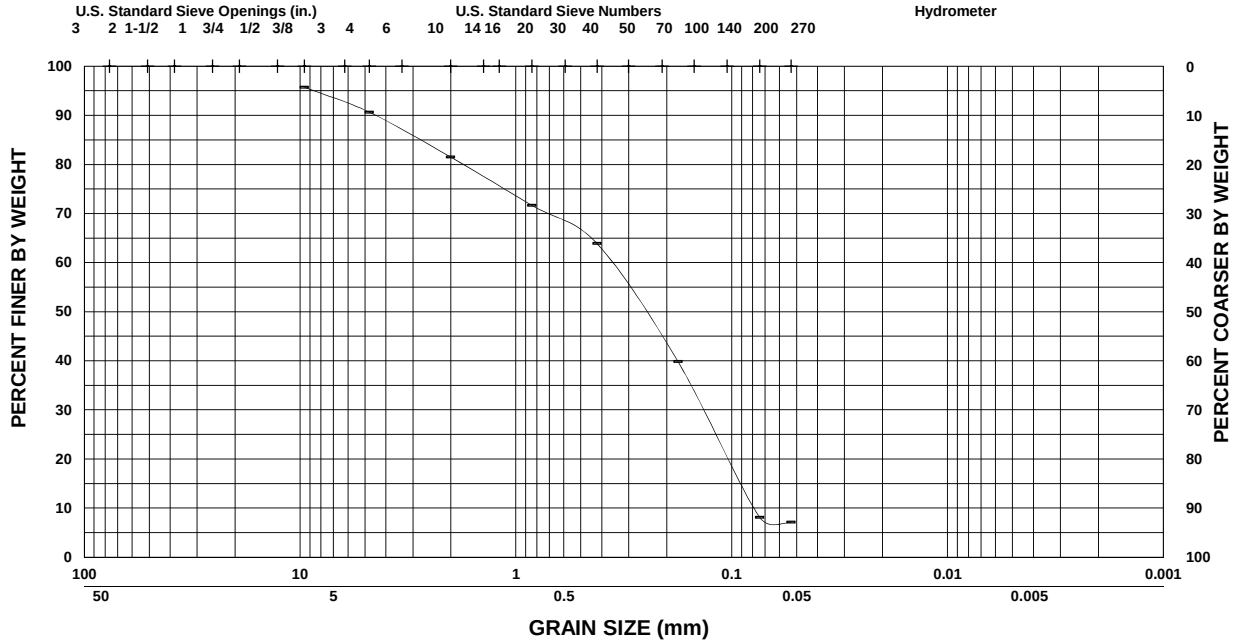
Testing Development and Research

12625 - 40th Street North, Clearwater, Florida 33762

Tampa Bay Area: (727) 572-9797 Florida: 1-800-248-CFTL Fax: (727) 299-0023

Lab No.:	***249589***	Sampled By:	***JM***
Material:	***Light brownish gray fine sand with shell***	Sampled From:	***DRI-1***
Project:	***Pirate Square LLC***	Date Sampled:	***8/7/24***
Source of Supply:	***175 107th Avenue, Treasure Island, FL***	Tested By:	***Lab***
Contractor:		Date Tested:	***8/8 - 8/9/24***
Client:	***Shawn Byrne***	Date Reported:	***8/9/24***
Reports To:	***Shawn Byrne***		

SIEVE ANALYS, ASTM C-136



GRAVEL	SAND		SILT OR SAND
	COARSE	FINE	

Sieve Size:	3/4"	1/2"	3/8"	#4	#10	#20	#40	#80	#200	#270
% Passing:	100.0	96.9	95.7	90.6	81.5	71.6	63.8	39.8	8.0	7.1

POROSITY/VOID RATIO, ASTM D-854

Material: Light brownish gray fine sand with shell

In-situ Density: 100.2 pcf
Specific Gravity: 2.63
Particle Density: 164.3 pcf
Volume of Solids (Vs): 0.61
Volume of Voids (Vv) (porosity): 0.39
Void Ratio (Vv / Vs): 0.64

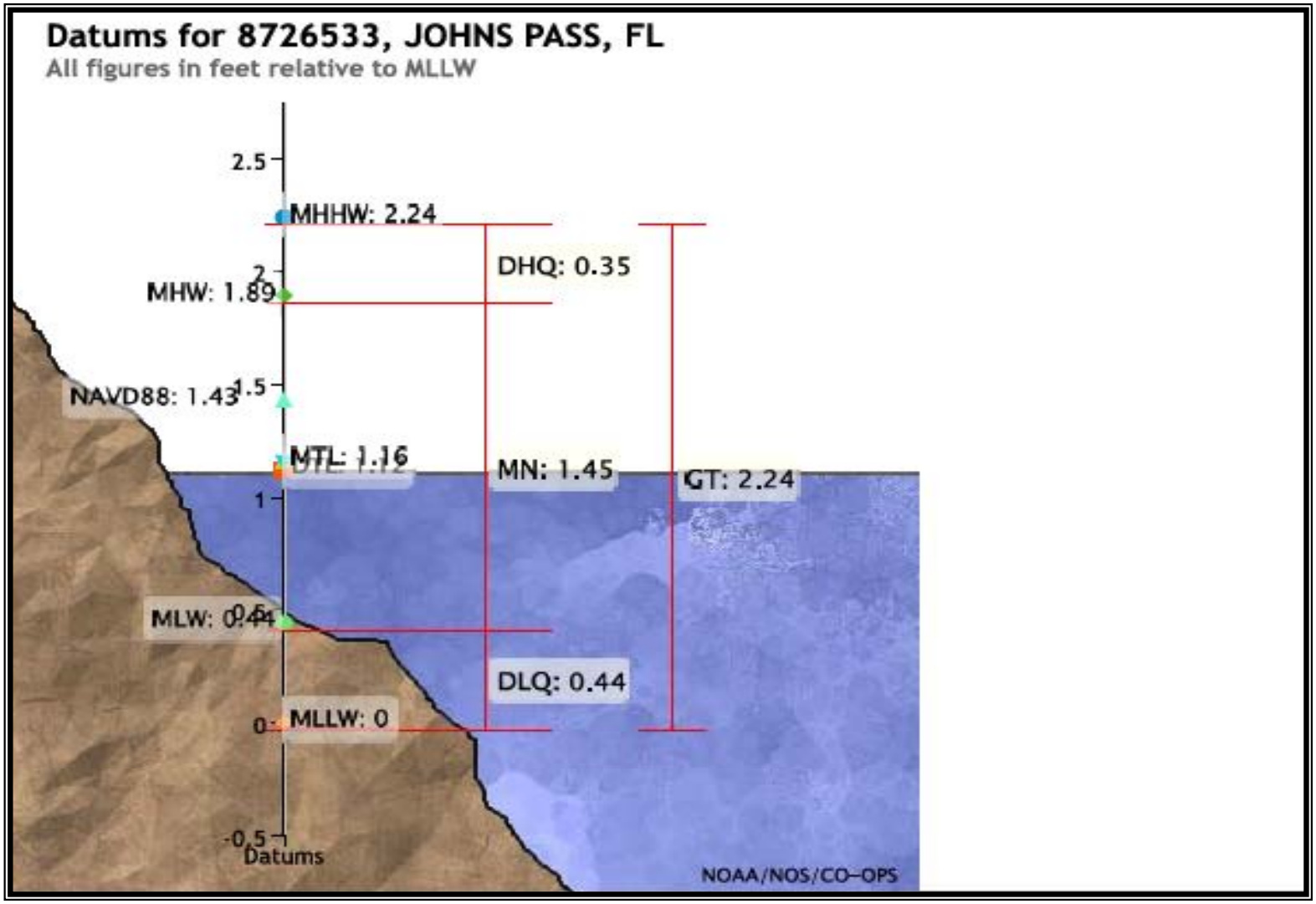
Fillable Porosity = $(0.9\eta) - (\omega\ \gamma_d/\gamma_w)$

η = total porosity
ω = natural moisture content
γ_d = dry unit weight of soil
γ_w = unit weight of water

Fillable Porosity$_1$ = (0.9 * 0.39) - (0.054 * 100.2/62.4) = **0.26**

[1] Formula from SJRWMD SJ93-SP10 Section 7.2.4.

NOAA MHHW Data



NRCS Data

Soil Map—Pinellas County, Florida
(Pirate Square / 175 - 107th Avenue, Treasure Island)



Map Scale: 1:2,350 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

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 1:24,000.

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 20, 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 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	0.2	0.7%
16	Matlacha and St. Augustine soils and Urban land	25.9	93.1%
100	Waters of the Gulf of Mexico	1.8	6.3%
Totals for Area of Interest		**27.9**	**100.0%**

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: Ridges on marine terraces, rises 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

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): Interfluve, 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

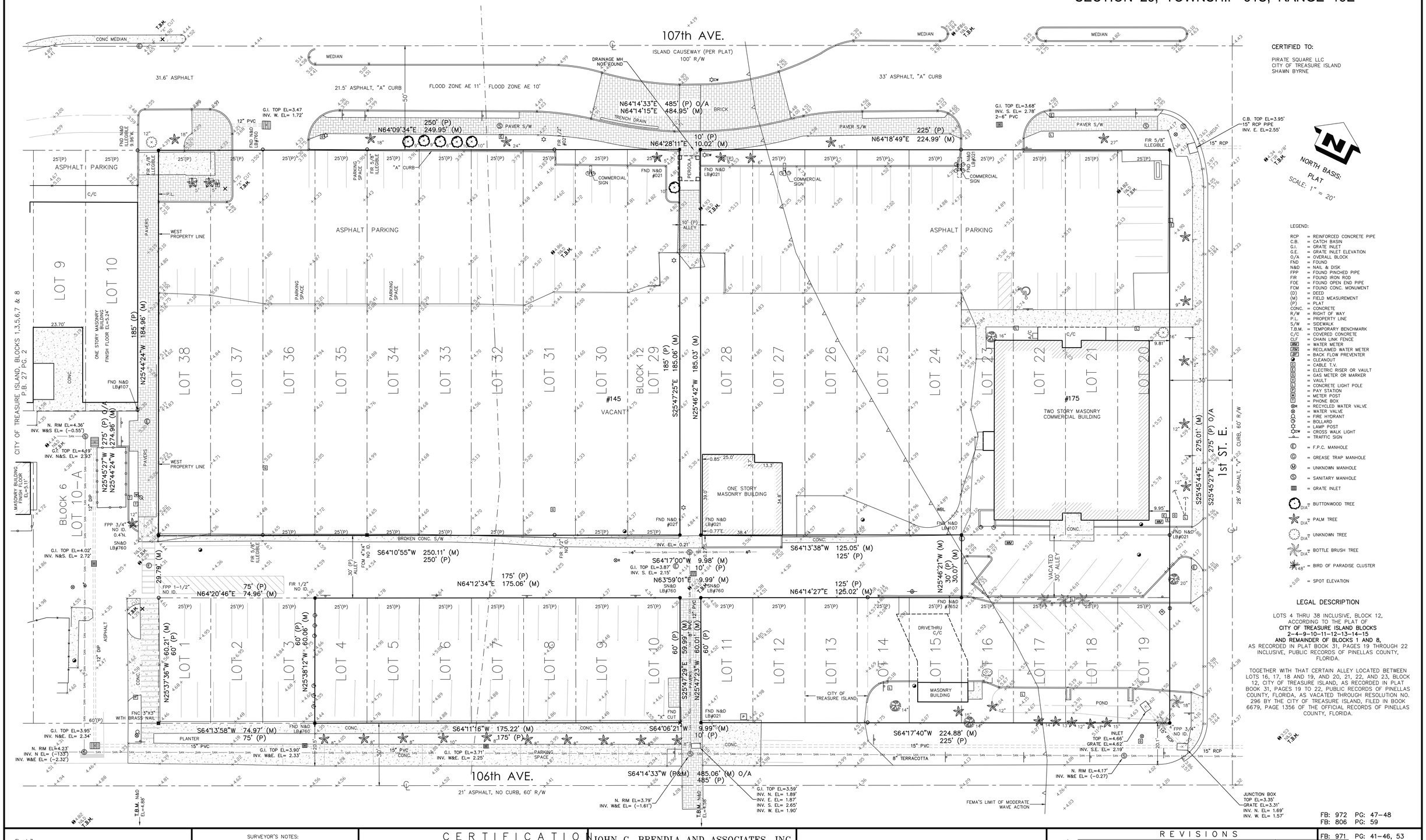
Wulfert

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 20, Aug 28, 2023

SECTION 23, TOWNSHIP 31S, RANGE 15E



CERTIFIED TO:

PIRATE SQUARE LLC
CITY OF TREASURE ISLAND
SHAWN BYRNE

LEGEND:

RCP	= REINFORCED CONCRETE PIPE
C.B.	= CATCH BASIN
G.I.	= GRATE INLET
G.E.	= GRATE INLET ELEVATION
O/A	= OVERALL BLOCK
FND	= FOUND
N&D	= NAIL & DISK
FPP	= FOUND PINCHED PIPE
FIR	= FOUND IRON ROD
FOE	= FOUND OPEN END PIPE
FCM	= FOUND CONC. MONUMENT
(D)	= DEED
(M)	= FIELD MEASUREMENT
(P)	= PLAT
CONC.	= CONCRETE
R/W	= RIGHT OF WAY
P.L.	= PROPERTY LINE
S/W	= SIDEWALK
T.B.M.	= TEMPORARY BENCHMARK
C/C	= COVERED CONCRETE
CLF	= CHAIN LINK FENCE
WM	= WATER METER
RW	= RECLAIMED WATER METER
BF	= BACK FLOW PREVENTER
	= CLEANOUT
	= CABLE T.V.
	= ELECTRIC RISER OR VAULT
	= GAS METER OR MARKER
	= VAULT
	= CONCRETE LIGHT POLE
	= PAY STATION
	= METER POST
	= PHONE BOX
	= RECYCLED WATER VALVE
	= WATER VALVE
	= FIRE HYDRANT
	= BOLLARD
	= LAMP POST
	= CROSS WALK LIGHT
	= TRAFFIC SIGN
(E)	= F.P.C. MANHOLE
(G)	= GREASE TRAP MANHOLE
(M)	= UNKNOWN MANHOLE
(S)	= SANITARY MANHOLE
	= GRATE INLET
DIA.	= BUTTONWOOD TREE
DIA.	= PALM TREE
DIA.	= UNKNOWN TREE
DIA.	= BOTTLE BRUSH TREE
48"	= BIRD OF PARADISE CLUSTER
+0.00	= SPOT ELEVATION

LEGAL DESCRIPTION

LOTS 4 THRU 38 INCLUSIVE, BLOCK 12, ACCORDING TO THE PLAT OF **CITY OF TREASURE ISLAND BLOCKS 2-4-9-10-11-12-13-14-15 AND REMAINDER OF BLOCKS 1 AND 8,** AS RECORDED IN PLAT BOOK 31, PAGES 19 THROUGH 22 INCLUSIVE, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA.

TOGETHER WITH THAT CERTAIN ALLEY LOCATED BETWEEN LOTS 16, 17, 18 AND 19, AND 20, 21, 22, AND 23, BLOCK 12, CITY OF TREASURE ISLAND, AS RECORDED IN PLAT BOOK 31, PAGES 19 TO 22, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, AS VACATED THROUGH RESOLUTION NO. 296 BY THE CITY OF TREASURE ISLAND, FILED IN BOOK 6679, PAGE 1356 OF THE OFFICIAL RECORDS OF PINELLAS COUNTY, FLORIDA.

FB: 972 PG: 47-48
FB: 806 PG: 59

Flood Zone
AE (EL. 11'), AE (EL. 10')
COMMUNITY PANEL #125153 1210300194 H, EFFECTIVE 8/24/21

Basis of Bearings:
SOUTH BOUNDARY OF LOTS 1 THRU 19
BEING S64°14'33"W (PER PLAT)

Benchmark:
COUNTY #236 PBE 147 (USCE 1968)
EL. = 5.273' N.G.V.D., ADJUSTED TO
EL. = 4.51' N.A.V.D. M.S.L. = 0.00'

SURVEYOR'S NOTES:

This survey was prepared without the benefit of a title search and is subject to all easements, rights-of-way and other matters of record.

Survey not valid without the signature and original raised seal of a Florida licensed Surveyor and Mapper.

This survey is made for the exclusive use of the current owners of the property and also those who purchase, mortgage or guarantee the title thereto within one (1) year from date hereof.

CERTIFICATION

I hereby certify that the survey represented hereon meets the requirements of Chapter 5J-17, Florida Administrative Code.

John O. Brendla
Digitally signed by John O. Brendla
Date: 2024.09.03 08:42:38

JOHN O. BRENDLA
Florida surveyor's registration No. 4601
Certificate of Authorization No. 760

JOHN C. BRENDLA AND ASSOCIATES, INC.
Professional Land Surveyors and Mappers
JCB
4015 82nd Avenue North
Pinellas Park, Florida 33781
Telephone (727) 576-7546
Facsimile (727) 577-9932
LB 760

BOUNDARY SURVEY WITH TOPOGRAPHY, TREES, AND IMPROVEMENTS

2108-77.CRD

REVISIONS

No.	DESCRIPTION	DATE
1.	ADDITIONAL PER ENG.	11/29/2022
2.	UPDATE AFTER DEMOLITION	2/29/2024
3.	DETAIL INLET STRUCTURE S.E.	8/30/2024

FB: 971 PG: 41-46, 53
FB: 973 PG: 1
Survey date: 12/30/2021
Job Number: 2108-77
Drawn by: JM
Chkd by: JOB
SHEET 1 of 1