



**AGENDA
TECHNICAL REVIEW COMMITTEE
REGULAR MEETING
NOVEMBER 20, 2025
10:00 AM
CITY HALL COMMISSION CHAMBERS
204 ASH STREET
FERNANDINA BEACH, FL 32034**

- 1. CALL TO ORDER**
- 2. ROLL CALL**
- 3. PLEDGE OF ALLEGIANCE**
- 4. APPROVAL OF MINUTES**
- 5. FIRST STEP REVIEW (PRE-APPLICATION ITEMS)**
- 6. OLD BUSINESS**
- 7. NEW BUSINESS**
 - 7.1 TRC 2025-0009 - ISLAND PARK PROPERTIES LLC, 1505 S. 15TH STREET**

Teresa Benton, Gulfstream Design Group LLC
Site Plan Review of the Island Park Properties project, to include construction of three (3) commercial buildings (2 medical offices and 1 retail). (C-1)
- 8. DEVELOPMENT INQUIRIES FROM APPLICANTS NOT ON THE AGENDA - DISCUSSION ONLY, NO ACTION TO BE TAKEN.**
- 9. COMMITTEE BUSINESS**
- 10. ADJOURNMENT**

NEXT REGULAR TRC MEETING IS SCHEDULED FOR DECEMBER 11, 2025.

Persons with disabilities requiring accommodations in order to participate in this program or activity should contact 310-3115, TTY 711, or through the Florida Relay Services at 1-800-955-8771 (TTY number for all City offices) at least 24 hours in advance to request such accommodations.

From: noreply@civicplus.com
To: [TRC Info](#)
Subject: Online Form Submittal: Technical Review Committee: Formal Review Request
Date: Friday, October 17, 2025 11:29:40 AM

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender, were expecting this email, and know the content is safe.

Technical Review Committee: Formal Review Request

Technical Review Committee: Formal Review

USE THIS FORM TO To apply for review of site plans, preliminary subdivision plats, final subdivision plats, minor subdivisions, and amendments to previously issued local development orders, change of use, and nonresidential building expansions.

Fees	<i>Field not completed.</i>
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IMPORTANT NOTES

This application will be routed to the various departments for review of the applicable codes and design standards.

****Please note that, unless otherwise indicated, TRC meetings are scheduled as follows:**

The 2nd and 4th Thursday of each month at 10:00 AM in the City Hall Chambers located at 204 Ash Street.

Agenda order includes First Step Reviews followed by Formal Reviews.**

Please see the Land Development Code (LDC) for detailed information:	<i>Field not completed.</i>
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The LDC is available for review at	www.fbfl.us/LDC
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Application Requirements	<i>Field not completed.</i>
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Key Contacts

TRC will guide your application from start to finish, engaging other City departments as needed.

PROJECT INFORMATION

Submission Type	Initial Submittal
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NOTICE

3rd and all subsequent resubmittals will be charged a fee of 1/2 the original application fees.

DATE OF YOUR FIRST STEP REVIEW (if you have not attended a First Step Review, return to the application page and choose the TRC First Step Review application)	3/15/2025
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PROPERTY INFORMATION	Property information can be found at the Nassau County Property Appraiser's Website → Map Search
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Site Address	1505 S 15th Street
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City	Fernandina Beach
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State	FL
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Zip	32034
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Parcel ID #(s)	00-00-31-1800-0267-0092, 00-00-31-1800-0267-0010, 00-00-31-1800-0267-0021, 00-00-31-1800-0267-0022, 00-00-31-1800-0267-0031, 00-00-31-1800-0267-0091, 00-00-31-1800-0267-0101, 00-00-31-1800-0267-0102
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Lot	<i>Field not completed.</i>
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Block	<i>Field not completed.</i>
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Subdivision	<i>Field not completed.</i>
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Zoning District	C-1
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Future Land Use Designation	General Commercial
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Overlay District	None
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Size of Property	2
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(acres)

Present Property Use	Residential and Commercial
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Wetlands	No
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Flood Zone	X, area of minimal flood hazard
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Coastal Construction Control Line (CCCL)	No
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OWNER OF RECORD

As recorded with the Nassau County Property Appraiser

First Name	Island Park
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Last Name	Properties LLC
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Company (if applicable)	<i>Field not completed.</i>
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Mailing Address	P.O. Box 489
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City	Yulee
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State	FL
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Zip	32041
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Telephone Number	904-794-4231
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Email Address	zazizmd@gmail.com
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OWNER'S AGENT

If other than owner. If an agent will be representing the owner, an Owner's Authorization For Agent Representation form must be included.

First Name	Teresa
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Last Name	Benton
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Company (if applicable)	Gulfstream Design Group, LLC
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Mailing Address	2225 A1A S, Suite A2
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City	St. Augustine
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State	FL
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Zip	32080
Telephone Number	904-794-4231
Email Address	sbaez@gulfstreamdesign.com
PROJECT INFORMATION	
Project Type	Site Plan Review
Project Name	Island Park Properties
Proposed Access Road	Nectarine Street
Rd Maintenance Jurisdiction	County Maintained
Project Estimated Cost	700,000
Description of Request	The Island Park Properties project includes the construction of three (3) commercial buildings (including two (2) medical offices and one (1) retail building), associated parking, and stormwater and utility infrastructure. The proposed project is located on the following parcels: 00-00-31-1800-0267-0010, 00-00-31-1800-0267-0021, 00-00-31-1800-0267-0022, 00-00-31-1800-0267-0031, 00-00-31-1800-0267-0091, 00-00-31-1800-0267-0092, 00-00-31-1800-0267-0101, 00-00-31-1800-0267-0102 The construction of this project will be phased to include Building 1 with associated parking in Phase 1 and the remainder of the site in Phase 2.
Site Plan Review Checklist	The names, address, telephone number, and email address of the person preparing the plan., The date of preparation and date(s) of any modifications, a north arrow, and a written and graphic scale., The legal description of the property, consistent with the required survey., A vicinity map showing the location of the property., The location of streams, bodies of water, natural features, roads, rights-of-way, street intersections, and paved areas within the boundaries of the property., The location of streams, bodies of water, dunes and dune systems, and other natural features within 250 feet of the boundaries of the property., The location of the mean high-water line, if such line is within the boundaries of the property., A topographic survey, soils report, grading plan, and an erosion control plan., A general floodplain map indicating areas subject to inundation and high groundwater levels up to a 100-year flood classification., A statement indicating the distances to schools and public safety facilities intended to serve the proposed development., The name, plat book, and page number of any recorded subdivision comprising all or part of the site., The location and use of any

existing and proposed principal or accessory buildings and structures, showing proposed setbacks, building heights, and other dimensional requirements of the zoning distr, Elevations of all proposed structures., The access points, driveway design, on-site parking, including required parking lot landscaping, internal circulation, sidewalks, and bicycle facilities, The location of existing and proposed utilities, utility services, and easements., A tree survey showing protected trees, proposed replacement trees, if required, and landscaping and buffering. (See Section 4.05.00.), A soil erosion and sediment control plan compliant with Section 3.01.04., o Concurrency analysis (concurrency analysis reports shall contain the information set forth in Section 7.04.00.), o Traffic analysis reports (requirements for traffic analysis reports are set forth in Section 11.01.06.) , o Stormwater management plans (requirements for stormwater management plans are set forth in Section 7.03.00.) , o Environmental Impact Study (requirements for environmental impact studies are set forth by regional, State, and federal agencies with jurisdiction and in Chapter 3 of the LDC.), o Tree Protection Plan (Section 4.05.09.), o Landscape Plan (Section 4.05.00.), o Lighting Plan (Section 3.05.00.), Section 7.01.04.B), o Signage Plan (Section 5.03.00.), o Proof of Ownership – provide a legal description, Property Identification Number (PIN) and a copy of the warranty deed.

School Concurrency

New residential development is required to demonstrate compliance with school concurrency as regulated in the City of Fernandina Beach through the City of Fernandina Beach's Comprehensive Plan Intergovernmental Coordination Element and the Interlocal Agreement Amendment for Public School Facility Planning adopted by the City on May 21, 2019. No new residential rezoning, preliminary plat, site plan or functional equivalent may be approved by the City unless the residential development is exempt from requirements outlined in Section 9.13 of the Amended Interlocal Agreement OR a School Concurrency Reservation Letter has been issued by the School Board indicating that adequate school facilities exist.

Certification

By signing below, I certify that the information contained in this application is true and correct to the best of my knowledge at the time of the application. , I acknowledge that I understand and have complied with all of the submittal requirements and procedures.

Applicant First Name

Teresa

Applicant Last Name

Benton

Today's Date

10/17/2025

Upload Supporting Documentation

[04_\(23-215\)_Project Maps.pdf](#)

Upload 2	05_(23-215)_Deed.pdf
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Upload 3	06_(23-215)_Sunbiz_Island Park Properties.pdf
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Upload 4	07_(23-215)_Legal Description.pdf
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Upload 5	11_(23-215)_Survey.pdf
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Upload 6	13_(23-215)_Arborist Evaluation Binder.pdf
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Upload 7	14_(20-106)_Traffic Analysis Memo.pdf
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DEPARTMENT OF PLANNING & CONSERVATION
204 Ash Street | *Fernandina Beach, FL 32034* | 904 310-3480 |
www.fbfl.us/planning

Email not displaying correctly? [View it in your browser.](#)



Via Electronic Delivery

October 14, 2025

TRC Coordinator
City of Fernandina Beach
204 Ash Street
Fernandina Beach, FL 32034

RE: **Island Park Properties**
GDG: 23-215
Technical Review Committee
Application

Dear TRC Coordinator:

On behalf of my client, Island Park Properties, LLC, please find the following documents regarding the Technical Review Committee Application associated with the Island Park Properties project located at 1412 Nectarine Street (f.k.a. Nectarine Street Offices).

- One (1) Application Review Fee
- One (1) Technical Review Committee Application
- One (1) Agent Authorization for Island Park Properties, LLC
- One (1) Drainage Analysis and Stormwater Management Design Report
- One (1) Set of Civil Engineering Drawings
- One (1) Set of Landscape and Irrigation Drawings

Project Description

The Island Park Properties project includes the construction of three (3) commercial buildings (including two (2) medical offices and one (1) retail building), associated parking, and stormwater and utility infrastructure. The proposed project is located on the following parcels: 00-00-31-1800-0267-0010, 00-00-31-1800-0267-0021, 00-00-31-1800-0267-0022, 00-00-31-1800-0267-0031, 00-00-31-1800-0267-0091, 00-00-31-1800-0267-0092, 00-00-31-1800-0267-0101, 00-00-31-1800-0267-0102

The construction of this project will be phased to include Building 1 with associated parking in Phase 1 and the remainder of the site in Phase 2.

If you have any questions or require additional information, please do not hesitate to email me at sbaez@gulfstreamdesign.com.

Sincerely,



Samantha Baez
Project Administrator
Gulfstream Design Group, LLC

CC: Dr. Zeeshan Aziz (zazizmd@gmail.com)
Kenny McGill, Cross Regions Real Estate
File

Prepared By/ Record & Return To:

Robert Erdman, Esq.
Quintairos, Prieto, Wood & Boyer, P.A.
4190 Belfort Road, Suite 450
Jacksonville, Florida 32216

Parcel ID #(s): 00-00-31-1800-0267-0092
00-00-31-1800-0267-0102
00-00-31-1800-0267-0101
00-00-31-1800-0267-0091
00-00-31-1800-0267-0021
00-00-31-1800-0267-0022
00-00-31-1800-0267-0031

SPECIAL WARRANTY DEED

This SPECIAL WARRANTY DEED is executed and delivered as of the 23rd day of April, 2021, by **PAPPY'S, LLP**, a Florida limited liability partnership, **a/k/a Pappy's, LLP**, a Florida General Partnership, whose mailing address is 2018 Cherokee Drive, Neptune Beach, Florida 32266, to **ISLAND PARK PROPERTIES LLC**, a Florida limited liability company (the "**Grantee**"), whose mailing address is 1100 Azie Morton Road #1105, Austin, Texas 78704.

W I T N E S S E T H:

That Grantor, for and in consideration of the sum of \$10.00 and other good and valuable consideration to Grantor in hand paid by Grantee, the receipt and sufficiency of which is acknowledged, has granted, bargained, and sold to Grantee and Grantee's heirs and assigns forever, the following described real property situate, lying, and being in Nassau County, Florida, and legally described as follows:

See **Exhibit "A"** attached hereto and made a part hereof (the "**Land**").

TOGETHER with all easements, tenements, hereditaments, and appurtenances belonging or in anywise appertaining to the Land, and the reversion and reversions, remainder and remainders, rents, issues, and profits of the Land, and all the estate, right, title and interest whatsoever of the Grantor in and to the Land, with the hereditaments and appurtenances to the Land.

SUBJECT, however, to real property taxes and assessments for 2021 and subsequent years; zoning and other regulatory laws and ordinances; those matters described on **Exhibit "B"** attached hereto ("**Permitted Exceptions**").

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

Grantor does hereby covenant with Grantee that Grantor is lawfully seized of the Land in fee simple; that Grantor has good right and lawful authority to sell and convey the Land, and that Grantor hereby warrants title to the Land and will defend the same against the lawful claims of all persons claiming by, through or under Grantor, but against no others.

IN WITNESS WHEREOF, Grantor has executed this Special Warranty Deed as of the day and year first above written.

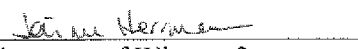
Signed, sealed, and delivered
in the presence of:



Signature of Witness 1

Teresa L. Prince

Print name of Witness 1



Signature of Witness 2

Jaime Hermann

Print name of Witness 2

PAPPY'S, LLP, a Florida limited liability partnership,
a/k/a **Pappy's, LLP**, a Florida General Partnership

By **Daniel I. McCranie, P.A., Employees Profit
Sharing Trust**, Managing Partner for Pappy's LLP, a
Florida limited liability partnership

By: 

DANIEL I. MCCRANIE, Trustee

By **S. Perry Penland, Jr., P.A. Profit Sharing Plan
and Trust**, its Partner for Pappy's LLP, a Florida
limited liability Partnership,

By: 

S. PERRY PENLAND, JR., Trustee

And

By **S. Perry Penland, Jr., P.A. Profit Sharing Plan
and Trust**, its Managing Partner for Pappy's LLP, a
Florida General Partnership,

By: 

S. PERRY PENLAND, JR., Trustee

By **Daniel I. McCranie, P.A., Employees Profit
Sharing Trust**, its Managing Partner for Pappy's LLP,
a Florida General Partnership

By: 

DANIEL I. MCCRANIE, Trustee

STATE OF FLORIDA)
) ss.:
COUNTY OF Nassau)

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 22nd day of April, 2021, by **S. PERRY PENLAND, JR.**, as Trustee of the **S. Perry Penland, Jr., P.A. Profit Sharing Plan and Trust**, as Partner of **PAPPY'S, LLP**, a Florida limited liability partnership, **a/k/a Pappy's, LLP**, a Florida General Partnership, on behalf of the company, and **DANIEL I. MCCRANIE**, as Trustee of the **Daniel I. McCranie, P.A., Employees Profit Sharing Trust**, as Managing Partner of **PAPPY'S, LLP**, a Florida limited liability partnership, **a/k/a Pappy's, LLP**, a Florida General Partnership, on behalf of the company, who is ☒ personally known to me or ☐ has produced _____ as identification.

[NOTARIAL SEAL]



Jaime Herrmann
Print Name: Jaime Herrmann
Notary Public, State of Florida
Commission #: GG 361349
My Commission Expires: 9/21/23

EXHIBIT "A" TO SPECIAL WARRANTY DEED

LEGAL DESCRIPTION OF PROPERTY

The land referred to herein below is situated in the County of Nassau, State of Florida, and described as follows:

All of Lot 9, Block 267, the Easterly 200 feet of Lot 10, Block 267, together with portions of Lot 1, 2 and 3, Block 267, The City of Fernandina Beach, Florida.

Lying and being in the City of Fernandina Beach (formerly Fernandina) in the County of Nassau and the State of Florida, and known and described upon and according to the Official Plat of said City (as lithographed and issued by the Florida Railroad Company in 1857, and enlarged, revised and reissued by the Florida Town Improvement Company in 1887 and 1901)

Being more particularly described as follows:

Begin at the Northeast corner of said Lot 10, Block 267; thence South 06 degrees 00 minutes 44 seconds West along the Westerly right of way line of South 15th Street (a 60 foot right of way) also being the East line of said Lots 9 and 10, a distance of 344.03 feet to the Southeast corner of said Lot 9; thence North 83 degrees 54 minutes 35 seconds West along the South line of said Lot 9, a distance of 230.00 feet to the Southwest corner of said Lot 9, said point also being the Northeast corner of Lot 3, Block 267, aforementioned; thence South 05 degrees 50 minutes 33 seconds West along the East line of said Lot 3, a distance of 86.00 feet to the Southeast corner of the North 1/2 of Lot 3, Block 267 aforementioned; thence North 83 degrees 55 minutes 56 seconds West along the Southerly line of said North 1/2 of Lot 3, a distance of 210.55 feet to the Easterly right of way line of South 14th Street (a 60 foot right of way); thence North 06 degrees 10 minutes 41 seconds East along said Easterly right of way line, a distance of 257.96 feet to a point located on the Northerly line of said Lot 2; thence South 83 degrees 58 minutes 54 seconds East along said Northerly line, a distance of 188.22 feet; thence South 83 degrees 50 minutes 13 seconds East, a distance of 51.84 feet (South 84 degrees 01 minute 10 seconds East 52.00 per deed); thence North 05 degrees 50 minutes 38 seconds East, a distance of 172.19 feet (172.00 feet per deed) to a point located on the Southerly right of way line of Nectarine Street (a 60 foot right of way), said line also being the North line of Lot 10, Block 267, aforementioned; thence South 83 degrees 50 minutes 59 seconds East along said Southerly right of way line, a distance of 200.00 feet to the point of beginning.

EXHIBIT "B" TO SPECIAL WARRANTY DEED

PERMITTED EXCEPTIONS

- Taxes and assessments for the year 2021 and subsequent years, which are not yet due and payable.
- All matters contained on the Plat of City of Fernandina Beach, formerly Fernandina, as recorded in on record with the Clerk of the Court for Nassau County, Florida.
- Twenty (20') foot Easement to the State of Florida for road right -of-way purposes as reserved in Warranty Deed recorded in OR Book 119, Page 211, of the Public Records of Nassau County, Florida. (The North One-half (N 1/2) of Lot 2)
- Any rights, easements, interests or claims which may exist by reason of or reflected by the facts shown on the survey with Job No. 1912-09B dated December 20, 2019 by Coastal Land Surveyors & Mappers, Inc.

Affidavit of the Trustee of
The P.A. Profit Sharing Trust

I, the undersigned, do hereby certify that:

1. I, S. Perry Penland, Jr., am Trustee of the P.A. Profit Sharing Plan and Trust (the "Trust"), which is a partner of Pappy's, LLP, a limited liability partnership (the "LP Partnership") and a partner of Pappy's LLP, a general partnership (the "GP Partnership") each duly organized and existing under the laws of Florida, and I am authorized to manage the Trust.

2. I, S. Perry Penland, Jr., as Trustee of the P.A. Profit Sharing Plan and Trust, as a partner of the LP Partnership and a partner of the GP Partnership, acting for and on behalf of the Trust, am hereby authorized to execute any and all documents and perform any and all acts that are deemed necessary or appropriate to complete the transaction.

3. The Federal Employment Identification Number for the Trust is 59-3266260.

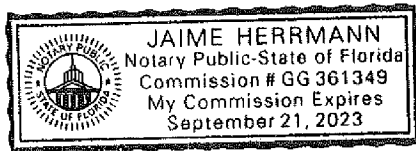
This affidavit has been signed and effective as of April 22, 2021.

AFFIANT FURTHER SAYETH NOT.

By: *S. Perry Penland, Jr.*
S. Perry Penland, Jr., as Trustee of the P.A. Profit
Sharing Plan and Trust

STATE OF FLORIDA
COUNTY OF NASSAU

The foregoing was acknowledged before me by means of x physical presence or _____ online notarization this 22nd day of April, 2021 by S. Perry Penland, Jr., as Trustee of the P.A. Profit Sharing Plan and Trust, a Partner of Pappy's, LLP, a limited liability partnership and a Partner of Pappy's, LLP, a general partnership, who is personally known to me or produced _____ as identification and who did take an oath.



Jaime Herrmann
Notary Public
My Commission Expires: 9/21/23

Affidavit of
PAPPY'S, LLP, a Florida limited liability partnership, a/k/a
Pappy's, LLP, a Florida General Partnership

I, the undersigned, do hereby certify that:

1. I, Daniel I. McCranie, Sr., as Trustee of the Daniel I. McCranie, P.A., Employees Profit Sharing Trust, as the managing partner of Pappy's, LLP, a limited liability partnership (the "LP Partnership") and as a managing partner of Pappy's LLP, a general partnership (the "GP Partnership") each duly organized and existing under the laws of Florida, am authorized to manage the LP Partnership and the GP Partnership.

2. I, S. Perry Penland, Jr., as Trustee of the P.A. Profit Sharing Plan and Trust, as a managing partner of the GP Partnership, am authorized to manage the GP Partnership.

3. I, Daniel I. McCranie, Sr., as Trustee of the Daniel I. McCranie, P.A., Employees Profit Sharing Trust, as managing partner of the LP Partnership and managing partner of the GP Partnership, acting for and on behalf of the LP and GP Partnerships, am hereby authorized to execute any and all documents and perform any and all acts that the LP and GP Partnerships deem necessary or appropriate to complete the transaction.

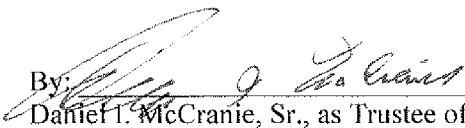
4. I, S. Perry Penland, Jr., as Trustee of the P.A. Profit Sharing Plan and Trust, as a managing partner of the GP Partnership and as partner of the LP Partnership, acting for and on behalf of the LP and GP Partnerships, am hereby authorized to execute any and all documents and perform any and all acts that the LP and GP Partnerships deem necessary or appropriate to complete the transaction.

5. The Federal Employment Identification Number for the LP and GP Partnerships is the same and is 59-3703170.

This affidavit has been signed and effective as of April 22, 2021.

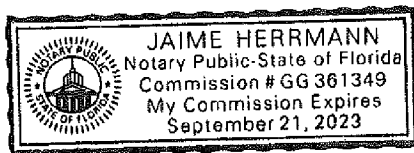
AFFIANTS FURTHER SAYETH NOT.

MANAGING LP & GP PARTNERSHIPS PARTNER:

By: 
Daniel I. McCranie, Sr., as Trustee of the Daniel I.
McCranie, P.A. Employees Profit Sharing Trust
Its: Managing Partner

STATE OF FLORIDA
COUNTY OF NASSAU

The foregoing was acknowledged before me by means of X physical presence or _____
online notarization this 22nd day of April, 2021 by Daniel I. McCranie, Sr., as Trustee
of the Daniel I. McCranie, P.A. Employees Profit Sharing Trust, Managing Partner of Pappy's,
LLP, a limited liability partnership and Managing Partner of Pappy's, LLP, a general partnership,
who is personally known to me or produced _____ as identification and who did take an
oath.



Jaime Herrmann
Notary Public
My Commission Expires: 9/21/23

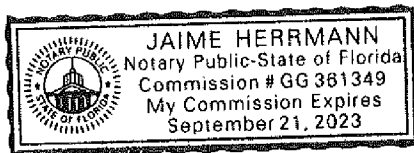
LP PARTNERSHIP PARTNER & GP
PARTNERSHIP MANAGING PARTNER:

By

By: S. Perry Penland, Jr.
S. Perry Penland, Jr., as Trustee of P.A. Profit
Sharing Plan and Trust
Its: Partner

STATE OF FLORIDA
COUNTY OF NASSAU

The foregoing was acknowledged before me by means of X physical presence or _____
online notarization this 22nd day of April, 2021 by S. Perry Penland, Jr., as Trustee of
the S. Perry Penland, Jr., P.A. Employees Profit Sharing Trust, Partner of Pappy's, LLP, a limited
liability partnership and Partner of Pappy's, LLP, a general partnership, who is personally known
to me or produced _____ as identification and who did take an oath.



Jaime Herrmann
Notary Public
My Commission Expires: 9/21/23

Affidavit of
The Daniel I. McCranie, P.A., Employees Profit Sharing Trust

I, the undersigned, do hereby certify that:

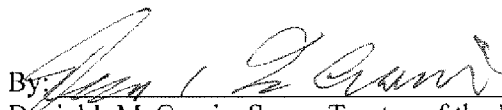
1. I, Daniel I. McCranie, Sr., as Trustee of the Daniel I. McCranie, P.A., Employees Profit Sharing Trust (the "Trust"), which is a managing partner of Pappy's, LLP, a limited liability partnership (the "LP Partnership") and a managing partner of Pappy's LLP, a general partnership (the "GP Partnership") each duly organized and existing under the laws of Florida, and I am authorized to manage the Trust.

2. I, Daniel I. McCranie, Sr., as Trustee of the Daniel I. McCranie, P.A., Employees Profit Sharing Trust, as a managing partner of the LP Partnership and a managing partner of the GP Partnership, acting for and on behalf of the Trust, am hereby authorized to execute any and all documents and perform any and all acts that are deemed necessary or appropriate to complete the transaction.

3. The Federal Employment Identification Number for the Trust is 59-2233725.

This affidavit has been signed and effective as of April 22, 2021.

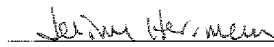
AFFIANT FURTHER SAYETH NOT.

By 
Daniel I. McCranie, Sr., as Trustee of the Daniel I.
McCranie, P.A. Employees Profit Sharing Trust

STATE OF FLORIDA
COUNTY OF NASSAU

The foregoing was acknowledged before me by means of x physical presence or _____ online notarization this 22nd day of April, 2021 by Daniel I. McCranie, Sr., as Trustee of the Daniel I. McCranie, P.A. Employees Profit Sharing Trust, Managing Partner of Pappy's, LLP, a limited liability partnership and Managing Partner of Pappy's, LLP, a general partnership, who is personally known to me or produced _____ as identification and who did take an oath.




Notary Public
My Commission Expires: 9/21/23



[Department of State](#) / [Division of Corporations](#) / [Search Records](#) / [Search by Entity Name](#) /

Detail by Entity Name

Florida Limited Liability Company
ISLAND PARK PROPERTIES LLC

Filing Information

Document Number L20000331525
FEI/EIN Number 85-3696276
Date Filed 10/19/2020
State FL
Status ACTIVE
Last Event REINSTATEMENT
Event Date Filed 10/05/2021

Principal Address

1201 HAYS STREET
TALLAHASSEE, FL 32301

Mailing Address

463063 State Road 200
Unit 489
Yulee, FL 32097

Changed: 01/30/2025

Registered Agent Name & Address

CORPORATION SERVICE COMPANY
1201 HAYS STREET
TALLAHASSEE, FL 32301

Name Changed: 10/05/2021

Authorized Person(s) Detail

Name & Address

Title MGR

ISLAND PARK PROPERTIES AGENT TRUST
1100 AZIE MORTON ROAD #1105
AUSTIN, TX 78704

Annual Reports

Report Year	Filed Date
2023	01/31/2023
2024	02/08/2024
2025	01/30/2025

Document Images

01/30/2025 – ANNUAL REPORT	View image in PDF format
02/08/2024 – ANNUAL REPORT	View image in PDF format
01/31/2023 – ANNUAL REPORT	View image in PDF format
01/29/2022 – ANNUAL REPORT	View image in PDF format
10/05/2021 – REINSTATEMENT	View image in PDF format
10/19/2020 – Florida Limited Liability	View image in PDF format

2025 FLORIDA LIMITED LIABILITY COMPANY ANNUAL REPORT

DOCUMENT# L20000331525

Entity Name: ISLAND PARK PROPERTIES LLC

Current Principal Place of Business:

1201 HAYS STREET
TALLAHASSEE, FL 32301

Current Mailing Address:

463063 STATE ROAD 200
UNIT 489
YULEE, FL 32097 US

FEI Number: 85-3696276

Certificate of Status Desired: No

Name and Address of Current Registered Agent:

CORPORATION SERVICE COMPANY
1201 HAYS STREET
TALLAHASSEE, FL 32301 US

The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.

SIGNATURE: ZEESHAN AZIZ

01/30/2025

Electronic Signature of Registered Agent

Date

Authorized Person(s) Detail :

Title MGR
Name ISLAND PARK PROPERTIES AGENT
TRUST
Address 1100 AZIE MORTON ROAD #1105
City-State-Zip: AUSTIN TX 78704

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am a managing member or manager of the limited liability company or the receiver or trustee empowered to execute this report as required by Chapter 605, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: ZEESHAN AZIZ

MANAGER

01/30/2025

Electronic Signature of Signing Authorized Person(s) Detail

Date



LEGAL DESCRIPTION

GDG# (23-215) ISLAND PARK PROPERTIES

ALL OF LOTS 2 AND 9 TOGETHER WITH THE NORTH ½ OF LOT 3 AND THE EASTERLY 200 FEET OF LOT 10, ALL BEING IN BLOCK 267, THE CITY OF FERNANDINA BEACH, FLORIDA.

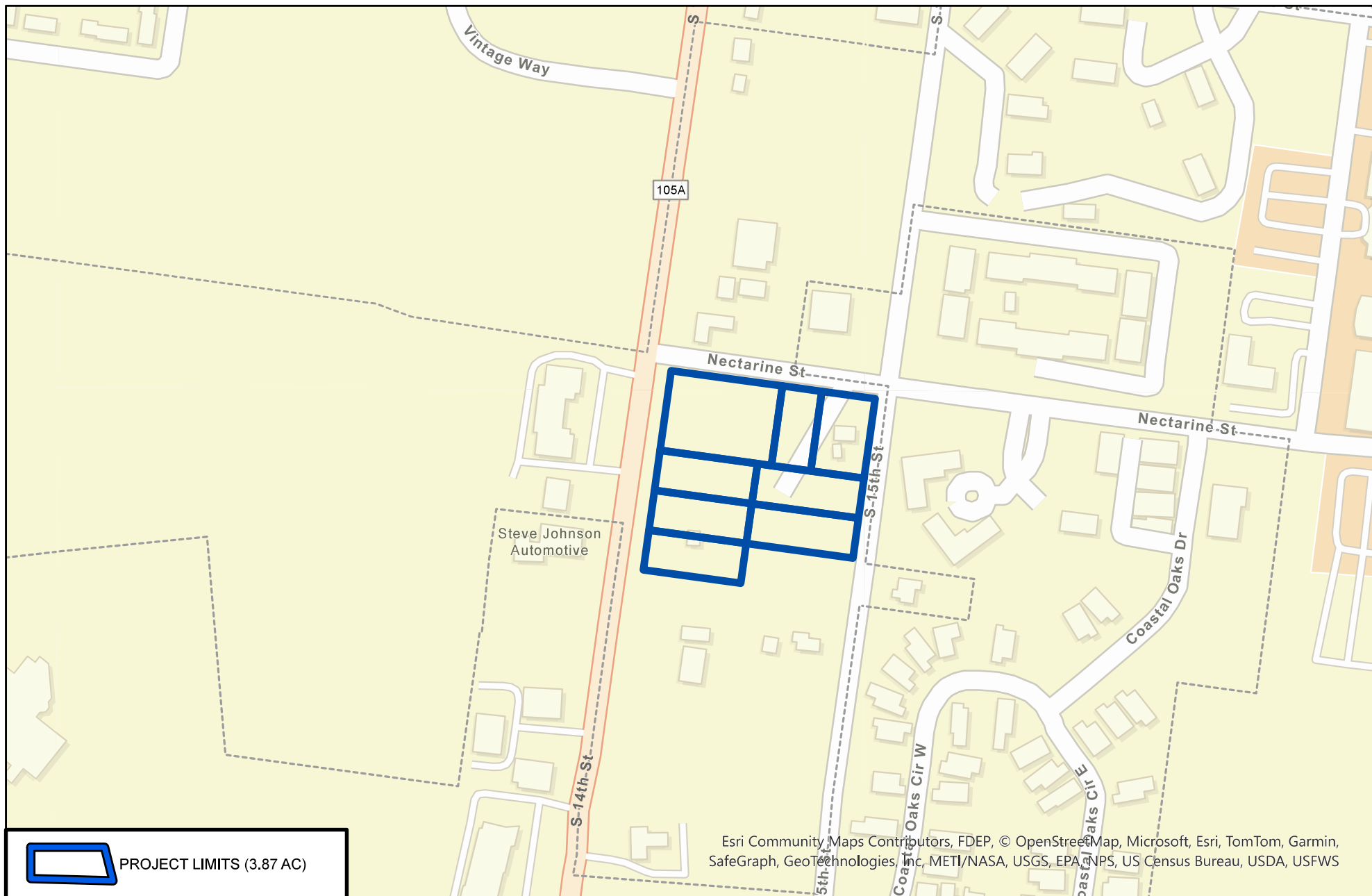
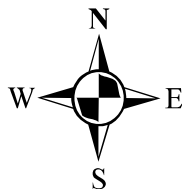


Image Source: ESRI 2023
Date: 01-29-2024
Project Number: 23-215



LOCATION MAP

1505 S 15TH STREET

NASSAU COUNTY, FLORIDA



Gulfstream Design Group, LLC
2225 A1A S, Suite A2
St. Augustine, FL 32080
904.794.4231

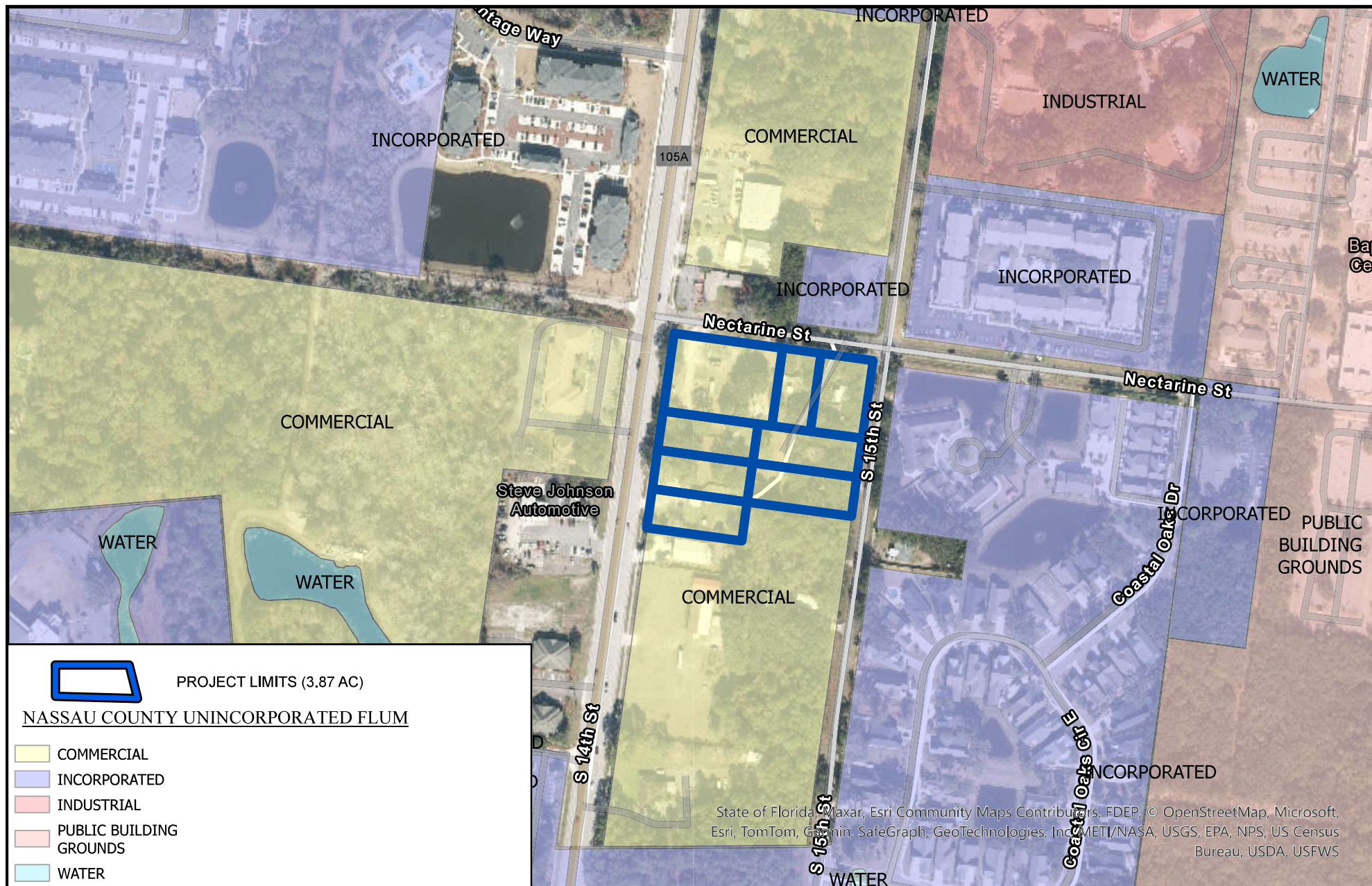
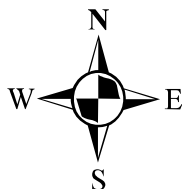


Image Source: ESRI 2023
 Date: 01-30-2024
 Project Number: 23-215

US Feet
 0 262.5 525



EXISTING FUTURE LAND USE MAP 1505 S 15TH STREET NASSAU COUNTY, FLORIDA

GULFSTREAM
 DESIGN GROUP, LLC

Gulfstream Design Group, LLC
 2225 A1A S, Suite A2
 St. Augustine, FL 32080
 904.794.4231

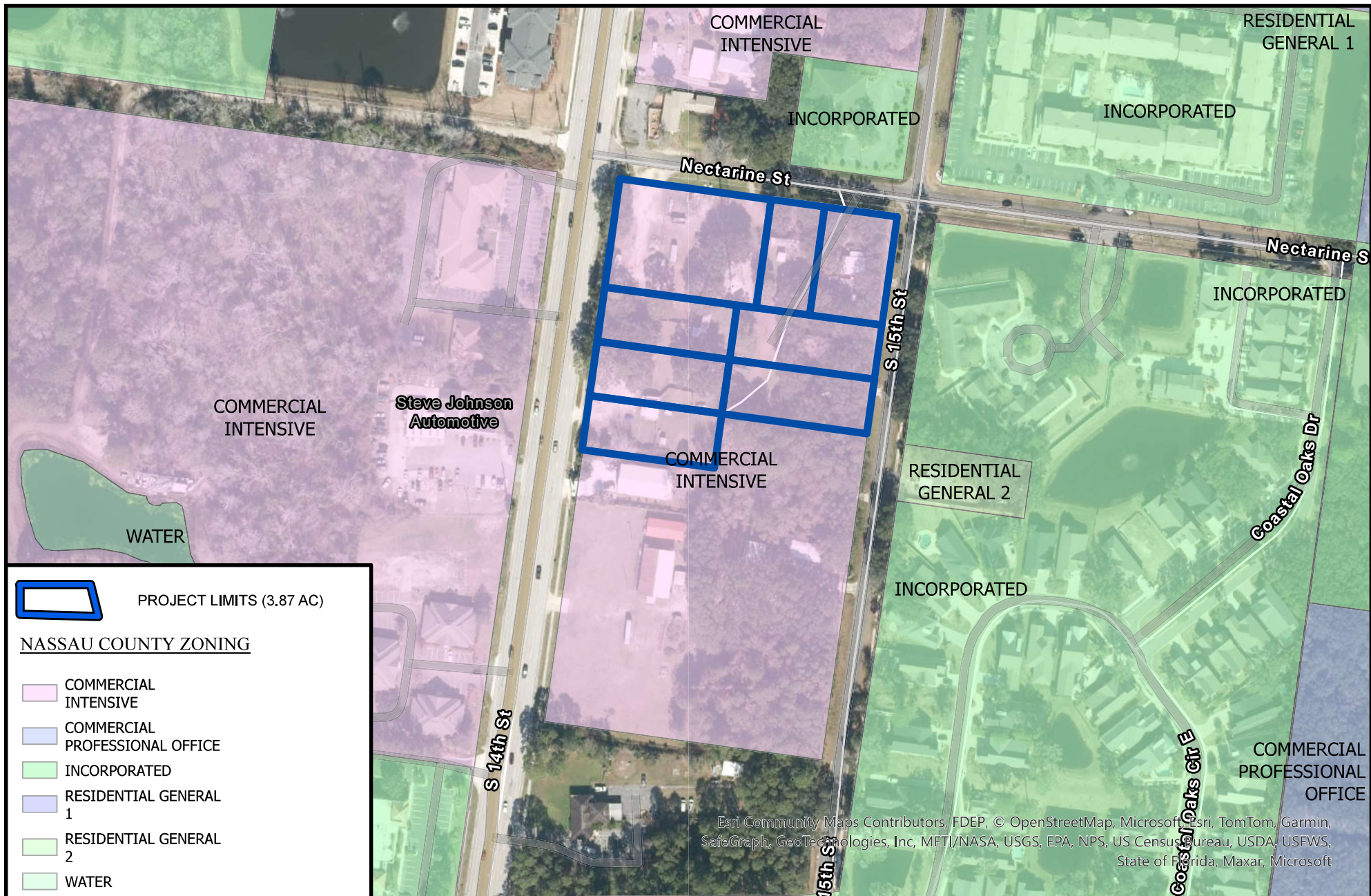
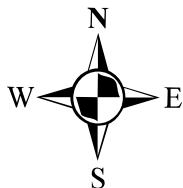


Image Source: ESRI 2023
Date: 01-30-2024
Project Number: 23-215

US Feet
0 140 280



EXISTING ZONING MAP 1505 S 15TH STREET NASSAU COUNTY, FLORIDA



Gulfstream Design Group, LLC
2225 A1A S, Suite A2
St. Augustine, FL 32080
904.794.4231



Image Source: ESRI 2023
Date: 01-30-2024
Project Number: 23-215
FIRM PANEL: 12089C0239G
Effective: 8/2/2017
Datum: NAVD 88



US Feet
0 125 250

FLOOD MAP

1505 S 15TH STREET

NASSAU COUNTY, FLORIDA

**GULFSTREAM**
DESIGN GROUP, LLC
Gulfstream Design Group, LLC
2225 A1A S, Suite A2
St. Augustine, FL 32080
904.794.4231



Image Source: ESRI 2023
Date: 01-30-2024
Project Number: 23-215

US Feet
0 80 160



TOPOGRAPHY MAP 1505 S 15TH STREET NASSAU COUNTY, FLORIDA

GULFSTREAM
DESIGN GROUP, LLC

Gulfstream Design Group, LLC
2225 A1A S, Suite A2
St. Augustine, FL 32080
904.794.4231

MAP SHOWING BOUNDARY AND TOPOGRAPHIC SURVEY OF
ALL OF LOTS 2 AND 9 TOGETHER WITH THE NORTH 1/2 OF LOT 3
AND THE EASTERLY 200 FEET OF LOT 10, ALL BEING IN BLOCK 267,
THE CITY OF FERNANDINA BEACH, FLORIDA.

LYING AND BEING IN THE CITY OF FERNANDINA BEACH (FORMERLY NAMED
FERNANDINA), IN THE COUNTY OF NASSAU AND THE STATE OF FLORIDA,
AND KNOWN AND DESCRIBED UPON AND ACCORDING TO THE OFFICIAL
PLAT OF SAID CITY (AS LITHOGRAPHED AND ISSUED BY THE FLORIDA
RAILROAD COMPANY IN 1857, AND ENLARGED, REVISED AND REISSUED
BY THE FLORIDA TOWN IMPROVEMENT COMPANY IN 1887 AND 1901).

2.94 ACRES +/- TOTAL

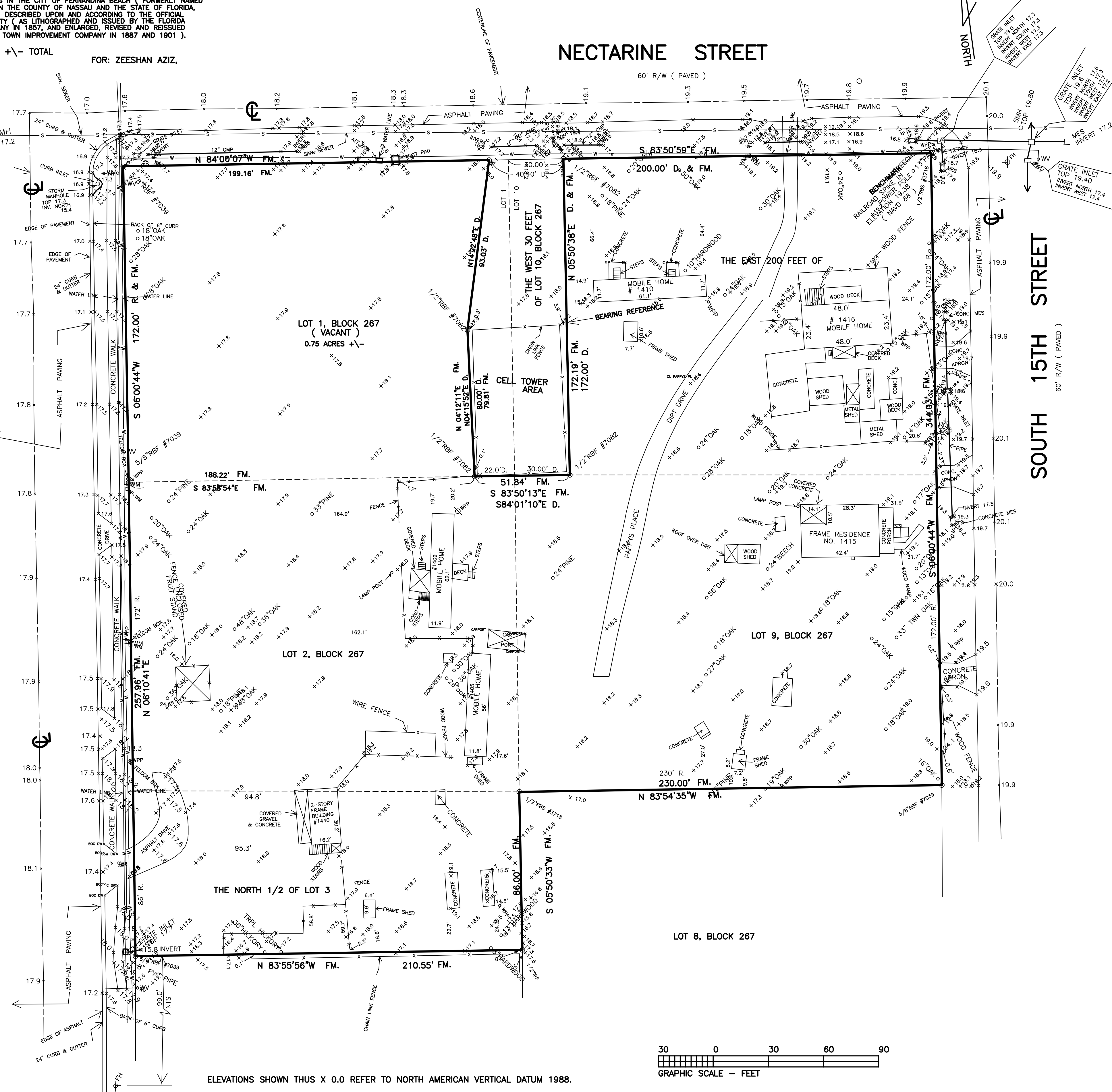
FOR: ZEESHAN AZIZ,

NECTARINE STREET

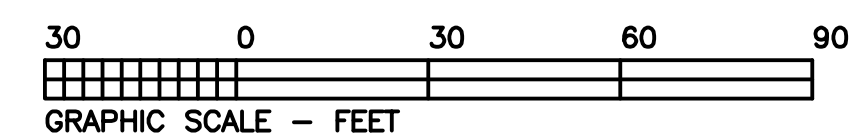
NORTH

SOUTH 15TH STREET

SOUTH 14TH STREET



ELEVATIONS SHOWN THUS X 0.0 REFER TO NORTH AMERICAN VERTICAL DATUM 1988.



COASTAL LAND SURVEYORS

& MAPPERS, INC.
34 NORTH FOURTEENTH STREET
FERNANDINA BEACH, FLORIDA 32032
TEL 904-261-8850 FAX 904-277-6650

I HEREBY CERTIFY THE INFORMATION DEPICTED HEREON AS
MEETING THE MINIMUM TECHNICAL STANDARDS FOR LAND
SURVEYING, CHAPTER 51-17.050, FLORIDA ADMIN. CODE, AND/OR
CHAPTER 180-7, GEORGIA STATUTES.
ELECTRONICALLY SIGNED 6/12/24 JAMES C. PEACOCK
JAMES C. PEACOCK, PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. 3718
GEORGIA CERTIFICATE NO. 2365
NOT VALID UNLESS EMBOSSED WITH SURVEYORS OFFICIAL SEAL

BEARINGS BASED ON O.R.B. 1984, P. 17
PROPERTY SHOWN HEREON LIES WITHIN
FLOOD ZONE X AS SHOWN ON
FEMA FLOOD INSURANCE RATE MAP,
COMMUNITY NO.120122 PANEL N02376
DATED 8/2/17
DATE OF SURVEY: JUNE 12, 2024
SCALE: 1"=30'
JOB NO. 2019-08 F.B.353, 354, 358
CORNER MARKERS HAVE NO IDENTIFICATION U.N.O.
LEGEND:
IRON PIPE FOUND - IPF POWER LINE - P-
REBAR FOUND - RBF PLAT - P
NOT TO SCALE - NTS FIELD MEASURED - FM
BUILDING RESTRICTION LINE - BRL RECORD - R. USED - D.
CONCRETE MONUMENT FOUND - CMF POWER POLE - O
STAINLESS STEEL PIPE FOUND - SSPP CONCRETE - CONC.
RIGHT-OF-WAY - R/W RIGHT-OF-WAY - R/W
POINT OF CURVE - P.C. POINT OF TANGENT OF REVERSE CURVE - PRC
CENTERLINE - C. OFFICIAL RECORDS BOOK - O.R.B.
MITRED END SECTION - MES
WATER METER - WM
WOOD POWER POLE - WPP
SEWER MANHOLE - SHM
CORROGATED METAL PIPE - CMP
WATER VALVE - WV

ENGINEERING PLANS

FOR

ISLAND PARK PROPERTIES

CITY OF FERNANDINA BEACH, FLORIDA

PROJECT TEAM

LAND OWNER
ISLAND PARK PROPERTIES, LLC
463063 STATE ROAD 200, UNIT 489
YULEE, FL 32097
PHONE: 904-910-6699

ARCHITECT:
DESIGN DEVELOPMENT ARCHITECTURE INCORPORATED
P.O. BOX 555
MIDDLEBURG, FL 32050
PHONE: 904-571-2373
CONTACT: D. SCOTT FRASER

DEVELOPER/APPLICANT
CROSS REGIONS REAL ESTATE, INC.
13353 ATLANTIC BLVD., SUITE 201
JACKSONVILLE, FL 32225
PHONE: 904-242-6555
CONTACT: DAVID ERIGISI

SURVEYOR:
COASTAL LAND SURVEYORS & MAPPERS, INC.
34 NORTH FOURTEENTH STREET
FERNANDINA BEACH, FL 32032
PHONE: 904-261-8950
CONTACT: JAMES C. PEACOCK

CIVIL ENGINEER:
GULFSTREAM DESIGN GROUP, LLC
2225 A1A S, SUITE A2
ST. AUGUSTINE, FL 32080
PHONE: 904-794-4231
CONTACT: MATT LAHTI, P.E.

ARBORIST
THE BRANCH MANAGER TREE SERVICE
2152 CORDELIA STREET
JACKSONVILLE, FL 32207
PHONE: 904-270-2090
CONTACT: MARC WHITE

PRIVATE UTILITY COMPANIES

ELECTRIC
FLORIDA POWER AND LIGHT
303 HASTINGS AVENUE
ST AUGUSTINE, FL 32084
PHONE: 904-255-3003
CONTACT: NICHOLAS LUBRANO

TV CABLE
COMCAST
5934 RICHARD ROAD
JACKSONVILLE, FL 32216
PHONE: 904-380-6341
CONTACT: JAMES GRAHAM

TELEPHONE
AT&T
735 MILL CREEK ROAD
JACKSONVILLE, FL 32211
PHONE: 904-727-1572
CONTACT: P.K. PATEL

GAS
TECO PEOPLES GAS
4040 PHILIPS HIGHWAY
JACKSONVILLE, FL 32207
PHONE: 904-477-5908
CONTACT: JERROD CARTER

PUBLIC UTILITY PROVIDERS

WATER AND SEWER
CITY OF FERNANDINA BEACH UTILITY
DEPARTMENT
1180 SOUTH 5TH STREET
FERNANDINA BEACH, FL 32034
CONTACT: ANDRE DESILET
PHONE: 904-310-3431

REGULATORY AGENCY

FDEP - WATER & SEWER
8800 BAYMEADOWS WAY, SUITE 100
JACKSONVILLE, FL 32256
CONTACT: LYDIA JOYNER
PHONE: 904-256-1700

**ST. JOHNS RIVER WATER
MANAGEMENT DISTRICT**
7775 BAYMEADOWS WAY W, SUITE 102
JACKSONVILLE, FL 32256
CONTACT: DALE R. EISMAN, P.E.
PHONE: 904-448-7931

**CITY OF FERNANDINA
BEACH**
204 ASH STREET
FERNANDINA BEACH, FL 32034
CONTACT: KELLEY GIBSON, AICP
PHONE: (904) 310-3481

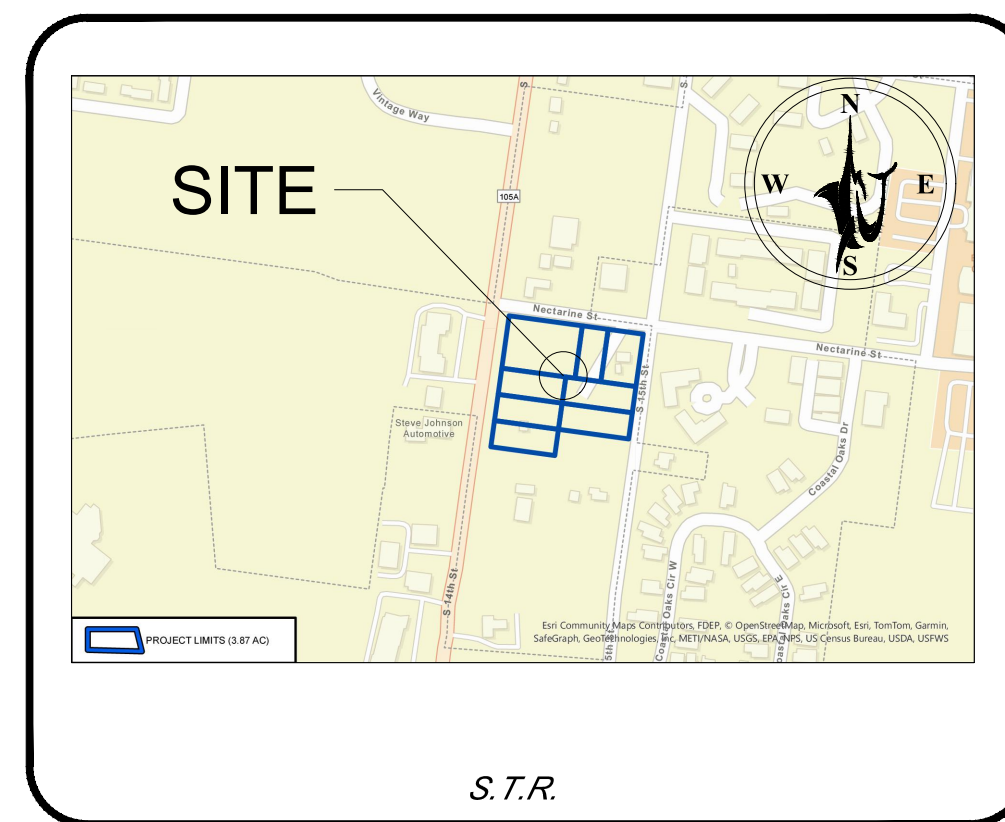
**NASSAU COUNTY ENGINEERING
SERVICES DEPARTMENT**
96161 NASSAU PLACE
YULEE, FL 32097
PHONE: (904) 530-6225

GENERAL NOTES:

- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF THE WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.
- GULFSTREAM DESIGN GROUP AND ITS ASSOCIATES WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS OR MISSIONS RESULTING FROM SURVEY INACCURACIES.
- ANY AND ALL WORK CONDUCTED WITHIN THE NASSAU COUNTY RIGHT-OF-WAYS MUST BE IN ACCORDANCE WITH THE APPLICABLE LAND DEVELOPMENT CODES.
- ALL ELEVATIONS SHOWN HEREIN ARE REFERENCED TO NORTH AMERICAN GEODETIC VERTICAL DATUM 1988 (NAVD 88).
- HORIZONTAL PROJECTION FOR THIS PLAN SET IS BASED ON NAD83 FLORIDA STATE PLANES, EAST ZONE, US FOOT.
- LEGAL DESCRIPTIONS - SEE SURVEY.

LOCATION OF SITE

1412 NECTARINE STREET
PARCEL ID # 00-00-31-1800-0267-0010



LOCATION MAP

SCALE: N.T.S.

PREPARED FOR

ISLAND PARK PROPERTIES, LLC
P.O. BOX 498, YULEE, FL 32041
P.O. BOX 489, YULEE, FL 32041
PHONE: ----
CONTACT: D. ZEESHAN AZIZ

PREPARED BY



© GDG 2025
2225 A1A S, SUITE A2
ST. AUGUSTINE, FLORIDA 32080
Phone: 904-794-4231
www.gulfstreamdesign.com

FINAL ENGINEERING PLANS

SHEET INDEX

Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL NOTES
3	SWPPP
4	EXISTING CONDITIONS
5	DEMOLITION PLAN
6	SITE PLAN
7	STRIPING & SIGNAGE PLAN
8	DRAINAGE PLAN
9	MASTER GRADING PLAN
10	PHASE I GRADING PLAN
11	UTILITY PLAN
12	CONSTRUCTION DETAILS-1
13	CONSTRUCTION DETAILS-2
14	CONSTRUCTION DETAILS-3
15	CONSTRUCTION DETAILS-4
16	CROSS SECTION DETAILS 1
17	CROSS SECTION DETAILS 2
18	SUBSURFACE UTILITY EVALUATION (S.U.E.)

ENGINEERING PLANS BASED ON

PLAN TYPE	COMPANY NAME	REVISION	REVISION DATE
SURVEYOR	COASTAL LAND SURVEYORS & MAPPERS, INC.	0	6/12/2024
ARCHITECT	DESIGN DEVELOPMENT ARCHITECTURE INCORPORATED	2	4/7/2020
ARBORIST	THE BRANCH MANAGER TREE SERVICE	1	4/3/2024

FLOOD ZONE

THE SUBJECT PROPERTY IS LOCATED IN THE FLOOD ZONE "X" PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER 12089C 0239G, DATED AUGUST 2, 2017

This item has been digitally signed and sealed by Matthew H. Lahti, 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.

REVISIONS

DESCRIPTION

NO.

DATE

BY

1

2

3

4

5

6

7

8

9

ENGINEERING PLANS
FOR
ISLAND PARK PROPERTIES

COVER SHEET

CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING
PLANS



2225 A1A S, SUITE A2
ST. AUGUSTINE, FLORIDA 32080
904-794-4231
matt@gulfstreamdesign.com

PROJECT NO: 23-215
ISSUE DATE: 09-05-2025
DRAFTED BY: TDP
DESIGNED BY: TVB
CHECKED BY: MHL

NOT VALID WITHOUT SEAL
Digitally signed by Matthew H. Lahti, P.E.
Date: 2025.10.15 14:08:50
P.E. FL# 2025.1035
71395

GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH EACH NOTE LISTED WITHIN THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT EACH SUBCONTRACTOR IS FAMILIAR AND PRESENTLY AWARE OF THESE NOTES AND CONDITIONS AS ESTABLISHED BY GULFSTREAM DESIGN GROUP, LLC THROUGHOUT THE ENTIRE PLAN SET AS LISTED ON THE COVER SHEET. THE CONTRACTOR IS ENCOURAGED TO THOROUGHLY REVIEW THIS PLAN PACKAGE TO BE FULLY PREPARED TO PROVIDE ACCURATE BID PRICES AND SERVICES.
2. EXISTING SURVEY INFORMATION PROVIDED BY COASTAL LAND SURVEYORS & MAPPERS, INC. DATED JUNE 12, 2024. ALL INFORMATION WITHIN THIS PLAN SET HAS BEEN BASED OFF OF THE ABOVE REFERENCED SURVEY. THE ENGINEER OF RECORD ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY OR LACK THEREOF.
3. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM 1988 (NAV D 88) AND SHOWN IN FEET.
4. PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR IS TO VERIFY IN WRITING WITH THE ENGINEER OF RECORD THAT THE DOCUMENTS BEING UTILIZED IN THE FIELD ARE THE MOST CURRENT AND ACCURATE VERSIONS. ADDITIONALLY, THE GEOTECHNICAL REPORT CORRESPONDING TO THIS PLAN SET IS A REQUIRED CONSTRUCTION DOCUMENT, MEANING THE ENGINEERING DESIGN PLANS AND RECOMMENDATIONS AS DESCRIBED IN THE REPORT SHALL TAKE PRECEDENCE UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL PROVIDE THE ENGINEER OF RECORD IN WRITING WITH A TENTATIVE SCHEDULE OF CONSTRUCTION ACTIVITIES.
5. PRIOR TO THE AWARD OF THE CONTRACT, THE CONTRACTOR SHALL BECOME ACQUAINTED WITH THEMSELVES WITH ALL SITE CONDITIONS BOTH ABOVE AND BELOW GROUND. THE CONTRACTOR SHOULD ADDITIONALLY ENSURE THEY ARE PROPERLY FAMILIARIZED WITH ALL MATERIALS REFERENCED FOR USE WITHIN THIS PLAN AND IN ACCORDANCE WITH ALL APPLICABLE STANDARDS AND CODE SECTION(S) THAT APPLY TO THIS PROJECT.
6. THE ENGINEER OF RECORD AND THE OWNER ASSUME NO RESPONSIBILITY IN THE SUPERVISION OR INSPECTION OF THE WORK INVOLVED IN THE EXECUTION OF THIS CONTRACT BEYOND OBSERVATION TO ENSURE, TO THE OWNER'S SATISFACTION, THAT THE DRAWINGS AND SPECIFICATIONS ARE BEING PROPERLY INTERPRETED. THIS OBSERVATION AND CHECKING WILL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY FOR THE PERFORMANCE OF HIS WORK IN ACCORDANCE WITH THE DRAWINGS AND THE SPECIFICATIONS.
7. THE CONTRACTOR SHALL EXERCISE CARE IN DIGGING AND OTHER WORK SO AS NOT TO DAMAGE EXISTING FEATURES, INCLUDING BUT NOT LIMITED TO UTILITIES, CONDUITS, SPRINKLER LINES, CONTROL CABLES AND HYDRANTS OF WATERING SYSTEMS. SURVEY BENCHMARKS/PROPERTY MONUMENTS, ETC. SHOULD ANY OVERHEAD OR UNDERGROUND OBSTRUCTION BE ENCOUNTERED WHICH INTERFERES WITH CONSTRUCTION, THE ENGINEER OF RECORD SHALL BE CONSULTED AND WILL HAVE THE OPPORTUNITY TO ADJUST THE LOCATION OF CONFLICT ITEMS TO CLEAR SUCH OBSTRUCTIONS.
8. THE CONTRACTOR SHALL CONTACT THE APPLICABLE FRANCHISE UTILITY COMPANY (IE: AT&T, TECO GAS, F&B, ETC. AS APPLICABLE) AND COORDINATE ANY CONSTRUCTION IN ADVANCE OF COMMENCING CONSTRUCTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OF ANY DAMAGE CAUSED BY HIS WORK AT NO COST TO THE OWNER. ADDITIONALLY, THE CONTRACTOR SHALL ENSURE THAT EXISTING STRUCTURES TO REMAIN ARE RESTORED TO THEIR ORIGINAL CONDITION, INCLUDING: PAVEMENTS, CONCRETES, LANDSCAPING, DRAINAGE, AND UTILITIES. THE CONTRACTOR SHALL TAKE PHOTOGRAPHS AND OR VIDEO FOOTAGE OF THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION TO ENSURE PROPER DOCUMENTATION OF PRECONSTRUCTION CONDITIONS OF THE SITE AND TO AVOID ANY POSSIBLE CONFLICTS DURING CONSTRUCTION. THIS INFORMATION SHOULD BE PROVIDED TO THE ENGINEER OF RECORD AND OWNER.
10. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NASSAU COUNTY LAND DEVELOPMENT CODE OR THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), WHICHEVER IS MORE RESTRICTIVE.
11. ALL WORK WITHIN THE NASSAU COUNTY RIGHT-OF-WAY MUST CONFORM TO MOST CURRENT LAND DEVELOPMENT CODE & STANDARDS AND SPECIFICATIONS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL UTILITIES, SHOWN OR NOT SHOWN, ON THESE PLANS PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITIES TO REMAIN AND COORDINATING THE RELOCATION (IF REQUIRED) OF EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF DAMAGES TO EXISTING UTILITIES. IF UTILITIES OR OTHER IMPROVEMENTS NOT SHOWN ON THE DRAWINGS ARE FOUND DURING EXCAVATIONS, CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER OF RECORD IN WRITING AND THE OWNER'S REPRESENTATIVE FOR INSTRUCTIONS AS TO FURTHER ACTION. FAILURE TO DO SO WILL MAKE CONTRACTOR LIABLE FOR ANY AND ALL DAMAGE ARISING FROM HIS OPERATIONS SUBSEQUENT TO DISCOVERY OF SUCH UTILITIES NOT SHOWN ON DRAWINGS.
13. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE ENGINEER OF RECORD, ANY EXTRA WORK REQUESTED BY ANY REGULATORY AGENCY THAT IS NOT SHOWN ON THE PLANS. THIS WORK MUST BE APPROVED BY THE ENGINEER OF RECORD IN WRITING AND THE OWNER BEFORE THE CONTRACTOR PROCEEDS WITH THE EXTRA WORK. ADDITIONALLY, THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, AND NOTIFY THE ENGINEER OF RECORD IN WRITING REGARDING ANY POTENTIAL CONFLICTS. THIS IS RECOMMENDED TO BE COMPLETED IN THE FORM OF FIELD STAKEOUT WHICH MAY INCLUDE: LOCATIONS OF BUILDINGS/BUILDING ELEMENTS (TO BE VERIFIED THROUGH ENGINEER OF RECORD AND APPROVED ARCHITECTURAL PLANS), EDGES OF PAVEMENT, UTILITY STUB OUT LOCATIONS, ETC.
14. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL PERFORM SITE CLEAN-UP OPERATION FOR REMOVAL AND DISPOSAL OF ALL TRASH, DEBRIS, PIPE, EXCESS MATERIAL AND EQUIPMENT OFFSITE.
15. THE CONTRACTOR SHALL PROVIDE AS-BUILT SURVEY, INCLUDING BENCHMARKS, TO OWNER AS REQUIRED BY THE NASSAU COUNTY, ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWD), FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND ENGINEER OF RECORD. THE AS-BUILT SURVEY SHALL BE CERTIFIED BY A PROFESSIONAL LAND SURVEYOR. ENGINEER OF RECORD IS TO PROVIDE ENGINEER'S CERTIFICATION TO OWNER WITH AS-BUILT PLANS.
16. IN THE EVENT THAT UNEXPECTED ARCHEOLOGICAL RESOURCES ARE ENCOUNTERED DURING GROUND DISTURBING ACTIVITIES, ALL WORK SHALL HALT AND THE ENGINEER OF RECORD'S OFFICE SHALL BE CONTACTED IMMEDIATELY IN WRITING.
17. ALL MATERIALS AND LABOR ASSOCIATED ITEMS ARE TO BE WARRANTED BY THE CONTRACTOR FOR A TIME PERIOD OF ONE (1) CALENDAR YEAR UPON THE ACCEPTANCE OF THE PROJECT BY THE OWNER AND ALL APPLICABLE GOVERNMENT AGENCIES.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSURANCES, AND LICENSES PERTAINING TO THE WORK ILLUSTRATED IN THIS PLAN SET.
19. ANY POTENTIAL DISCREPANCIES WITHIN THIS PLAN SET THAT THE CONTRACTOR FINDS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY IN WRITING.
20. ALL DISTURBED AREAS WITHIN THE NASSAU COUNTY RIGHT-OF-WAY WILL BE RESTORED TO ORIGINAL OR BETTER CONDITION BY GRADING AND SODDING THE AREAS DISTURBED (BERMUDA IN RURAL, CENTPEDE IN UTILITY STRIPS).
21. THE ENGINEER OF RECORD ASSUMES NO RESPONSIBILITY IN REGARDS TO CONSTRUCTION METHODS AND PROCEDURES EXERCISED BY THE CONTRACTOR. IT IS ASSUMED BY THE ENGINEER OF RECORD THAT THE CONTRACTOR SHALL OPERATE WITHIN THE BOUNDARIES OF ALL APPLICABLE SAFETY STANDARDS REGARDING TREES AND EXCAVATION OPERATIONS WITH THE BEST INTEREST OF ALL EMPLOYEES TAKEN INTO CONSIDERATION. THE CONTRACTOR MUST CARRY THE REQUIRED STATUTORY LIABILITY AND WORKERS COMPENSATION INSURANCE. THE ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR ANY OF THESE ITEMS. THE OWNER IS THE ONLY ENTITY WHICH MAY CHOOSE TO TAKE ACTION REGARDING THESE ITEMS. GULFSTREAM DESIGN GROUP DOES NOT HAVE THE AUTHORITY TO RELIEVE THE CONTRACTOR OF HIS DUTIES DUE TO VIOLATIONS OF THESE POLICIES.
22. THE USE OF THE WORD "CERTIFY" WITHIN THIS ENGINEERING PLAN SET, IMPLIES AN EXPRESSION OF "PROFESSIONAL OPINION" REGARDING THE SUBJECT TOPIC. THIS HOWEVER, DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY (EXPRESSED OR IMPLIED).
23. BURNING OF ANY MATERIAL OR DEBRIS ONSITE IS PROHIBITED.
24. ALL ADJACENT PROPERTY OWNERS AND BUSINESSES ARE TO BE PROVIDED ACCESS TO THEIR SITES AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
25. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTORS FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS. IF THE CONTRACTOR AND/OR OWNER FAILS TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH APPROVED PLANS, THEY AGREE TO JOINTLY AND SEVERALLY INDEMNIFY AND HOLD THE ENGINEER OF RECORD HARMLESS FOR ALL INJURIES AND DAMAGES THAT THE ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS.

CLEARING/DEMOLITION AND EROSION CONTROL NOTES:

1. AREAS ADJACENT TO THE PROJECT AREA ARE TO BE PROTECTED AND LEFT UNDISTURBED UNLESS NOTED OTHERWISE ON THE CONSTRUCTION DOCUMENTS.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES, EROSION CONTROL STRUCTURES, AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO: TEMPORARY CONSTRUCTION FENCES, FILTER FABRIC, SILT FENCES AND FILTER FABRIC BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.
3. PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED: (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES AND (6) AT ANY ADDITIONAL AREAS THAT NASSAU COUNTY DEEMS NECESSARY TO BE RECOVERED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS. WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, NASSAU COUNTY, FDEP, AND SJRWMD RESERVE THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED THROUGHOUT PROJECT CONSTRUCTION.
4. PRIOR TO, AND DURING, LAND CLEARING ACTIVITIES ALL PRESERVED TREES (AS PER THE NASSAU COUNTY APPROVED PLANS) WILL BE CLEARLY MARKED. THIS INCLUDES "TREE PROTECTION BARRICADES" WHICH SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES. "TREE PROTECTION BARRICADES" SHALL BE INSTALLED AT THE DRIP LINE OF THE SUBJECT TREE. ANY PROPOSED ACTIVITIES WITHIN THIS DRIP LINE MUST BE APPROVED BY THE APPLICABLE GOVERNMENT AGENCY.
5. ONLY SUPPORTIVE LANDSCAPING ELEMENTS MAY BE ATTACHED TO PRESERVED OR PLANTED TREES, NO SIGNAGE, PERMITS, AND OR STAKES MAY BE ATTACHED TO A TREE ON THE SUBJECT PROPERTY.
6. ANY TREE THAT IS DAMAGED DURING THE TIME OF CONSTRUCTION SHALL BE CONSIDERED "REMOVED" AND SHALL BE REPLACED BY THE CONTRACTOR WITH NO COST TO THE OWNER.
7. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THESE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS AND WHERE

TREES ARE TO BE INSTALLED OR RELOCATED.

8. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF NEW CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.
9. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY UNDER SUPERVISION OF A LICENSED GEOTECHNICAL ENGINEER.
10. IF ANY UNSUITABLE MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING ASHTO T-180 MODIFIED PROCTOR METHOD AND AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER OF RECORD.
11. ALL EXISTING CATCH BASINS ADJACENT TO THE SITE SHALL BE COVERED WITH FILTER FABRIC TO PREVENT SEDIMENTS FROM ENTERING THE SYSTEM. THE FILTER FABRIC SHALL BE INSPECTED AND MAINTAINED DAILY THROUGHOUT THE DURATION OF CONSTRUCTION.
12. THE CONTRACTOR IS REQUIRED TO USE THE RECOMMENDATIONS FROM THE GEOTECHNICAL ENGINEER ON THE PROJECT FOR FINAL FILL COMPACTION AND DENSITY SPECIFICATIONS THROUGHOUT THE PROJECT.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING AN EROSION CONTROL AND DEWATERING PLAN 14 DAYS PRIOR TO THE PRECONSTRUCTION CONFERENCE. THE PROPOSED PLANS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CRITERIA SET FORTH IN THE FOOT STANDARD SPECIFICATIONS FOR ROADS, FDEP LAND DEVELOPMENT MANUAL, AND SJRWMD APPLICANTS HANDBOOK.
14. EROSION CONTROL AND SEDIMENTATION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION. THEY SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION, AS STRUCTURES AND ELEMENTS ARE ADDED TO THE PROJECT SITE. STAKE OUT MUST BE PERFORMED UNDER THE SUPERVISION OF A LICENSED SURVEYOR IN THE STATE OF FLORIDA, PRIOR TO PLACEMENT OF STRUCTURES.
15. SILT FENCE SHALL BE INSTALLED ALONG THE CLEARING LIMITS. GRAPHICAL REPRESENTATION OF CLEARING LIMITS AND SILT FENCE IS EXAGGERATED FOR PICTORIAL PURPOSES ONLY.
16. SILT FENCE SHALL BE PLACED AROUND THE PERIMETER OF THE ENTIRE SITE TO BE CLEARED.
17. WHERE MUCK OR OTHER ORGANIC MATERIAL IS REMOVED, IT SHALL BE REPLACED BY GOOD QUALITY NEW BACKFILL MATERIAL OBTAINED FROM THE GRADING OPERATIONS OR OTHER SOURCE APPROVED IN WRITING BY THE ENGINEER OF RECORD AND THE GEOTECHNICAL ENGINEER OF RECORD. THE ORGANIC MATERIAL SHALL THEN BE USED AS TOP DRESSING WHEN MIXED WITH CLEAN BACKFILL SOIL AND APPROVED BY THE OWNER AND ENGINEER.
18. CONTRACTOR SHALL SOD ALL DISTURBED AREAS UNLESS OTHERWISE NOTED.
19. CONTRACTOR MUST REFER TO STORMWATER POLLUTION PREVENTION PLAN AND ABIDE BY ALL CONDITIONS.
20. WITHIN 48 HOURS PRIOR TO CLEARING, THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE NPDES NOTICE OF COMMENCEMENT AND NOTICE OF TERMINATION APPLICATIONS TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION. CONTRACTOR SHALL PROVIDE A COPY OF THESE DOCUMENTS TO THE OWNER AND THE ENGINEER OF RECORD AS WELL AS A COPY OF THE NOTICE LETTER PROVIDED BY THE FDEP. PLEASE CONTACT NPDES STORMWATER NOTICES CENTER, MS93585, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, 2600 BLAIR STONE ROAD, TALLAHASSEE, FL 32399-2400 FOR FURTHER INFORMATION.
21. ALL EXISTING CURB AND GUTTER AND SIDEWALK SHOWN TO BE REMOVED, WILL BE REMOVED AND REPLACED JOINT TO JOINT.
22. ALL BROKEN/CRACKED DRIVEWAYS MUST BE FULLY REMOVED AND REPLACED.
23. THE OVERALL PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED. THE CONTRACTORS BID SHOULD INCLUDE THE ANTICIPATED COST OF THIS ITEM.

SITE LAYOUT NOTES:

1. ALL DIMENSIONS ARE TO THE EDGES OF PAVEMENT UNLESS OTHERWISE NOTED.
2. SIDEWALKS ADJACENT TO PAVEMENT SURFACES ARE TO BE THICKENED EDGE SIDEWALKS.
3. ALL TYPE "F" CURBING SHALL HAVE A THREE (3) FOOT TRANSITION AT ALL TERMINUS LOCATIONS WHEN TYING BACK TO GRADE.
4. ALL TYPE "D" CURBING SHALL HAVE A ONE (1) FOOT TRANSITION AT ALL TERMINUS LOCATIONS WHEN TYING BACK TO GRADE.
5. THE CONTRACTOR SHALL LAYOUT EACH AREA OF WORK TO CHECK DIMENSIONING PRIOR TO CONSTRUCTION AND COORDINATE WITH OTHER DISCIPLINES. SHOULD ANY DISCREPANCIES EXIST, THE CONTRACTOR IS TO NOTIFY, IN WRITING, THE OWNER'S REPRESENTATIVE AND THE ENGINEER OF RECORD IMMEDIATELY.
6. ALL AMERICANS WITH DISABILITIES ACT (ADA) RAMPS TO MEET CURRENT ADA CRITERIA AND INCLUDE A DETECTABLE WARNING. COLOR SELECTION FOR DETECTABLE WARNINGS TO BE COORDINATED WITH OWNER PRIOR TO ORDER AND PLACEMENT.
7. THE CONTRACTOR SHALL COORDINATE ANY OFF-SITE IMPROVEMENTS WITH NASSAU COUNTY 7 DAYS PRIOR TO CONSTRUCTION.
9. WHERE RETAINING WALLS (WHETHER OR NOT THEY MEET THE JURISDICTIONAL DEFINITION) ARE IDENTIFIED ON PLANS, ELEVATIONS IDENTIFIED ARE FOR THE EXPOSED PORTION OF THE WALL. WALL FOOTINGS/FOUNDATION ELEVATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET DETERMINED BY THE CONTRACTOR BASED ON FINAL STRUCTURAL DESIGN. SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS AND/OR EXISTING EASEMENTS BEFORE BEGINNING CONSTRUCTION.
11. ADA RAMPS SHALL BE INSTALLED AT ALL SIDEWALK-CURB INTERSECTIONS. ALL ADA RAMPS SHALL CONFORM TO DETAILS, NOTES AND SPECIFICATIONS FROM THE FDOT DESIGN MANUAL, LATEST EDITION, INDEX NO. 304 SHEETS 1 THROUGH 8, AS APPLICABLE.

ADA GUIDANCE TO CONTRACTOR:

1. CONTRACTORS MUST EXERCISE CARE AND PRECISION WHEN CONSTRUCTING ADA ACCESSIBLE COMPONENTS OF THE PRESCRIBED WORK AS PERTAINING TO THIS PLAN SET. THESE COMPONENTS MUST COMPLY WITH THE CURRENT ADA STANDARDS AT THE TIME OF PLAN APPROVAL. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO:
 - 1.1. PARKING SPACES AND AISLES
 - 1.1.1. SLOPE SHALL NOT EXCEED 1:50 (2%) IN ANY DIRECTION
 - 1.2. CURB RAMPS -
 - 1.2.1. SLOPE SHALL NOT EXCEED 1:12 (8.3%) FOR A MAXIMUM OF SIX (6) FEET
 - 1.3. LANDINGS -
 - 1.3.1. MUST BE AT EACH END OF RAMPS, PROVIDE POSITIVE DRAINAGE, AND MUST NOT EXCEED 1:50 (2%) IN ANY DIRECTION
 - 1.4.1. PATH OF TRAVEL ALONG ACCESSIBLE ROUTE -
 - 1.4.1.1. MUST PROVIDE A 36-INCH OR GREATER UNOBSTRUCTED WIDTH OF A VEHICLE. THIS SLOPE MUST BE NO GREATER THAN 5% IN THE DIRECTION OF TRAVEL (LONGITUDINAL), AND MUST NOT EXCEED 2% IN CROSS SLOPE. WHERE PATH OF TRAVEL WILL BE GREATER THAN 5% ADA RAMP MUST ADHERE TO A MAXIMUM SLOPE OF 8.3%. FOR A MAXIMUM RISE OF 2.5 FEET, MUST BE PROVIDED. THE RAMP MUST ALSO INCLUDE ADA HANDRAILS AND LEVEL LANDINGS ON EACH END THAT ARE CROSS SLOPED NO MORE THAN 2% IN ANY DIRECTION
 - 1.5. DOORWAYS -
 - 1.5.1. MUST HAVE A "LEVEL" LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED AWAY FROM THE DOOR NO MORE THAN 2% TO ENSURE POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO LESS THAN FIVE (5) FEET LONG, UNLESS OTHERWISE PERMITTED BY ADA STANDARDS FOR ALTERNATIVE DOORWAY OPENING DESIGN
 2. WHEN THE PROPOSED CONSTRUCTION INVOLVES REMEDIATION OF CONSTRUCTION ACTIVITIES REGARDING ADA COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, CONTRACTOR MUST VERIFY ELEVATIONS SHOWN ON PLAN. REFER TO THE MOST RECENT VERSION OF THE ADA CODE TO CONFIRM DESIGN REQUIREMENTS. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF RECORD OF ANY CONFLICTS AND OR DISCREPANCIES IN THE FIELD THAT DIFFER FROM WHAT IS ILLUSTRATED ON THE PLAN SET. IN WRITING, BEFORE THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. ALL CONSTRUCTION IMPROVEMENTS MUST MEET ALL REQUIREMENTS SET FORTH BY THE MOST RECENT VERSION OF ADA REQUIREMENTS.
 3. CONTRACTOR MUST VERIFY SLOPES PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES. IF THERE ARE ANY NON-COMFORMANCES THAT EXIST, THE CONTRACTOR MUST NOTIFY THE ENGINEER OF RECORD IN WRITING IMMEDIATELY.
 4. IT IS ENCOURAGED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION WITH THE LOCAL BUILDING CODES AND FIELD INSPECTOR AFTER STAGING AND BEFORE COMMENCEMENT OF CONSTRUCTION.

PAVING, GRADING, AND DRAINAGE NOTES:

1. PIPE LENGTHS SHOWN REPRESENT SCALED DISTANCES BETWEEN CENTERLINE OF DRAINAGE STRUCTURES AND TO END OF MITERED END SECTIONS.
2. ALL HP, HDPE OR RCP PIPE JOINTS TO BE WRAPPED WITH FOUR FOOT (4') WIDE "TYPE R" STRIPS OR EQUAL. PIPE ABBREVIATIONS ARE DEFINED AS FOLLOWS:
 - PVC = POLYVINYL CHLORIDE PIPE
 - RCP = REINFORCED CONCRETE PIPE
 - HDPE = HIGH DENSITY POLYETHYLENE
 - HP = HIGH PERFORMANCE
3. ALL PIPE SHALL MEET MINIMUM SLOPE REQUIREMENTS FOR THEIR SPECIFIC TYPE. AT A MINIMUM THE FOLLOWING SHOULD BE MET THROUGHOUT THE SITE:
 - a. RCP SHALL BE A MINIMUM OF 0.30%
 - b. PVC SHALL BE A MINIMUM OF 0.80%
 - c. HDPE SHALL BE A MINIMUM OF 0.80%
4. DRAINAGE PIPE NOT LOCATED IN PAVED AREAS CAN BE PVC SDR-26 OR HDPE N-12 EQUIVALENT. STRUCTURES TO BE ADJUSTED ACCORDINGLY DEPENDING ON PIPE MATERIAL CHOSEN. THE CONTRACTOR MUST SUBMIT A REQUEST IN WRITING AND OBTAIN APPROVAL FROM THE OWNER AND THE ENGINEER OF RECORD BEFORE ANY SUBSTITUTIONS ARE ALLOWED.

5. UNLESS OTHERWISE STATED, ALL STORM SEWER PIPE MUST BE REINFORCED CONCRETE PIPE (RCP) CLASS III WITH SILT TIGHT JOINTS. WHEN HIGH-DENSITY POLYETHYLENE PIPE (HDPE) IS CALLED FOR ON THE PLANS, IT MUST CONFORM TO ASHTO M240 AND TYPES 150/180/210 INTERIOR WITH ANGULAR DISLOCATIONS WITH GASKET FOR SILT TIGHT JOINTS). PVC PIPE FOR ROOF DRAIN CONNECTIONS) MUST BE SDR 26 OR SCHEDULE 80 UNLESS INDICATED OTHERWISE. PVC PIPE AND FITTINGS MUST CONFORM TO ASTM D 3034, SDR 35, WITH PUSH ON OR RUBBER GASKETS. NO MATERIAL SUBSTITUTES WILL BE ALLOWED.
6. INSTALLATION OF PIPE SHOULD OCCUR ON A MINIMUM OF 8" STABILIZED MATERIAL FREE OF JAGGED MATERIAL. BACKFILL MATERIAL SHALL BE WELL GRADED AND MEET COVER VALUES AS SHOWN ON THE APPLICABLE PLAN SHEETS. STORM SEWER PIPES SHOULD BE PROTECTED BY A MINIMUM OF 18" OF FILL DURING CONSTRUCTION. DRAINAGE FROM OFFSITE ENTERING THE SITE VIA DITCH OR AN OPEN CUT PIPE MUST BE ACCOMMODATED FOR AND NOT HINDERED DURING CONSTRUCTION ACTIVITIES. CONTRACTOR TO UTILIZE ALL NECESSARY EQUIPMENT TO ENSURE POSITIVE DRAINAGE.
7. ALL NON-PAVED DISTURBED AREAS TO BE SODDED AND STABILIZED WITHIN SEVEN (7) DAYS OF THE DISTURBANCE UNLESS OTHERWISE NOTED.
8. ALL PAVEMENT RETURN RADII SHALL BE MEASURED TO THE EDGE OF PAVEMENT SURFACE UNLESS OTHERWISE NOTED.
9. DITCH BOTTOM AND CONTROL STRUCTURE INLET GRATES SHALL BE SEATED PROPERLY.
10. FIVE (5) FEET OF SOD IS REQUIRED AROUND ALL DITCH BOTTOM INLETS, MANHOLES, HEADWALLS, ETC.
11. THE STORM DRAINAGE SYSTEM SHALL BE FREE OF DIRT, SAND AND DEBRIS PRIOR TO FINAL ACCEPTANCE.
12. MITERED END SECTIONS SHALL CONFORM TO FDOT INDEX #430-022. MITERED END SECTIONS IN PONDS SHALL CONFORM TO FDOT INDEX #430-021. DITCH BOTTOM INLETS SHALL CONFORM TO FDOT INDEX #425-052. STORM MANHOLES SHALL CONFORM TO FDOT INDEX #425-001.
13. THE CONTRACTOR IS TO COORDINATE THE CONFLICT POINTS AT UTILITY INTERFACES AROUND THE SITE. CLEARANCES SHOULD BE MET IN ACCORDANCE WITH FDEP RULES AND PER THE NASSAU COUNTY STANDARDS NOTED IN THIS PLAN SET.
14. STORM STRUCTURE PIPES THAT EXCEED THE SIZING FOR TYPE C INLETS ARE TO BE CONSTRUCTED WITH ALTERNATE BOTTOMS WITH MINIMUM DIAMETERS TO ACCOMMODATE PIPE SIZES AND/OR PIPE ANGLES PER FOOT INDEX NO. 425-010 AND 425-001 - TYPE J BOTTOM.
15. NYLOPLAST OR EQUAL SHALL BE USED WHERE NOTED AND SHALL ACCOMMODATE THE PIPE SIZING AND ANGLES NOTED. SHOULD THE PIPES NOT BE ABLE TO BE ACCOMMODATED, THEN A TYPE "C" INLET SHALL BE SUBSTITUTED AT NO ADDITIONAL CHARGE TO THE OWNER.
16. PAVEMENT SHALL BE PLACED IN TWO EQUAL LIFTS. THE SECOND LIFT SHOULD BE PLACED AFTER THE FINAL CERTIFICATE OF OCCUPANCY UNLESS THE OWNER AND THE ENGINEER OF RECORD REQUESTS OTHERWISE IN WRITING.
17. ALL DISTURBED AREA THAT WILL BE EXPOSED FOR MORE THAN SEVEN (7) DAYS REQUIRE EROSION CONTROL, TO ADDRESS RAIN DRIVEN AND WIND BLOWN SEDIMENT.
18. GULFSTREAM DESIGN GROUP, LLC. WILL REVIEW OR TAKE APPROPRIATE ACTION AS PERTAINING TO THE CONTRACTORS SUBMITTALS INCLUDING BUT NOT LIMITED TO: SHOP DRAWINGS, RFI, PROTECTIVE SAMPLES, FIELD DATA, ETC. GULFSTREAM DESIGN GROUP, LLC. WILL NOT BE REQUIRED TO PERFORM A COMPLETE REVIEW ON A SUBMITTAL WHICH IS CONSIDERED TO BE "INCOMPLETE" BY THE ENGINEER OF RECORD. SUCH SUBMITTAL WILL BE REJECTED IN WRITING AND RETURNED TO THE CONTRACTOR.
19. THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE OWNER AND GEOTECHNICAL ENGINEER OF RECORD FOR APPROVAL PRIOR TO PLACEMENT OF ANY CONCRETE PAVEMENT.
20. THE CONTRACTOR SHALL PROVIDE EXPANSION JOINTS AT ABUTMENTS OF CONCRETE AND ANY STRUCTURE.
21. THE CONTRACTOR IS THE RESPONSIBLE PARTY FOR MAINTAINING THE STORM DRAINAGE SYSTEMS UNTIL FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE REQUIRED TESTING WITH THE GEOTECHNICAL ENGINEER. TESTING IS REQUIRED IN ACCORDANCE WITH THE TESTING SCHEDULE FOUND ON THIS SHEET UPON COMPLETION OF THE WORK. THE GEOTECHNICAL ENGINEER OF RECORD SHALL SUBMIT CERTIFICATES TO THE CIVIL ENGINEER OF RECORD AND THE OWNER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.

SIGNAGE AND PAVEMENT MARKINGS NOTES:

1. ALL SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH FDOT ROADWAY AND TRAFFIC DESIGN STANDARD, LATEST EDITION.
2. ALL GROUND MOUNTED STOP, YIELD, WRONG WAY, DO NOT ENTER SIGN FACES SHALL BE FABRICATED ENTIRELY WITH TYPE "B" REFLECTIVE SHEETING.
3. ALL PAVEMENT MARKINGS ARE TO BE PAINTED WITH THERMOPLASTIC PAINT IN ACCORDANCE WITH FDOT STANDARDS UNLESS OTHERWISE NOTED ON THE PLANS.
4. FOR SIGN DETAILS REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES PUBLISHED BY U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, LATEST EDITION.
5. ALL PAVEMENT MARGINS TO BE IN ACCORDANCE WITH FDOT INDEX NO. 711-001. THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY PAVEMENT MARKINGS UNTIL THE FINAL SURFACE COURSE HAS CURED (MINIMUM THIRTY (30) DAYS AFTER FINAL SURFACE COURSE PAVEMENT).
6. ALL TRAFFIC CONTROL SIGNS MUST BE IN ACCORDANCE WITH MUTCD STANDARDS AND SPECIFICATIONS (LATEST EDITION VALID AT TIME OF PLAN APPROVAL) AND SHALL BE FABRICATED USING 3M BRAND "SCOTOLITE" SHEETING (HIGH INTENSITY GRADE) ON MINIMUM .080 GA ALUMINUM BLANKS. ALL 36" X 48" SIGNS SHALL BE 100 GA MINIMUM AND SHALL BE INSTALLED USING 3" X 12" ROUND ALUMINUM POSTS. ALL STOP SIGNS SHALL BE 36" OCTAGONAL INSTALLED ON 12, 3 LB/FT "U" CHANNEL POSTS ON 3'X12" ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR ALL SIGNS SMALLER THAN 36" X 48". ALL WARNING SIGNS SHALL BE 30" X 30". ALL SPEED LIMIT SIGNS SHALL BE 24" X 30".
7. SIGN PLACEMENT SHOWN IN PLANS IS APPROXIMATE. FINAL LOCATION SHALL BE AS DIRECTED BY ENGINEER OF RECORD, INSPECTOR(S) AND OWNER.
8. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED USING THE "HYDRO-BLAST" METHOD. IF THIS PROCESS DAMAGES/SCARS PAVEMENT, THEN THE PAVEMENT SHALL BE MILLED AND RESURFACED PER LATEST EDITION FDOT STANDARDS AND SPECIFICATIONS.
9. ALL DIRECTIONAL ARROWS SHALL BE PLACED AS ONE CONTINUOUS APPLICATION.
10. PROPOSED PAVEMENT MARKINGS SHALL ALIGN WITH EXISTING PAVEMENT MARKINGS AT PAVEMENT MARKING LIMITS OF CONSTRUCTION.
11. ALL EXISTING CURB AND GUTTER AND SIDEWALK SHOWN TO BE REMOVED, WILL BE REMOVED AND REPLACED FROM JOINT TO JOINT.
12. ALL BROKEN/CRACKED DRIVEWAYS MUST BE FULLY REMOVED AND REPLACED.

OVERALL UTILITY NOTES:

1. PROJECT LIES WITHIN NASSAU COUNTY UTILITY DEPARTMENT SERVICE AREA.
2. THE PROJECT LIES WITHIN TECO GAS SERVICE AREA.
3. WORK DIRECTLY IMPACTING TECO GAS MAINS SHALL BE COORDINATED AS REQUIRED AND CONFORM TO TECO GAS STANDARD SPECIFICATIONS AND DETAILS (LATEST EDITION).
4. ALL WATER, SEWER AND REUSE WORK TO CONFORM TO THE NASSAU COUNTY WATER AND SEWER STANDARDS, SPECIFICATIONS AND DETAILS (LATEST EDITION). PLEASE NOTE THAT WORK DIRECTLY IMPACTING NASSAU COUNTY UTILITIES SHALL BE COORDINATED AS REQUIRED AND CONFORM TO THE NASSAU COUNTY DESIGN SPECIFICATIONS AND DETAILS (LATEST EDITION).
5. COORDINATE UTILITY SIZE AND SERVICE LOCATION WITH ARCHITECT AND MECHANICAL, ELECTRICAL & PLUMBING (MEP) PLANS.
6. ALL CONNECTIONS TO SERVICE LINES TO BE ON SITE SIDE OF BACKFLOW OR CLEANOUT DEPENDING ON LINE TYPE.
7. CLEAN-OUTS SHALL BE INSTALLED SO THAT THEY ARE ACCESSIBLE FOR MAINTENANCE.
8. CLEAN-OUTS LOCATED IN WALKWAY SHALL BE INSTALLED WITH ADA COMPLIANT FLUSH MOUNT COVER. CLEAN-OUTS IN PAVED AREAS SHALL BE CONSTRUCTED WITH TRAFFIC RATED BOX AND COVER.
9. ALL ABANDONED UTILITIES FOUND WITHIN THE NASSAU COUNTY RIGHT-OF-WAY AND NOT SHOWN ON THESE PLAN SHEETS ARE TO BE REMOVED AND PROPERLY DISPOSED OF AT THE EXPENSE OF THE CONTRACTOR PER NASSAU COUNTY AND FDEP STANDARDS.
10. ALL PRIMARY AND SECONDARY ELECTRICAL LOCATIONS ARE NOT SHOWN HEREON. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCATION AND COST WITH LAND OWNER AND ELECTRIC COMPANY. ADDITIONALLY, THE CONTRACTOR SHOULD VERIFY THE LOCATION AND COST OF ANY IRRIGATION CONDUITS.
11. THE CONTRACTOR SHALL PROVIDE TRANSFORMER PAD TO ALLOW FOR INSTALLATION FROM POWER COMPANY.
12. REFERENCE ARCHITECTURAL AND MEP PLANS FOR ALL UTILITY SERVICE CONNECTION POINTS.

OVERALL TESTING NOTES:

1. THE CONTRACTOR SHALL UTILIZE THE SERVICES OF A THIRD PARTY TESTING LABORATORY TO CONDUCT ALL REQUIRED TESTS ON SUBGRADE, BASE, AND SURFACE COURSE MATERIALS. TEST RESULTS MAY BE SUBMITTED PRIOR TO ANY REQUEST FOR PAYMENT RELATING TO THE SITE CONSTRUCTION SCHEME AGREED UPON BY ALL APPLICABLE PARTIES.
 - 2.1. SCHEDULE OF ROAD CONSTRUCTION TESTING SHALL BE AS FOLLOWS:
 - 2.1.1. SUBGRADE
 - 2.1.1.1. BEARING VALUE TESTS SHALL BE TAKEN AT INTERVALS OF NO MORE THAN 200 LINEAR FEET.
 - 2.2.1. BASE
 - 2.2.1.1. DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NO MORE THAN 500 LINEAR FEET.

3. ALL TESTING SHALL BE TAKEN IN A STAGGERED PATTERN WITHIN THE EDGE OF PAVEMENT BOUNDARY.
4. IF ANY SAMPLES SHOULD BE EXAMINED AS "UNSATISFACTORY" PER THE STANDARDS OF THE GEOTECHNICAL ENGINEER OF RECORD, THE AREA OF CONCERN SHALL BE REWORKED AT THE CONTRACTORS EXPENSE UNTIL THE LEVEL OF "SATISFACTION" IS MET.
5. ALL PASSING TESTS SHALL BE PAID FOR BY THE OWNER AND ALL FAILING TESTS SHALL BE PAID FOR BY THE CONTRACTOR.

SCHEDULE OF TESTING:

TEST ITEM:	TEST(S) TO BE PERFORMED:	TESTING METHOD(S):	REQUIREMENT:	TESTING INTERVAL:
EMBANKMENT	MAXIMUM DENSITY/OPTIMUM MOISTURE FIELD DENSITY	• ASHTO T180 • ASTM D1557 • ASHTO T191,T204,T238 • ASTM D1556, D2937, D2922	95% OF MAXIMUM DENSITY	ONE PER 2,000 SF HORIZONTALLY (ALTERNATING LIFTS 6 INCHES)
UTILITY TRENCH BACKFILL (LOCATED BENEATH DRIVE AISLES/BUILDINGS)	MAXIMUM DENSITY/OPTIMUM MOISTURE FIELD DENSITY	• ASHTO T180 • ASTM D1557 • ASHTO T191,T204,T238 • ASTM D1556, D2937, D2922	95% OF MAXIMUM DENSITY	EVERY 150 LF OF PIPE FROM CONNECTOR.
BACKFILL OF STRUCTURES	MAXIMUM DENSITY/OPTIMUM MOISTURE FIELD DENSITY	• ASHTO T180 • ASTM D1557 • ASHTO T191,T204,T238 • ASTM D1556, D2937, D2922	95% OF MAXIMUM DENSITY	PER SOIL TYPE: EVERY 6" VERTICALLY FROM 6" BELOW THE STRUCTURE
SUBGRADE	BEARING VALUES	LBR - FOOT	SEE TYPICAL PAVEMENT SECTION	• ONE PER SOURCE • ONE PER 500' HORIZONTAL LF
BASE	MAXIMUM DENSITY/OPTIMUM MOISTURE FIELD DENSITY AND THICKNESS	• ASHTO T180 • ASTM D1557 • ASHTO T191,T238 • ASTM D1556, D2922	SEE TYPICAL PAVEMENT SECTION	• ONE PER 2,000 SF HORIZONTALLY • ONE PER SOURCE
	BEARING VALUES	LBR - FOOT	SEE TYPICAL PAVEMENT SECTION	• ONE PER SOURCE • ONE PER 2,000 SF HORIZONTALLY
	MAXIMUM DENSITY/OPTIMUM MOISTURE FIELD DENSITY AND THICKNESS	• ASHTO T180 • ASTM D1557 • ASHTO T191,T238 • ASTM D1556, D2922	SEE TYPICAL PAVEMENT SECTION	• ONE PER 2,000 SF HORIZONTALLY • ONE PER SOURCE
	GRADATION	• ASHTO T27, T96	SEE TYPICAL PAVEMENT SECTION	• ONE PER SOURCE • ONE PER 2,000 SF HORIZONTALLY
	ATTERBERG LIMIT	• ASHTO T90, T93, • ASTM C136, D423, D424 • ASHTO T234	SEE TYPICAL PAVEMENT SECTION	• ONE PER SOURCE
ASPHALTIC CONCRETE	MATERIALS QUALITY BITUMEN CONTENT; GRADATION FIELD DENSITY.	• ASTM D2172	PER GEOTECHNICAL SPECIFICATIONS	• ONE PER DAY, PER INSTALLATION
	FIELD DENSITY	• ASTM D2950-81	PER SPECIFICATIONS 98% OF LAB DENSITY	• ONE PER DAY • ONE EVERY 2,000 LF HORIZONTALLY • ONE PER 2,000 LF HORIZONTALLY
	LOS ANGELES ABRASION THICKNESS	• ASHTO T98-77 • ASTM C131-81	PER SPECIFICATIONS	• ONE PER SOURCE • ONE PER 2,000 LF HORIZONTALLY

ACCEPTED TESTING METHODS:

- ASHTO T27-GRADATION (SIEVE TESTING)
- ASHTO T96-GRADATION (LOS ANGELES MACHINE)
- ASHTO T90-ATTERBERG LIMITS (HYDROMETER)
- ASTM C136-GRADATION (SIEVE TESTING)
- ASTM D4243-ATTERBERG LIMITS (DRIVE FUNNEL)
- ASTM D424-ATTERBERG LIMITS (PLASTIC XXX)
- ASHTO T160-FIELD DENSITY (STANDARD PROCTOR)
- ASHTO T156-ASPHALT BINDER (HOT MIX ASPHALT)
- ASHTO T96-77-DEGRADATION (LOS ANGELES MACHINE)
- ASHTO T191-FIELD DENSITY (SAND CONE)
- ASTM D1557-FIELD DENSITY (MODIFIED PROCTOR)
- ASTM D2950-ASPHALT DENSITY (NUCLEAR)
- ASHTO T102-172-ASPHALT BINDER-HOT MIX ASPHALT)
- ASTM C131-DEGRADATION (LOS ANGELES MACHINE)
- ASTM D4243-ATTERBERG LIMITS (DRIVE FUNNEL)
- ASTM D2922-FIELD DENSITY (NUCLEAR)
- FDOT LBR-LIME ROCK BEARING RATIO

NOTES:

1. CONTRACTOR SHALL ADHERE TO THE SPECIFIC RECOMMENDATION OF THE GEOTECHNICAL ENGINEER OF RECORD.

FIRE PROTECTION NOTES:

1. FIRE PROTECTION FOR THE PURPOSE OF THESE PLANS IS ANY UNDERGROUND WATER LINE NOT OWNED AND MAINTAINED BY A PUBLIC UTILITY AS WELL AS ANY PRIVATE FIRE SERVICE MAIN AND PIPE AND ITS APPURTENANCES ON PRIVATE PROPERTY. (1) BETWEEN A SOURCE OF WATER AND THE BASE OF THE SYSTEM RISER FOR WATER-BASED FIRE PROTECTION SYSTEMS, (2) BETWEEN A SOURCE OF WATER AND INLETS TO FOAM-MAKING SYSTEMS, (3) BETWEEN A SOURCE OF WATER AND THE BASE ELBOW OF PRIVATE HYDRANTS OR MONITOR NOZZLES AND (4) USED AS FIRE PUMP SUCTION DISCHARGE PIPING. (5) BEGINNING AT THE INLET SIDE OF THE CHECK VALVE ON A GRAVITY OR PRESSURE TANK.
2. THIS SHALL ALSO APPLY TO COMBINED SERVICE MAINS USED TO CARRY WATER FOR FIRE SERVICE AND OTHER USES. IE: DOMESTIC.
3. STANDARDS TO BE REFERENCED ARE TO BE THE MOST CURRENT AS ADOPTED BY THE FLORIDA FIRE PREVENTION CODE:
 - NFPA 24, INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES
 - NFPA 20, STANDARD FOR INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
 - NFPA 22, STANDARD FOR WATER TANKS FOR PRIVATE FIRE PROTECTION
 - NFPA 16, STANDARD ON DELUGE FOAM-WATER SPRINKLER & FOAM-WATER SPRAY SYSTEMS
 - NFPA 1963 STANDARD FOR FIRE HOSE CONNECTIONS
4. ITEMS ON THE CONSTRUCTION PLANS SHALL INCLUDE BUT NOT LIMITED TO SCALE DRAWINGS AND DETAILS AND TO INCLUDE THE FOLLOWING: (1) NAME OF OWNER AND OCCUPANT. (2) LOCATION, INCLUDING STREET ADDRESS. (3) POINT OF COMPASS. (4) A GRAPHIC REPRESENTATION OF THE SCALE USED ON ALL PLANS. (5) NAME AND ADDRESS OF CONTRACTOR. (6) SIZE AND LOCATION OF ALL WATER SUPPLIES. (7) SIZE AND LOCATION OF ALL PIPING, WHERE POSSIBLE, THE CLASS AND TYPE AND DEPTH OF EXISTING PIPE, THE CLASS AND TYPE OF NEW PIPE TO BE INSTALLED, AND THE DEPTH TO WHICH IT IS TO BE BURIED. (8) SIZE, TYPE AND LOCATION OF VALVES. INDICATE IF LOCATED IN PIT OR IF OPERATION IS BY POST INDICATOR OR KEY WRENCH THROUGH A CURB BOX. (9) LOCATION OF FIRE DEPARTMENT CONNECTIONS, IF PART OF PRIVATE FIRE SERVICE MAIN SYSTEM, INCLUDING DETAIL OF CONNECTIONS. (10) SPRINKLER AND STANDPIPE RISERS AND MONITOR NOZZLES TO BE SUPPLIED BY THE SYSTEM. (11) ALL COMPONENTS MUST HAVE LISTING WITH FIRE PROTECTION PER NFPA 24. (12) ALL FIRE HYDRANTS LISTED AS LARGE-DIAMETER MUST HAVE A SINGLE 4.5 INCH HOSE OUTLET AND TWO 2.5 INCH HOSE OUTLETS, ALL WITH MALE NH STANDARD THREADS, IN ACCORDANCE WITH NFPA 1963.
5. A COPY OF THESE APPROVED ENGINEERING PLANS SHALL UNDERGO A REQUIRED FIRE MARSHAL UNDERGROUND PERMIT SUBMITTED BY A CERTIFIED CONTRACTOR. THIS UNDERGROUND PERMIT WILL REQUIRE ADDITIONAL DETAILS AND SPECS AT THE TIME OF SUBMITTAL TO THE FIRE MARSHAL'S OFFICE.
6. CONTRACTORS INSTALLING THE UNDERGROUND PIPING IN ACCORDANCE WITH THE ABOVE REFERENCE STANDARDS FOR A FIRE PROTECTION SYSTEM USING WATER AS THE EXTINGUISHING AGENT BEGINNING AT THE POINT AT WHICH THE PIPING IS USED EXCLUSIVELY FOR FIRE PROTECTION AND ENDING NO MORE THAN 1 FOOT ABOVE THE FLOOR SHALL BE REQUIRED TO HAVE A CLASS I, II, OR V FIRE PROTECTION CONTRACTORS LICENSE PURSUANT TO CHAPTER 63

MAP SHOWING BOUNDARY AND TOPOGRAPHIC SURVEY OF ALL OF LOTS 2 AND 9 TOGETHER WITH THE NORTH 1/2 OF LOT 3 AND THE EASTERLY 200 FEET OF LOT 10, ALL BEING IN BLOCK 267, THE CITY OF FERNANDINA BEACH, FLORIDA.

LYING AND BEING IN THE CITY OF FERNANDINA BEACH (FORMERLY NAMED
FERNANDINA), IN THE COUNTY OF NASSAU AND THE STATE OF FLORIDA,
AND KNOWN AND DESCRIBED UPON AND ACCORDING TO THE OFFICIAL
PLAT OF SAID CITY (AS LITHOGRAPHED AND ISSUED BY THE FLORIDA
RAILROAD COMPANY IN 1857, AND ENLARGED, REVISED AND REISSUED
BY THE FLORIDA TOWN IMPROVEMENT COMPANY IN 1887 AND 1901).

2.94 ACRES +/- TOTAL

FOR: ZEESHAN AZIZ,

NECTARINE STREET

SOUTH 15TH STREET

SOUTH 14TH STREET

100' R/W (PAVED)

30 0 30 60 90
GRAPHIC SCALE - FEET

ELEVATIONS SHOWN THUS X 0.0 REFER TO NORTH AMERICAN VERTICAL DATUM 1988.

COASTAL LAND SURVEYORS

& MAPPERS, INC.
34 NORTH FOURTEENTH STREET
FERNANDINA BEACH, FLORIDA 32032
TEL. 904-281-8800 FAX 904-277-6650

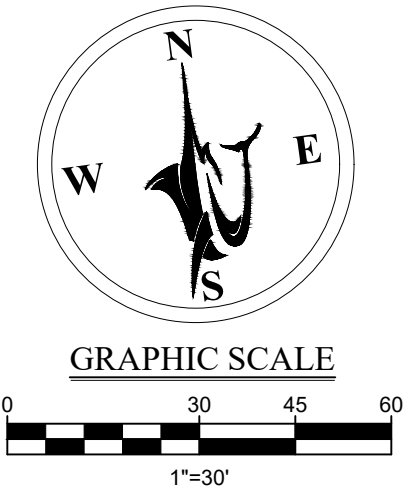
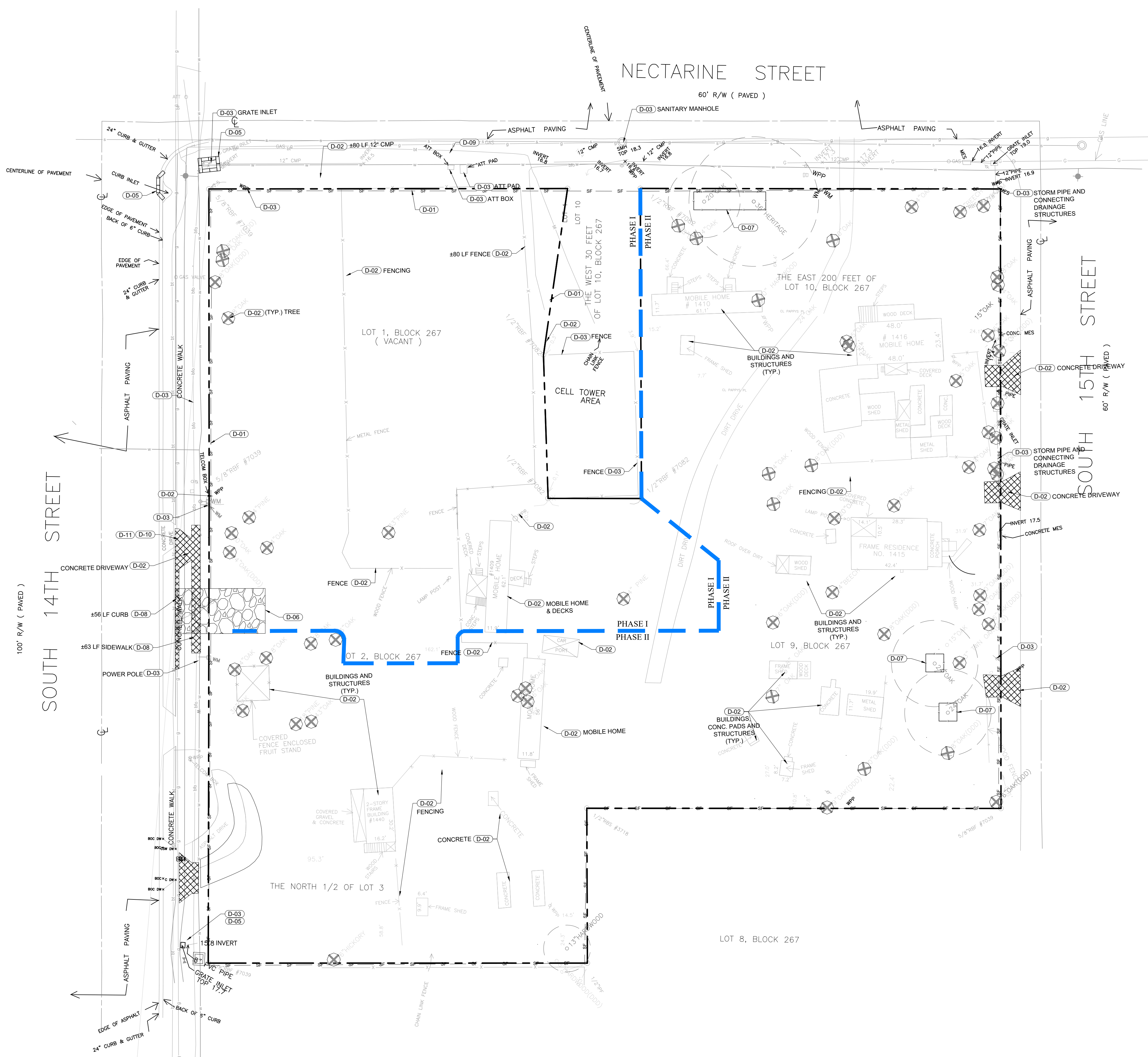
I HEREBY CERTIFY THE INFORMATION DEPICTED HEREON AS
MEETING THE MINIMUM TECHNICAL STANDARDS FOR LAND
SURVEYING, CHAPTER 5J-17.050, FLORIDA ADMIN. CODE, AND/OR
CHAPTER 180-7, GEORGIA STATUTES.
ELECTRONICALLY SIGNED 6/12/24 LICENSED BUSINESS NO. 6412

JAMES C. PEACOCK, PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA CERTIFICATE NO. 3718
GEORGIA CERTIFICATE NO. 2385
NOT VALID UNLESS EMBOSSED WITH SURVEYORS OFFICIAL SEAL

BEARINGS BASED ON O.R.B. 1984, P. 17

PROPERTY SHOWN HEREON LIES WITHIN
FLOOD ZONE X AS SHOWN ON
FEMA FLOOD INSURANCE RATE MAP,
COMMUNITY NO.120172 PANEL N02376
DATED 8/2/17
DATE OF SURVEY: JUNE 12, 2024
SCALE 1"=30'
JOB NO. 2010-08 F.B.353, 354, 358

CORNER MARKERS HAVE NO IDENTIFICATION U.N.O.
LEGEND:
IRON PIPE FOUND - IPF POWER LINE - P
IRON PIPE SET - IPS FIELD MEASURED - FM
REBAR FOUND - RFB RECORD - R, S.D. - D.
NOT TO SCALE - NTS POWER POLE - P
BUILDING RESTRICTION LINE - BRL CONCRETE - CONC.
CONCRETE MONUMENT FOUND - CMF
STAINLESS STEEL PIPE FOUND - SSPF
POINT OF TANGENCY - P.T. POINT OF REVERSE CURVE - PRC
POINT OF CURVE - P.C. OFFICIAL RECORDS BOOK - O.R.B.
CENTERLINE - C. MITRED END SECTION - MES
WATER METER - WM
WOOD POWER POLE - WPP
SEWER MANHOLE - SMH
CORROGATED METAL PIPE - CMP
WATER VALVE - WV



LEGEND

- EXISTING PROPERTY LINE
- EXISTING R/W LINE
- SF SILT FENCE
- PHASE LINE
- EXISTING TREE TO BE REMOVED (NOTE, "DDD" TREE DESCRIPTOR = DEAD, DISEASED OR DYING)
- SYNTHETIC BALE BARRIER
- TREE PROTECTION
- EXISTING TO BE REMOVED
- CONSTRUCTION ENTRANCE

DEMOLITION KEY NOTES:

- D-01 TYPE III SILT FENCE (SEE SHEET #3 SWPPP FOR DETAILS)
- D-02 EXISTING TO BE REMOVED
- D-03 EXISTING TO REMAIN
- D-04 EXISTING TO BE RELOCATED
- D-05 SYNTHETIC BALE BARRIER (SEE SHEET #3 SWPPP FOR DETAILS)
- D-06 STABILIZED CONSTRUCTION ENTRANCE (SEE SHEET #3 FOR DETAILS)
- D-07 TREE PROTECTION
- D-08 SAWCUT AND REMOVE TO NEAREST CONSTRUCTION JOINT
- D-09 MOT PER FDOT INDEX 102-602
- D-10 SIDEWALK CLOSURE PER FDOT INDEX 102-660 PROVIDE TEMPORARY PEDESTRIAN WAY
- D-11 MOT PER FDOT INDEX 102-613

GENERAL NOTES:

- IT IS RECOMMENDED THAT AS THE OWNER THAT YOUR CONTRACTOR PERFORM SOFT DIGS PRIOR TO CONSTRUCTION START TO VERIFY INVERTS, UTILITY CONNECTION POINTS, STORM WATER CONNECTION, PLUS ANY OTHER DRY UTILITIES WITHIN THE WORK AREA. A LIMITED SUBSURFACE UTILITY EVALUATION WAS MADE BY DRMP AND THEIR REPORT IS INCLUDED AT THE END OF THIS PLAN SET. ANY CONFLICTS THAT THE CONTRACTOR MAY FIND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY TO AVOID DELAYS AND FOR A CONFLICT SOLUTION TO BE PROPERLY DESIGNED. GULFSTREAM DESIGN GROUP (GDG) WILL NOT BE RESPONSIBLE FOR ERRORS FROM UNKNOWN BURIED OR AS-BUILT PERFORMED BY OTHERS.
- MAINTENANCE OF TRAFFIC PER THE LATEST FDOT STANDARDS FOR ROAD CONSTRUCTION, REFERENCE FDOT INDEX 102-602, 102-603, 102-613 AND 102-660.
- ALL WORK WITHIN NASSAU COUNTY (NC) RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH ORDINANCE 99-17.
- ANY DISTURBED AREAS WITHIN NC RIGHTS-OF-WAY SHALL BE STABILIZED WITH BERMUDA SOD.
- CONTRACTOR SHALL PROVIDE A VIDEO OF EXISTING CONDITIONS WITHIN THE RIGHTS-OF-WAY ALONG THE PROJECT LIMITS PRIOR TO PRE-CONSTRUCTION MEETING WITH NASSAU COUNTY.
- PLEASE REFER TO THE ARBORIST REPORT FOR JUSTIFICATION OF DEAD, DISEASED OR DYING TREE DETERMINATION.

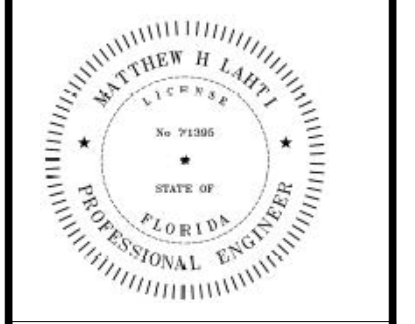
ENGINEERING PLANS FOR ISLAND PARK PROPERTIES DEMOLITION PLAN CITY OF FERNANDINA BEACH, FLORIDA



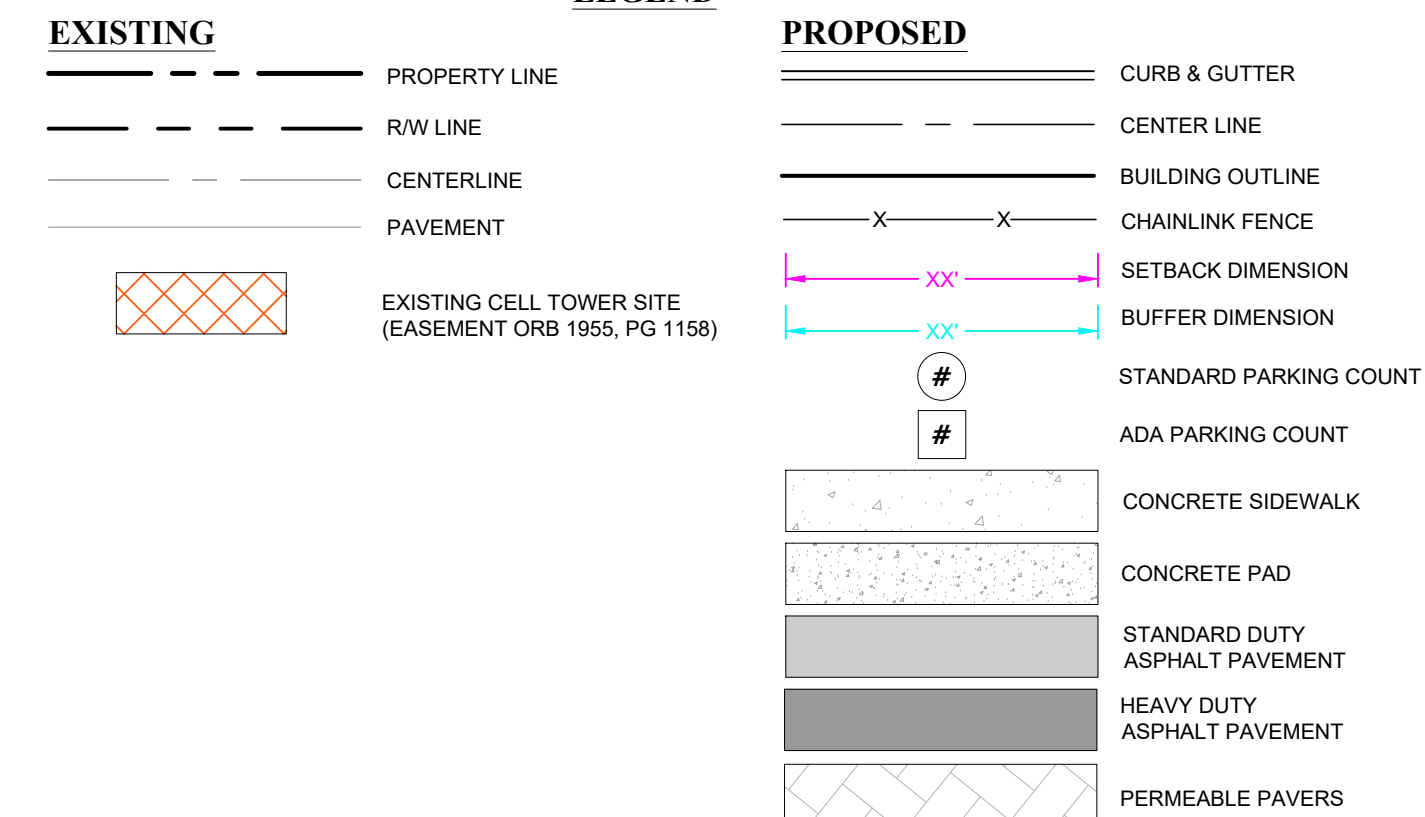
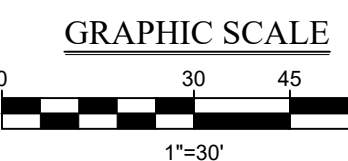
FINAL ENGINEERING PLANS

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PROJECT NO: 23-215
ISSUE DATE: 09-05-2025
DRAFTED BY: TDP
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- ## GENERAL SITE NOTES:
1. ALL SITE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS OF THE CITY OF FERNANDINA BEACH LAND DEVELOPMENT CODE.
 2. ALL DIMENSIONS ARE SHOWN TO FACE OF CURB UNLESS OTHERWISE NOTED.
 3. ALL DIMENSIONS FOR CONCRETE ARE FOR REINFORCED CONCRETE ARCHITECTURAL PLANS BY, FOR EXACT DIMENSIONS, CIVIL PLANS REFERENCE EXTERIOR WALL DIMENSIONS. CONTRACTOR TO VERIFY FOUNDATION AND ROOF OVERHANG.
 4. ALL HANDICAP RAMPS SHALL MEET CURRENT ADA REQUIREMENTS AND INCLUDE LEGIBLE WARNING WARNING PER THE CITY OF FERNANDINA BEACH REQUIREMENTS.
 5. CONTRACTOR SHALL STAKE EACH STAGE OF WORK, HORIZONTAL AND VERTICAL, IN ADVANCE OF CONSTRUCTION TO ENSURE THAT NO CONFLICTS EXIST. CONTRACTOR SHALL NOTIFY GULFSTREAM DESIGN GROUP, LLC, IMMEDIATELY IF CONDITIONS DIFFER IN THE FIELD.
 6. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS AND/OR EASEMENT REQUIREMENTS BEFORE ANY CONSTRUCTION BEGINS.
 7. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE ENGINEER, ANY EXTRA WORK REQUESTED BY ANY REGULATORY AGENCY THAT IS NOT SHOWN ON THE PLANS. THIS EXTRA WORK MUST BE APPROVED BY THE ENGINEER AND THE OWNER BEFORE THE CONTRACTOR PROCEEDS WITH THE EXTRA WORK.
 8. ALL ELEMENTS THAT ARE PLACES OF PUBLIC ACCOMMODATIONS AND COMMERCIAL FACILITIES ON THE SITE (INCLUDING ACCESSIBLE ROUTES AND PARKING) SHALL MEET THE REQUIREMENTS OF THE STANDARDS OF THE CITY OF FERNANDINA BEACH, FLORIDA BUILDING CODE IMPLEMENTATION ACT, ADA STANDARDS FOR ACCESSIBLE DESIGN, FLORIDA BUILDING CODE - ACCESSIBILITY AND THE FAIR HOUSING ACT, WHEN APPLICABLE.
 9. ALL MECHANICAL EQUIPMENT SCREENING SHALL MEET THE REQUIREMENTS OF THE CITY OF FERNANDINA BEACH LDC.
 10. SOLID WASTE SCREENING SHALL MEET THE REQUIREMENTS OF THE CITY OF FERNANDINA BEACH LDC.
 11. THE CITY OF FERNANDINA BEACH WILL TRANSFER OF PROPERTY OWNERSHIP (REAL LAND OR CHANGE IN OWNERSHIP) FOR ANY PORTIONS OF THE APPROVED OR CONSTRUCTED BUILDING, OWNERSHIP DOCUMENTS MUST BE SUBMITTED TO THE BUILDING DEPARTMENT IN ORDER TO MAKE SURE THE CITY OF FERNANDINA BEACH DOES NOT VIOLATE ANY CITY ORDINANCES.
 12. ALL SIGNS SHALL MEET THE REQUIREMENTS OF THE CITY OF FERNANDINA BEACH.
 13. APPROXIMATE LOCATION OF PROJECT SIGNAGE SHOWN HEREON.
 14. PROJECT LIGHTING SHALL MEET THE REQUIREMENTS OF THE CITY OF FERNANDINA BEACH LDC.

SITE DATA TABLE (BUILDOUT)		
GROSS PROPERTY AREA:	169,379 SF	3.89 AC
BUILDING FOOTPRINT AREA:	34,305 SF	0.79 AC
HEAVY & STANDARD ASPHALT AREA:	33,902 SF	0.78 AC
CONCRETE PAVEMENT AND SIDEWALKS:	10,570 SF	0.24 AC
PERMEABLE PAVERS AREA:	36,095 SF	0.83 AC
TOTAL IMPERVIOUS AREA:	114,872 SF	2.64 AC
TOTAL PERVIOUS AREA:	54,507 SF	1.25 AC

PROPERTY ID NO:	00-00-331-1800-0267-0021
	00-00-331-1800-0267-0102
	00-00-331-1800-0267-0010
	00-00-331-1800-0267-0091
	00-00-331-1800-0267-0101
	00-00-331-1800-0267-0022
	00-00-331-1800-0267-0031
	00-00-331-1800-0267-0092

ZONING:	CT & C
FLUM:	GENERAL COMMERCIAL
FEMA FIRM PANEL NUMBER	12089C0239C

	MAXIMUM:	PROPOSED:
IMPERVIOUS SURFACE AREA RATIO:	70.00%	67.82%
FLOOR AREA RATIO:	150.00%	27.57%
BUILDING HEIGHT:	45'	VARIES
	MINIMUM	PROPOSED:
FRONT BUILDING SETBACK	0'	10'
SIDE SETBACK	10'	10'
REAR SETBACK	10'	10'

PARKING CALCULATIONS				
USE	1 SPACE PER GROSS FLOOR AREA (SF)	PROPOSED BUILDING AREA (SF)	REQUIRED PARKING SPACES	PROVIDED PARKING SPACES
MEDICAL OFFICE	250	12,392 SF	50	54
TOTAL PARKING SPACES			50	54
ADA ACCESSIBLE PARKING			2	2*

* ADA PARKING IS INCLUDED IN THE TOTAL PARKING COUNT

PARKING CALCULATIONS (BUILDOUT)				
USE	1 SPACE PER GROSS FLOOR AREA (SF)	PROPOSED BUILDING AREA (SF)	REQUIRED PARKING SPACES	PROVIDED PARKING SPACES
MEDICAL OFFICE	250	37,192 SF	149	149
RETAIL	300	9,513 SF	32	44
TOTAL PARKING SPACES			181	193
ADA ACCESSIBLE PARKING			6	8*

* ADA PARKING IS INCLUDED IN THE TOTAL PARKING COUNT

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REVIEWS			DESCRIPTION	
NO.	DATE	BY		
1	1-1-1988	1-1-1988		
2	2-1-1988	2-1-1988		
3	3-1-1988	3-1-1988		
4	4-1-1988	4-1-1988		
5	5-1-1988	5-1-1988		
6	6-1-1988	6-1-1988		
7	7-1-1988	7-1-1988		
8	8-1-1988	8-1-1988		
9	9-1-1988	9-1-1988		

YIELD ANALYSIS PLAN FOR ISLAND PARK PROPERTIES SITE PLAN



**FINAL ENGINEERING
PLANS**

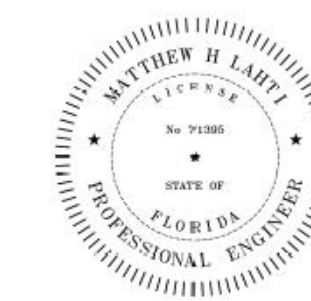


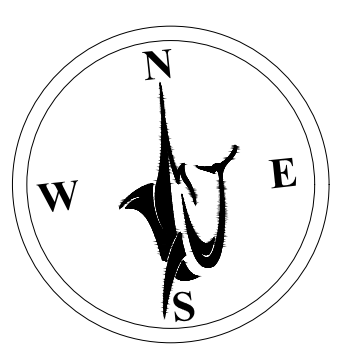
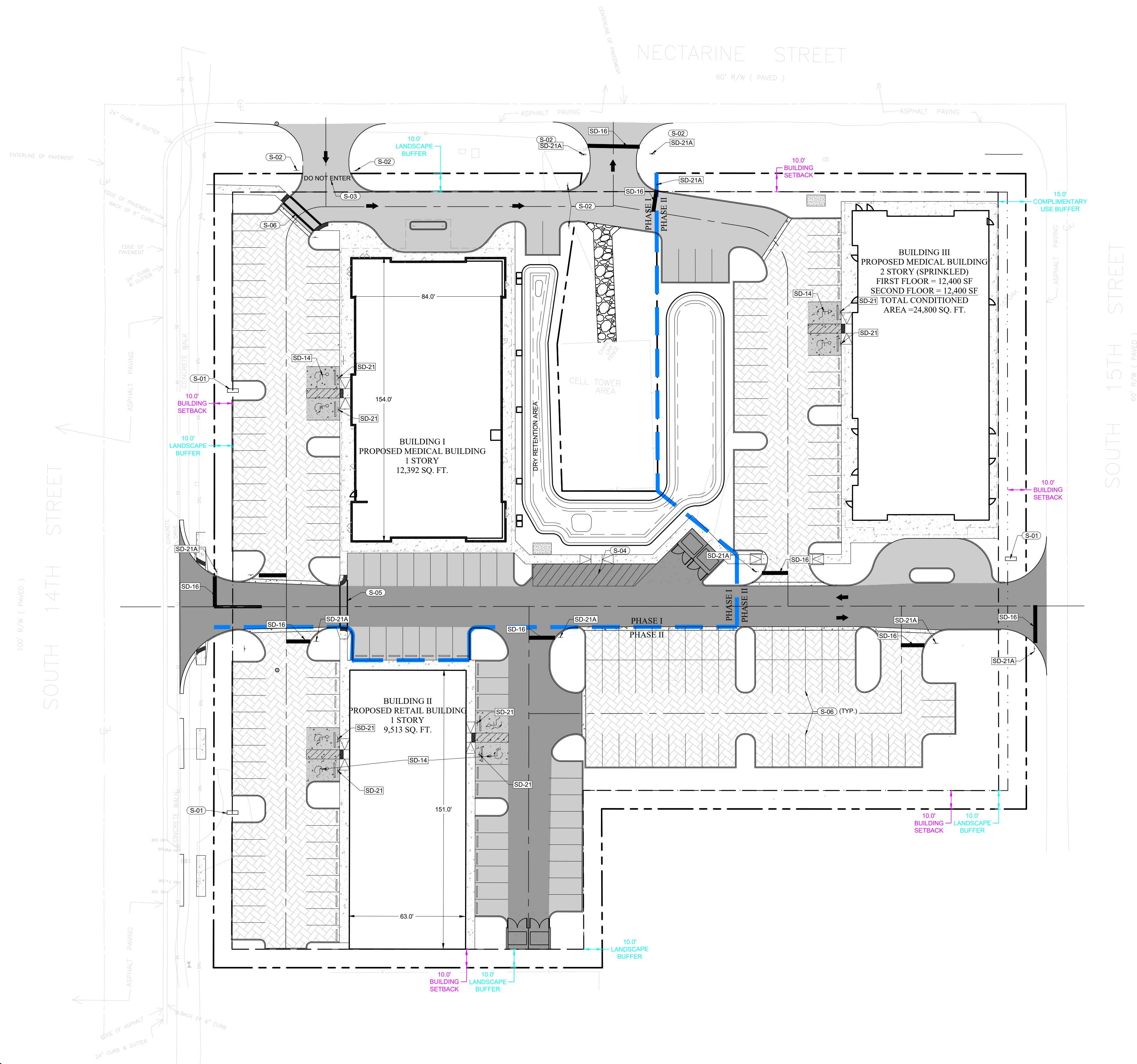
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DESIGNED BY:	TVB
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GRAPHIC SCALE
0 30 45 60
1"=30'

EXISTING	LEGEND	PROPOSED
	PROPERTY LINE	CURB & GUTTER
	R/W LINE	CENTER LINE
	CENTERLINE	BUILDING OUTLINE
	PAVEMENT	CHAINLINK FENCE
		SETBACK DIMENSION
		BUFFER DIMENSION
		CONCRETE SIDEWALK
		CONCRETE PAD
		STANDARD DUTY ASPHALT PAVEMENT
		HEAVY DUTY ASPHALT PAVEMENT
		PERMEABLE PAVERS
		PHASE LINE

SITE DETAILS SD-XX

- SD-14 PARKING PAINT STRIPING
- SD-16 STOP BAR
- SD-21 ACCESSIBLE PARKING SIGN
- SD-21A STOP SIGN (R1-1, 30")

SITE KEY NOTES: S-XX

- S-01 SITE IDENTIFICATION
- S-02 DO NOT ENTER SIGN
- S-03 "DO NOT ENTER" IN 24" WHITE LETTERING
- S-04 6" YELLOW STRIPING AT 45 DEGREE ANGLE WITH "LOADING ZONE"
- S-04 24" YELLOW LETTERING
- S-05 12" WHITE PEDESTRIAN CROSSWALK 5' O.C.
- S-06 PARKING STALL STRIPING (9' X 18') VIA PAINT OR ALTERNATE PAVER COLOR

TRAFFIC, STRIPING, AND SIGNAGE NOTES

- ALL SIGNAGE WITHIN THIS DEVELOPMENT SHALL FOLLOW MUTCD STANDARDS
- DETECTABLE WARNING AND SIDEWALK CURB RAMPS SHALL FOLLOW IN ACCORDANCE WITH FDOT STANDARD PLANS INDEX 522-002.
- OWNER TO ISSUE FINAL APPROVAL OF CONTRACTORS STRIPING PLAN IN WRITING TO CONTRACTOR PRIOR TO MOBILIZATION OF STRIPING CREW.

ENGINEERING PLANS
FOR
ISLAND PARK PROPERTIES
STRIPING & SIGNAGE PLAN
CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING
PLANS



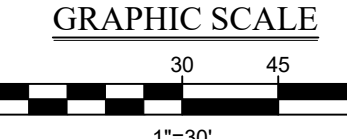
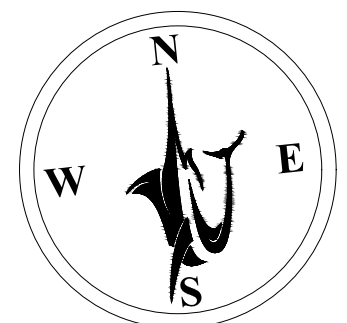
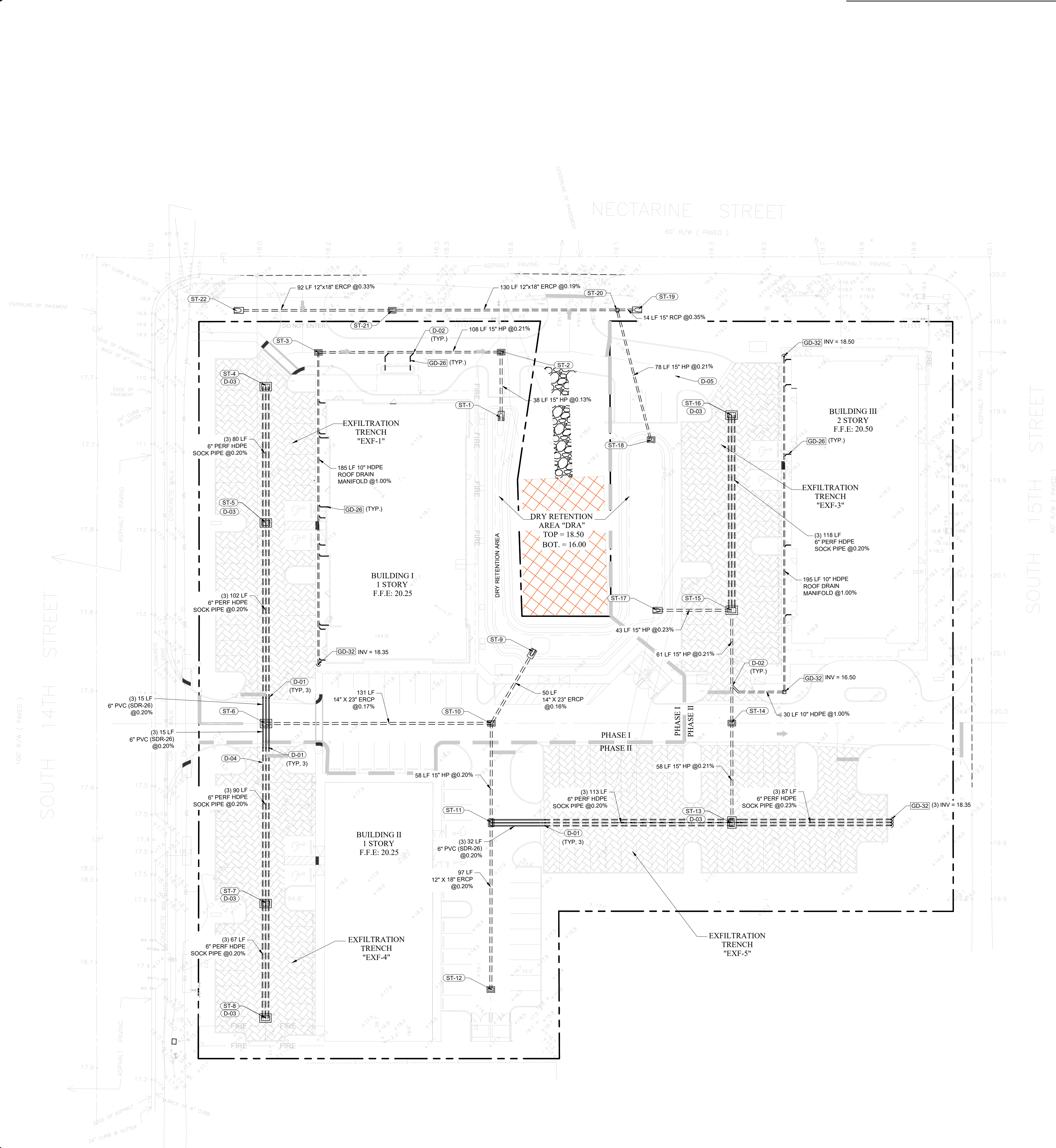
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LEGEND

- PROPERTY LINE
- R/W LINE
- CENTERLINE
- PAVEMENT
- EXISTING GRADE ELEVATION
- EXISTING CELL TOWER EASEMENT
- STORM PIPE
- CURB INLET
- TYPE D INLET
- MITERED END SECTION
- STORM MANHOLE
- PERMEABLE PAVERS OVER EXFILTRATION TRENCH
- PHASE LINE

STORM STRUCTURE TABLE									
PHASE NO.	STRUCT. NO.	STRUCT. TYPE	DETAIL NO.	TOP/GRATE ELEV.	INVERT				
					N	S	E	W	
1	ST-1	15" MES	GD-17	N/A	16.00				
1	ST-2	TYPE C INLET	GD-1	19.05		16.05		16.05	
1	ST-3	TYPE C INLET	GD-1	19.25		16.50	16.25		
1	ST-4	TYPE E INLET W/ SUMP	GD-3	19.40		17.40			
1	ST-5	TYPE E INLET W/ SUMP	GD-3	19.24	17.24	17.24			
1	ST-6	TYPE E INLET	GD-3	19.00	17.00	17.65	16.30		
2	ST-7	TYPE E INLET W/ SUMP	GD-3	19.78	17.88	17.78			
2	ST-8	TYPE E INLET W/ SUMP	GD-3	19.90	17.90				
1	ST-9	14"x23" MES	GD-17	N/A		16.00			
1	ST-10	TYPE E INLET	GD-3	19.20	16.08 (NW)	16.18	16.08		
1	ST-11	TYPE E INLET	GD-3	19.30	16.26	16.26 KO	17.30 KO		
2	ST-12	TYPE C INLET	GD-1	19.45	16.45				
2	ST-13	TYPE C INLET	GD-3	19.35	16.35		17.00	17.00	
2	ST-14	TYPE C INLET	GD-1	19.25	16.23	16.23			
2	ST-15	TYPE E INLET	GD-3	19.20	17.00	16.10		16.10	
2	ST-16	TYPE E INLET W/ SUMP	GD-3	19.25		17.25			
2	ST-17	15" MES	GD-17	N/A			16.00		
2	ST-18	MOD. TYPE C INLET W/ SUMP	GD-9	18.25	16.90	24" WEIR @ 17.75			
1	ST-19	15" MES	GD-17	N/A				16.80	
1	ST-20	STORM MANHOLE	GD-7	19.00		16.75 KO	16.75	16.75	
1	ST-21	TYPE C INLET	GD-1	18.20		16.50	16.50		
1	ST-22	12"x18" MES	GD-17	N/A			16.20		

- DRAINAGE KEY NOTES** (D-XX)
- D-01 CORRUGATED PIPE COUPLER (SEE SIZE ON PLAN)
 - D-02 ADS INSERT/TEE CONNECTION (SEE SIZE ON PLAN)
 - D-03 PROVIDE 12" SUMP
 - D-04 INSTALL THREE (3) CLEANOUTS TO GRADE IN PHASE 1 (TO BE REMOVED IN PHASE 2).
 - D-05 SEE PHASE 1 TEMPORARY OUTFALL EXHIBIT ON SHEET 9
- DRAINAGE DETAILS** (GD-XX)
- GD-1 TYPE "C" INLET
 - GD-2 TYPE "E" INLET
 - GD-3 STORM MANHOLE
 - GD-9 MODIFIED TYPE C INLET
 - GD-17 MITERED END SECTION (SEE FOOT DETAILS)
 - GD-26 ROOF DRAIN DOWNSPOUT CONNECTION
 - GD-32 STORM CLEANOUT
 - GD-50 EXFILTRATION TRENCH TYPICAL CROSS SECTIONS
 - GD-51 EXFILTRATION TRENCH LONGITUDINAL SECTIONS
- DRAINAGE NOTES**
- PIPE LENGTHS SHOWN REPRESENT DISTANCES BETWEEN CENTERLINE OF DRAINAGE STRUCTURES AND TO END OF MITERED END SECTIONS.
 - ALL NON-PAVED DISTURBED AREAS TO BE SEEDED AND STABILIZED UNLESS OTHERWISE NOTED.
 - FIVE FEET OF SOO IS REQUIRED AROUND ALL DITCH BOTTOM INLETS, MANHOLES, HEADWALLS, ETC.
 - THE STORM DRAINAGE SYSTEM SHALL BE FREE OF DIRT, SAND AND DEBRIS PRIOR TO FINAL ACCEPTANCE.
 - CONTRACTOR SHALL STAKE EACH STAGE OF WORK, HORIZONTAL AND VERTICAL, IN ADVANCE OF CONSTRUCTION TO ENSURE THAT NO CONFLICTS EXIST. CONTRACTOR SHALL NOTIFY GULFSTREAM DESIGN GROUP, LLC, IMMEDIATELY IF FIELD CONDITIONS DIFFER.

- Stormwater Drainage Notes:**
- All stormwater drainage facilities within Public Right-of-Way and paved areas, including Nassau County Right-of-Way, turn lanes, residential roadways, drive aisles for multi-family developments, and major drive aisles for commercial developments shall be laser profiled per FDOT Section 430.
 - A builder cannot modify the County's storm water management system including the pipes, inlets, area drains, ditches and related elements typically within the street or within a drainage easement without the prior written approval of the County Engineer or designee.
 - Drainage easements and ditches should remain free of stockpiled soil, sediment, mud, construction materials/waste, etc. at all times. Positive stormwater flow must be maintained throughout construction.
 - The contractor shall temporarily or permanently stabilize bare soil areas and soil stockpiles when the area is inactive for fourteen days or more or has reached finished grade.
 - Per Ordinance 99-17 Section 11.11.5.4, all gravity flow pipe installations shall have a soil tight joint performance unless specific site factors warrant watertight joint performance.
 - Per Ordinance 99-17 Section 10.6.5.1, immediately install additional Erosion Protection Sediment Control measures if sediment is leaving your site. Failure to contain sediment to your site may result in delayed inspections, notices of violation, citations, fines, penalties, and/or stop work orders.
 - Per 99-17 Section 10.1.2.a-e, stormwater management for a project shall not have adverse effects on adjacent properties, downstream structures, or rights of other landowners.
- Paving Notes:**
- Per Nassau County Roadway and Drainage Standards, Ordinance 99-17 Section 12.2 and 12.4, a construction bond and 26-month maintenance bond will be required for all work within Nassau County Right-of-Way.
 - A pre-pave meeting is required prior to any paving operations within Nassau County ROW, residential subdivisions, or multi-family developments.
 - Approved mix designs shall be provided to Nassau County Construction Inspector 48 hours prior to pre-pave meeting or placement of concrete.
 - Contractor is required to have a Certified QC Asphalt Level II Technician during any asphalt operations within Nassau County ROW, residential subdivision, or multi-family developments.
 - All bases shall be primed in accordance with Ordinance 99-17 Section 11.5.2.3, Nassau County Standard Details, and FDOT Standard Specifications.
 - Signage and pavement markings shall be in compliance with Nassau County Standards, Manual on Uniform Traffic Control Devices (MUTCD), and FDOT Standard Plans.
 - Maintenance of Traffic (MOT) shall be in compliance with FDOT Standard Index 600 Series.
 - All work, materials, and testing performed within Nassau County right-of-way and single-family/multi-family developments shall be in accordance with the current revision of Nassau County's Ordinance 99-17 and all current Nassau County Standard Details.
 - Per Ordinance 99-17 Section 11.9.2, all pavement markings within Nassau County ROW shall be lead free thermoplastic meeting Nassau County and FDOT Standard Specification Latest Edition.
 - Removing pavement markings within Nassau County ROW shall be:
 - a. Grinding or hydro-blasting on weathered asphalt surfaces.
 - b. Hydro-blasting only on new asphalt surfaces.
 - c. Paint Blackout is prohibited.
 - Per Ordinance 99-17 Section 8.5.5, any damage to pavement resulting from construction or pavement marking removal within Public ROW not planned as part of the project shall be milled and overlaid for entire width of roadway and length of damage plus 50' in each direction.
 - All underground utilities, or appropriate conduit sleeves, that are to be installed under pavement must be installed prior to preparation of the subgrade for pavement.
 - Single Vertical Joints in roadway construction shall be avoided in Nassau County Right-of-Way using Nassau County Standard Detail #26.
 - All drainage structures shall have traffic bearing grates that meet or exceed the rating for the facilities expected traffic.
 - All concrete shall be a minimum of 3000 psi within Public Right-of-Way.

ROADWAY AND DRAINAGE STANDARDS NASSAU COUNTY ENGINEERING SERVICES DEPARTMENT	REVISION DATES		STORMWATER DRAINAGE & PAVING NOTES	NOTE SHEET: 2 DWG: ISSUED: 12/09/2020

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ENGINEERING PLANS FOR
ISLAND PARK PROPERTIES
DRAINAGE PLAN
CITY OF FERNANDINA BEACH, FLORIDA



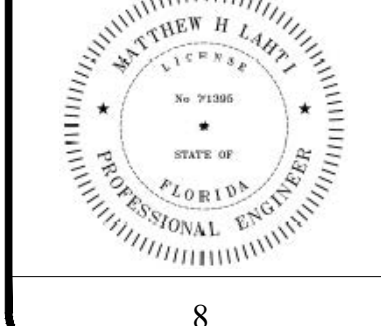
FINAL ENGINEERING PLANS

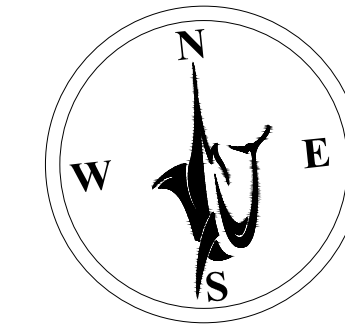


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GRAPHIC SCALE

0 30 45 60
1"=30'

LEGEND

- EXISTING PROPERTY LINE
- EXISTING R/W LINE
- EXISTING CENTERLINE
- EXISTING PAVEMENT
- EXISTING GRADE ELEVATION
- PROPOSED GRADE ELEVATION
- FLOW ARROW
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- SECTION VIEW (SEE SHEETS 15 & 16)
- PHASE LINE

GRADING KEY NOTES:

- G-01 MATCH EXISTING GRADE
- G-02 TRANSITION ASPHALT GRADE TO MATCH TOP OF CURB GRADE WITHIN 6'-FT (6" RISE)
- G-03 MAXIMUM 5% RUNNING SLOPE
- G-04 SEE TEMPORARY OUTFALL EXHIBIT BELOW

GENERAL GRADING NOTES:

- SEE DEMOLITION PLAN FOR EROSION CONTROL MEASURES WHICH ARE TO BE INSTALLED PRIOR TO EARTHWORK OR CLEARING ACTIVITIES.
- EROSION CONTROL MEASURES SHALL BE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
- ALL NON-PAVED DISTURBED AREAS TO BE SEEDED AND STABILIZED UNLESS OTHERWISE NOTED.
- FIVE FEET OF SOD IS REQUIRED AROUND ALL DITCH BOTTOM INLETS, MANHOLES, HEADWALLS, ETC.
- CONTRACTOR SHALL STAKE EACH STAGE OF WORK, HORIZONTAL AND VERTICAL, IN ADVANCE OF CONSTRUCTION TO ENSURE THAT NO CONFLICTS EXIST. CONTRACTOR SHALL NOTIFY GULFSTREAM DESIGN GROUP, LLC, IMMEDIATELY IF FIELD CONDITIONS DIFFER.

ENGINEERING PLANS
FOR
ISLAND PARK PROPERTIES
MASTER GRADING PLAN
CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING
PLANS

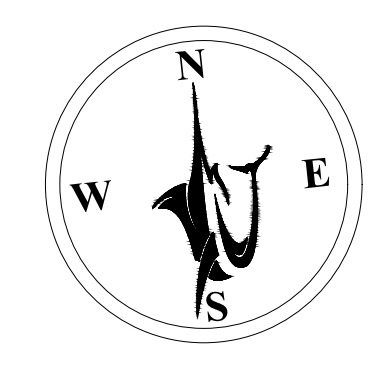
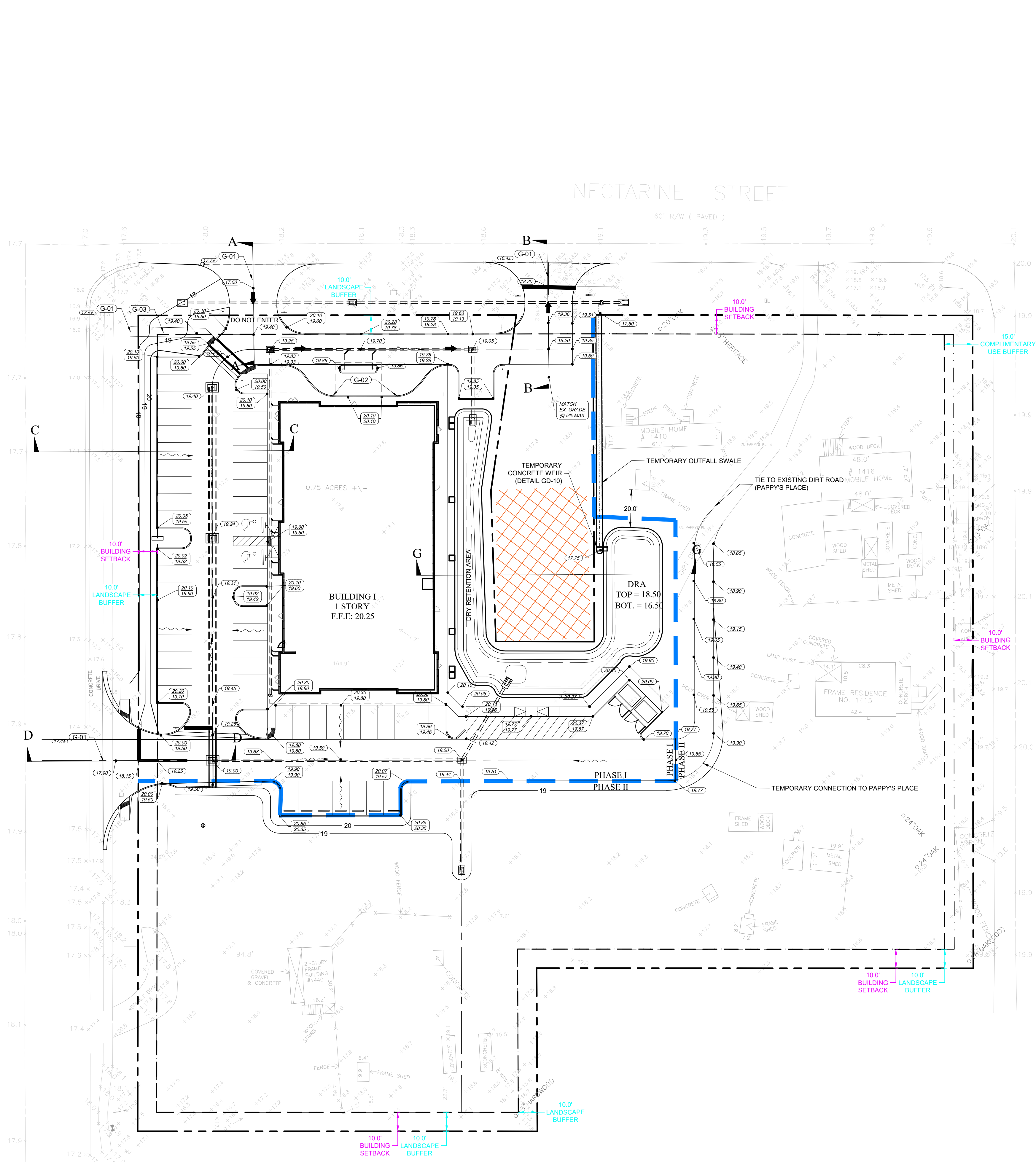


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- LEGEND**
- EXISTING PROPERTY LINE
 - EXISTING R/W LINE
 - EXISTING CENTERLINE
 - EXISTING PAVEMENT
 - EXISTING GRADE ELEVATION
 - PROPOSED GRADE ELEVATION
 - FLOW ARROW
 - PROPOSED CONTOUR MAJOR
 - PROPOSED CONTOUR MINOR
 - SECTION VIEW (SEE SHEETS 15 & 16)
 - PHASE LINE

- GRADING KEY NOTES:**
- G-01 MATCH EXISTING GRADE
 - G-02 TRANSITION ASPHALT GRADE TO MATCH TOP OF CURB GRADE WITHIN 6-FT (6" RISE)
 - G-03 MAXIMUM 5% RUNNING SLOPE
 - G-04 SEE TEMPORARY OUTFALL EXHIBIT BELOW

- GENERAL GRADING NOTES:**
- SEE DEMOLITION PLAN FOR EROSION CONTROL MEASURES WHICH ARE TO BE INSTALLED PRIOR TO EARTHWORK OR CLEARING ACTIVITIES.
 - EROSION CONTROL MEASURES SHALL BE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
 - ALL NON-PAVED DISTURBED AREAS TO BE SEEDED AND STABILIZED UNLESS OTHERWISE NOTED.
 - FIVE FEET OF SOD IS REQUIRED AROUND ALL DITCH BOTTOM INLETS, MANHOLES, HEADWALLS, ETC.
 - CONTRACTOR SHALL STAKE EACH STAGE OF WORK, HORIZONTAL AND VERTICAL, IN ADVANCE OF CONSTRUCTION TO ENSURE THAT NO CONFLICTS EXIST. CONTRACTOR SHALL NOTIFY GULFSTREAM DESIGN GROUP, LLC IMMEDIATELY IF FIELD CONDITIONS DIFFER.

ENGINEERING PLANS FOR
ISLAND PARK PROPERTIES
PHASE I GRADING PLAN
CITY OF FERNANDINA BEACH, FLORIDA

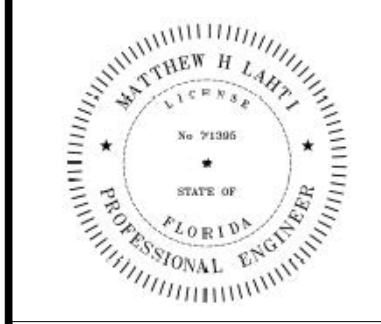


FINAL ENGINEERING PLANS

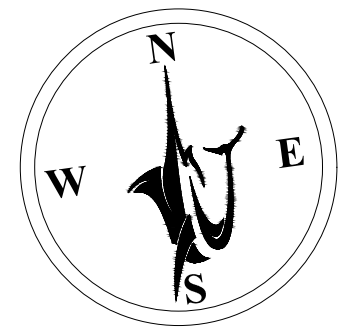
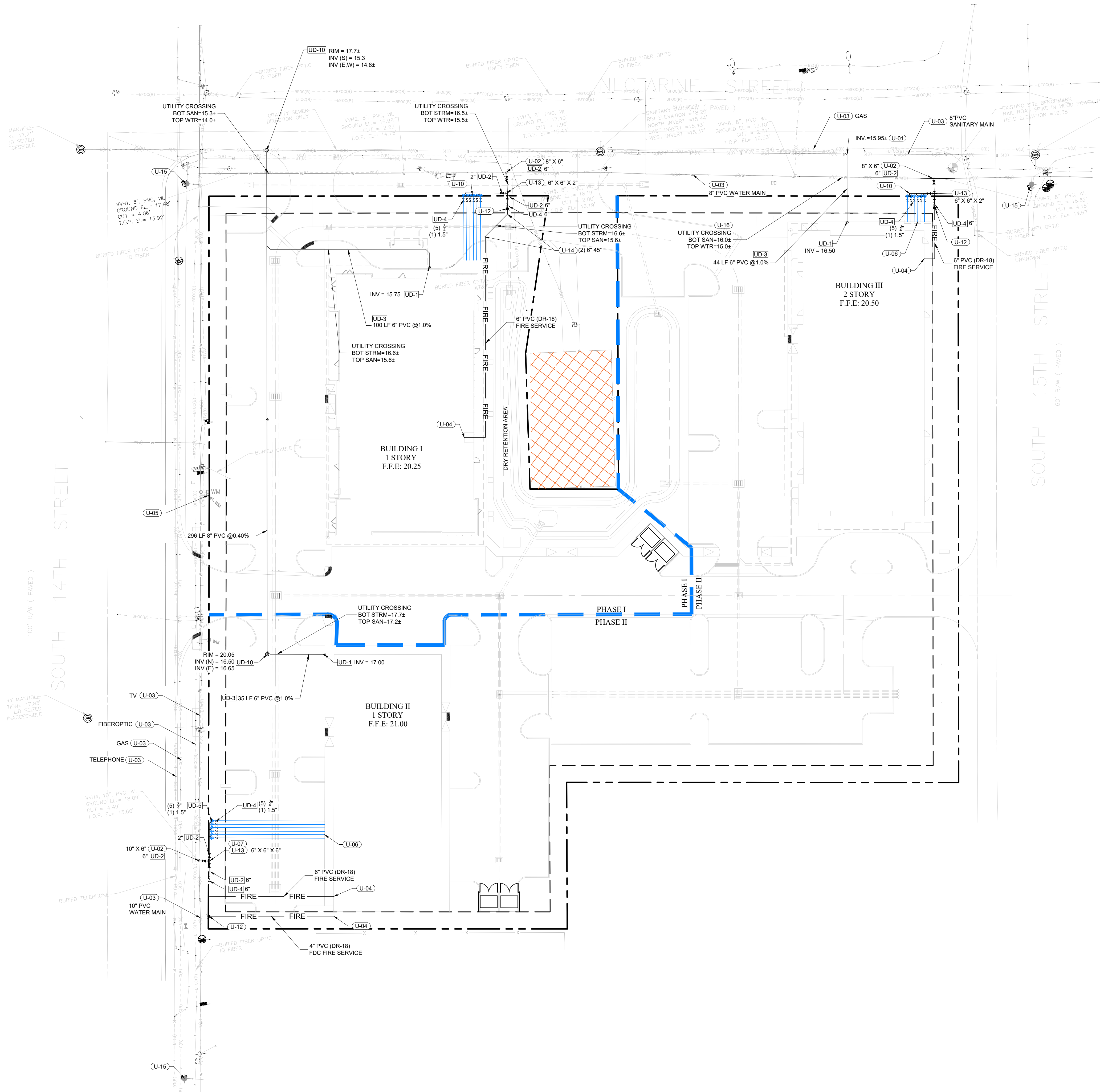


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LEGEND

- EXISTING PROPERTY LINE
- EXISTING R/W LINE
- EXISTING WATER MAIN
- EXISTING SEWER MAIN
- PROPOSED WATER SERVICE (HOPE DR-18)
- PROPOSED SANITARY SEWER SERVICE (6" PVC SDR-26)
- PROPOSED FIRE SERVICE (4" PVC DR-18)
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- PHASE LINE

UTILITY KEY NOTES: U-XX

- U-01 CONNECT SEWER LATERAL TO EXISTING SANITARY SEWER MAIN WITH WYE FITTING (EXACT LOCATION TO BE FIELD VERIFIED)
- U-02 CONNECT TO EXISTING WATERMAIN WITH WET TAPPING SLEEVE AND GATE VALVE (SEE SIZE ON PLAN)
- U-03 APPROXIMATE UTILITY LINE LOCATION
- U-04 FIRE SERVICE CONNECTION AT FIRE RISER ROOM (SEE ARCHITECTURAL PLANS)
- U-05 USE EXISTING WATER METER FOR IRRIGATION SERVICE CONNECTION (SEE LANDSCAPE PLANS FOR CONTINUATION)
- U-06 DOMESTIC WATER SERVICE ENTRY TO INDIVIDUAL UNITS (SEE ARCHITECTURAL PLANS)
- U-07 2" TAPPED CAP
- U-08 DOMESTIC SANITARY SEWER SERVICE ENTRY (SEE ARCHITECTURAL PLANS)
- U-09 LOCATION OF EXISTING UTILITY AS SHOWN IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATION IN THE FIELD PRIOR TO THE CONSTRUCTION OF PROPOSED UTILITIES IN THIS AREA. CONTRACTOR SHALL NOTIFY GULFSTREAM DESIGN GROUP, LLC IF THE CONDITIONS DIFFER IN THE FIELD.
- U-10 MANIFOLD INSTALLATION FOR MULTIPLE METERS WITH ONE (1) 1" AND FIVE (5) 3/4" POLY TUBE SERVICES
- U-11 EXISTING METERS TO REMAIN FOR IRRIGATION
- U-12 FIRE DEPARTMENT CONNECTION
- U-13 M.J. TEE (SEE SIZE ON PLAN)
- U-14 M.J. BEND (SEE SIZE AND ANGLE ON PLAN)
- U-15 EXISTING FIRE HYDRANT
- U-16 LOWER EXISTING 8" WATER MAIN (TYPE "B" CROSSING) MIN 12" VERTICAL SEPARATION FROM SANITARY LATERAL

UTILITY DETAILS UD-XX

- UD-1 SANITARY SEWER CLEANOUT
- UD-2 GATE VALVE AND BOX W/COVER (SEE SIZE ON PLAN)
- UD-3 SANITARY SEWER SERVICE LATERAL
- UD-4 RPZ BACKFLOW PREVENTER (SEE SIZE ON PLAN)
- UD-5 MANIFOLD INSTALLATION FOR MULTIPLE SMALL METERS

GENERAL UTILITY NOTES:

- CONTRACTOR SHALL REFER TO GENERAL NOTES SHEET 2 IN THESE PLANS FOR ADDITIONAL SPECIFIC INFORMATION NOT SHOWN ON INDIVIDUAL PLAN SHEETS.
- ALL EXISTING UTILITIES SHOWN ARE BASED ON THE BEST AVAILABLE DATA AND HAVE NOT BEEN SURVEYED OR FIELD LOCATED. CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES VIA POT-HOLING & LOCATES PRIOR TO CONSTRUCTION.
- PLANS SUBJECT TO CHANGE BASED ON REVIEW BY REGULATORY AGENCIES.
- PIPE LENGTHS HEREIN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY ANY UTILITY LOCATIONS PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF FIELD CONDITIONS VARY GREATLY FROM THESE PLANS.
- CONTRACTOR SHALL FIELD STAKE EACH STAGE OF WORK, HORIZONTAL AND VERTICAL, IN ADVANCE OF CONSTRUCTION TO ENSURE THAT NO CONFLICTS EXIST. CONTRACTOR SHALL NOTIFY GULFSTREAM DESIGN GROUP, LLC IMMEDIATELY IF CONDITIONS DIFFER IN THE FIELD.
- ALL FIRE HYDRANTS SHALL OPEN COUNTER CLOCKWISE. LARGEST HOSE OUTLET NOT LESS THAN 18" ABOVE FINAL GRADE AND FACING ROADWAY.
- APPROVAL OF THESE PLANS DO NOT INCLUDE APPROVAL FOR PRIVATE UNDERGROUND WATER MAIN AND FIRE HYDRANTS. PRIVATE FIRE HYDRANTS SHALL BE RED AND PUBLIC FIRE HYDRANTS SHALL BE YELLOW.
- CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS.
- ALL ELECTRIC, TELEPHONE AND GAS EXTENSIONS INCLUDING SERVICE LINES SHALL BE CONSTRUCTED TO THE APPROPRIATE UTILITY COMPANY SPECIFICATIONS. ALL UTILITY DISCONNECTIONS SHALL BE COORDINATED WITH THE DESIGNATED UTILITY COMPANIES.
- SUBMITTAL OF AS-BUILT SURVEY, INCLUDING BENCHMARKS, IS REQUIRED IN COMPLIANCE WITH THE CITY OF FERNANDINA BEACH LAND DEVELOPMENT CODE PRIOR TO SCHEDULING A FINAL INSPECTION OF THE BUILDING BY THE BUILDING DEPARTMENT AND THE FIRE MARSHALL.
- CITY OF FERNANDINA BEACH DEVELOPMENT REVIEW INSPECTOR SHALL BE CONTACTED 24 HOURS PRIOR TO ALL NECESSARY SITE WORK INSPECTIONS AND 5 DAYS PRIOR TO FINAL INSPECTION.
- IT IS THE RESPONSIBILITY OF THE APPLICANT TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH CITY OF FERNANDINA BEACH STAFF AFTER PLANS HAVE BEEN RELEASED FOR CONSTRUCTION BY THE CITY, AND PRIOR TO STARTING ANY SITE ACTIVITIES INCLUDING LAND CLEARING.

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ENGINEERING PLANS FOR ISLAND PARK PROPERTIES UTILITY PLAN

CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING PLANS



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ENGINEERING PLANS
FOR
ISLAND PARK PROPERTIES
CONSTRUCTION DETAILS-2
CITY OF FERNANDINA BEACH, FLORIDA

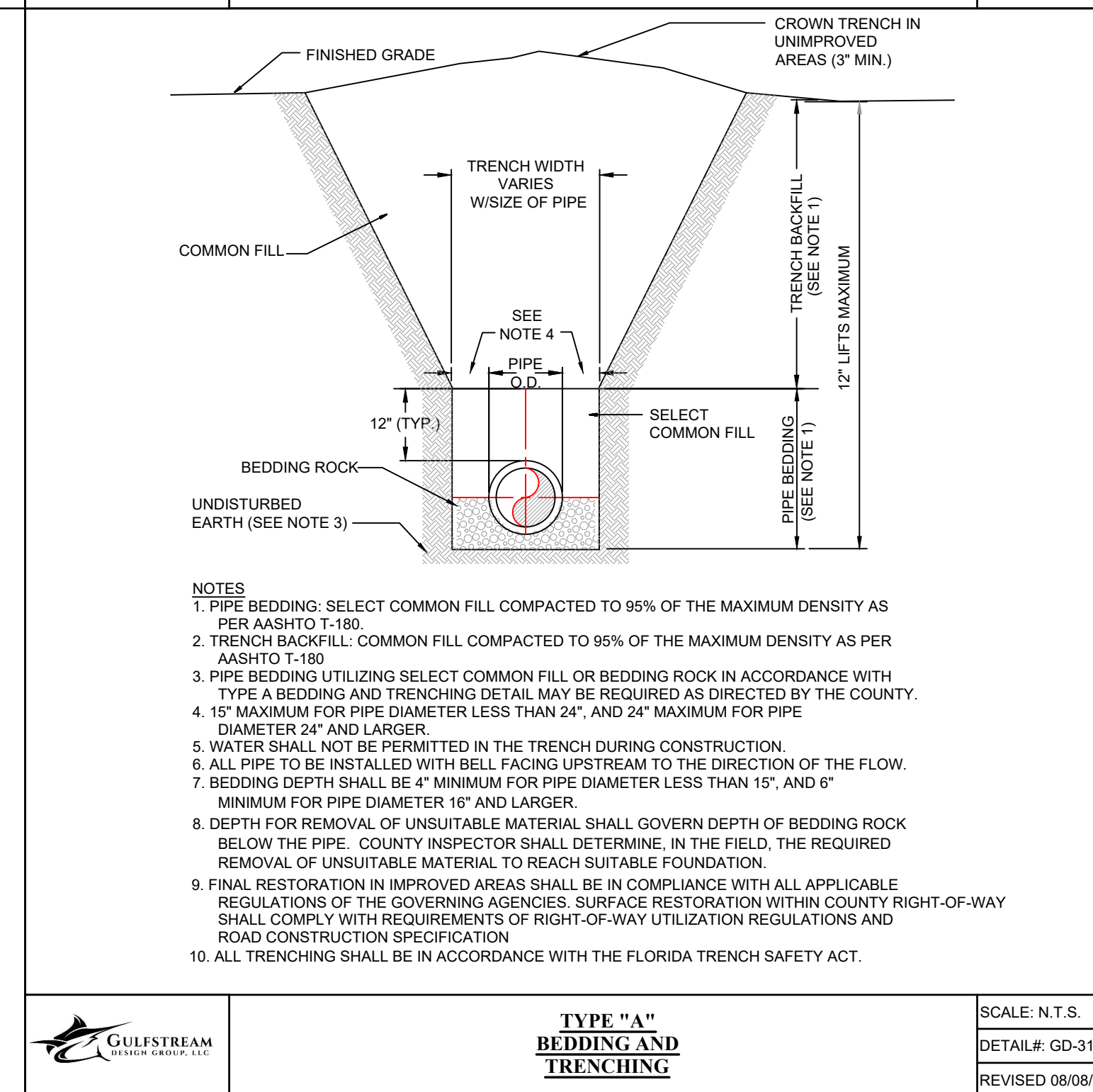
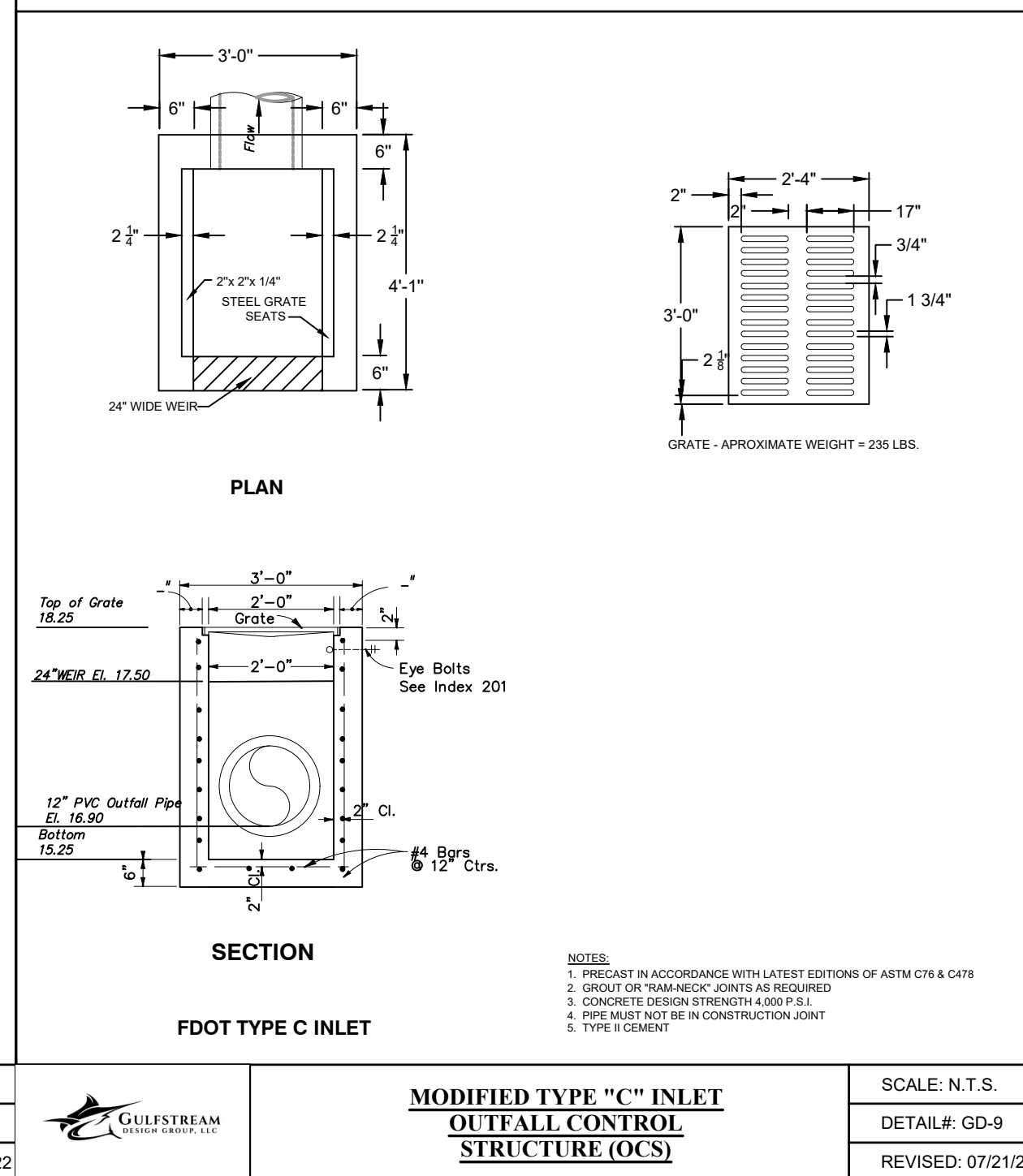
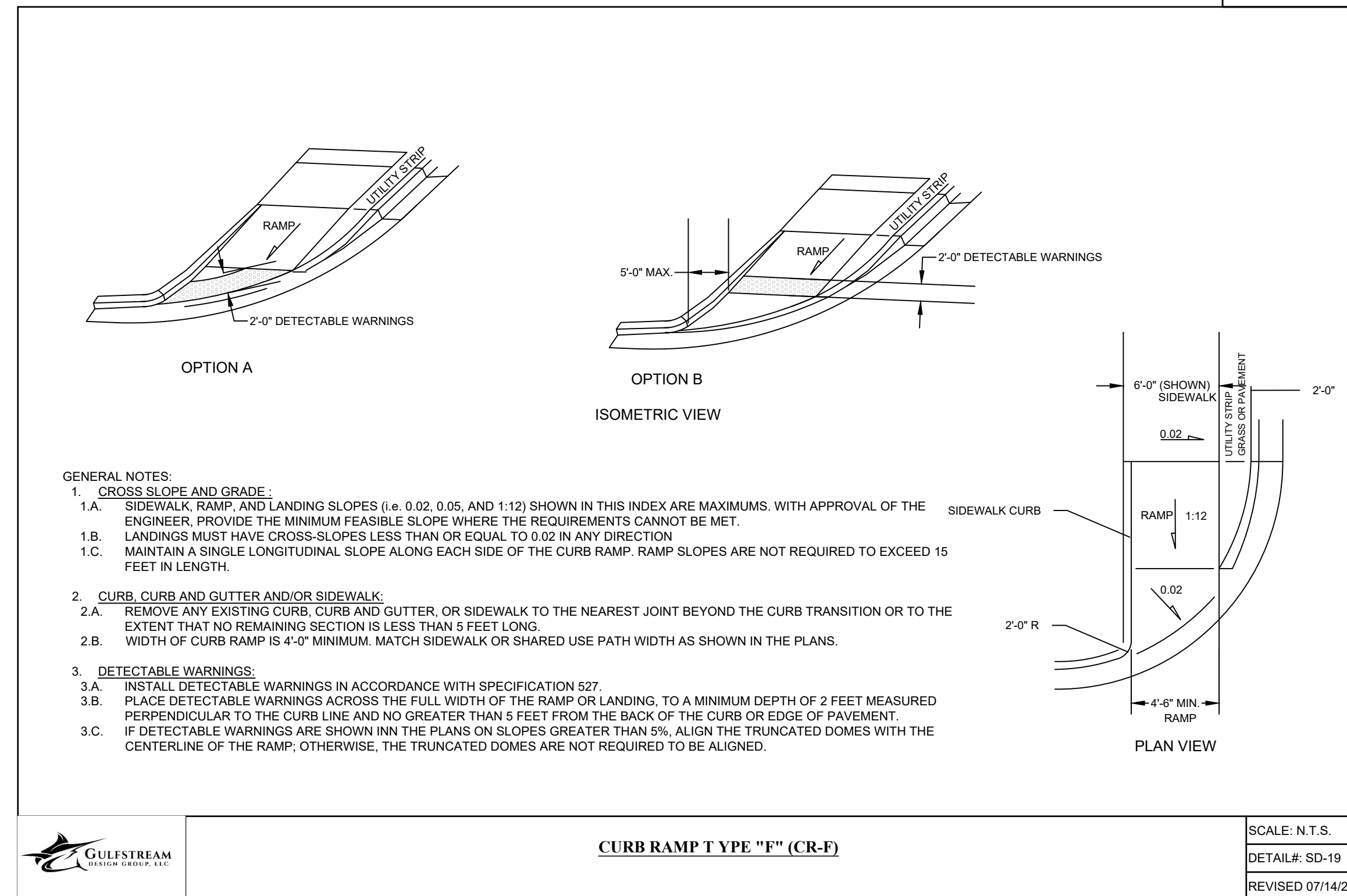
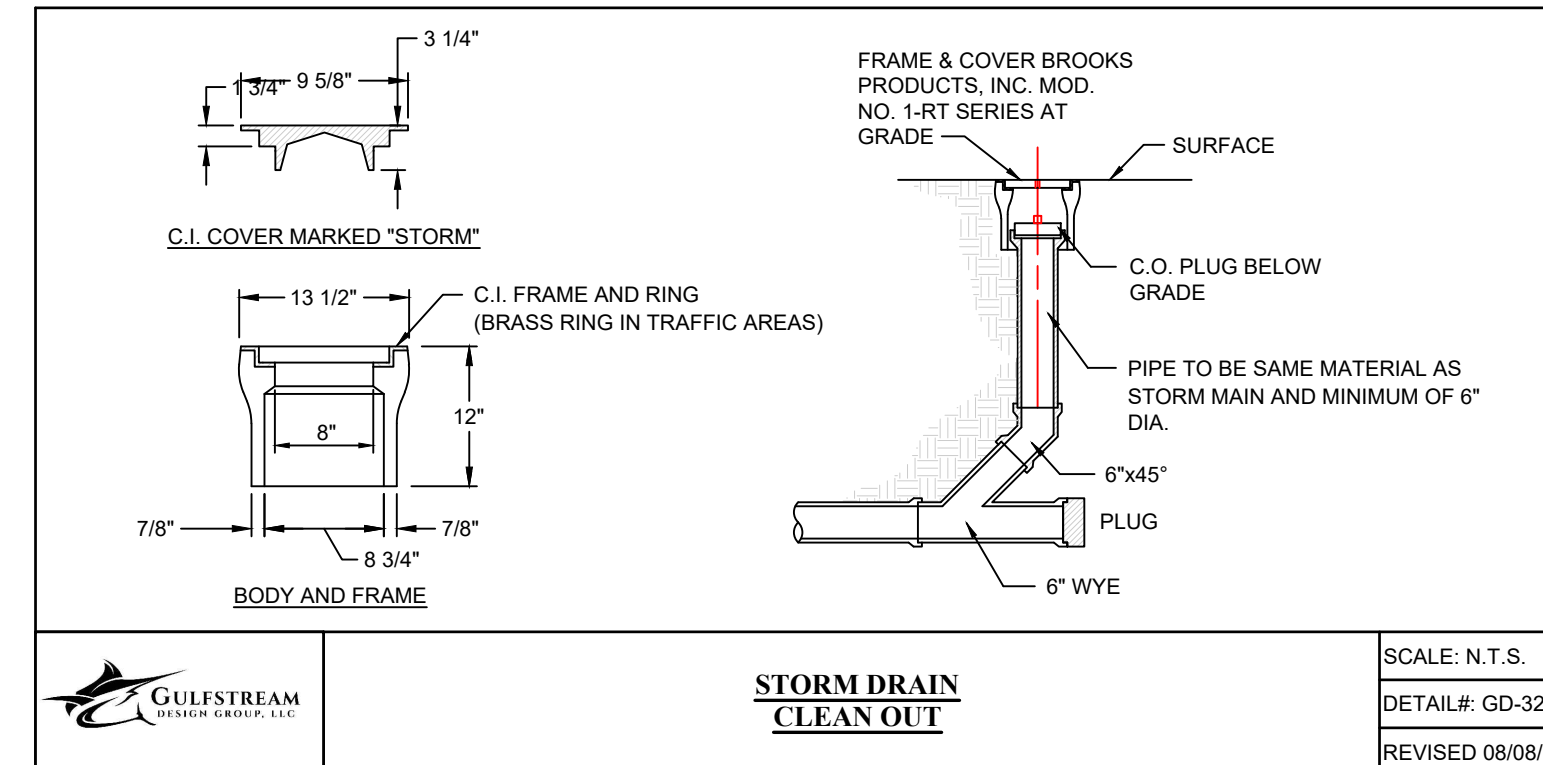
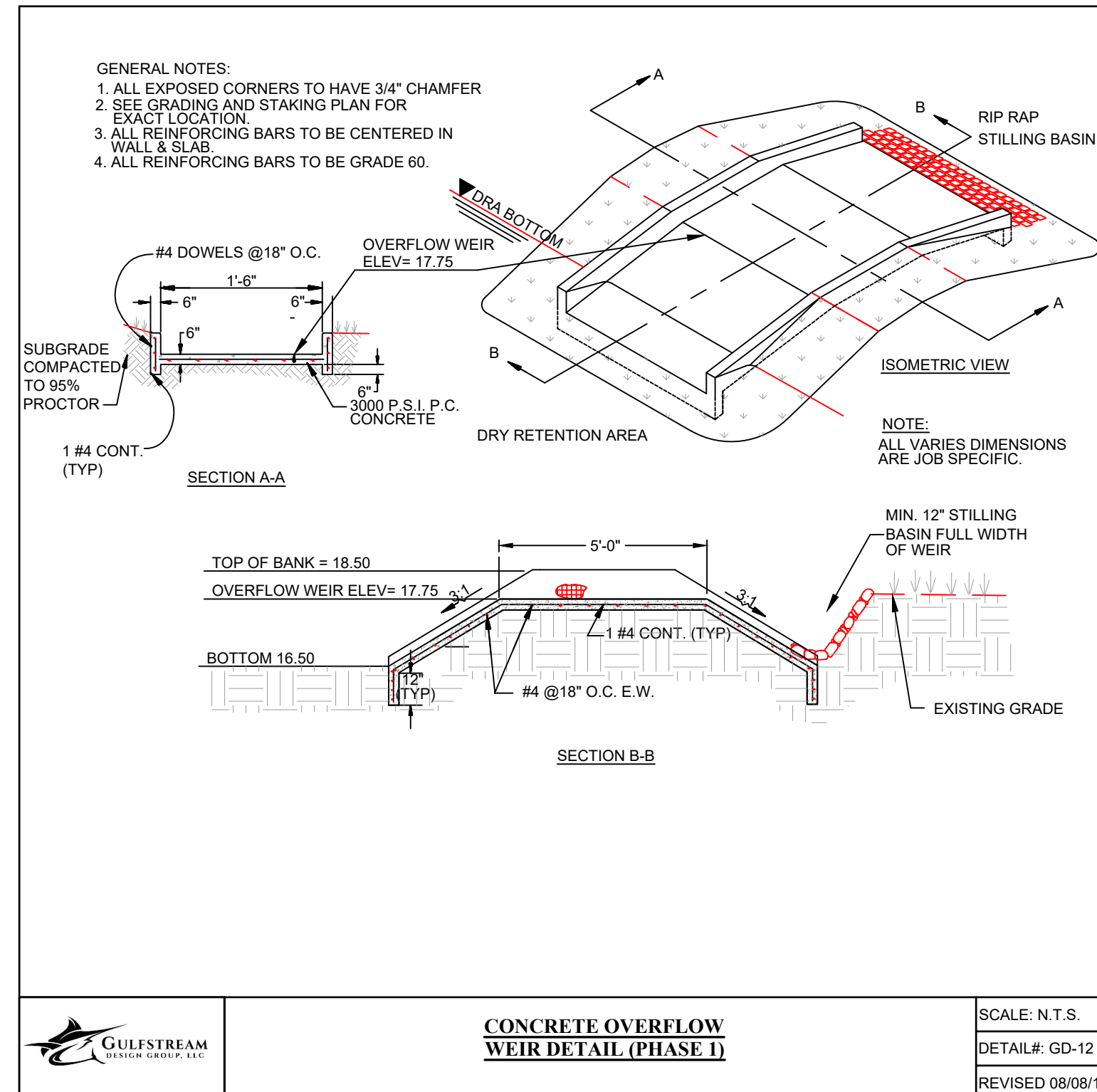
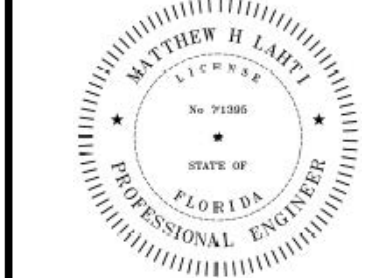


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SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G



GENERAL NOTES:



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ENGINEERING PLANS
FOR

ISLAND PARK PROPERTIES

CONSTRUCTION DETAILS-4

CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING
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15

2" SDR-9 HDPE POLYTUBING

2" BALL VALVE, CURB STOP (B81-777) WITH BOX AND COVER

2"x2" BRASS NIPPLE

2" BRASS TEE TYPICAL

2" COUPLING JOINT (C84-77)

2" SDR-9 HDPE POLY TUBING (LENGTH TBD)

2" COUPLING JOINT (C84-77)

2" BRASS TEE TYPICAL

2" BRASS ELBOW 90° TYPICAL

1"x2" BRASS BUSHING (C18-47)

1"x1" COUPLING (C84-44)

1" SDR-9 HDPE POLYTUBING (LENGTH TBD)

1"x 3/4" REDUCING WYE (Y65-243)

EXPAND UP TO 6 METERS

2"x2" BRASS BUSHING

2"x2" COUPLING

2"SDR-9 HDPE POLYTUBING

2"x1 1/2" REDUCING WYE

1 1/2"x1/2" REDUCER ONLY ON ONE SERVICE

(SEE RESIDENTIAL TAP AND WATER SERVICE DETAIL)

VALVE BOX AND COVER

2" SDR-9 HDPE POLYTUBING

CORPORATION STOP (90° TURN ONLY, WITH LARGE OPERATING NUT)

TAPPING SADDLE

WATER MAIN

NOTES:

- METER MANIFOLD MAY BE EXTENDED UP TO A MAXIMUM OF SIX (6) METERS.
- METER YOKE AND BOX DETAIL AT UD-6 (3/4" AND 1" RESIDENTIAL TAP AND WATER SERVICE DETAIL).
- ALL MATERIALS MUST CONFORM TO CITY OF FERNANDINA BEACH LIST OF APPROVED MATERIALS AND MANUFACTURERS, OR PRE-APPROVED EQUAL.
- ALL FITTINGS TO BE BRASS, UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE CITY.
- CONTRACTOR TO PROVIDE AND INSTALL ALL MATERIALS EXCEPT THE WATER METER. CITY OF FERNANDINA BEACH WILL INSTALL THE WATER METER IN THE METER BOX ASSEMBLY THAT IS FULLY CONSTRUCTED BY THE CONTRACTOR IN ACCORDANCE WITH THIS DETAIL.

MANIFOLD INSTALLATION FOR MULTIPLE SMALL METERS (LIMIT 6 METERS)

SCALE: N.T.S.

DETAIL#: UD-5

REVISED 01/20/22

24"

24"

WATER

COVER

FINISHED GRADE

LOCATOR PEG AT ALL VALVES

24"x24"x6" THK CONCRETE PAD (ALL AROUND VALVE BOX)

30" MIN. COVER

GATE VALVE

MECHANICAL JOINT

RESTRAINED JOINT

PIPE

UNDISTURBED EARTH

FOOT NO. 57 STONE

VALVE AND BOX

SCALE: N.T.S.

DETAIL#: UD-2

REVISED 03/10/20

9 5/8"

1 3/4"

C.I. COVER MARKED "SEWER"

13 1/2"

8"

12"

7/8"

8 3/4"

7/8"

BODY AND FRAME

FRAME & COVER BROOKS PRODUCTS, INC. MOD. NO. 1-RT SERIES AT-GRADE

SURFACE

C.O. PLUG BELOW GRADE

PIPE TO BE SAME MATERIAL AS SEWER MAIN AND MINIMUM OF 6" DIA.

6"x45" PLUG

6" WYE

SCALE: N.T.S.

DETAIL#: UD-1

REVISED 03/10/20

SANITARY SEWER CLEAN-OUT

SCALE: N.T.S.

DETAIL#: UD-1

REVISED 03/10/20

R/W

R/W

SLOPE TO TERMINAL DEPTH AT 1.0% MIN. (TYP.)

TERMINAL DEPTH AS REQUIRED FOR HOUSE SERVICE (3' MIN.)(TYP.)

ROTATE 30° (TYP.) (SEE NOTE 2)

SINGLE LATERAL

DOUBLE LATERAL

SEWER MAIN

SPRING LINE

PROFILE

NOTES:

- CLEAN-OUTS SHALL BE INSTALLED BY THE UTILITY CONTRACTOR IN ACCORDANCE WITH STD. PLUMBING CODE.
- INVERT OF SERVICE LATERAL SHALL NOT ENTER SEWER MAIN BELOW SPRING LINE.
- WYE BRANCH FITTINGS SHALL BE USED FOR LATERAL CONNECTIONS TO THE MAIN.

SANITARY SEWER SERVICE LATERAL

SCALE: N.T.S.

DETAIL#: UD-3

REVISED 03/10/20

CAST IRON FLUSH LID WITH TOUCH READ HOLE (1-7/8" DIA.) LABELED WATER AND PAINTED BLUE

EXPANSION CONNECTOR

DUAL CHECK DETECTOR

CURB STOP WITH CUSTOMER HANDLE

PLASTIC VALVE BOX AND LID (FOR USE IN UN-PAVED AREAS ONLY)

FOR INSTALLATION IN PAVED AREAS, WITH CITY'S APPROVAL, USE BROOKS PRODUCTS INC. NO. 1 RT BODY AND CAST IRON COVER MARKED "WATER"

1" SDR-9 HDPE POLYTUBING

STRAIGHT BALL YOKE VALVE

YOKE BAR

NIPPLE- BRASS

RIGHT-OF-WAY

UTILITY CUSTOMER'S PROPERTY

CORPORATION STOP (WITH LARGE OPERATING NUT)

METER BOX: FOR 3/4" WATER METER USE 1" METER BOX

FOR 1" WATER METER USE 1-1/2" METER BOX

WATER MAIN

SADDLE

STANDARD INSTALLATION LOCATION, UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE CITY

NOTES:

- ALL MATERIALS TO CONFORM TO CITY OF FERNANDINA BEACH LIST OF APPROVED MATERIALS AND MANUFACTURERS, OR PRE-APPROVED EQUAL.
- ALL RESIDENTIAL SERVICE LINES TO BE 1-INCH OFF MAIN. FOR 3/4-INCH METER SIZE, REDUCE 1-INCH SERVICE LINE TO 3/4-INCH AT METER.
- ALL FITTINGS TO BE BRASS, UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE CITY.
- CONTRACTOR TO PROVIDE AND INSTALL ALL MATERIALS EXCEPT THE WATER METER. CITY OF FERNANDINA BEACH WILL INSTALL THE WATER METER IN THE METER BOX ASSEMBLY THAT IS FULLY CONSTRUCTED BY THE CONTRACTOR.

2" & 1" RESIDENTIAL TAP AND WATER SERVICE DETAIL

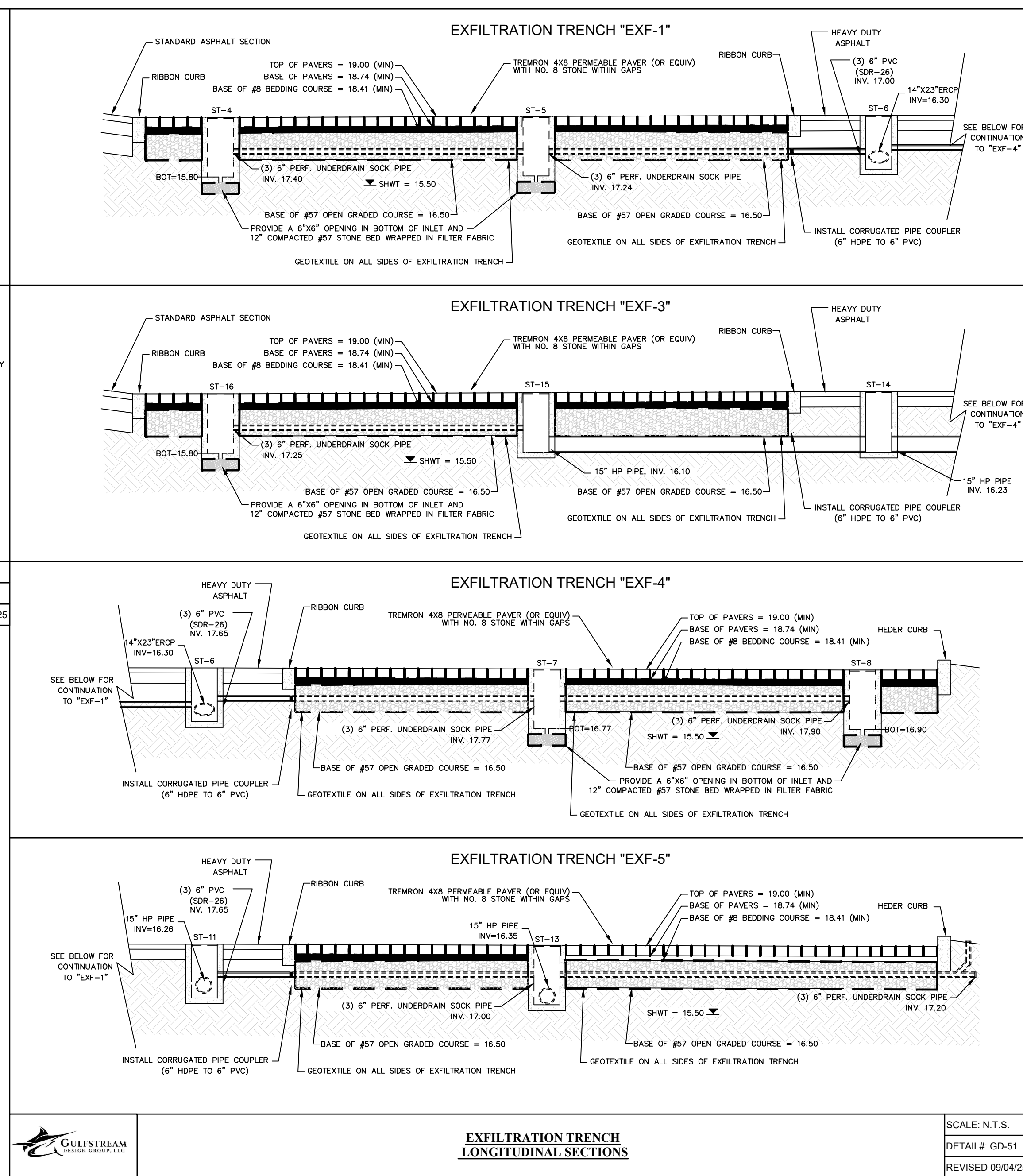
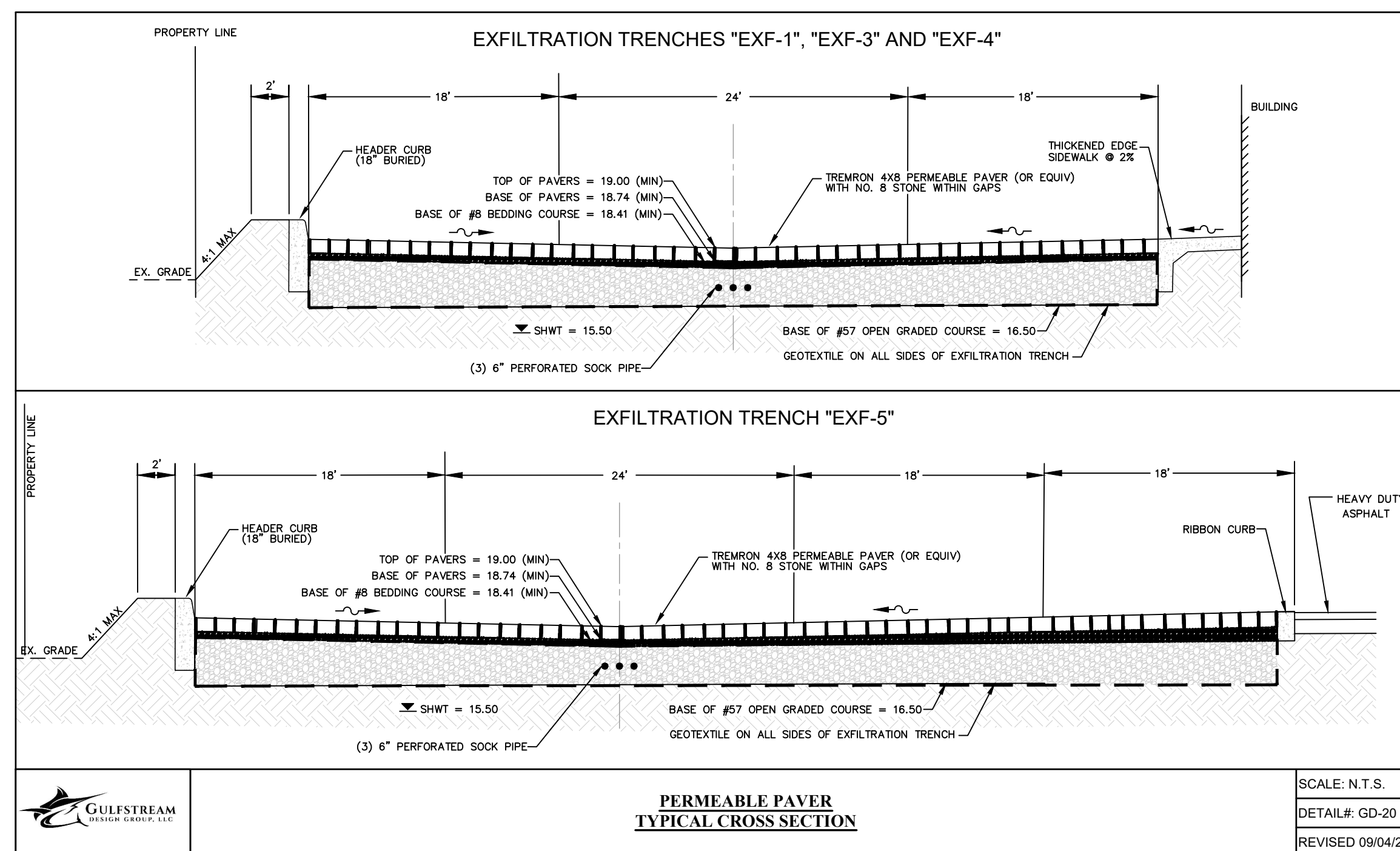
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DETAIL#: UD-6

REVISED 02/09/21

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ENGINEERING PLANS
FOR
ISLAND PARK PROPERTIES
CROSS SECTION DETAILS 1
CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING PLANS



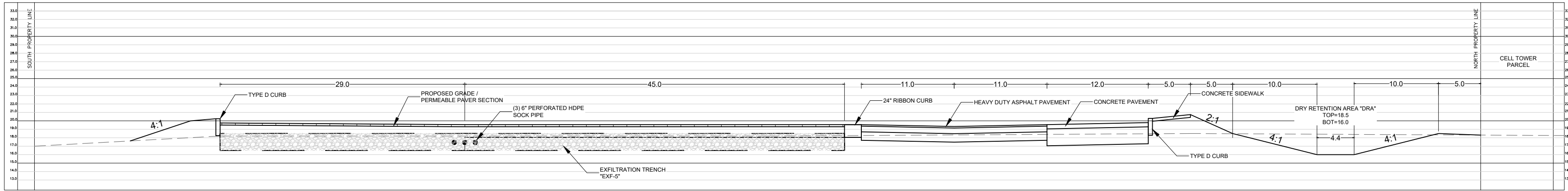
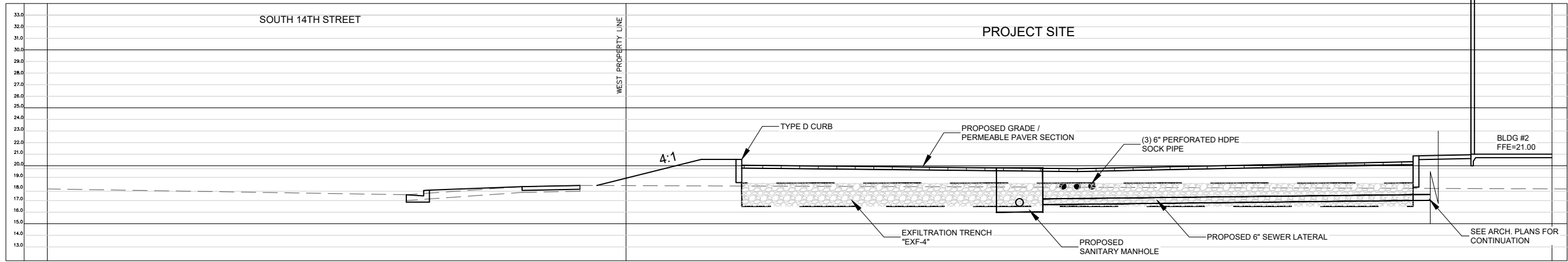
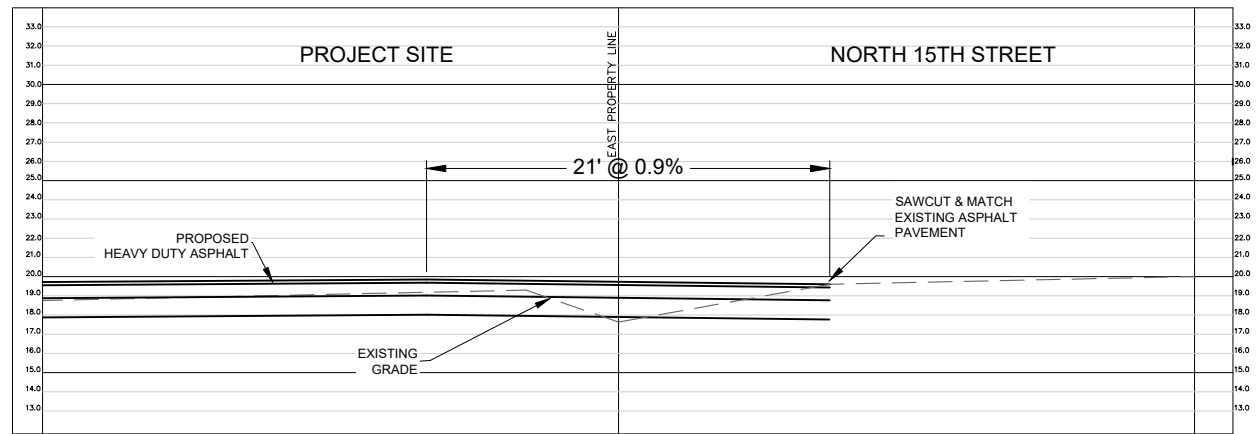
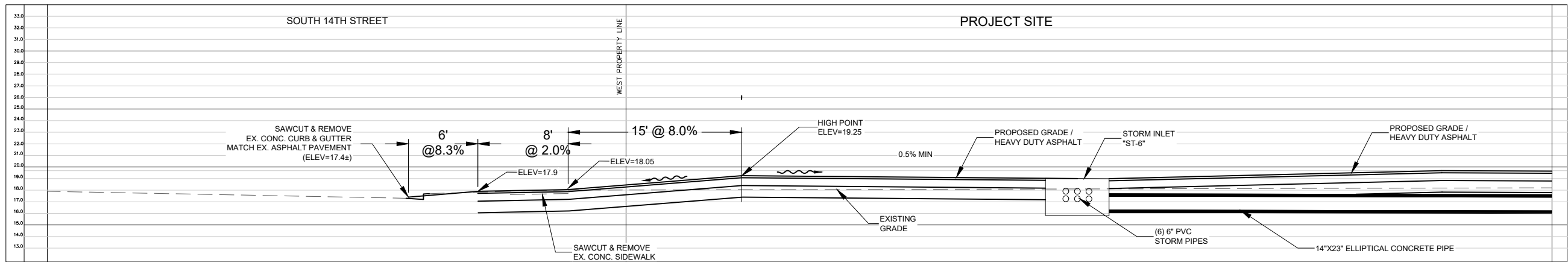
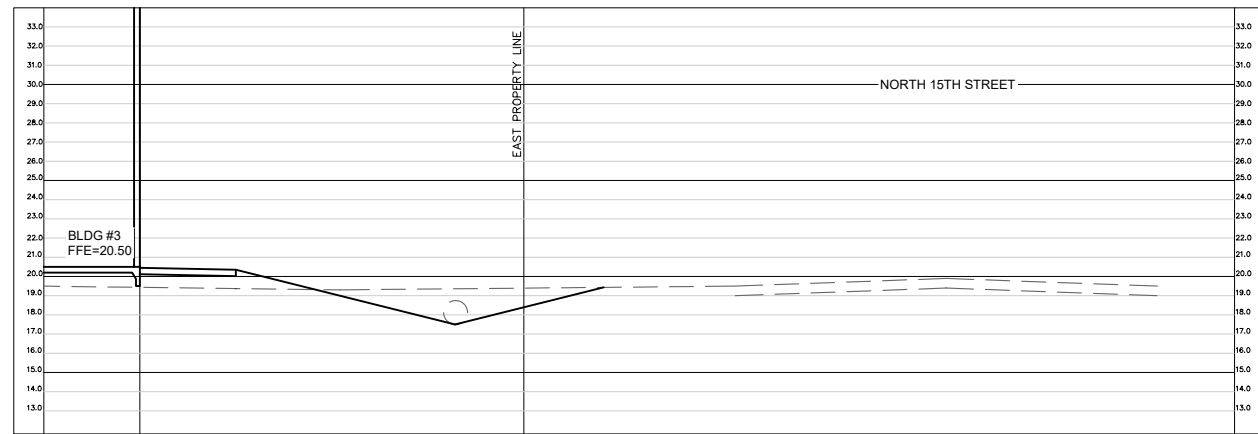
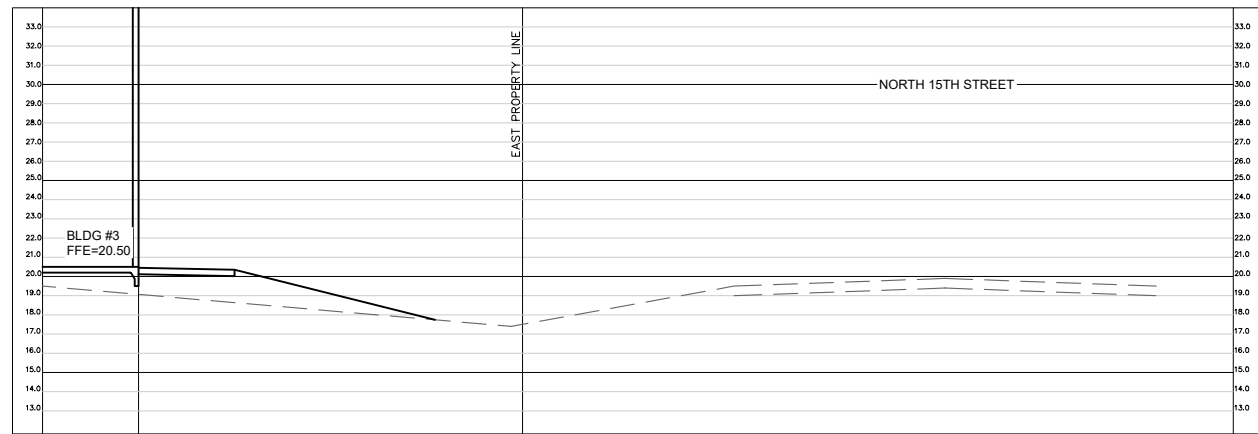
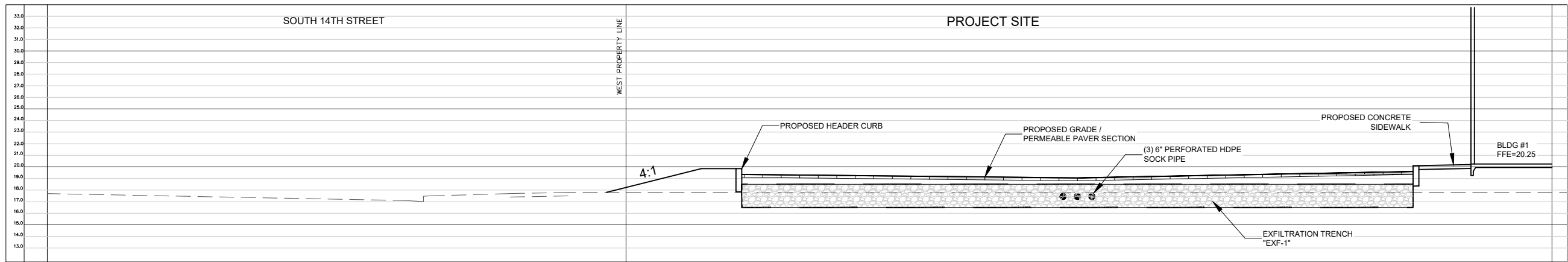
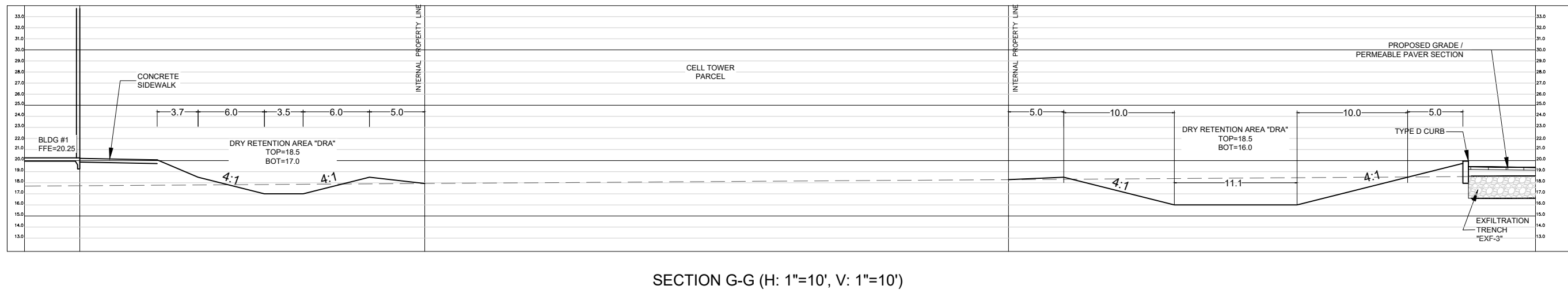
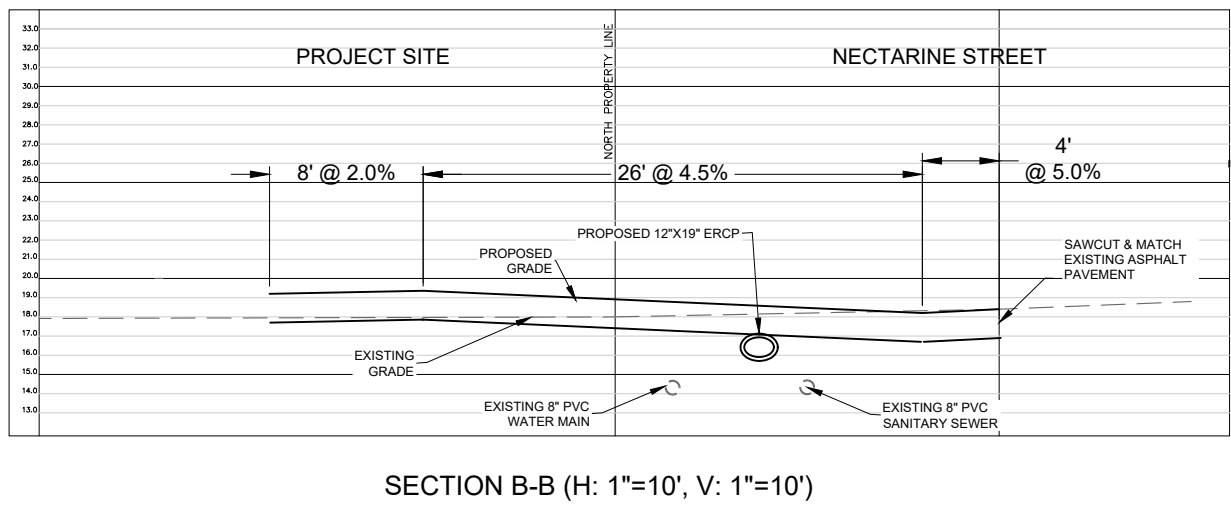
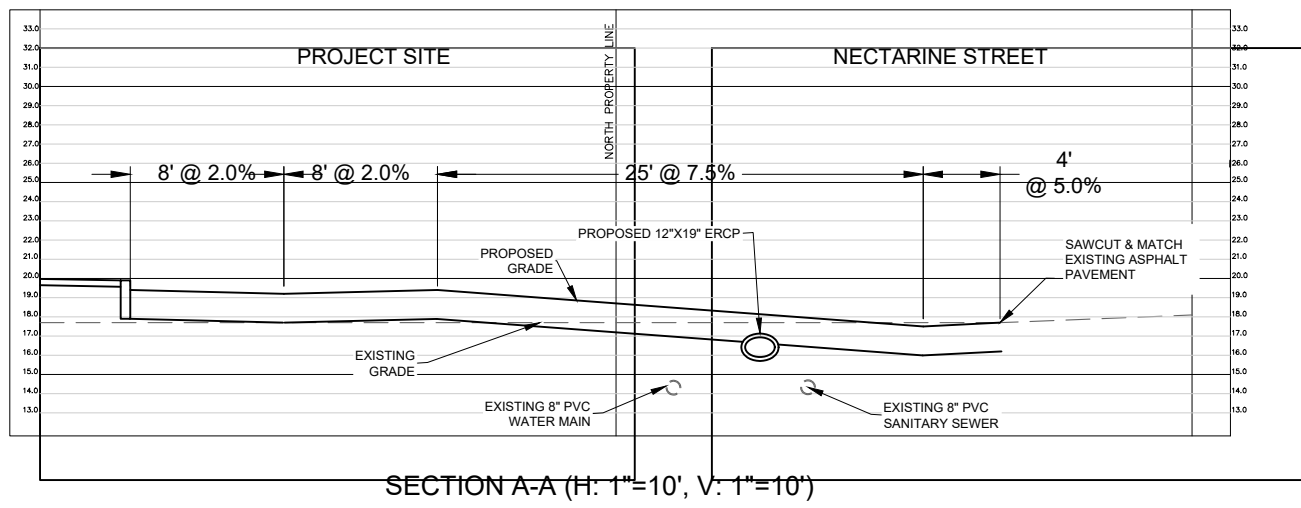
2225 A1A S, SUITE A2
ST. AUGUSTINE, FLORIDA 32080
904.794.4231
matt@gulfstreamdesign.com

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PROJECT NO:	23-215
ISSUE DATE:	09-05-2025
DRAFTED BY:	TDP
DESIGNED BY:	TVB
CHECKED BY:	MHL

NOT VALID WITHOUT SEAL





REVIEWS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION
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2			
3			
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ENGINEERING PLANS
FOR
ISLAND PARK PROPERTIES
CROSS SECTION DETAILS 2
CITY OF FERNANDINA BEACH, FLORIDA



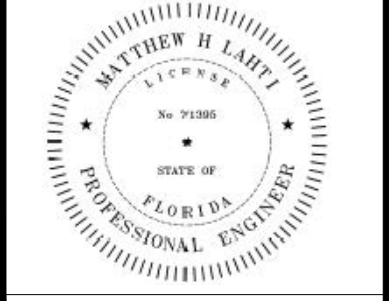
FINAL ENGINEERING
PLANS



2225 A1A S, SUITE A2
ST. AUGUSTINE, FLORIDA 32080
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PROJECT NO: 23-215
ISSUE DATE: 09-05-2025
DRAFTED BY: TDP
DESIGNED BY: TVB
CHECKED BY: MHL

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This item has been digitally signed and sealed by Matthew H. Lahti, 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.

SPECIFIC PURPOSE SURVEY
VERIFIED UTILITY LOCATE SHEET

SUMMARY OF VERIFIED UTILITIES

Vvh #	UTILITY DESCRIPTION (Owner, type)	SIZE	MATERIALS	COORDINATES ARE DERIVED FROM REAL TIME KINEMATIC OBSERVATIONS (RTK) HELD ON NORTH AMERICAN DATUM 1983 (2011 ADJUSTMENT), FLORIDA STATE PLANE, EAST ZONE		EXISTING GROUND ELEVATION	TOP ELEVATION	COMMENTS
				NORTHING	EASTING			
VVH1	CITY OF FERNANDINA BEACH, WATER LINE	8"	PVC	2297418.30	513442.60	17.99	13.93	
VVH2	CITY OF FERNANDINA BEACH, WATER LINE	8"	PVC	2297405.63	513537.39	16.98	14.75	
VVH3	CITY OF FERNANDINA BEACH, WATER LINE	8"	PVC	2297397.07	513597.77	17.40	15.44	
VVH4	CITY OF FERNANDINA BEACH, WATER LINE	10"	PVC	2297020.96	513363.25	18.09	13.60	
VVH5	CITY OF FERNANDINA BEACH, WATER LINE	8"	PVC	2297389.12	513656.34	18.19	16.19	
VVH6	CITY OF FERNANDINA BEACH, WATER LINE	8"	PVC	2297371.74	513765.08	19.10	16.53	
VVH7	CITY OF FERNANDINA BEACH, WATER LINE	8"	PVC	2297359.10	513850.02	18.82	14.67	
EH1	DUG EXPLORATORY HOLE FOR SANITARY LATERAL, NO UTILITY FOUND	N/A	N/A	2297276.22	513403.05	17.80	0.00	3.0' NORTH/SOUTH 1.0' EAST/WEST, DEPTH EXCAVATED +/-4' PROBED TO +/-10'

SURVEYOR'S NOTES:

SUBSURFACE UTILITY ENGINEERING NOTES:

1. OWNERSHIP IS BASED UPON OBSERVING ABOVE GROUND UTILITY FEATURES, SUNSHINE 811 DIG TICKET, AND PROFESSIONAL JUDGEMENT. THIS SUMMARY DOES NOT CONVEY OR ESTABLISH OWNERSHIP OF RECORD.

SURVEYOR'S NOTES:

- 1.) THIS SURVEY WAS PERFORMED IN COMPLIANCE WITH A PROJECT SPECIFIC SCOPE OF SERVICES DEFINED BY THE CLIENT.
- 2.) THIS SUMMARY OF VERIFIED UTILITIES ACCOMPANIES A DESIGN FILE THIS IS NOT A BOUNDARY SURVEY.
- 3.) COORDINATES ARE ON THE NORTH AMERICAN DATUM 1983, 2011 ADJUSTMENT (NAD83/11), FLORIDA STATE PLANE, EAST ZONE.
- 4.) VERTICAL ELEVATIONS SHOWN ARE ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). ELEVATIONS WERE DERIVED FROM AN EXISTING SURVEY PERFORMED BY COASTAL LAND SURVEYORS AND MAPPERS INC. DATED 6-12-24 AND PROVIDED BY THE CLIENT. THE BENCHMARK, A RAILROAD SPIKE IN POWER POLE WAS REPORTED WITH AN ELEVATION OF 19.38' NAVD 88.
- 5.) THE SUBSURFACE UTILITY MAPPING WAS PERFORMED IN ACCORDANCE WITH THE UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT, CHAPTER 556, FLORIDA STATUTES AND CONFORMS TO ASCE 38-22 UTILIZING QUALITY "A" (VACUUM EXCAVATION), "B" (UTILITY DESIGNATION), AND "C" (SURFACE EVIDENCE) UTILITY INVESTIGATION WAS PERFORMED WITH TONES FROM CABLE LOCATORS, AND GROUND PENETRATING RADAR.
- 6.) THE UTILITY INFORMATION WAS RECORDED UTILIZING A R12 GPS RECEIVER, AND CONVENTIONAL METHODS FROM EXISTING SURVEY CONTROL.
- 7.) NO UNDERGROUND FOOTERS OR FOUNDATIONS HAVE BEEN LOCATED IN CONNECTION WITH THIS SURVEY UNLESS OTHERWISE SHOWN OR NOTED.
- 8.) ALL MEASUREMENTS ARE IN US SURVEY FEET UNLESS OTHERWISE NOTED.
- 9.) DATE OF LAST FIELD WORK = 07/30/2025
- 10.) DRMP PROJECT # 301.2500739.000

LEGEND:

ACP	ASBESTOS CONCRETE PIPE (TRANSITE PIPE)
B	BASELINE
C	CENTERLINE
CONC	CONCRETE
CI	CAST IRON
CP	CONCRETE PIPE
DIP	DUCTILE IRON PIPE
DBC	DIRECT BURIED CABLE
DUCT	BANK OF MULTIPLE PIPES
GPR	GROUND PENETRATING RADAR
HDPE	HIGH-DENSITY POLYETHYLENE
N/A	NOT APPLICABLE
PCCP	PRE-STRESSED CONCRETE CYLINDER PIPE
PSM	PROFESSIONAL SURVEYOR AND MAPPER
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
STL	STEEL PIPE
TC	TRAFFIC CONTROL
TH	TEST HOLE
UNK.	UNKNOWN
UTV	UTILITY VERIFICATION SHEET
VCP	VITRIFIED CLAY PIPE
VvH	VERIFIED VERTICALLY & HORIZONTALLY

LIMITS: ALONG SOUTH 14TH STREET,NECTARINE STREET, AND SOUTH 15TH STREET
FERNANDINA BEACH, FLORIDA

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THIS SPECIFIC PURPOSE SURVEY WAS MADE FOR THE PURPOSE OF SURVEYING, REFERENCING, DESCRIBING, AND MAPPING THE UTILITY VACUUM EXCAVATIONS, AS MARKED ON THE SURFACE FOR THE SPECIFIC AREA DEPICTED HEREON AND THAT SAID SURVEY WAS DONE UNDER MY RESPONSIBLE CHARGE AND MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17 FLORIDA ADMINISTRATIVE CODE PURSUANT TO SECTION 472.027 FLORIDA STATUTES. THIS SPECIFIC PURPOSE SURVEY CONSISTING OF SHEET 01 IS A TRUE, ACCURATE AND COMPLETE DEPICTION OF THE RESULTS OF A FIELD SURVEY PERFORMED UNDER MY DIRECTION AND COMPLETED JULY 30,2025

Matthew Cohen

Digitally signed by Matthew Cohen
DN: E=mcohen@drmp.com,
CN=Matthew Cohen, OU=DRMP
Active Users, DC=drmp1, DC=com
Reason: S&S
Date: 2025.08.06 10:25:37-04'00'

DATE :

SURVEYOR: MATTHEW A. COHEN

PSM NUMBER: 7488

PRINTED COPIES OF THIS SHEET ARE NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
THE ABOVE NAMED PROFESSIONAL SURVEYOR AND MAPPER SHALL BE RESPONSIBLE
FOR THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 5J-17.062, F.A.C.



REVISIONS				PROFESSIONAL SURVEYOR AND MAPPER				VERIFIED UTILITY LOCATE	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	MATTHEW COHEN PSM LICENSE NUMBER 7488 DRMP INC. 8001 BELFORT PARKWAY, SUITE 200 JACKSONVILLE, FL 32256					
						NASSAU	301.2500739.000		
									1

REVISIONS		NO.	DATE	BY	DESCRIPTION
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ENGINEERING PLANS
FOR
ISLAND PARK PROPERTIES
SUBSURFACE UTILITY EVALUATION (S.U.E.)
CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING
PLANS



PROJECT NO:	23-215
ISSUE DATE:	09-05-2025
DRAFTED BY:	TDP
DESIGNED BY:	TVB
CHECKED BY:	MHL
NOT VALID WITHOUT SEAL	

X

To,
Ms. Kelly N. Gibson, AICP
Planning and Conservation Director
City of Fernandina Beach
204 Ash Street, Fernandina Beach, Florida 32034
kgibson@fbfl.org

Date: 02/11/2021

Introduction:

An office development that is anticipated to include 47,322 SF of medical-office facility is proposed for construction on the southeast quadrant of South 14th Street and Nectarine Street in the City of Fernandina Beach, Florida. The proposed development is anticipated to be built in 2 Phases. The Phase 01 development is anticipated to include 12,846 SF of medical-office building and Phase 02 development is anticipated to include 34,476 SF of medical-office building. **Figure 01** shows the location of the proposed development. A copy of the site plan (provided by Gulfstream Design Group, Inc.) is included as **Attachment A**.

Access to the Phase 01 development will be provided via a driveway on South 14th Streets and two (2) driveways on Nectarine Street. Phase 02 development will provide two (2) additional driveways on South 15th Street. As discussed with the City of Fernandina Beach staff, this memo summarizes the traffic impact on South 14th Street from proposed Phase 01 development.

Trip Generation:

The trip generation for the proposed Phase 01 development was estimated using the rates and equations included in the trip generation manual, 10th edition published by the Institute of Transportation Engineers (ITE). Attached **Table 01** summarizes the trips anticipated to be generated by the proposed development. As shown in this table, the proposed Phase 01 development is anticipated to generate 406 daily trips that will include 36 AM peak and 46 PM peak trips.

Existing Conditions:

The South 14th Street between Lime Street and Sadler Road is a four-lane major collector road with two travel lanes on each direction and a center two-way left turn lane. South 14th street has a posted speed limit of 45 miles per hour (mph). **Figure 02** shows the exiting conditions on South 14th Street and Nectarine Street. The daily maximum service volume for South 14th Street between Lime Street and Sadler Road is 28,880 vehicles per day.

Current Year and Future Background Traffic Volumes:

The proposed Phase 01 development is anticipated to be built out by year 2022. The year 2019 traffic volumes and the historical AADT on South 14th Street obtained from the Florida Department of Transportation (FDOT) Traffic Counts Portal was used to determine the year 2021

traffic volumes and future year 2022 background traffic volumes. The trends analysis of the historical AADT on South 14th Street yielded a growth rate of less than 1.0%. Hence a minimum growth rate of 2.0% was applied to estimate the year 2021 and 2022 growth factors. The year 2021 and the year 2022 traffic volumes were estimated by applying a growth factor of 1.04 (2.0% per year for two years) and 1.06 (2.0% per year for 3 years) respectively.

Attachment B includes copies of the year historical AADT, year 2019 synopsis (hourly traffic counts data) and trends analysis for the South 14th Street roadway segments. **Table 02** summarizes the year 2019, year 2021 and year 2022 background year traffic volumes. The section of South 14th Street between Lime Street and Nectarine Street is currently operating at LOS C and is anticipated to operate at LOS C under the future year 2022 background conditions. The section of South 14th Street between Nectarine Street and Sadler Road is currently operating at LOS D and is anticipated to operate at LOS D under the future year 2022 background conditions.

Project Traffic Distribution:

Project traffic distribution for the proposed Phase 01 office development was estimated using the existing traffic patterns on South 14th Street. **Figure 03** shows Phase 01 project traffic distribution on South 14th Street and Nectarine Street. The following is a summary of the project traffic distribution on South 14th Street.

AM Peak and PM Peak Distribution:

- South 14th Street from Lime Street to Nectarine Street – 43% / 55%
- South 14th Street from Nectarine Street to Sadler Road – 52% / 40%
- Nectarine Street east of South 14th Street – 5% / 5%

Daily Distribution (Average of AM Peak and PM Peak):

- South 14th Street from Lime Street to Nectarine Street – 49%
- South 14th Street from Nectarine Street to Sadler Road – 46%
- Nectarine Street east of South 14th Street – 5%

The above stated project traffic distribution was applied to the trip generation shown in previously stated **Table 01** to determine project traffic assignment on to South 14th Street and Nectarine Street. **Table 03** summarizes daily, AM peak and PM peak project traffic distribution and assignment on South 14th Street for the proposed Phase 01 Medical Office development. Previously stated **Figure 03** also shows the AM peak and PM peak period project traffic assignment at the project access driveways on South 14th Street and Nectarine Street.

Build-Out Traffic Projections:

The year 2022 Phase 01 development build-out traffic volumes include the year 2022 future background traffic volumes and the Phase 01 development project traffic assignment. **Table 04** summarizes the year 2022 build-out traffic projections. As shown in this table, the section of South 14th Street between Lime Street and Nectarine Street is anticipated to continue operating at LOS C and the section of South 14th Street between Nectarine Street and Sadler Road is anticipated to continue operating at LOS D under the year 2022 build-out conditions of the proposed Phase 01 medical office development.

Turn Lane Evaluation on South 14th Street at Project Access Driveway:

The section of South 14th Street between Lime Street and Sadler Road has a center two-way left turn lane. This center two-way left turn lane is anticipated to act as a left turn lane for southbound left turn traffic on South 14th Street into the proposed project access driveway. Hence the need for southbound left turn lane was not evaluated.

The need for a northbound right turn lane on South 14th Street at the proposed Project Access Driveway was evaluated using the right turn lane guidance included in the FODT Access Management Guidebook. The guidance states that for a multi-lane divided roadway where vehicle operating speeds are 45 mph or less, 125 right turns per hour are required to warrant an exclusive right turn lane. A copy of this criteria is included as **Attachment C**.

As shown in previously stated **Figure 03**, a maximum of 13 northbound right turns during the AM peak are anticipated on South 14th Street at the proposed Project Access Driveway under the build-out conditions of the proposed Phase 01 development. Hence, a northbound right turn lane on South 14th Street is not anticipated to be warranted under the build-out conditions of the proposed Phase 01 development.

Phase 02 (Project Build-Out Conditions) Concurrency Traffic Study:

A concurrency traffic study determining the impact of the proposed development on all the roadway segments and major intersections (including all the project access driveway intersections) within a one-mile radius of the proposed development will be submitted with the development application for the Phase 02 development.

Please let me know if you have any questions.

Sincerely,
Chindalur Traffic Solutions, Inc.

A handwritten signature in black ink, appearing to read 'R. Chindalur' with a stylized flourish at the end.

Rajesh Chindalur
8833 Perimeter Park Boulevard, Suite 103, Jacksonville, FL 32216
(904) 619-3368 | Chindalur@ctrafficsolutions.com

cc:

Dr. Zeeshan Aziz, Island Park Properties <LLC.zazizmd@gmail.com>;
Mr. Brad Hollett, Accelerated Contractors <brad@acceleratedcontractors.com>;
Mr. Matt Lahti P.E., Gulfstream Design Group, LLC. <Matt@gulfstreamdesign.com>;
Mr. Justin Spicer, Gulfstream Design Group, LLC. <justin@gulfstreamdesign.com>;
Ms. Teresa Benton, Gulfstream Design Group, LLC. <teresa@gulfstreamdesign.com>



Chindalur Traffic Solutions, Inc.
 8833 Perimeter Park Blvd., Suite 103
 Jacksonville FL 32216
 Phone: (904) 619-3368
 www.ctrfficsolutions.com

Figure 01 – Project Location Map
 Nectarine Street– Traffic Study
 Fernandina Beach, Florida

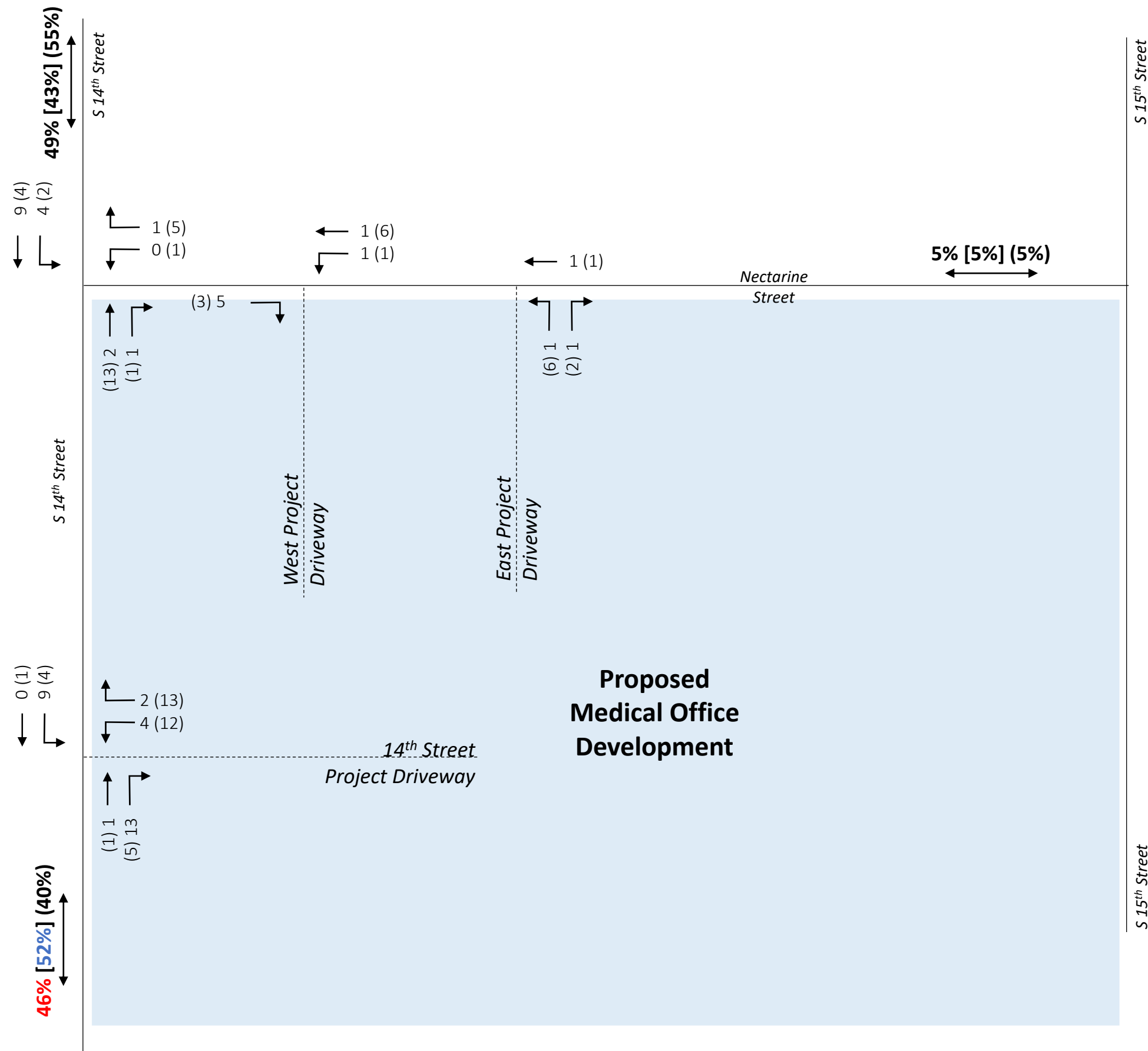


Figure 02 – Existing Conditions on South 14th Street and Nectarine Street

Nectarine Street Medical Office – Traffic Study
Fernandina Beach, Florida



Chindalur Traffic Solutions, Inc.
8833 Perimeter Park Blvd., Suite 103
Jacksonville FL 32216
Phone: (904) 619-3368
www.ctrfficsolutions.com



LEGEND:

- XX% – Daily Project Traffic Distribution
- [XX%] – AM Peak Project Traffic Distribution
- (XX%) – PM Peak Project Traffic Distribution
- XX – AM Peak Project Traffic Assignment
- (XX) – PM Peak Project Traffic Assignment

Figure 03 – Project Traffic Distribution and Assignment

Nectarine Street– Traffic Study
Fernandina Beach, Florida



Chindalur Traffic Solutions, Inc.
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Jacksonville FL 32216
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Table 01
Trip Generation
Nectarine Street Office, City of Fernandina Beach, FL

ITE Land Use Code	Description	Quantity	Units	Time Period	Trip Rate	Percent		Gross Trips		
						Entering	Exiting	Total	Entering	Exiting
Phase 01 Development (Building 01)										
720	Medical - Dental Office Building	12,846	SF	Daily	T = 38.42(X) - 87.62	50%	50%	406	203	203
				AM Peak	Ln(T) = 0.89 Ln(X) + 1.31	78%	22%	36	28	8
				PM Peak	T = 3.39(X) + 2.02	28%	72%	46	13	33

Source: Trip Generation Manual, 10th Edition, Institute of Transportation Engineers

Table 02**South 14th Street - Existing Conditions****Nectarine Street Office, City of Fernandina Beach, FL**

Roadway	Termini	Number of Lanes	Adopted LOS	Daily Maximum Service Volume (MSV)	Year 2019 AADT	Year 2021 AADT	Year 2022 Background AADT	Year 2022 Background LOS
South 14th Street	Lime Street to Nectarine Street	5	D	28,880	6,900	7,176	7,314	C
	Nectarine Street to Sadler Road	5	D	28,880	20,616	21,441	21,853	D

1.04 Year 2021 Growth Factor

1.06 Year 2022 Growth Factor

28,880 Daily MSV from Nassau County Mobility Plan Ordinance

Table 03**Project Traffic Distribution and Assignment****Nectarine Street Office, City of Fernandina Beach, FL**

		406			36		46
Roadway	Termini	Project Traffic			Project Traffic Assignment		
		Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
South 14th Street	Lime Street to Nectarine Street	49%	43%	55%	199	15	25
	Nectarine Street to Sadler Road	46%	52%	40%	187	19	18

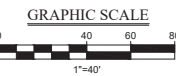
Table 04**South 14th Street - Phase 01 Roadway Segment Analysis****Nectarine Street Office, City of Fernandina Beach, FL**

Roadway	Termini	Adopted LOS	Daily Maximum Service Volume (MSV)	Year 2022 Background AADT	Daily Project Traffic Assignment	Year 2022 Build-Out AADT	Year 2022 Build-Out LOS
South 14th Street	Lime Street to Nectarine Street	D	28,880	7,314	199	7,513	C
	Nectarine Street to Sadler Road	D	28,880	21,853	187	22,040	D

Attachment A

Project Site Plan

Source: Gulfstream Design Group, LLC.



	EXISTING PROPERTY LINE
	EXISTING R/W LINE
	PROPOSED CURB & GUTTER
	PROPOSED CENTER LINE
	PROPOSED BUILDING OUTLINE
	PROPOSED STANDARD DUTY ASPHALT PAVEMENT
	PROPOSED CONCRETE SIDEWALK

SD-1	TYPE D CURB
SD-2	18" STANDARD CURB & GUTTER
SD-3	TYPE F CURB & GUTTER
SD-4	MIAMI CURB & GUTTER
SD-5	24" RIBBON CURB
SD-6	CONCRETE SIDEWALK
SD-8	TURN DOWN SIDEWALK
SD-11	CONCRETE PAVEMENT SECTION
SD-12	TYPICAL PAVEMENT SECTION
SD-13	HEAVY DUTY PAVEMENT SECTION
SD-14	PARKING PAINT STRIPING
SD-15	STOP BAR
SD-18	DETECTABLE WARNING DETAIL
SD-20	WHEELCHAIR RAMP IN SIDEWALK
SD-21	ACCESSIBLE PARKING SIGN
SD-22	CONCRETE WHEELSTOP
SD-35	DUMPSTER ENCLOSURE WITH SCREEN

S-01 PROPERTY LINE
S-02 CONNECT TO EXISTING SIDEWALK
S-03 TRAFFIC ARROW PER FDOT STANDARD INDEX 711-001

SITE DATA TABLE - COSA		
GROSS PROPERTY AREA:	165,792.00 SF	3.81 AC
NET DEVELOPABLE PROJECT AREA:	165,792.00 SF	3.81 AC
BUILDING FOOTPRINT AREA:	18,000 SF	0.41 AC
PARKING AND DRIVEWAYS:	47,000 SF	1.08 AC
SIDEWALK AREA:	2,485 SF	0.06 AC
TOTAL IMPERVIOUS AREA:	67,485.00 SF	1.55 AC
TOTAL PERVIOUS AREA:	98,307.00 SF	2.26 AC
IMPERVIOUS SURFACE AREA RATIO:		40.70 %
FLOOR AREA RATIO:		10.86 %
TOTAL SURFACE WATER AREA:		
NET OPEN SPACE:		
PROPERTY ID NO:	00-00-31-1800-0267-00-010	
ZONING:		
FLUM:		
FEMA FIRM PANEL NUMBER	120172 02370	
FRONT YARD SETBACK		
REAR YARD SETBACK		
SIDE YARD SETBACK		

PARKING CALCULATIONS - COSA					
USE	1 SPACE PER GROSS FLOOR AREA (SF)	UNITS, SEATS, ROOMS, SPACES	PROPOSED BUILDING AREA (SF)	REQUIRED PARKING SPACES	PROVIDED PARKING SPACES
BUSINESS, COMMERCIAL	300		5,000 SF	17	
ADA PARKING SPACES				100	
TOTAL PARKING SPACES				###	###

ENGINEERING PLANS
FOR
NECTARINE STREET OFFICES
SITE PLAN
ST. JOHNS COUNTY, FLORIDA



50% SET



PROJECT NO:	20-106
ISSUE DATE:	12-30-2020
DRAFTED BY:	JGD
DESIGNED BY:	TVB
CHECKED BY:	MHL
NOT VALID WITHOUT SEAL	

NOT VALID WITHOUT SEA

Attachment B

FDOT Traffic Counts Data
Maximum Service Volumes
Trends Analysis

COUNTY: 74
STATION: 9120
DESCRIPTION: S 14TH ST, 350 FT N OF SR-108/SADLER RD
START DATE: 06/06/2019
START TIME: 0000

TIME	DIRECTION: N					DIRECTION: S					COMBINED TOTAL	
	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL		
0000	12	11	13	2	38	12	12	7	12	43	81	
0100	9	5	2	8	24	9	7	5	7	28	52	
0200	6	9	1	5	21	5	7	7	2	21	42	
0300	3	3	4	5	15	5	3	3	7	18	33	
0400	1	3	4	15	23	4	9	12	11	36	59	
0500	4	13	26	42	85	14	11	28	24	77	162	
0600	41	71	78	123	313	38	35	56	77	206	519	
0700	125	136	167	195	623	83	89	91	109	372	995	
0800	174	171	184	194	723	96	125	139	149	509	1232	
0900	173	177	168	198	716	152	165	150	173	640	1356	
1000	187	171	150	197	705	166	167	178	163	674	1379	
1100	193	185	164	183	725	181	193	205	208	787	1512	
1200	181	192	206	198	777	233	212	208	210	863	1640	
1300	191	209	193	204	797	225	194	188	221	828	1625	
1400	161	180	184	199	724	187	230	218	214	849	1573	
1500	202	178	166	169	715	243	259	251	244	997	1712	
1600	168	192	169	175	704	229	228	245	234	936	1640	
1700	160	164	148	152	624	289	274	200	178	941	1565	
1800	139	121	131	128	519	156	167	142	141	606	1125	
1900	109	96	93	77	375	150	115	101	103	469	844	
2000	66	55	62	49	232	110	77	91	68	346	578	
2100	58	47	44	43	192	81	67	53	57	258	450	
2200	28	26	32	25	111	57	34	29	22	142	253	
2300	25	20	18	17	80	38	25	31	15	109	189	
24-HOUR TOTALS:					9861						10755	20616

PEAK VOLUME INFORMATION						
DIRECTION: N			DIRECTION: S		COMBINED DIRECTIONS	
	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
A.M.	830	728	845	616	830	1333
P.M.	1230	804	1630	1042	1445	1712
DAILY	1230	804	1630	1042	1445	1712

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

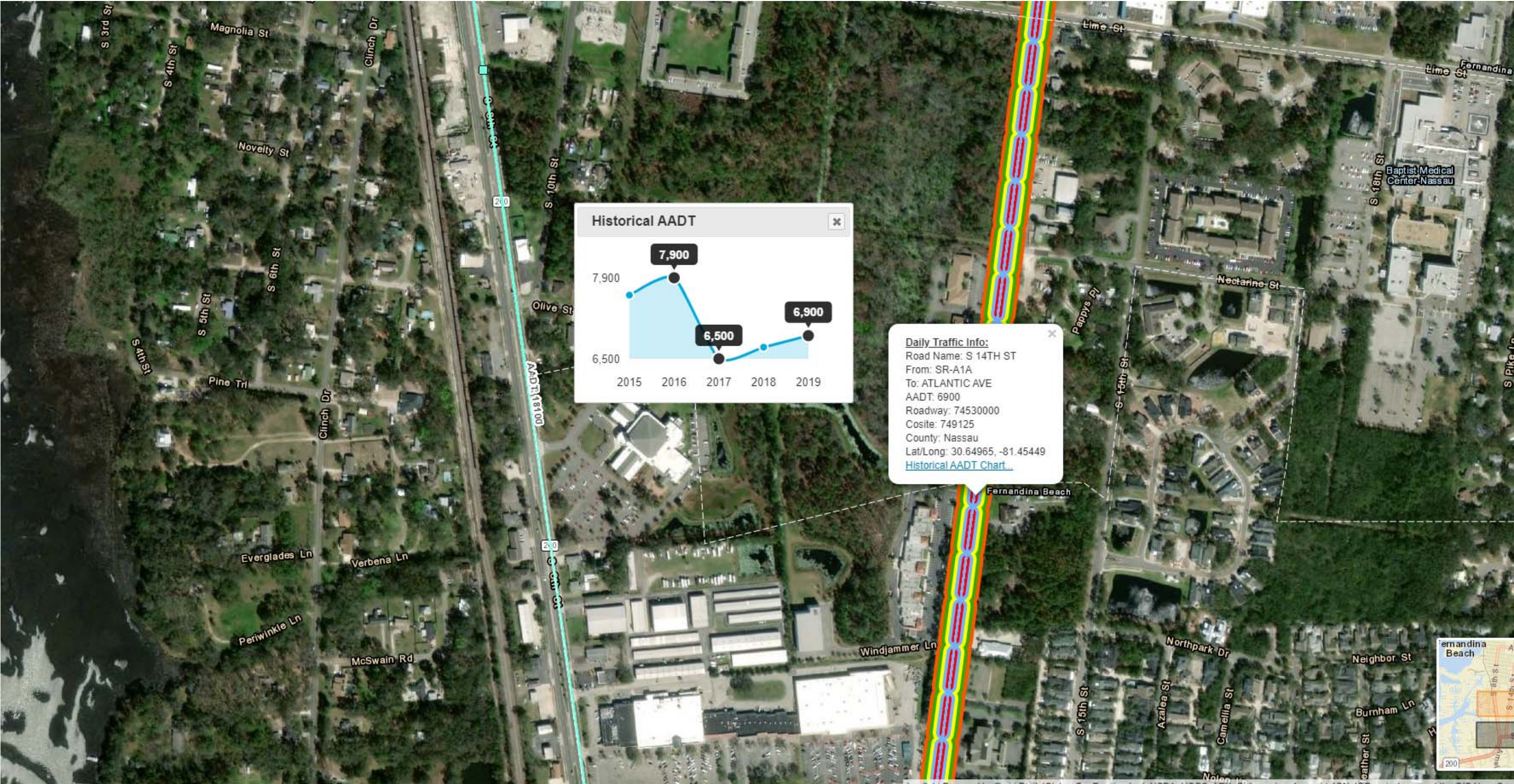
COUNTY: 74 - NASSAU

SITE: 9120 - S 14TH ST, 350 FT N OF SR-108/SADLER RD

YEAR	AADT		DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----	-----	-----	-----	-----
2019	19400 C	N	9400	S 10000	9.00	54.30	3.40
2018	18200 C	N	8800	S 9400	9.00	54.50	4.50
2017	18500 C	N	8900	S 9600	9.00	55.10	4.00
2016	18400 C	N	8900	S 9500	9.00	56.00	5.90
2015	19200 C	N	9200	S 10000	9.00	55.30	3.50
2014	18200 C	N	8900	S 9300	9.00	55.10	4.30
2013	20500 F	N	10000	S 10500	9.00	56.90	4.10
2012	20500 C	N	10000	S 10500	9.00	54.70	4.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

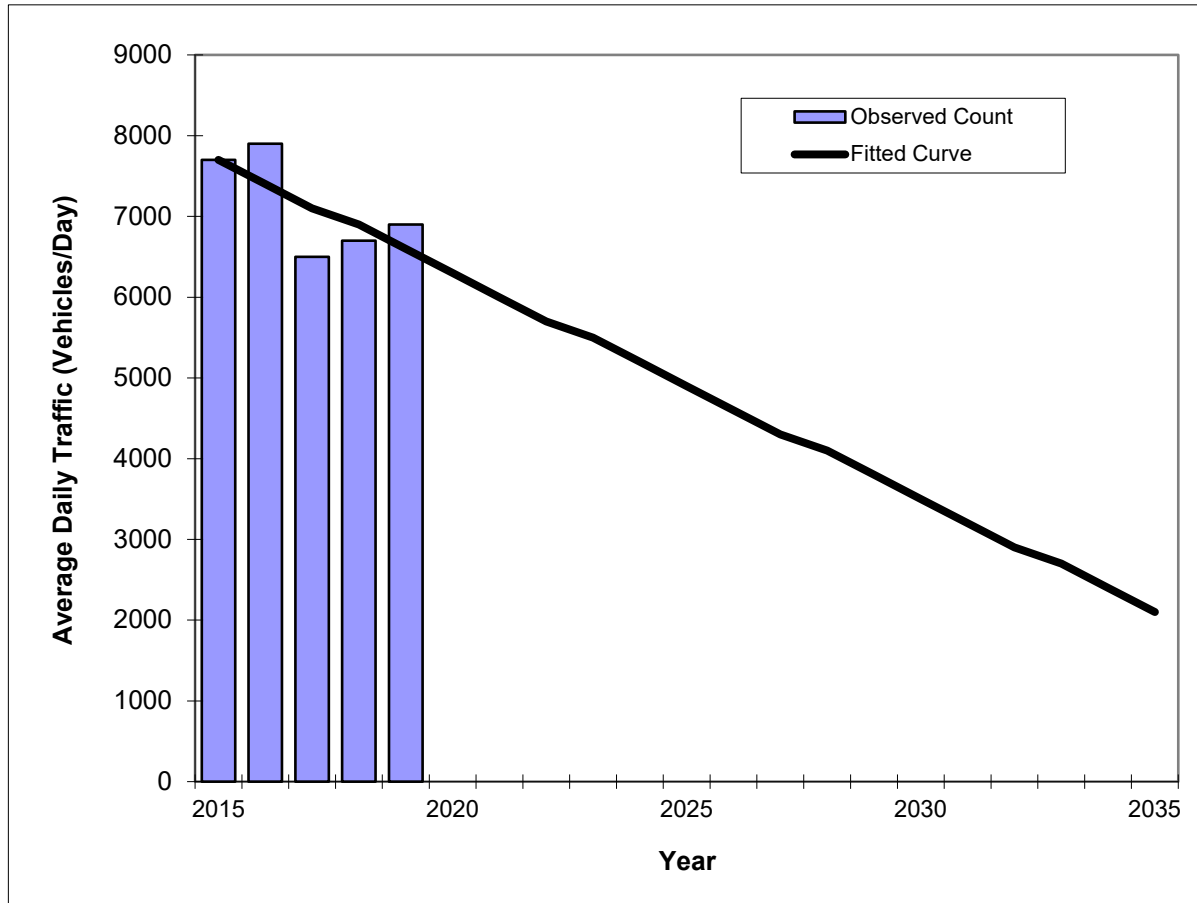


Traffic Trends - V03.a

South 14th Street -- Lime Street to Nectarine Street

FIN#	1234
Location	1

County:	Nassau (74)
Station #:	0
Highway:	South 14th Street



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	7700	7700
2016	7900	7400
2017	6500	7100
2018	6700	6900
2019	6900	6600
2021 Opening Year Trend		
2021	N/A	6000
2022 Mid-Year Trend		
2022	N/A	5700
2023 Design Year Trend		
2023	N/A	5500
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	-280
Trend R-squared:	50.52%
Trend Annual Historic Growth Rate:	-3.57%
Trend Growth Rate (2019 to Design Year):	-4.17%
Printed:	9-Feb-21
Straight Line Growth Option	

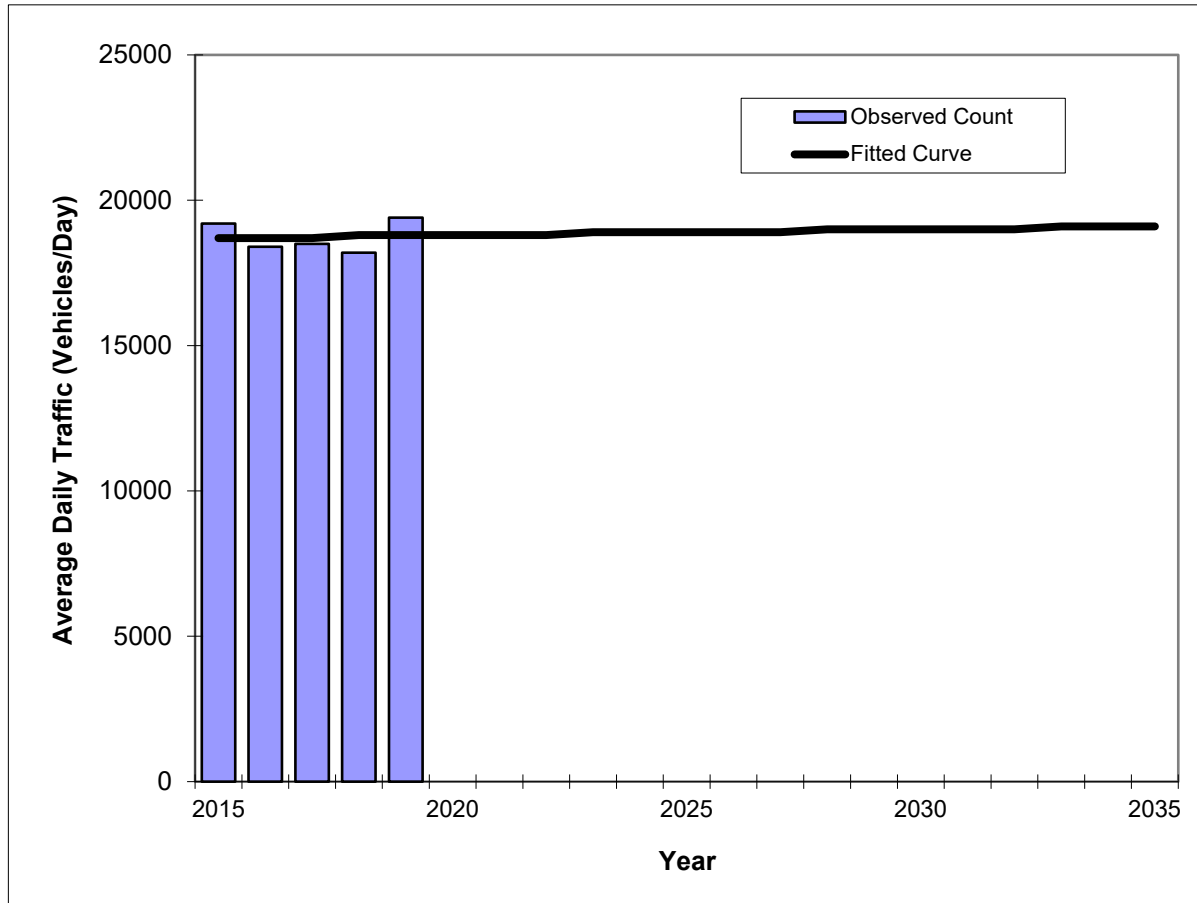
*Axle-Adjusted

Traffic Trends - V03.a

South 14th Street -- Sadler Road to Nectarine Street

FIN#	1234
Location	1

County:	Nassau (74)
Station #:	0
Highway:	South 14th Street



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2015	19200	18700
2016	18400	18700
2017	18500	18700
2018	18200	18800
2019	19400	18800
2021 Opening Year Trend		
2021	N/A	18800
2022 Mid-Year Trend		
2022	N/A	18800
2023 Design Year Trend		
2023	N/A	18900
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	20
Trend R-squared:	0.36%
Trend Annual Historic Growth Rate:	0.13%
Trend Growth Rate (2019 to Design Year):	0.13%
Printed:	9-Feb-21
Straight Line Growth Option	

*Axle-Adjusted

Appendix D
Nassau County Mobility Analysis

Link ID	Roadway	Termini	Lanes/ Classification	Planned and Programmed Improvements	Segment Length (Miles)	LOS Standard	Modified LOS Standard	Table or Study	Max Peak Hour Capacity (Veh./Hr.)	Max Daily Capacity Veh/Day	Modified Daily Capacity Veh/Day	Final Max Daily Capacity Veh/Day	Parallel Roads for Cordon Line Analysis	(L) 24-HR Volume (AADT)	2035 DSAP1 Model AADT	2035 DSAP1 Model AADT < Existing AADT	Adjusted 2035 DSAP1 Model AADT	Year 2035 DSAP1 Model AADT Capacity Exceeded
1	S.R.200/S.R.A1A	Amelia Island Parkway to Sadler Road	4-MA		1.028	D		ART-TAB	4,200	36,700		36,700		32,000	40,459		40,459	Yes
2	S. 8th Street	Sadler Road to Lime Street	4-MA		1.138	D		ART-TAB	3,950	36,700		36,700		16,600	13,871	Yes	16,600	
3	S. 8th Street	Lime Street to Atlantic Avenue	2-MA		1.055	C(FB)		ART-TAB	1,860	16,200		16,200		10,500	12,751		12,751	
4	Atlantic Avenue (S.R.A1A)	8th Street to 14th Street	2-MA		0.444	C(FB)		4-5	1,260	16,500		16,500		5,000	7,072		7,072	
6	Atlantic Avenue (S.R.A1A)	14th Street to Fletcher Avenue	2-MA		1.184	C(FB)		4-5	1,260	16,500		16,500		7,600	6,177	Yes	7,600	
8	Fletcher Avenue (S.R.A1A)	Atlantic Avenue to Sadler Road	2-MA		2.621	C(FB)		4-5	1,260	16,500		16,500		4,700	12,435		12,435	
10	Fletcher Avenue (S.R.A1A)	Sadler Road to Simmons Road	2-MA		1.003	C(FB)		4-5	1,260	16,500		16,500		7,800	12,115		12,115	
11	Fletcher Avenue (S.R.A1A)	Simmons Road to Amelia Island Parkway	2-MA		1.832	C(FB)		4-5	1,260	16,500		16,500		6,600	12,728		12,728	
12	Fletcher Avenue (S.R.A1A)	Amelia Island Parkway to Buccaneer Trail (S.R.105A)	2-MA		0.756	D		4-5	1,490	16,500		16,500		5,200	7,337		7,337	
14	14th Street	Pogy Place to Atlantic Avenue	2-MaG		2.200	D		4-5	720	10,730		10,730		3,200	4,028		4,028	
15	14th Street	Atlantic Avenue to Hickory Street	2-MaG		0.700	D		AHTPLAN	1,130	10,730		10,730		9,097	5,117	Yes	9,097	
16	14th Street	Hickory Street to Jasmine Street	2-MaG		0.170	D		AHTPLAN	1,750	14,850		14,850		12,247	8,359	Yes	12,247	
15A	14th Street	Jasmine Street to Lime Street	2-MaG		0.170	D		AHTPLAN	2,010	14,850		14,850		12,247	7,741	Yes	12,247	
17	14th Street	Lime Street to Sadler Road	4-MaG		1.060	D		4-5	2,810	29,880		29,880		15,008	15,008	Yes	15,008	
18	14th Street	Sadler Road to Amelia Island Parkway	2-MaG		1.110	D		4-5	1,300	13,680		13,680		7,405	10,485		10,485	
19	Amelia Island Parkway	S.R.200/S.R.A1A to 14th Street Extension	2-MaG		1.090	D		AHTPLAN	1,870	15,200		15,200		9,029	14,332		14,332	
20	Amelia Island Parkway	14th Street Extension to Buccaneer Trail (C-105A)	2-MaG		1.090	D		U2LN-TAB	1,660	15,200		15,200		12,885	18,761		18,761	Yes
22	Amelia Island Parkway	Fletcher Avenue to Scott Road	2-MaG		0.980	D		4-5	1,300	13,680		13,680		5,225	10,636		10,636	
22A	Amelia Island Parkway	Scott Road to S.R.A1A/Julia Street	2-MaG		0.095	D		4-5	1,300	13,680		13,680		5,101	6,793		6,793	
23	Buccaneer Trail (C-105A)	Canopy Drive to Amelia Island Parkway	2-MaG		0.720	D		4-5	1,300	13,680		13,680		8,100	9,925		9,925	
24	Amelia Road	Amelia Island Parkway to S.R.200	2-MaG		1.420	D		4-5	720	7,740		7,740	Not in the model	1,140			1,140	
26	First Coast Highway (S.R.A1A)	Garbing HD/JS. Fletcher AV. to Amelia Island Pkwy/Julia St.	2-MA		1.301	D		U2LN-TAB	1,910	16,400		16,400		10,500	18,280		18,280	Yes
27	First Coast Highway (S.R.A1A)	Amelia Island Parkway/Julia Street to Beach Lagoon Road	2-MA		1.591	D		4-5	1,490	24,265		24,265		9,645	22,439		22,439	
28	First Coast Highway (S.R.A1A)	Beach Lagoon Road to Nassau Sound	2-MA		2.631	D		4-5	1,490	21,100		21,100		3,700	13,328		13,328	
29	Sadler Road	8th Street to 14th Street	4-MaG		0.290	D		4-5	2,810	29,200		29,200		20,105	29,653		29,653	
30	Sadler Road	14th Street to Fletcher Avenue	4-MaG		1.000	D		4-5	2,810	29,200		29,200		10,154	12,310		12,310	
31	Lime Street (Jasmine in Model)	8th Street to 14th Street	2-MaG		0.490	D		4-5	720	7,740		7,740		2,583	Not in the model		2,583	
32	Lime Street (Jasmine in Model)	14th Street to Citrona Drive	2-MaG		0.440	D		4-5	720	7,740		7,740		3,665	Not in the model		3,665	
33	Citrona Drive	Atlantic Avenue to Jasmine Street	2-MaG		0.881	D		4-5	720	7,740		7,740		3,510	6,988		6,988	
34	Citrona Drive	Jasmine Street to Sadler Road	2-MaG		1.167	D		4-5	900	9,880		9,880		5,044	9,323		9,323	
35	Will Hardie Road	Sadler Road to Simmons Road	2-MaG		1.160	D		4-5	900	9,880		9,880		2,170	8,239		8,239	
36	Simmons Road	Amelia Road to Will Hardie Road	2-MaG		0.530	D		4-5	720	7,740		7,740		2,226	8,777	Yes	8,777	
37	Simmons Road	Will Hardie Road to Fletcher Avenue	2-MaG		0.520	D		4-5	720	7,740		7,740		2,245	2,305		2,305	
38	Jasmine Street	14th Street to Citrona Drive	2-MaG		1.200	D		4-5	720	7,740		7,740		3,621	4,246		4,246	
39	T. J. Courson Road	8th Street (S.R.200) to 14th Street	2-MaG		0.240	D		4-5	900	9,880		9,880		5,025	Not in the model		5,025	
40	I-95	Duval County Line to S.R.200/S.R.A1A	6-F		2.990	C	D	4-5	8,110	86,600	110,000	110,000		59,000	138,451		138,451	Yes
41	I-95	S.R.200/S.R.A1A to U.S.17	6-F		5.140	C	D	4-5	8,110	86,600	110,000	110,000		49,500	120,262		120,262	Yes
42	I-95	U.S.17 to Georgia State Line	6-F		4.100	C	D	4-5	8,110	86,600	110,000	110,000		36,251	96,986		96,986	
43	S.R.200/S.R.A1A	Griffin Road to Edwards Road	4-PA		8.754	C		4-5	4,190	43,400	58,800	58,800		9,100	39,718		39,718	
43A	S.R.200/S.R.A1A	Edwards Road to I-95	4-PA		1.582	C		4-5	4,190	43,400	58,800	58,800		9,100	49,467		49,467	
44	S.R.200/S.R.A1A	I-95 eastbound off ramp to Still Quarters Road	4-MA	6 MA	2.320	C	D	PDOT	4,360	45,400	55,300	55,300	Parallel Roads	17,336	55,700		55,700	
44A	S.R.200/S.R.A1A	Still Quarters Road to U.S.17	6-MA	6 MA	1.310	D	D	4	5,628	36,700	55,300	55,300	Parallel Roads	17,336	55,502		55,502	
45	S.R.200/S.R.A1A	U.S.17 to Robin Lane	6-MA	6 MA	0.951	D	D	4	5,628	36,700	55,300	55,300	Parallel Roads	36,500	62,225		62,225	
45A	S.R.200/S.R.A1A	Robin Lane to Chester Road	4-MA	6 MA	2.600	D	D	AHTPLAN	5,370	36,700	55,300	55,300	Parallel Roads	35,000	67,124		67,124	
46	S.R.200/S.R.A1A	U.S.17 to Chester Road	4-MA	6 MA	2.600	D	D	4	5,370	36,700	55,300	55,300	Parallel Roads	35,000	67,124		67,124	
48	S.R.200/S.R.A1A	Old Nassauville Road to Amelia Island Parkway	4-MA		2.889	D		AHTPLAN	5,090	64,300		64,300		40,500	53,983		53,983	
49	C.R.200A (Pages Dairy Road)	U.S.17 to Chester Road	2-MaG		3.940	D		4-5	1,300	13,680		13,680	Parallel Roads	3,604	11,056		11,056	
50	C.R.107N. (Blackrock Road)	Chester Road to S.R.200/S.R.A1A	2-MaG		5.130	D		4-5	900	9,880		9,880		2,700	2,602	Yes	2,700	
51	C.R.107S. (Old Nassauville Road)	S.R.200/S.R.A1A to Amelia Concourse	2-MaG		1.910	D		4-5	1,490	15,200		15,200		6,403	9,617		9,617	
51A	C.R.107S. (Old Nassauville Road)	Amelia Concourse to Santa Juanita Road	2-MaG		1.750	D		4-5	1,490	15,200		15,200		6,730	9,470		9,470	
51B	Rosers Bluff Road	Chester Road West	2-MaG		1.170	D		4-5	900	9,880		9,880		1,597	0	Yes	1,597	
52	Chester Road	S.R.200/S.R.A1A to Pages Dairy Road (C.R.200A)	4-MaG		0.440	D	D	5	3,115	32,110	36,700	36,700		7,501	5,530	Yes	7,501	
52.1	Chester Road	Pages Dairy Road to CR 108 Extension	2-MaG	4-MaG	1.883	D	D	5	3,115	15,200	36,700	36,700		6,637	6,518	Yes	6,637	
53	Chester Road	CR 108 Extension to Blackrock Road	2-MaG		1.387	D	D	5	1,480	15,200	16,500	16,500		6,637	2,837	Yes	6,637	
54	Blackrock Road	S.R.200/S.R.A1A to Oyster Bay Drive	2-MaG		2.250	D		4-5	900	9,880		9,880		3,251	5,247		5,247	
54A	Blackrock Road	Blackrock Road to S.R.200/S.R.A1A	2-MaG		2.570	D		4-5	900	13,680		13,680	Parallel Roads	7,070	10,295		10,295	
55	U.S.17 (S.R.5)	Duval County Line to 44-Lanes Section	2-PA		3.357	D		AHTPLAN	1,300	27,430		27,430		11,057	26,165		26,165	
56	U.S.17 (S.R.5)	44-Lanes Section to S.R.200/S.R.A1A	2-PA		0.690	D		HIGHPLAN	1,830	36,700		36,700	Parallel Roads	10,000	18,343		18,343	
57	U.S.17 (S.R.5)	S.R.200/S.R.A1A to Pages Dairy Road	4-PA		0.237	D		4-5	3,290	36,700		36,700		10,800	12,870		12,870	
58	U.S.17 (S.R.5)	Pages Dairy Road to C.R.108	2-PA		4.446	D		HIGHPLAN	1,960	16,500		16,500		11,049	15,669		15,669	
59	U.S.17 (S.R.5)	C.R.108 to I-95	2-MA		2.228	D		4-5	1,490	21,100		21,100		7,589	7,462	Yes	7,589	
60	U.S.17 (S.R.5)	I-95 to Georgia State Line	2-PA		2.427	D		4-6	1,930	21,100		21,100		3,000	10,260		10,260	
60A	Harris Road	S.R.200/S.R.A1A to U.S.17	2-MaG		2.350	D		4-5	900	9,880		9,880		1,508	8,514		8,514	
60B	Harris Road	U.S.17 to Blackrock Road	2-MaG		1.993	D		4-5	900	9,880		9,880		3,765	6,514		6,514	
61	C.R.108	Middle Road (C.R.121A) to U.S.17 (S.R.5)	2-MaG		3.008	D		4-5	1,190	20,000		20,000		2,536	6,238		6,238	
62	William Burgess Boulevard	S.R.200/S.R.A1A to U.S.17	2-MaG		2.010	D		4-5	1,300	13,680		13,680		1,163	3,729		3,729	
63	U.S.17/U.S.29/U.S.301 (S.R.15)	Musell White Road to C.R.108	4-PA		8.932	C		4-6	4,000	41,100		41,100		13,400	26,377		26,377	
64	U.S.17/U.S.29/U.S.301 (S.R.15)	C.R.108 to C.R.121	4-PA		6.788	C		4-6	4,000	41,100		41,100		11,100	21,789		21,789	
65	U.S.17/U.S.29/U.S.301 (S.R.15)	C.R.121 to Georgia State Line	4-PA		0.164	C		4-6	4,000	41,100		41,100		8,864	16,034		16,034	
66	C.R.121	C.R.108/C.R.121 Split to Hay Road (C.H.115)	2-MaG		9.560	D		4-6	1,190	13,800		13,800		423	2,291		2,291	
67	C.R.121	C.H.115 (Hay Road) to Andrews Road	2-MaG		3.493	D		4-6	1,190	13,800		13,800		875	1,507		1,507	
68	C.R.121	Andrews Road to U.S.17/U.S.301	2-MaG		3.553	D		4-6	1,190	13,800		13,800		1,146	1,513		1,513	
69	C.H.115 (Hay Road)	C.H.121 to C.H.108	2-MaG		5.970	D		4-6	1,190	13,800		13,800		1,479	3,074		3,074	
70	Kings Ferry Rd. (C.R.115A)	C.R.108 to Kings Ferry Road	2-MaG		8.020	D		4-6	1,190	13,800		13,800		1,169	1,184		1,184	
71	C.R.108	C.R.121 to C.R.115 (Hay Road)	2-MaG		1.530	D		4-6	1,190	13,800		13,800		1,032	2,202		2,202	

Appendix D
Nassau County Mobility Analysis

Link ID	Roadway	Termini	Lanes/ Classification	Planned and Programmed Improvements	Segment Length (Miles)	LOS Standard	Modified LOS Standard	Table or Study	Max Peak Hour Capacity (Veh./Hr.)	Max Daily Capacity Veh/Day	Modified Daily Capacity Veh/Day		Final Max Daily Capacity Veh/Day	Parallel Roads for Cordon Line Analysis	(L) 24-HR Volume (AADT)	2035 DSAP1 Model AADT	2035 DSAP1 Model AADT < Existing AADT	Adjusted 2035 DSAP1 Model AADT	Year 2035 DSAP1 Model AADT Capacity Exceeded
73	Middle Road (C.R.121A)	C.R.108 to Griffin Road	2-MIG		4,580	D		4-6	1,190	13,800			13,800		528	877		877	
74	Leisure Road	C.R.108 to Middle Road (C.R.121A)	2-MIG		7,500	D		4-6	1,190	13,800			13,800		427	4	Yes	427	
75	C.R.115 (Old Dixie Highway)	U.S.1/U.S.23/U.S.301 to Henry Smith Road	2-MIG		8,560	D		4-6	1,190	13,800			13,800		1,054	10,325		10,325	
76	Andrews Road	C.R.121 to U.S.1/U.S.23/U.S.301	2-MIG		3,180	D		4-6	1,190	13,800			13,800		1,072	2,320		2,320	
76A	Lake Hampton Road	U.S.1 to Murren Road	2-MIG		3,300	D		4-6	1,190	13,800			13,800		720	764		764	
77	U.S.1/U.S.23/S.R.15	Duval County Line to Ratliff Road	4-PA		0,552	C		4-6	4,000	41,100			41,100	Parallel Roads	16,500	29,569		29,569	
78	U.S.1/U.S.23/S.R.15	Ratliff Road to S.R.115 (Lem Turner Road)	4-PA		3,814	C		4-6	4,000	41,100			41,100	Parallel Roads	13,000	32,380		32,380	
79	U.S.1/U.S.23/U.S.301/S.R.15	S.R.115 (Lem Turner Road) to Old Dixie Highway (C.R.115)	4-PA		0,956	C		4-6	4,000	41,100			41,100		15,900	37,022		37,022	
80	U.S.1/U.S.23/U.S.301/S.R.15	C.R.115 to Murren White Road	4-PA		1,315	C		4-6	4,000	41,100			41,100		14,700	30,918		30,918	
81A	Griffin Road East	A1A to Bridge	2-MIG		2,500	D		4-5	900	9,880			9,880		952	5,224		5,224	
81B	Griffin Road West	Bridge to Murren White Road	2-MIG		1,700	D		4-5	900	9,880			9,880		907	5,218		5,218	
82	S.R.200/U.S.301	Duval County Line to C.R.119	2-PA	4 PA	1,800	C	D	4-5	1,130	15,100	45,400		45,400		4,270	45,782		45,782	
83	S.R.200/U.S.301	C.R.119 to Crawford Road	2-PA	4 PA	9,305	C	D	4-5	1,130	15,100	45,400		45,400		5,530	47,538		47,538	
84	S.R.200/U.S.301	Crawford Road to Kingbird Drive	2-PA	4 PA	2,943	C	D	4-5	1,130	15,100	45,400		45,400		5,500	38,711		38,711	
85	S.R.200/U.S.301	Kingbird Drive to U.S.1/U.S.23	4-PA		2,000	C	D	4-5	3,150	32,100	33,800		33,800		6,500	34,714		34,714	Yes
86	S.R.200/S.R.1A	U.S.1/U.S.23 to Evelyn Street	4-PA		0,700	C	D	4-5	3,150	32,100	33,800		33,800		19,700	31,279		31,279	
87	S.R.200/S.R.1A	Evelyn Street to Griffin Road	4-PA		3,600	C		4-5	4,190	43,400			43,400		9,100	38,117		38,117	
88	S.R.115 (Lem Turner Road)	Duval County Line to Church Road	2-MA		4,321	D		4-5	1,480	15,200			15,200	Parallel Roads	9,705	18,855		18,855	
89	S.R.115 (Lem Turner Road)	Church Road to U.S.1/U.S.23	2-MA		3,117	D		4-5	1,480	15,200			15,200	Parallel Roads	7,400	16,727		16,727	
90	C.R.121	Duval County Line to C.R.119	2-MIG		7,070	D		4-6	1,190	13,800			13,800		1,403	6,407		6,407	
91	C.R.121	C.R.119 to C.R.2 (Crawford Road)	2-MIG		7,960	D		4-6	1,190	13,800			13,800		1,564	5,698		5,698	
92	C.R.121	C.R.2 (Crawford Road) to C.R.108 (River Road)	2-MIG		9,550	D		4-6	1,190	13,800			13,800		2,209	5,091		5,091	
93	C.R.121	C.R.108 (River Road) to C.R.108/C.R.121 Split	2-MIG		1,288	D		4-6	1,190	13,800			13,800		1,518	4,360		4,360	
94	C.R.119	U.S.301 to C.R.121	2-MIG		5,950	D		4-6	1,190	13,800			13,800		1,300	2,294		2,294	
95	C.R.108 (River Road)	C.R.121 to U.S.1	2-MIG		11,000	D		4-6	1,190	14,200			14,200		3,297	6,923		6,923	
96	Hore Road	U.S.301 to Duval County Line	2-MIG		3,310	D		4-6	1,190	14,200			14,200		1,277	4,088		4,088	
97	Ratliff Road	Thomas Creek Road to U.S.1	2-MIG		3,790	D		4-6	1,190	14,200			14,200		1,322	7,188		7,188	
98	C.R.2	C.R.121 to Georgia State Line	2-MIG		1,500	D		4-6	1,190	14,200			14,200		2,985	3,025		3,025	
99	Crawford Road	U.S.301 to C.R.121	2-MIG		7,330	D		4-6	1,190	14,200			14,200		166	1,988		1,988	
100	8th Street	Alachua Street to Port	2-MA		0,456	C		4-5	670	7,740			7,740		3,800	1,452	Yes	3,800	
101	8th Street	Atlantic to Alachua Street	2-MA		0,084	C		4-5	670	7,740			7,740		4,500	1,452	Yes	4,500	
102	Alachua Street	Front Street to 8th Street	2-MIG		0,350	C		4-5	670	7,740			7,740	Parallel Roads	1,804	Not in the model		1,804	
103	Cornie Street	Front Street to 8th Street	2-MIG		0,358	C		4-5	670	7,740			7,740	Parallel Roads	3,538	12,349		12,349	
104	Ash Street	Front Street to 8th Street	2-MIG		0,364	C		4-5	670	7,740			7,740	Parallel Roads	2,218	Not in the model		2,218	
105	N. Fletcher	1st Street North	2-MIG		1,337	C		4-5	670	7,740			7,740		1,486	8,472		8,472	Yes
106	N. Fletcher	Atlantic Avenue to 1st Street	2-MIG		0,174	C		4-5	670	7,740			7,740		1,579	8,225		8,225	Yes
107	Beach Street	14th Street to Citrona Drive	2-MIG		0,480	C		4-5	670	7,740			7,740		2,239	Not in the model		2,239	
108	Beach Street	8th Street to 14th Street	2-MIG		0,446	C		4-5	670	7,740			7,740		1,229	Not in the model		1,229	
109	Gum Street	3rd Street to 8th Street	2-MIG		0,050	C		4-5	670	7,740			7,740		2,027	Not in the model		2,027	
110	3rd Street	Gum Street to Ash Street	2-MIG		0,335	C		4-5	670	7,740			7,740		911	Not in the model		911	
111	Jasmine Street	Citrona Drive to S. Fletcher Avenue	2-MIG		0,722	C		4-5	670	7,740			7,740		2,300	1,509	Yes	2,300	
117	SR 90 (Heaver Street)	Basler County Line to Duval County Line	2-MIG			D		4-6	1,340	13,800			13,800		4,500	15,952		15,952	Yes
118	I-10	Baker County Line to Duval County Line	4-F			B		4-6	3,670	37,100			37,100		3,150	82,076		82,076	Yes
	NS Regional Center Arterial	SR A1A to DSAP Collector Loop Rd.	4D	4D						36,700	36,700		36,700			8489		8,489	
	NS Regional Center Arterial	DSAP Collector Loop Rd. to Interchange Hd.	4D	4D						36,700	36,700		36,700			2,617		2,617	
	NS Regional Center Arterial	Interchange Rd. to CR 108	4D	4D						36,700	36,700		36,700			2,107		2,107	
	NS Regional Center Arterial	CR 108 to US 17	4D	4D						36,700	36,700		36,700			69		69	
	Interchange Rd.	SRs to NS Regional Center Arterial	4D (2)	4D (2)						55,300	55,300		55,300	Parallel Roads		29,432		29,432	
	Interchange Rd.	NS Regional Center Arterial to US 17	4D	4D						36,700	36,700		36,700	Parallel Roads		16,576		16,576	
	Interchange Hd.	US 17 to CR 108	4D	4D						36,700	36,700		36,700			0		0	
	DSAP Collector Loop Hd.	NS Regional Center Arterial to Interchange Hd.	2U	2U						16,500	16,500		16,500			9,779		9,779	
	DSAP Collector (A1A Connector)	SR A1A to DSAP Collector Loop Rd.	2U	2U						16,500	16,500		16,500			7,693		7,693	
	CR 108 Extension	Interchange Rd. to US 17	2U	2U	1,700	D				16,500	16,500		16,500	Parallel Roads		0		0	
	CR 108 Extension	Chester Rd. to Interchange Rd.	2U	2U	3,300	D				16,500	16,500		16,500	Parallel Roads		0		0	
	Radio Avenue	Miner Road to US 17	2U	2U		D				16,500	16,500		16,500	Parallel Roads		11,690		11,690	

**Generalized Annual Average Daily Volumes for Florida's
TABLE 2 Transitioning Areas and
Areas Over 5,000 Not In Urbanized Areas¹**

12/18/12

INTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS					
Class I (40 mph or higher posted speed limit)					
Lanes	Median	B	C	D	E
2	Undivided	*	14,400	16,200	**
4	Divided	*	34,000	35,500	**
6	Divided	*	52,100	53,500	**
Class II (35 mph or slower posted speed limit)					
Lanes	Median	B	C	D	E
2	Undivided	*	6,500	13,300	14,200
4	Divided	*	9,900	28,800	31,600
6	Divided	*	16,000	44,900	47,600
Non-State Signalized Roadway Adjustments					
(Alter corresponding state volumes by the indicated percent.)					
Non-State Signalized Roadways - 10%					
Median & Turn Lane Adjustments					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors	
2	Divided	Yes	No	+5%	
2	Undivided	No	No	-20%	
Multi	Undivided	Yes	No	-5%	
Multi	Undivided	No	No	-25%	
—	—	—	Yes	+ 5%	
One-Way Facility Adjustment					
Multiply the corresponding two-directional volumes in this table by 0.6					

UNINTERRUPTED FLOW FACILITIES					
FREEWAYS					
Lanes	B	C	D	E	
4	44,100	57,600	68,900	71,700	
6	65,100	85,600	102,200	111,000	
8	85,100	113,700	135,200	150,000	
10	106,200	141,700	168,800	189,000	
Freeway Adjustments					
Auxiliary Lanes Present in Both Directions + 20,000			Ramp Metering + 5%		

UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	B	C	D	E
2	Undivided	9,200	17,300	24,400	33,300
4	Divided	35,300	49,600	62,900	69,600
6	Divided	52,800	74,500	94,300	104,500
Uninterrupted Flow Highway Adjustments					
Lanes	Median	Exclusive left lanes	Adjustment factors		
2	Divided	Yes	+5%		
Multi	Undivided	Yes	-5%		
Multi	Undivided	No	-25%		

BICYCLE MODE²

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,600	6,100	19,500
50-84%	1,900	5,500	18,400	>19,500
85-100%	7,500	19,500	>19,500	**

PEDESTRIAN MODE²

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,400
50-84%	*	1,600	8,600	15,600
85-100%	3,800	10,500	17,100	>19,500

BUS MODE (Scheduled Fixed Route)³

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

¹Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 2
(continued)

Generalized **Annual Average Daily** Volumes for Florida's
Transitioning and
Areas Over 5,000 Not In Urbanized Areas

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (t,uo)	t	t	t	t	t	t	t	t	t
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n	n	n						
Median (n, nr, r)		n	r	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	8	5	5	1.8	2	2	2	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Local adjustment factor	0.85	0.97	0.95						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n
LEVEL OF SERVICE THRESHOLDS									
Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus	
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.	
		%ffs	Density	ats	ats				
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6	
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4	
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3	
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2	

% ffs = Percent free flow speed ats = Average travel speed

Attachment C

FDOT Right Turn Lane Criteria and Guidance

Chapter 6: Turn Lanes and U-Turns

6.1 Overview

For driveways, medians and median openings, the placement and design of turn lanes and U-turns are critical to avoid potential traffic safety issues. For example, a median opening placed across a left-turn lane at an intersection could create conditions leading to a vehicular crash (See [Figure 16](#) or [Figure 17](#)). The locating of these roadway openings is discussed in greater detail in [Locating Roadway Openings](#). This chapter will instead focus on where to locate and design turn lanes and U-turns and how they relate to driveways, medians and median openings.

6.2 Exclusive Right-Turn Lanes

Exclusive right-turn lanes are useful where a combination of high roadway speeds, and high right-turn volumes into a driveway are expected. Congestion on the roadway may also be a good reason to use an exclusive right-turn lane. If properly built, they remove the turning vehicle from the through lanes, thereby decreasing the operational and safety impact of right turning vehicles on the through traffic.

Previous requirements in Standard Index 301 were removed and placed into [FDM 212 – Intersections](#). There is no specific guidance on warrants for right-turn lanes based on number of turns in and out of unsignalized driveways, but the guidelines in this chapter were developed to assist in the decision-making process. *FDM 212* does contain the standards needed to design right-turn lanes.

6.2.1 When to Consider Exclusive Right-Turn Lanes

Here are some additional situations when adding an exclusive right-turn lane may be required:

- Facilities having a high volume of buses, trucks or trailers (2 or 3 per hour)
- Poor internal site design of a driveway facility causing potential backups in the through lanes
- Heavier than normal peak flows on the main roadway
- Very high operating speeds (such as 55 mph or above) and in rural locations where turns are not expected by through drivers
- Highways with curves or hills where sight distance is impacted
- Gated entrances
- Crash experience, especially rear end collisions
- Intersections or driveways just after signalized intersections where acceleration or driver expectancy would make a separate right-turn lane desirable
- Severe skewed angle of intersection requiring right-turn vehicle to slow greatly

When Not to Consider Exclusive Right-Turn Lanes

- Dense or built-out corridors with limited space
- Right-turn lane that would negatively impact pedestrians or bicyclists
- Vehicular movements from driveways or median openings that cross the right-turn lane resulting in multiple threat crashes
- Context classifications C2T, C4, C5, or C6

When Exclusive Right-Turn Lanes are Beneficial

There are instances when adding an exclusive right-turn lane for unsignalized driveways are beneficial to traffic operations and safety. **Table 27** provides some guidance for this situation based on the speed limit of the roadway and how many right turns occur per hour. Locations where the Auto and Truck Modal Emphasis is "High" may be appropriate for consideration of Exclusive Right Turn Lanes.

Table 27 – Recommended Guidelines for Exclusive Right-Turn Lanes to Unsignalized Driveway¹⁰

Roadway Posted Speed Limit	Number of Right Turns Per Hour
45 mph or less	80 – 125 ¹
Over 45 mph	35 – 55 ²
<i>Note: A posted speed limit of 45 mph may be used with these thresholds if the operating speeds are known to be over 45 mph during the time of peak right turn demand.</i>	
<i>Note on traffic projections: Projecting turning volumes is, at best, a knowledgeable estimate. Keep this in mind especially if the projections of right turns are close to meeting the guidelines. In that case, consider requiring the turn lane.</i>	
¹ The lower threshold of 80 right-turn vehicles per hour would be most used for higher volume (greater than 600 vehicles per hour, per lane in one direction on the major roadway) or two-lane roads where lateral movement is restricted. The 125 right-turn vehicles per hour upper threshold would be most appropriate on lower volume roadways, multilane highways, or driveways with a large entry radius (50 feet or greater).	
² The lower threshold of 35 right-turn vehicles per hour would be most appropriately used on higher volume two-lane roadways where lateral movement is restricted. The 55 right-turn vehicles per hour upper threshold would be most appropriate on lower volume roadways, multilane highways, or driveways with large entry radius (50 feet or greater).	

Source: [*NCHRP Report 420 \(Impacts of Access Management Techniques\)*](#)

These recommendations are primarily based on the research done in [*NCHRP Report 420, Impacts of Access Management Techniques, Chapter 4 – Unsignalized Access Spacing \(Technique 1B\)*](#), and [*Use of Speed Differential as a Measure to Evaluate the Need for Right-Turn Deceleration Lane at Unsignalized Intersections*](#).

In the *NCHRP Report 420*, the observed high-speed roads, 30 to 40 right-turn vehicles per hour caused evasive maneuvers on 5 - 10 percent of the following through vehicles. For lower speed roadways, 80 to 110 right-turn vehicles caused 15 - 20 percent of the following through vehicles to make evasive maneuvers. The choice of acceptable percentages of through vehicles impacted is a decision based on reasonable expectations of the different roadways.

In this study, by modeling speed differentials, a better understanding of the impacts of through volume and driveway radius was discovered.

¹⁰ May not be appropriate for signalized locations where signal phasing plays an important role in determining the need for right turn lanes.



Drainage Analysis and Stormwater Management Plan for 1505 S. 15th Street Offices

Prepared for:

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**City of Fernandina Beach, Florida
St. Johns River Water Management District**

Initial Issue: October 14, 2025

Project # 23-21

Matthew Lahti, PE
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Teresa V. Benton, PE
Project Engineer, FL#56987

Gulfstream Design Group, LLC

Digitally
signed by
Matthew Lahti,
P.E. FL#71395
Date:
2025.10.15
14:28:36
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This item has been digitally signed and sealed by Matthew H. Lahti, 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.

Table of Contents

1.0 Introduction.....	1
1.1 Background.....	1
1.2 Stormwater Management Facility Design Criteria	1
1.2.1 SJRWMD Design Criteria	1
1.2.2 City of Fernandina Beach Design Criteria	2
2.0 Pre-Developed Hydrologic Conditions	3
2.1 Existing Site Conditions	3
2.2 Soils	3
2.3 FEMA Flood Map Review.....	3
2.4 Pre-Developed Basin Characteristics.....	4
3.0 Post-Developed Hydrologic Conditions	5
3.1 Post Developed Basin Description.....	5
3.2 Post-Developed Basin Characteristics	6
4.0 Study Results	8
4.1 Detention Requirements.....	8
4.2 StormWise Model Results	8
4.3 PONDS Recovery Results	9
5.0 Stormwater Management Design.....	10
5.1 Stormwater Conveyance Systems.....	10
5.2 Water Quality Structures.....	10
5.3 Sedimentation and Erosion Control Measures.....	10

ATTACHMENT A – MAPS

Location Map
Aerial Map
Flood map
Pre-Development and Post Development
Drainage Maps

ATTACHMENT B – REFERENCE MATERIAL

ATTACHMENT C – GEOTECHNICAL REPORT AGES of Jax, Inc. (3/9/21)

ATTACHMENT D - CALCULATIONS

Time of Concentration
Pre-Developed Drainage Characteristics
Post-Developed Drainage Characteristics
Treatment Volume Calculations
Recovery Calculations

ATTACHMENT E – MODEL RESULTS

StormWise Input & Results
PONDS Input & Results

1.0 Introduction

1.1 Background

This report describes the stormwater treatment system for the proposed Office Complex at 1505 South 15th Street, Fernandina Beach, Florida. The proposed development will accommodate three (3) buildings with associated infrastructure. The project is located on several parcels consisting of 3.89 acres on the south side of Nectarine Street between South 14th Street and South 15th Street, in Fernandina Beach, Florida. Specifically, the development includes the following Parcel IDs according the Nassau County Property Appraisers Office:

00-00-31-1800-0267-0010
00-00-31-1800-0267-0021
00-00-31-1800-0267-0022
00-00-31-1800-0267-0031
00-00-31-1800-0267-0091
00-00-31-1800-0267-0092
00-00-31-1800-0267-0101
00-00-31-1800-0267-0102

The proposed stormwater treatment will incorporate an exfiltration trench below permeable pavers within the parking lot which will drain to a dry retention facility before discharging to the Nectarine Street right-of-way. The project will be constructed in two phases. The first phase will include a partial stormwater treatment system to treat only that first phase of development. This report analyzes the stormwater treatment system during both the Phase 1 conditions as well as the final buildout conditions to satisfy the requirements of the St. Johns River Water Management District (SJRWMD) Environmental Resource Permit Section E, as well as the City of Fernandina Beach Land Development Code.

See the Vicinity, Aerial, Pre- and Post-Development Maps in Attachment A.

1.2 Stormwater Management Facility Design Criteria

Exfiltration is proposed for the stormwater treatment for this development. Methods obtained from the *Applicants Handbook: Volume II* published by the St. Johns River Water Management District (SJRWMD) June 28, 2024, were used to determine the required treatment volumes and system recovery for the stormwater management facilities, as well as the City of Fernandina Beach requirements.

1.2.1 SJRWMD Design Criteria

In accordance with SJRWMD requirements, this hydrologic analysis is based on the SCS Curve Number methodology. A topographic survey and USGS soil data was used to evaluate the existing conditions for the site. Design rainfall depths were obtained from isopluvial maps published by the SJRWMD (Rao, 1988) for the mean annual, 5- and 25-year, 24-hour storm events. See attached isopluvial maps in Attachment B. The SCS Type II Florida Modified storm was used as the design rainfall distribution.

Hydraulic characteristics of the project areas were studied utilizing hydrodynamic numerical models constructed utilizing Streamline Technology's StormWise model (f.k.a. ICPR) version 4.08.00 software.

1.2.2 City of Fernandina Beach Design Criteria

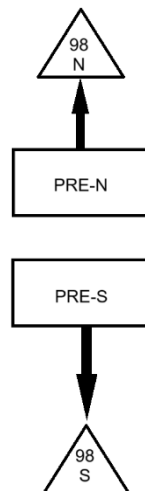
In addition to the storm analyses performed for the SJRWMD submittal, the City of Fernandina Beach requires that stormwater treatment facilities be provided non-linear banks and to demonstrate positive drainage to the ultimate outfalls within drainage easements and/or public rights-of-way.

2.0 Pre-Developed Hydrologic Conditions

2.1 Existing Site Conditions

The property is currently the site of several residential structures as well as open spaces used for outdoor commercial storage. A natural ridge exists near the southern property lines, the areas north of the ridge (Basin “PRE-1”) drain towards the north and west, eventually reaching a drainage pipe at the northwest corner of the property which crosses under South 14th Street. The small area south of the ridge (Basin “PRE-2”) drains to offsite properties that appear to eventually reach a drainage inlet at the southwestern corner of the project and enters to South 14th Street stormwater collection system. The South 14th Street stormwater collection system appear to eventually reach Jackson Creek.

The following diagram depicts the nodal diagram of the proposed pre-developed drainage system and connectivity to the receiving waters. Drainage basins are shown on the Pre-Development Drainage Map in Attachment A.



See the attached USGS map and Pre-Developed Basin Map in Attachment A.

2.2 Soils

Based on the USDA NRCS Soil Survey of Nassau County, Florida, the site has soils that are classified as Echaw Fine Sand, which is classified as Hydrologic Soil Group (HSG) “A”. A site specific Geotechnical Exploration was performed AGES of Jax, Inc., dated March 9, 2021. At the time of the exploration groundwater was encountered at depths ranging 3.4- to 4.2-feet below the ground surface and provide estimated seasonal high groundwater elevations based on the topographic survey. See the attached Geotechnical Report in Attachment B.

2.3 FEMA Flood Map Review

We reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for Fernandina Beach, Florida, for this project. The project area is located on Panel No. 12089C0239G, dated August 2, 2017, which indicates that the project area is located within Flood Zone X.

2.4 Pre-Developed Basin Characteristics

A natural ridge exists near the southern property boundary, the areas north of the ridge (Basin “PRE-1”) drain towards the north and west, eventually reaching a drainage pipe at the northwest corner of the property which crosses under South 14th Street. The small area south of the ridge (Basin “PRE-2”) drains to offsite properties that appear to eventually reach a drainage inlet at the southwestern corner of the project. The existing impervious areas on the site consist of existing residential buildings and storage sheds as well as random concrete pads throughout the site and paved driveways. All other areas of the site are defined as “Open Space” with Fair Cover.

Runoff curve numbers are based on the cover descriptions and hydrologic soil groups of the site. Based on these coefficients and associated areas, composite runoff coefficients were determined. A summary of the pre-developed drainage basin characteristics is presented in the Table 2-1.

Table 2-1: Pre-Developed Area Summary

Basin Description	Area (acres)	Curve Number	Time of Concentration (min)
PRE-1	3.68	52.2	33.6
PRE-2	0.21	50.8	10.0

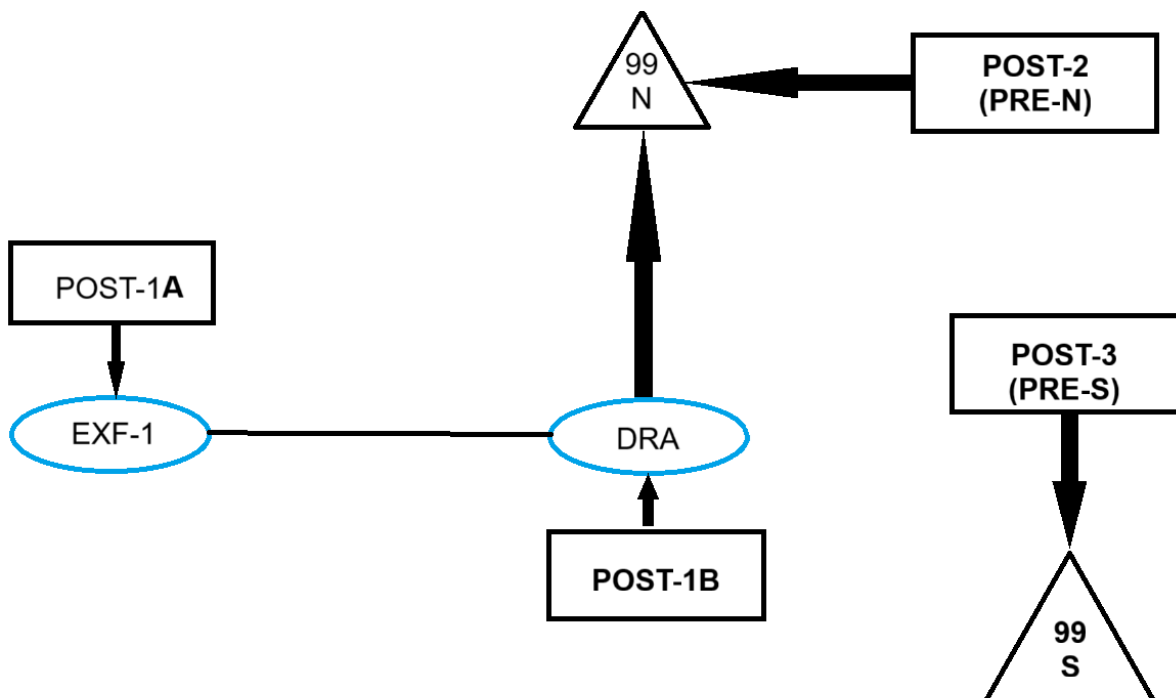
This data was then entered into the Streamline Technology’s StormWise model (f.k.a. CPR) version 4.08.00 software and evaluated by the SCS Method. A model was established with the area, CN, time of concentration, and storage within the isolated wetlands, to evaluate the resulting flows for the entire contributing basins to their respective receiving waters. We evaluated the model for the Mean Annual and 25-Year 24-Hour storm events to meet SJRWMD and City of Fernandina Beach requirements. Pre-Development modeling data is included in Attachment E – Model Results.

3.0 Post-Developed Hydrologic Conditions

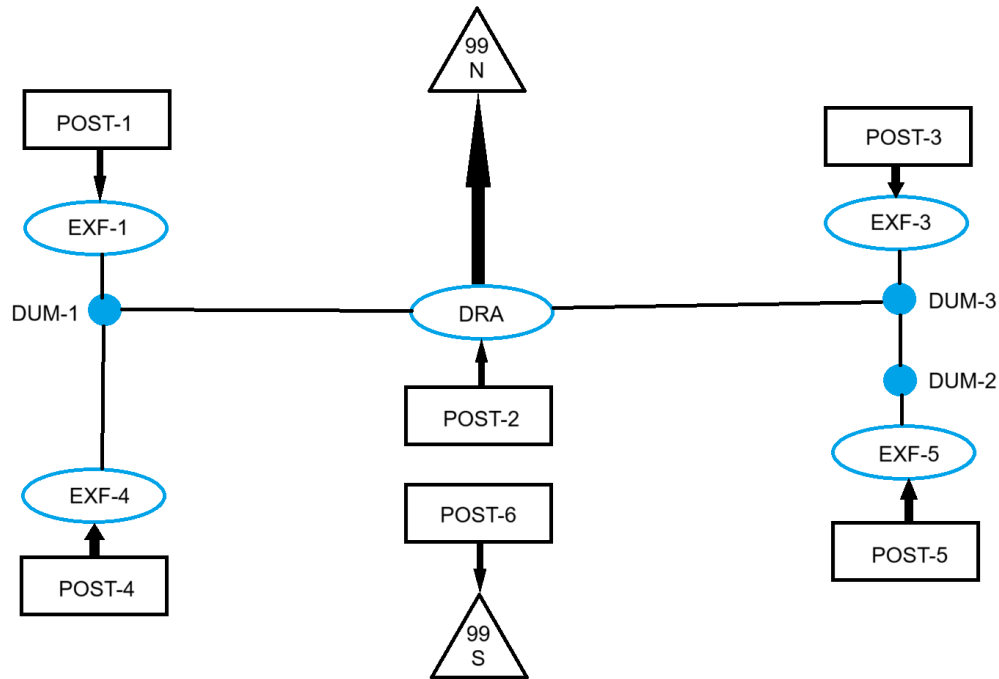
3.1 Post Developed Basin Description

This project includes the construction of three (3) office buildings with associated parking infrastructure. The intent is to construct Building #1 in Phase 1 of construction with only the minimum parking as required by the City and then complete the remainder of the site construction in Phase 2. An analysis of the Phase 1 stormwater system is provided to demonstrate compliance with applicable rules in the interim between construction phases. The tailwater condition for the stormwater system is based on the lowest road elevations at the intersection of Nectarine Street and South 14th Street, elevation 17.10-ft (NAVD 88).

Phase 1 will include an exfiltration trench (“EXF-1”) consisting of a stone section under permeable pavers in the parking areas to provide the required stormwater treatment to support the development of Building #1. The exfiltration trench will connect to a Dry Retention Area (“DRA”) behind Building #1 before discharging to the Nectarine Street right-of-way via a concrete spillway outfall control structure. The following nodal diagram depicts the connectivity of the Phase 1 post-developed drainage system.



Phase 2 will include additional exfiltration trenches (EXF-3, and EXF-4), as well as expansion of the Dry Retention Area. Each exfiltration trench will connect to the Dry Retention Area (DRA). The concrete spillway constructed in Phase 1 will be modified in Phase 2 of construction to include a drop structure. A small area along the southern perimeter of the property will drain south and will not enter the treatment system. The following nodal diagram depicts the connectivity of the drainage system.



3.2 Post-Developed Basin Characteristics

The post-development runoff factors for the contributing areas were determined from the CN values assigned for the delineated land use types (Impervious and Open Space “Good”) for the hydrologic soil group classification “A”. Based on these coefficients and associated areas, composite runoff coefficients were calculated for both Phases 1 and 2 (See Drainage Calculations in Attachment D).

A summary of this data is presented in the Tables 3-1 and 3-2.

Table 3-1: Post-Developed Area Summary – PHASE 1

Sub Basin Description	Area (acres)	Composite Runoff Factor - CN	Time of Concentration (min)
POST-1A	0.71	82.2	10.0
POST-1B	0.94	68.7	10.0
POST-2 (PRE-N)	2.05	53.2	33.6
POST-3 (PRE-S)	0.21	50.8	10.0

Table 3-2: Post-Developed Area Summary – BUILDOUT

Sub Basin Description	Area (acres)	Composite Runoff Factor - CN	Time of Concentration (min)
POST-1	0.71	82.2	10.0
POST-2	0.94	68.1	10.0
POST-3	0.79	85.8	10.0
POST-4	0.38	89.4	10.0
POST-5	0.88	85.7	10.0
POST-6	0.19	39.0	10.0

This data was then entered into the Streamline Technology's StormWise Model f.k.a. ICPR) version 4.08.00 software and evaluated by the SCS Method. A model was established with the area, CN, time of concentration, and slope defined, to evaluate the resulting flows for the entire contributing basin. We evaluated the model for the Mean Annual 5-Year and 25-Year 24-Hour storm events to meet SJRWMD and City of Fernandina Beach requirements. Post-Development modeling data is included in Attachment E – Model Results.

4.0 Study Results

4.1 Detention Requirements

Exfiltration under the proposed parking areas is proposed for the site's stormwater treatment system. The SJRWMD criteria for exfiltration is to provide 1.25-inches over the total impervious area plus 0.5" over the total drainage area, or 1" over the total drainage area, whichever is greater. Table 4.1 summarizes the required and provided treatment volumes for the development.

Table 4-1: Treatment Volume Summary

PHASE #	Minimum TV (ac-ft)	Provided TV (ac-ft)
PHASE 1	0.172	0.215
PHASE 2	0.443	0.480

4.2 StormWise Model Results

The post-developed basin characteristics and treatment volumes listed above are detailed in Attachment D – Drainage Calculations. This data was then entered into the StormWise model to evaluate the peak runoff rates for pre- and post-developed conditions. Table 4.2 summarizes the peak flows during Phase 1 and Table 4.3 summarizes the peak flows in Phase 2, Buildout condition to the receiving waters, "PRE/POST-N" and "PRE/POST-S".

Table 4-2: Pre-/Post-Developed Peak Flows – PHASE 1

Storm Event	PRE-N Q (cfs)	POST-N Q (cfs)	PRE-S Q (cfs)	POST-S Q (cfs)
Mean Annual Storm	0.99	0.61	0.08	0.08
25yr-24hr Storm	5.62	5.45	0.53	0.53

Table 4-3: Pre-/Post-Developed Peak Flows – PHASE 2 / BUILDOUT

Storm Event	PRE-N Q (cfs)	POST-N Q (cfs)	PRE-S Q (cfs)	POST-S Q (cfs)
Mean Annual Storm	0.99	0.00	0.08	0.01
25yr-24hr Storm	5.62	3.71	0.53	0.22

This Drainage Analysis and Stormwater Management Plan study shows that sufficient treatment volume has been provided in the wet detention pond and that the peak flows from the site into the Nectarine Street right-of-way are reduced during both the mean annual and 25-year, 24 hour storm events for each phase of development. See the Stormwater Tabulation Calculations in Attachment D and StormWise Model and Results in Attachment E.

4.3 PONDS Recovery Results

In order to meet the minimum requirements for SJRWMD, the dry retention and exfiltration systems must recover the minimum treatment volume within 72 hours after a rain event. Existing soil parameters taken from the geotechnical report prepared by AGES of Jax, Inc., dated March 9, 2021 (See Attachment C), were used to evaluate the recovery of the proposed systems and a safety factor of 2.0 was applied to the reported values. A confining layer was not observed in the geotechnical exploration, so the average bottom of boring elevation was used as the bottom of aquifer (elev. 3.0). The recovery of the dry retention and exfiltration trenches are modeled with the PONDS software to demonstrate that the proposed design recovers the minimum stormwater treatment volume within the 72 hour requirement (See Attachment E). The parameters used in the PONDS model are based on the average values for multiple soil borings performed by AGES of Jax, as summarized in Table 4-4, with a safety factor of 2.0 applied to the conductivity and infiltration rates.

Table 4-4: Soil Parameters Reported vs. Used for Dry Retention Recovery

Soil Boring ID	Seasonal High Water Table Elevation	Base of Aquifer Elevation	Horizontal Saturated Hydraulic Conductivity Rate	Vertical Infiltration Rate
LA-1	15.5 ft	3.0 ft	0.72 ft/day	12.1 in/hr
LA-2	16.0 ft	3.0 ft	5.40 ft/day	26.7 in/hr
LA-3	15.5 ft	3.0 ft	17.7 ft/day	8.0 in/hr
LA-4	15.5 ft	3.0 ft	3.5 ft/day	22.4 in/hr
LA-5	14.2 ft	3.0 ft	2.0 ft/day	7.2 in/hr
AVERAGE	15.34 ft	3.0 ft	5.86 ft/day	15.28 in/hr

5.0 Stormwater Management Design

Development of the site should consider storm water management systems that minimize the impacts to adjoining properties. The methods to accomplish a low impact should not cause considerable economic hardship. These methods should consider using the best management practices for sedimentation and erosion control during construction and after the development has been completed. These methods will be discussed in two parts. The first part is the management of storm water conveyance systems and detention. The second part will be sedimentation and erosion control measures and practices.

5.1 Stormwater Conveyance Systems

Following grading and drainage improvements for the proposed site development, the majority of the site will drain directly into the exfiltration section under the parking areas. Runoff from the underground exfiltration system will be collected and conveyed via underdrain piping to a drainage inlet/drop structure which will then overflow into a conveyance swale which contains the overflow control structure that discharges to the roadside swale in Nectarine Street.

5.2 Water Quality Structures

The proposed control structure is a concrete spillway provided with a splash pad immediately downstream of the structure to reduce the potential for scour during heavy rain events.

5.3 Sedimentation and Erosion Control Measures

Sedimentation and erosion control measures used during and after construction will add environmental value to the proposed project. The following general recommendations for sedimentation and erosion control management are suggested.

Before the construction phase begins, all silt fence and construction exit shall be in place.

- ❑ Silt fence and hay bales should be constructed to DOT and/or County standards. Silt fencing and hay bales provide a barrier to prevent sediment from leaving the construction site.
- ❑ A construction exit consisting of a crushed stone pad located will be located at the construction exit to provide a place for removing mud from tires thereby protecting public streets from mud being tracked off the construction site.
- ❑ During the construction phase check dams, construction road stabilization, inlet sediment traps, and storm drain outlet protection should be in place, maintained and repaired as needed.
- ❑ All disturbed area should be stabilized with temporary seeding establishing a temporary vegetative cover with fast growing grass, and control of surface air movement of dust on the construction site should be maintained during the construction phase.

- ❑ Check dams are a small temporary barrier of dam constructed across a swale, drainage ditch, or area of concentrated flow to slow down storm water flow below erosive velocities. Construction road stabilization consist of travel ways constructed as part of a construction plan including access roads, subdivision roads, parking areas, and other on-site vehicle transportation routes that are stabilized with gravel to minimize the amount mud being tracked within the construction site.
- ❑ Inlet sediment traps are an impounding area created by excavating around a storm drain drop inlet.
- ❑ Storm drain outlet protection is a paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated storm water runoff.

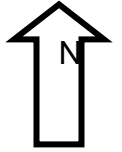
After construction permanent erosion and sediment control structures should be maintained and repaired. Such devices are the detention ponds, vegetated natural buffers, and permanent vegetation.

- ❑ Conveyance swales should be cleared and mowed to maintain flow and volume.
- ❑ Outlet control device on the stormwater treatment system should be cleared of debris obstructing the storm water flow.
- ❑ Permanent vegetation should be maintained to control the erosive flow of storm water on sloped areas and mulch refreshed to provide a storm water break.

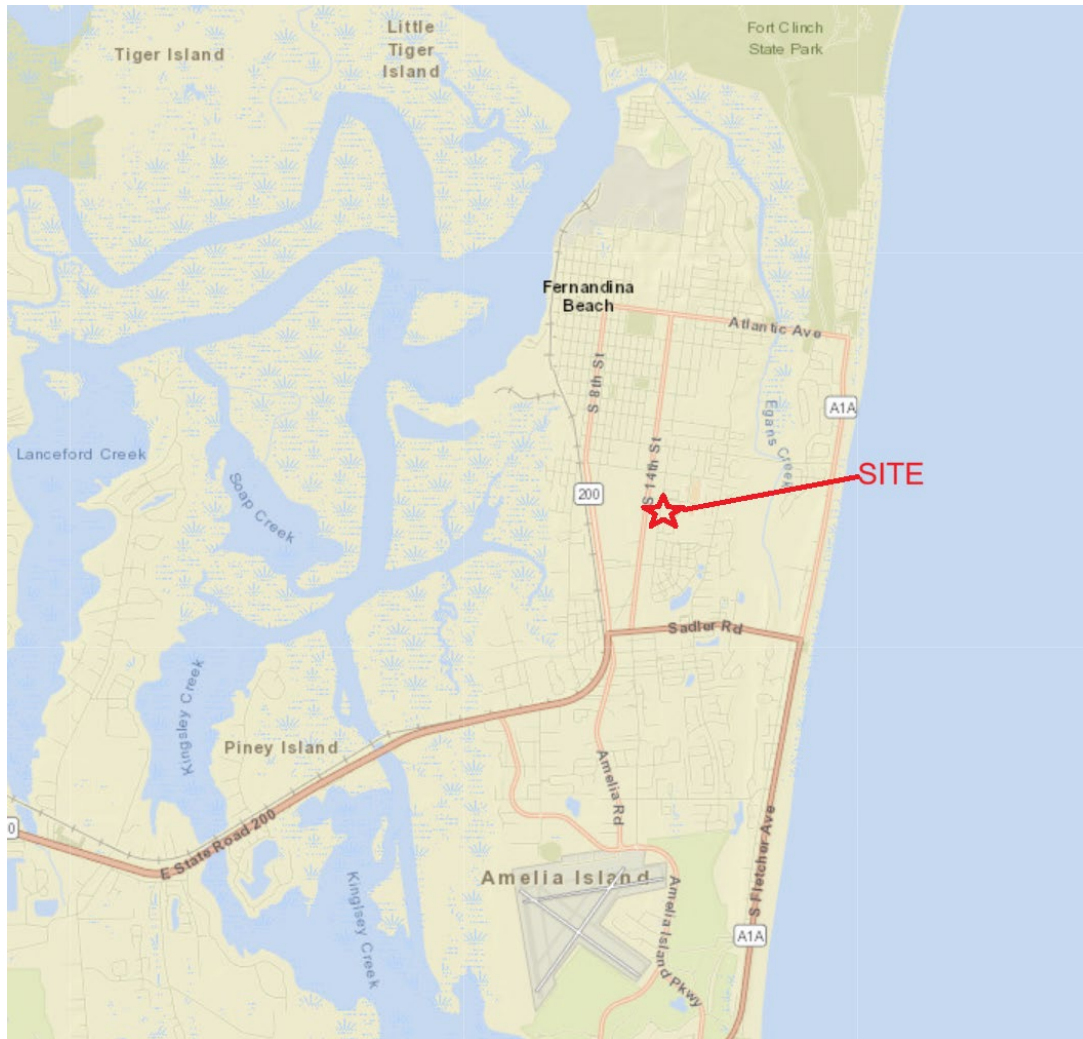
END OF REPORT

ATTACHMENT A

MAPS



VICINITY MAP



VICINITY MAP
1505 S. 15TH STREET
GDG# 23-215

FERNANDINA BEACH, FLORIDA

MAP SOURCE:
NCPAFL.COM

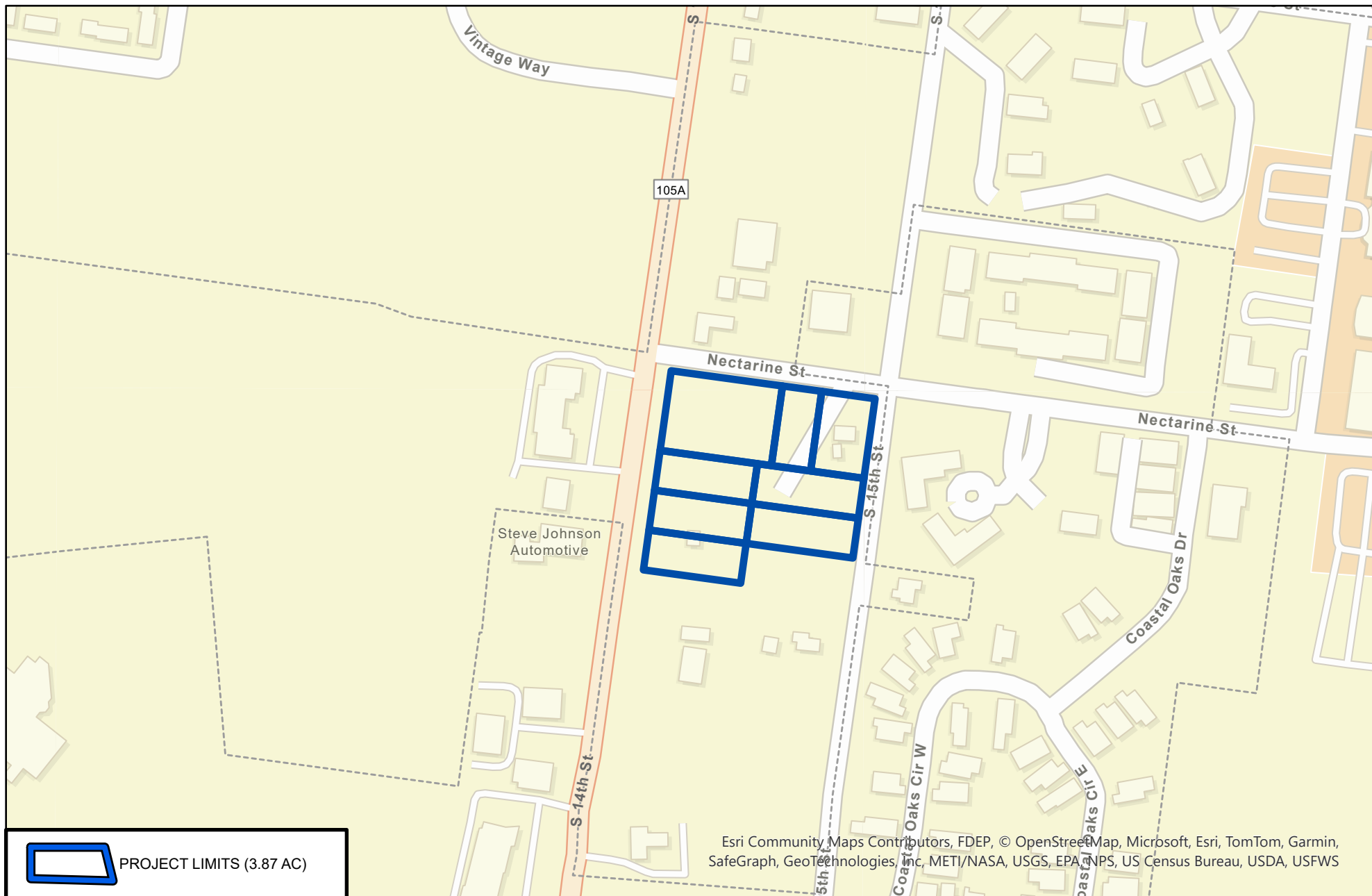
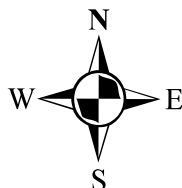


Image Source: ESRI 2023
Date: 01-29-2024
Project Number: 23-215



LOCATION MAP

1505 S 15TH STREET

NASSAU COUNTY, FLORIDA

**GULFSTREAM**
DESIGN GROUP, LLC
Gulfstream Design Group, LLC
2225 A1A S, Suite A2
St. Augustine, FL 32080
904.794.4231



**PROJECT LIMITS (3.87 AC)**

12	18
13	19
14	20
15	21
16	22
17	

Image Source: ESRI 2023
Date: 01-30-2024
Project Number: 23-215



TOPOGRAPHY MAP

1505 S 15TH STREET

NASSAU COUNTY, FLORIDA

**GULFSTREAM**
DESIGN GROUP, LLC

Gulfstream Design Group, LLC
2225 A1A S, Suite A2
St. Augustine, FL 32080
904.794.4231

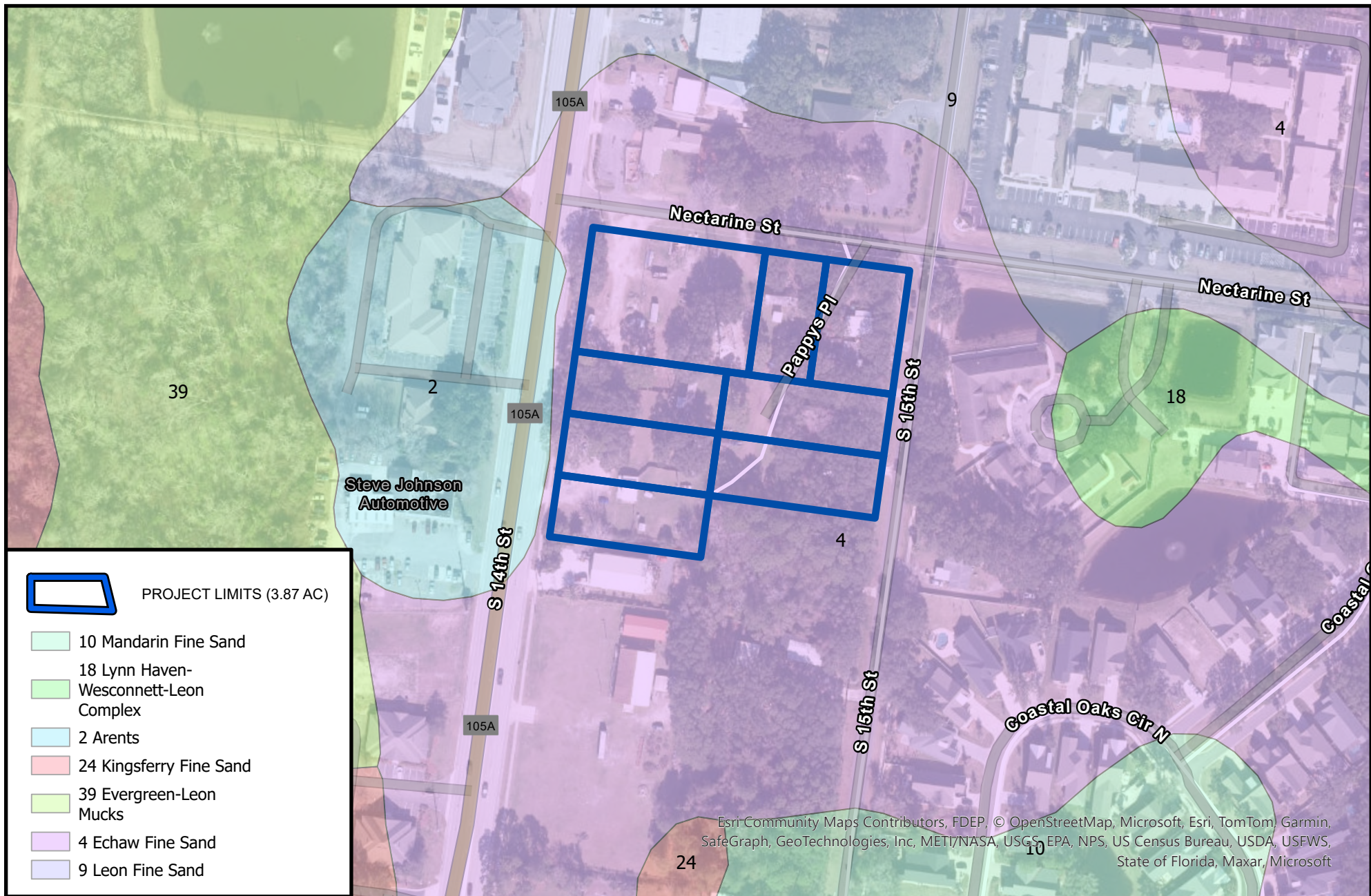
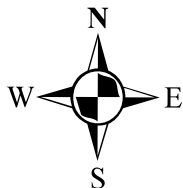


Image Source: ESRI 2023
Date: 01-30-2024
Project Number: 23-215



SOILS MAP

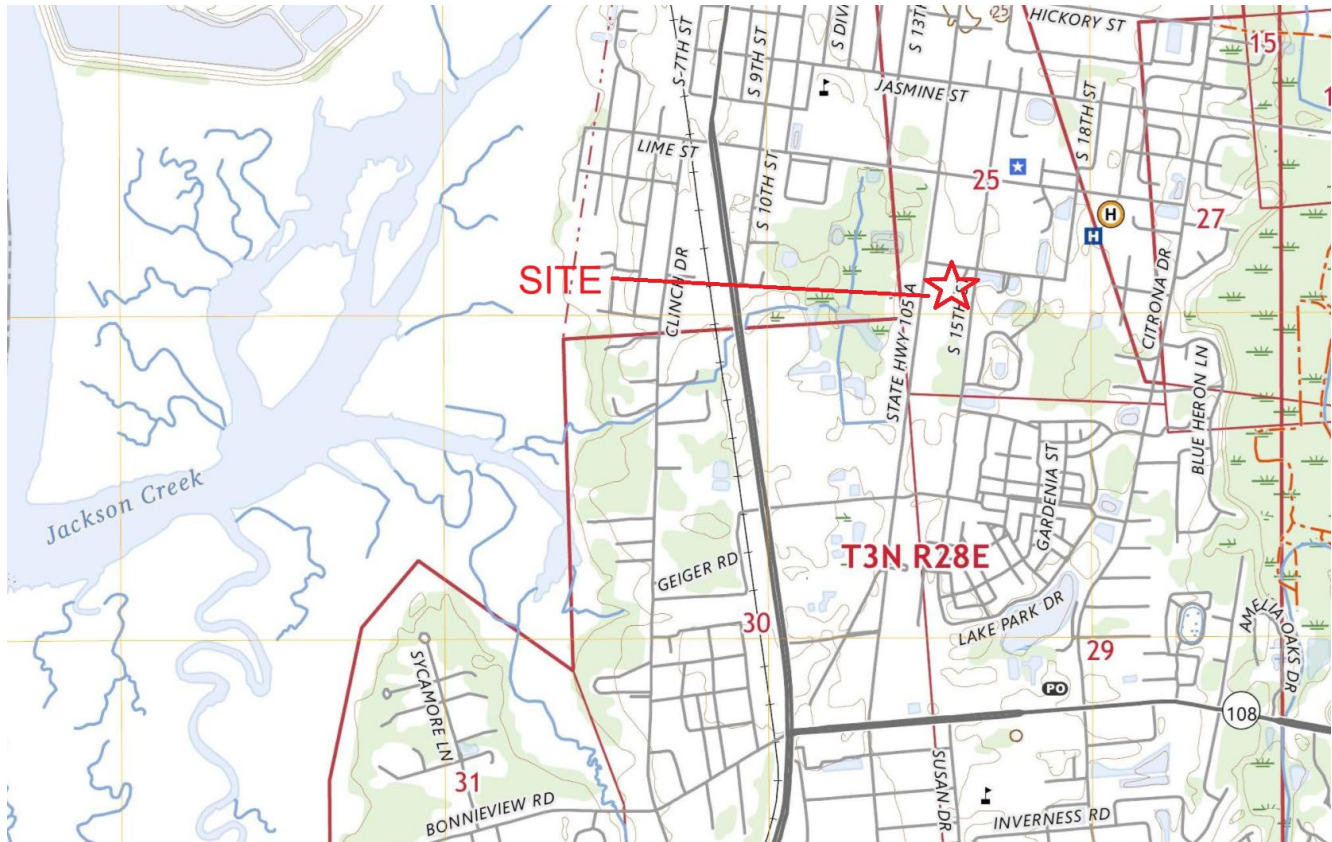
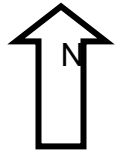
1505 S 15TH STREET

NASSAU COUNTY, FLORIDA



Gulfstream Design Group, LLC
906 Anastasia Blvd, Suite A
St. Augustine, FL 32080
904.794.4231

USGS QUAD MAP

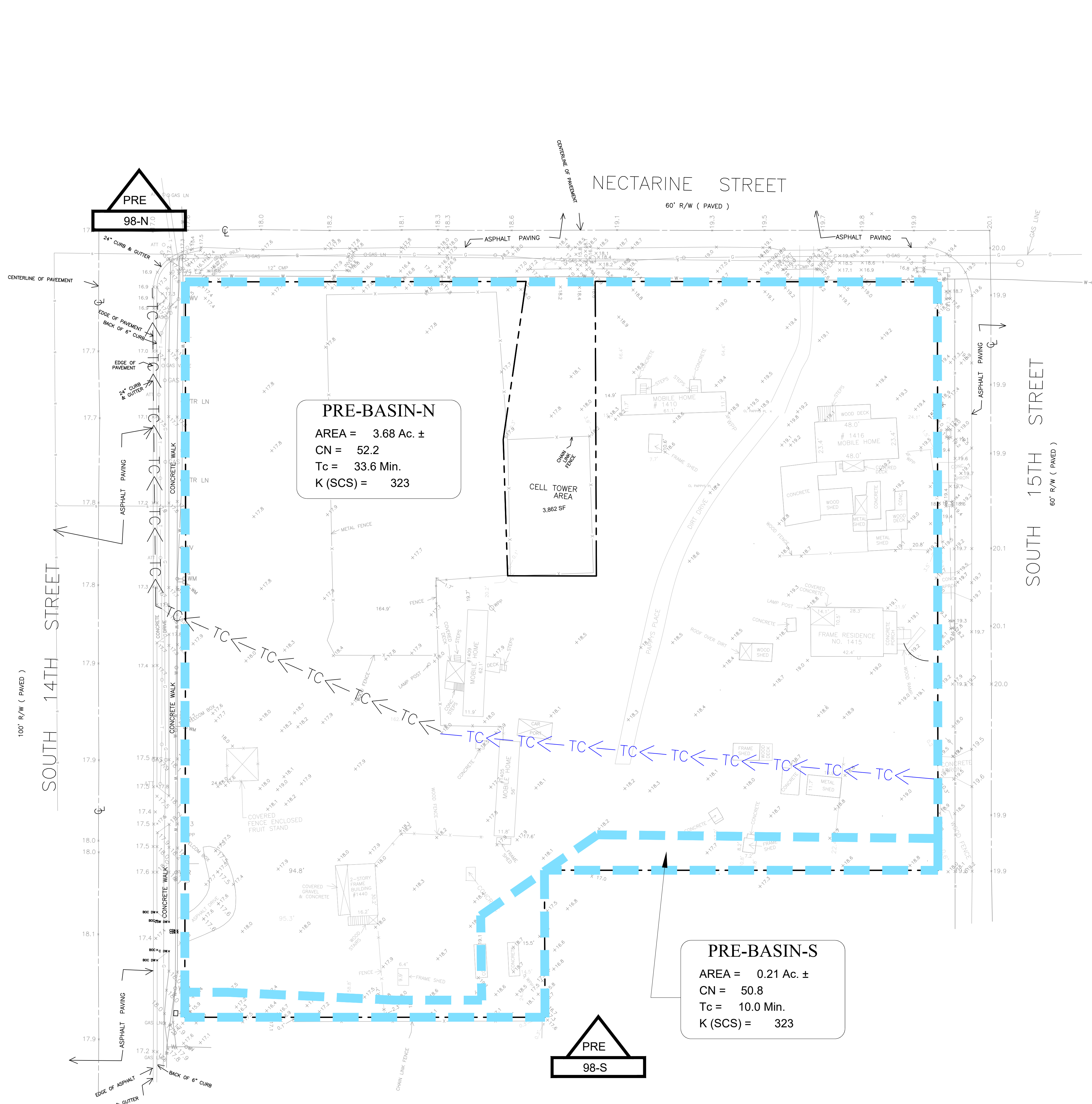


USGS QUAD MAP
1505 S. 15TH STREET
GDG# 23-215

FERNANDINA BEACH, FLORIDA

MAP SOURCE:
USGS.GOV

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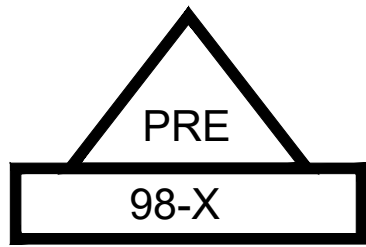


LEGEND

PRE-BASIN-X

AREA = X.XX Ac. ±
CN = XX.X
Tc = XX.XX Min.
K (SCS) = 256

BASIN NAME



OUTFALL



BASIN LIMITS



TIME OF CONCENTRATION
FLOW PATH

ENGINEERING PLANS
FOR
1505 S 15TH STREET
PRE-DEVELOPED BASIN MAP
CITY OF FERNANDINA BEACH, FLORIDA



FINAL ENGINEERING
PLANS



2225 A1A S, SUITE A2
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matt@gulfstreamdesign.com
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PROJECT NO: 23-215
ISSUE DATE: 06-05-2025
DRAFTED BY: JGD
DESIGNED BY: TVB
CHECKED BY: MHL
NOT VALID WITHOUT SEAL



AREA = X.XX Ac. ±
CN = XX.X
Tc = XX.XX Min.
K (SCS) = 256

OUTFALL

TIME OF CONCENTRATION
FLOW PATH

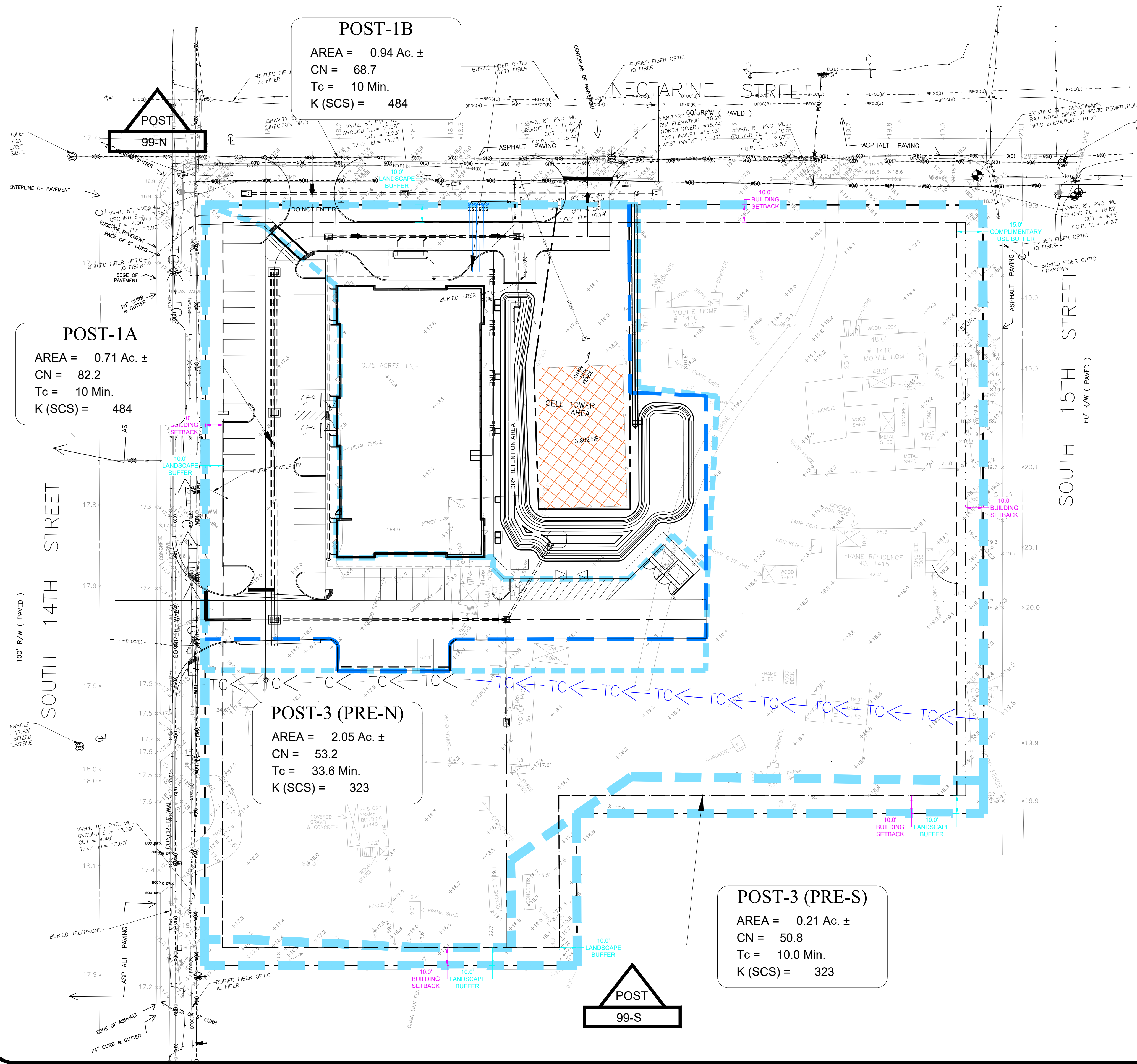
**Know what's below.
Call before you dig.**



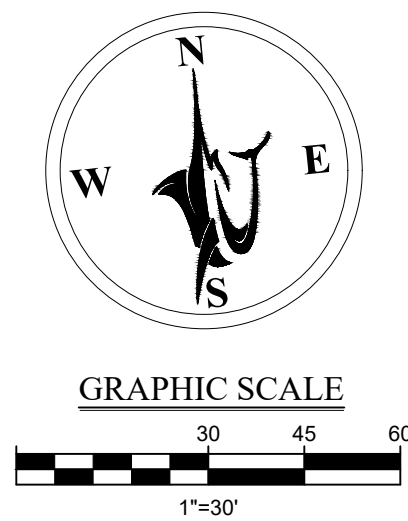
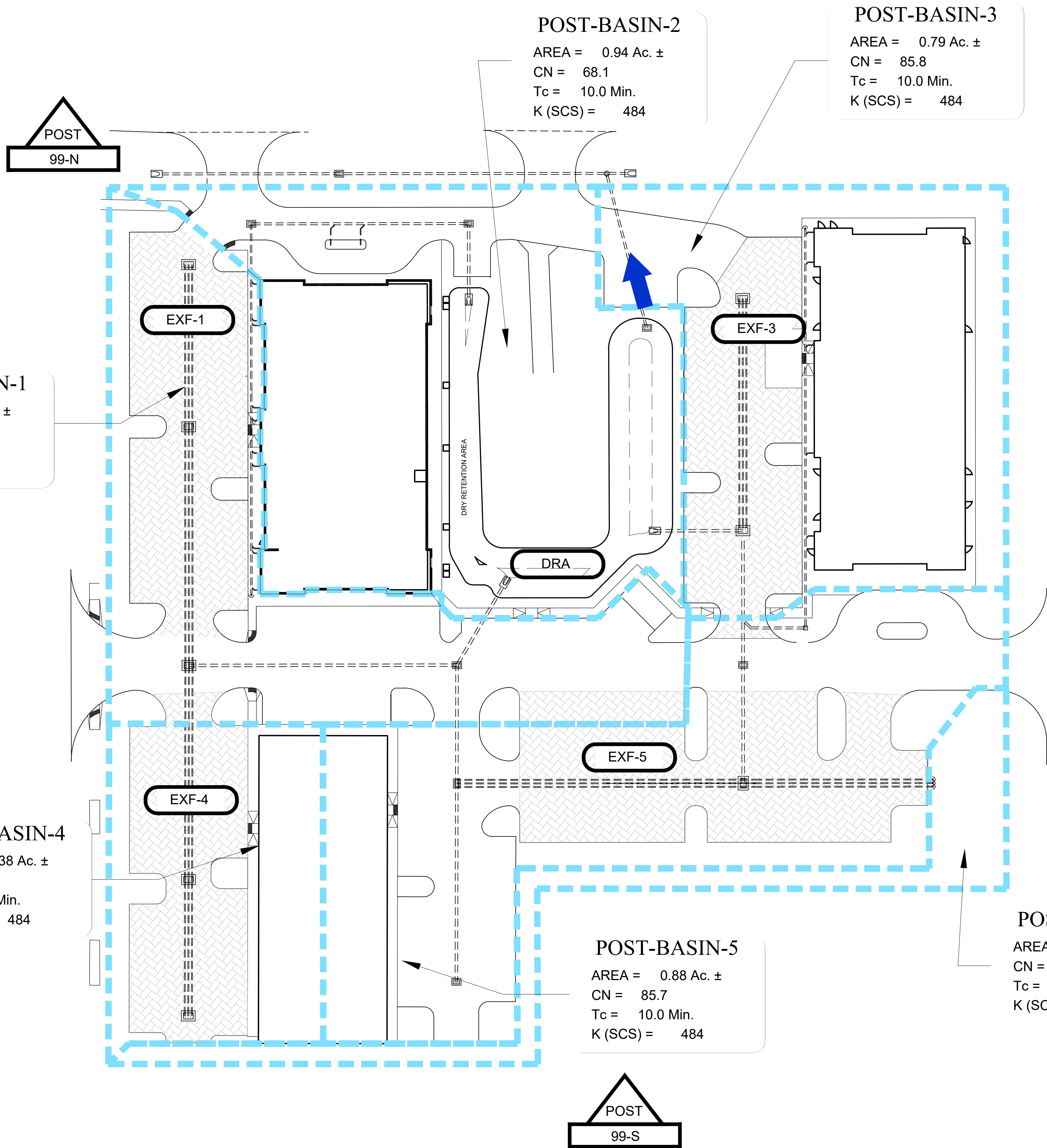
GULFSTREAM
DESIGN GROUP, LLC

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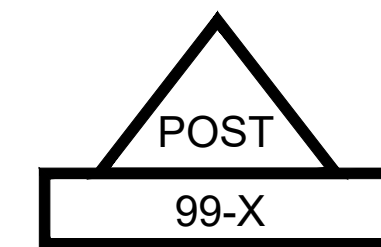


LEGEND

POST-BASIN-X

AREA = X.XX Ac. ±
CN = XX.X
Tc = XX.XX Min.
K (SCS) = 256

BASIN NAME



OUTFALL

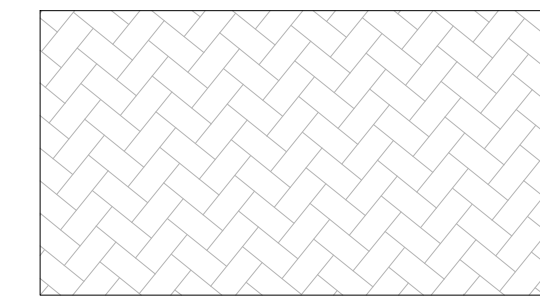


STORMWATER FACILITY NODE

BASIN LIMITS



PROPOSED OUTFALL
FLOW DIRECTION



PROPOSED EXFILTRATION TRENCH
UNDER PERMEABLE PAVERS

REVISIONS

NO.	DATE	BY	DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
8			
9			

**ENGINEERING PLANS
FOR**

**ISLAND PARK - BUILDOUT
POST-DEVELOPED BASIN MAP**

CITY OF FERNANDINA BEACH, FLORIDA



**FINAL ENGINEERING
PLANS**



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PROJECT NO:	23-215
ISSUE DATE:	06-05-2025
DRAFTED BY:	JGD
DESIGNED BY:	TVB
CHECKED BY:	MHL

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ATTACHMENT B

REFERENCE MATERIAL

Table 2-2a Runoff curve numbers for urban areas ^{1/}

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area ^{2/}	A	B	C	D
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ^{3/} :					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ^{4/}		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) ^{5/}		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

¹ Average runoff condition, and $I_a = 0.2S$.² The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.³ CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.⁴ Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.⁵ Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

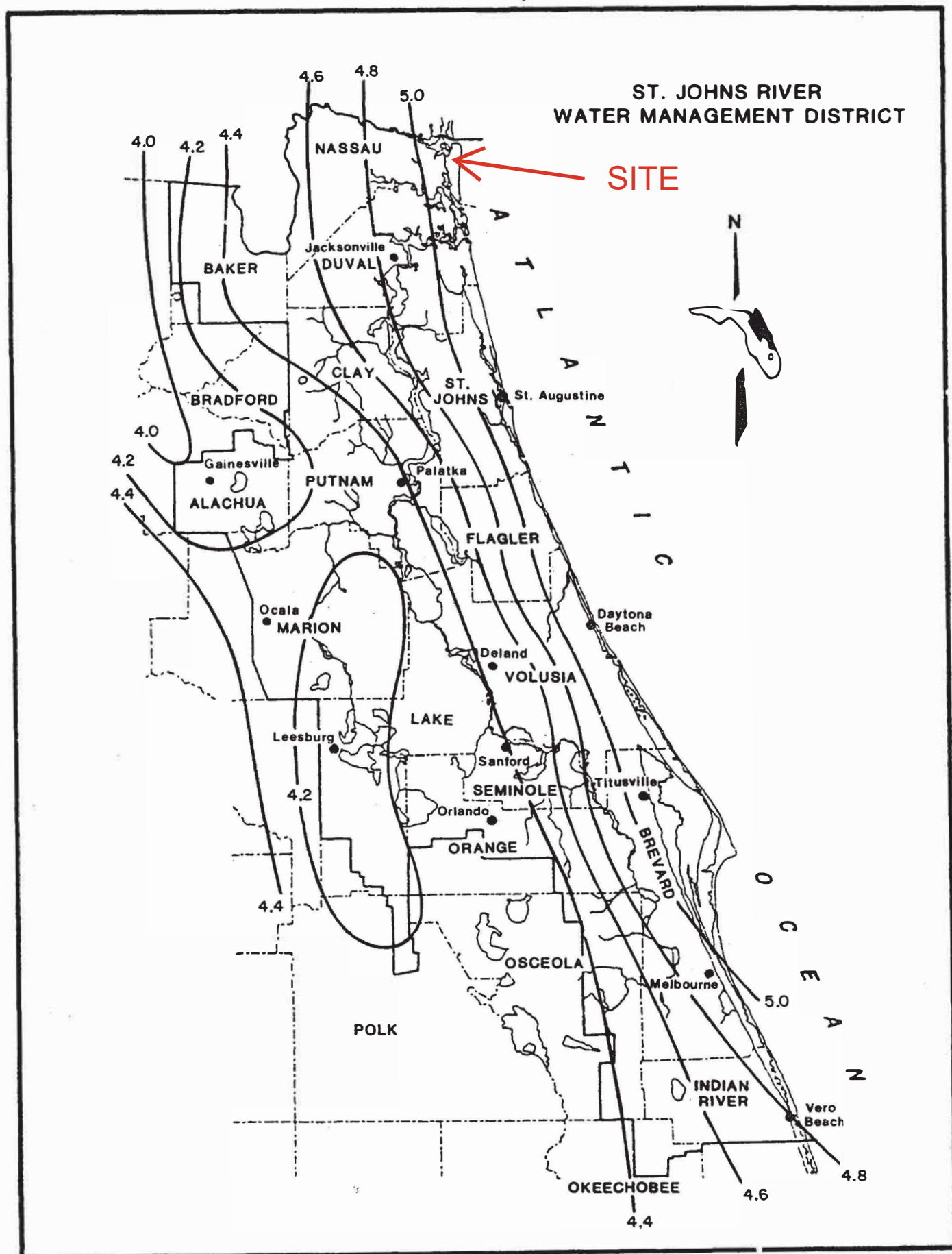


Figure 3. Mean Annual 24-Hour Maximum Rainfall for Northeast Florida, Inches.

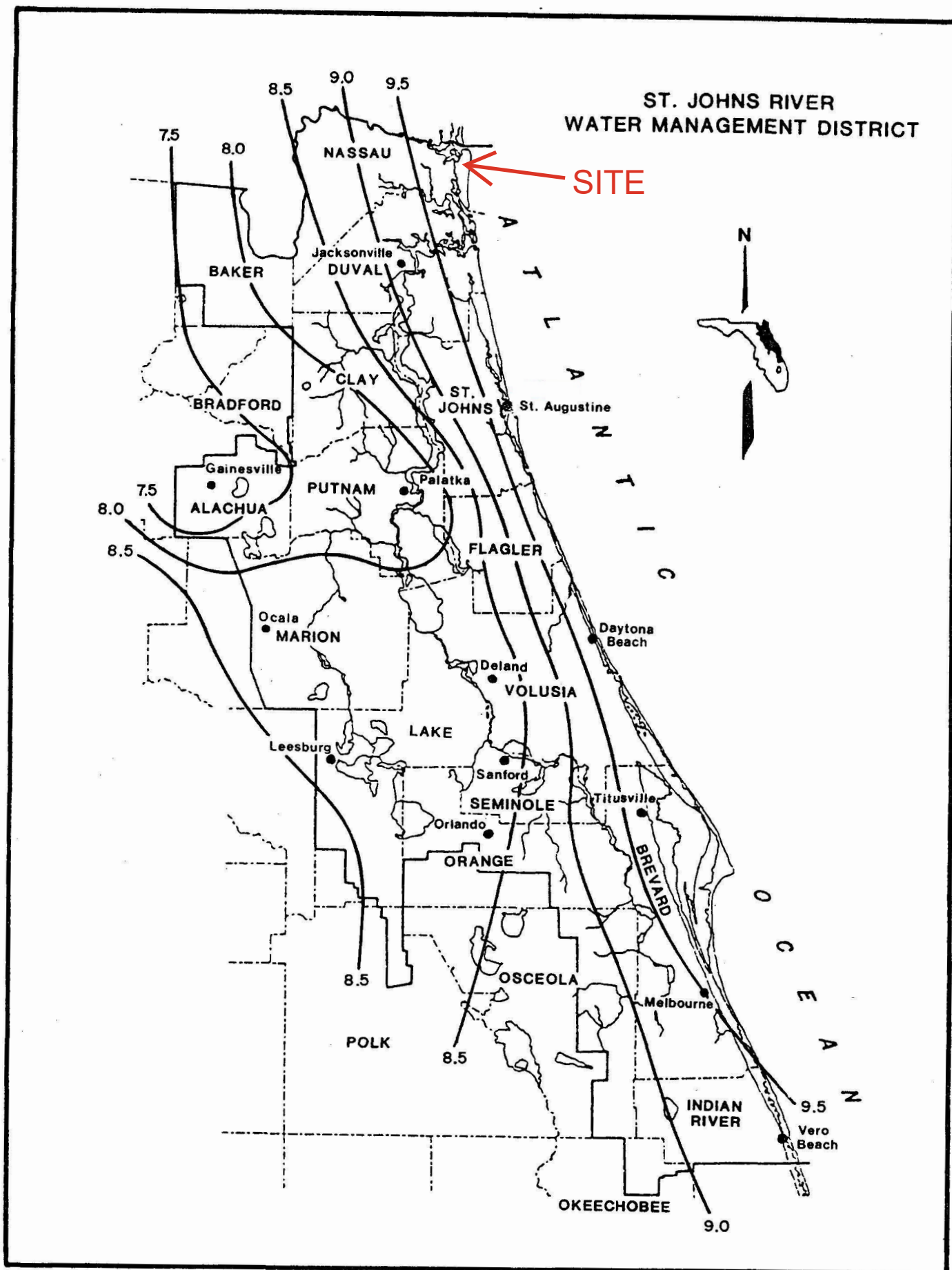


Figure 7. 25-Year 24-Hour Maximum Rainfall for Northeast Florida, Inches.

Hydrologic Soil Group—Nassau County, Florida
(Nectarine Street)



Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
4	Echaw fine sand	A	4.2	100.0%
Totals for Area of Interest			4.2	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

ATTACHMENT C

GEOTECHNICAL REPORT



OF JAX, INC.

February 2, 2021

ISLAND PARK LLC
96335 High Pointe Drive
Fernandina Beach, Florida 32034

Re: Report of Double Ring Infiltration and Saturated Horizontal Hydraulic Conductivity Testing
The "A" Project Medical Office Park - Exfiltration Trenches
1412 South 14th Street
Fernandina Beach, Florida
AGES Job No. J19501A, Report No. 001

Ladies & Gentlemen:

AGES OF JAX (AGES), INC. has completed the requested testing in planned exfiltration trench areas of subject site. This report includes a summary of the background information, and a description of the testing that was performed and the results that were obtained.

Project information has been provided by Gulfstream Design Group representative Mr. Justin Spicer during recent email and phone conversations. We have been provided with: (1) a Grading Plan (prepared by Gulfstream Design Group, dated 12-30-20) which shows the property boundaries, the planned development, existing ground surface elevations, and the requested stormwater management facility related supplemental testing.

We understand that an office medical park is being planned at 1412 South 14th Street in Fernandina Beach, Florida. The site is currently occupied by a vehicle storage yard and a cell tower. The planned development will likely include one(1) 14,000 square foot and three(3) 10,000 square foot 1-story block framed medical office buildings, and asphalt paved parking areas. Stormwater will be handled in a combination of dry swales and underground exfiltration vaults/trenches. We recently completed a preliminary exploration at the site. However, no hydraulic conductivity testing or infiltration rate testing was performed as part of the original investigation. Therefore, Gulfstream requested that infiltration rate and horizontal hydraulic conductivity testing be conducted at five previously conducted auger boring locations: A1, A2, A4, A5 and A6.

The requested testing which was conducted during the period of January 15 - 23, 2021, included five(5) 15 foot auger borings (LA1- LA5), five(5) double ring infiltration tests (DRI1 - DRI5) which were performed at the ground surface, installation of five(5) approximately 12-foot deep temporary monitoring wells with 10-foot screen (TM1 - TMW5) and performance of Rising and Falling Head hydraulic conductivity tests at each temporary well location. The Double Ring Tests were conducted in accordance with ASTM Standards to determine the unsaturated vertical hydraulic conductivity (K_{vunsat}) of the vadose zone portion of the surface aquifer. The Rising and Falling Head "slug" tests were performed in accordance with the procedures outlined in ASTM D4044/D4044M - 15, to determine the saturated horizontal hydraulic conductivity (K_{hsat}) of the saturated portion of the surface aquifer. The slug test results were analyzed using Hvorslev Time Lag Analytical procedures. The test locations are shown on the attached Field Exploration Plan. The auger boring results, the rising and falling Head "Slug Test" data, and Double Ring Infiltration Test Data are presented in the attachments.

AGES of JAX, Inc.

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(904) 886-0766 ● (904) 880-5190 (FAX)

The borings/tests performed in the proposed exfiltration trench areas typically encountered slightly silty fine sand (SP-SM, A-3) the upper 15 feet of profile. The current groundwater levels were encountered at depths ranging from 3.4 to 4.2 feet below the ground surface. Estimated seasonal high groundwater levels range from 2.5 to 3.5 feet below the ground surface. The fillable porosity of the sand deposit is estimated to be 0.22. The effective aquifer thickness is estimated to be 15 feet. The saturated horizontal hydraulic conductivity (Khsat, the average of the falling and rising head hydraulic conductivity tests) of the unconfined surface aquifer, the average unsaturated vertical hydraulic conductivity (Kvunsat, infiltration rate) and the estimated seasonal high groundwater depth (and elevation) at each test location are summarized in the following table:

TABLE 1: SURFACE AQUIFER PARAMETERS SUMMARY TABLE

TEST LOCATION	AVERAGE VERTICAL INFILTRATION RATE (Kvunsat) (IN/HOUR) ¹	AVERAGE HORIZONTAL SATURATED HYDRAULIC CONDUCTIVITY (Khsat) (FT/DAY) ²	CURRENT GROUNDWATER ELEVATION (FT - NAVD)	ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATION (FT - NAVD)
LA1/DRI1/TMW1	12.1	0.72	+14.5	+15.5
LA2/DRI2/TMW2	26.7	5.4	+15.3	+16.0
LA3/DRI3/TMW3	8.0	17.7	+15.0	+15.5
LA4/DRI4/TMW4	22.4	3.5	+14.6	+15.5
LA5/DRI5/TMW5	7.2	2.0	+13.7	+14.2

Notes:

- 1) As measured by the Double Ring Infiltrometer.
- 2) The average of the rising and falling head slug test results.

We appreciate the opportunity to be of service as the geotechnical consultant during this phase of your project. Should you have any questions concerning this report or if we may be of any further service to you, please feel free to contact us.

Very truly yours,

AGES of JAX, INC.

Bill C. McMahan, Jr., P.E.
Principal Engineer
Registered, Florida No. 42677

DATA ATTACHMENTS

Site Location Map

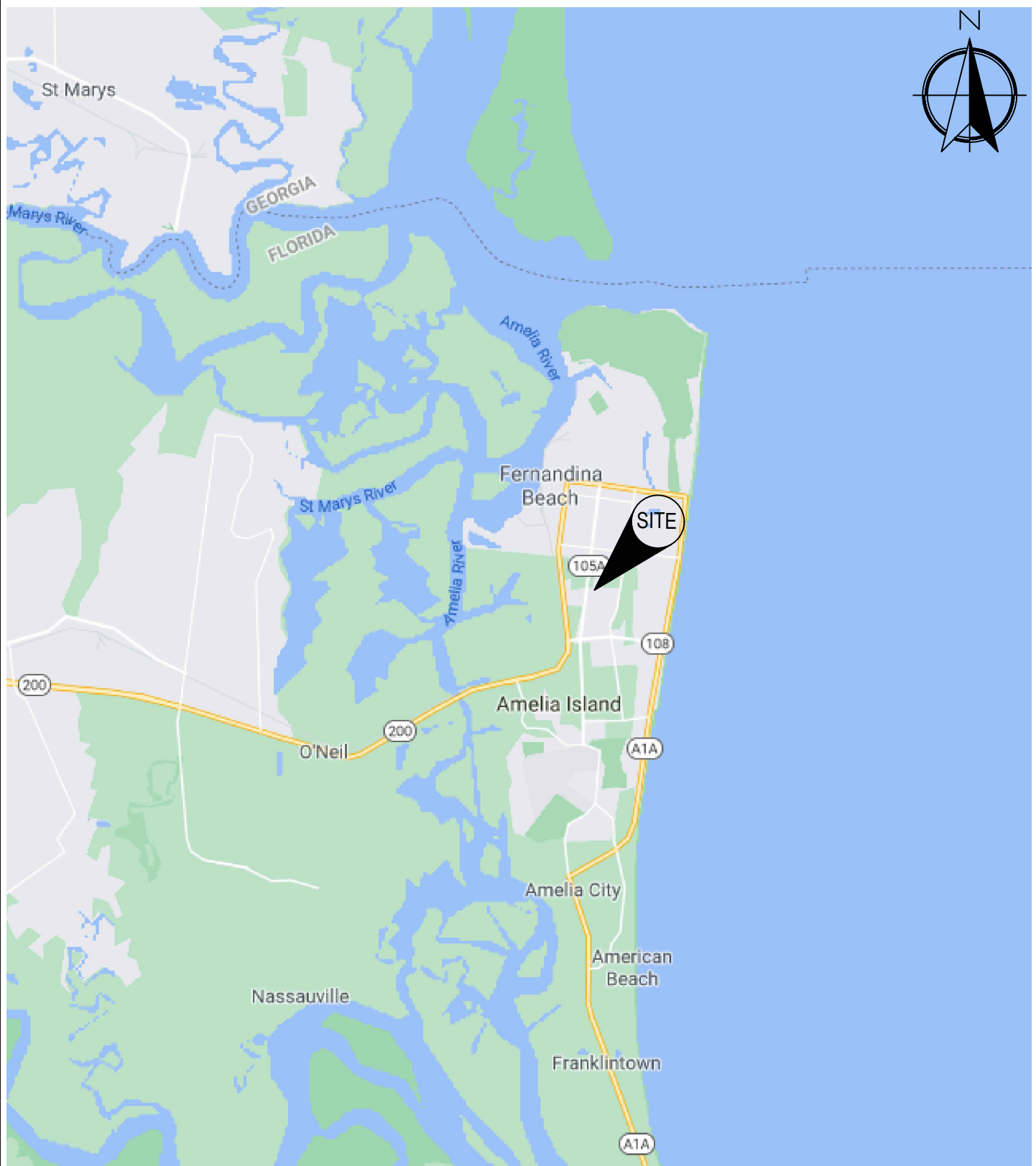
Field Exploration Plan

Key to Soil Classification

Auger Boring Records

Double Ring Infiltration Test Results Sheet

Rising and Falling Head Hydraulic Conductivity Test Results Sheets



REFERENCE:

Google.com



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9556 Historic Kings Rd.
Jacksonville, Florida 32257

SITE LOCATION MAP

"A" Project - Exfiltration Trenches
Fernandina Beach, Florida

DRAWN: DEP

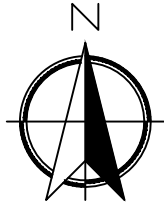
DATE: 11/29/21

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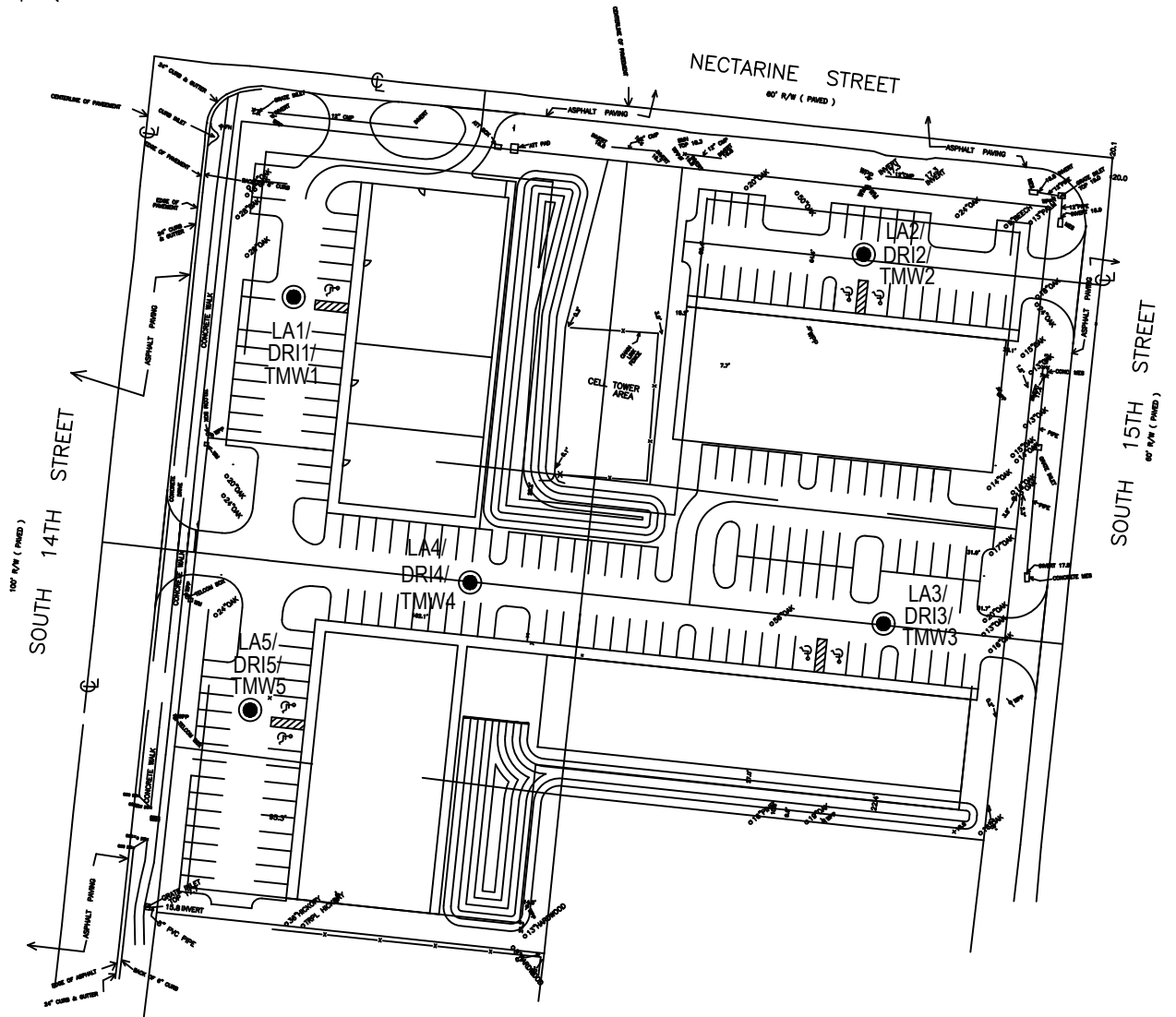
CHECKED: BCM

JOB NO: J19501A

NTS



--- TOTAL
 --- SHOWN THUS X 0.0 REFER TO NORTH AMERICAN VERTICAL DATUM 1988.



LEGEND:

- Double Ring/Temporary Well Location (approximate)

REFERENCE:

Site Plan provided Gulfstream Design Group LLC, dated 12/30/20.

NOTES:

The boring locations were established by AGES personnel using handheld GPS Locator Units. Boring locations as shown on this plan are approximate.



AGES of JAX Inc.
 9556 Historic Kings Rd.
 Jacksonville, Florida 32257

FIELD EXPLORATION PLAN

"A" Project - Exfiltration Trenches
 Fernandina Beach, Florida

DRAWN: DEP

DATE: 01/29/21

SCALE:

CHECKED: BCM

JOB NO: J19501A

1"=100'

KEY TO SOIL CLASSIFICATION

CORRELATION OF N-VALUE WITH RELATIVE DENSITY & CONSISTENCY

SANDS AND GRAVEL	
NO. OF BLOWS, N'	RELATIVE DENSITY
0 - 4	VERY LOOSE
5 - 10	LOOSE
11 - 20	FIRM
21 - 30	VERY FIRM
31 - 50	DENSE
OVER 50	VERY DENSE

SILTS AND CLAYS	
NO. OF BLOWS, N*	CONSISTENCY
0 - 2	VERY SOFT
3 - 4	SOFT
5 - 8	FIRM
9 - 15	STIFF
16 - 30	VERY STIFF
31 - 50	HARD
OVER 50	VERY HARD

PARTICLE SIZE IDENTIFICATION (UNIFIED SOIL CLASSIFICATION SYSTEM)

CATEGORY	DIMENSIONS
Boulders	Diameter exceeds 12 inches
Cobbles	3 to 12 inches
Gravel	Coarse - 0.75 to 3 inches in diameter
Sand	Coarse - 2.0 mm to 4.76 mm diameter Medium - 0.42 mm to 2.0 mm diameter
Silt and Clay	Less than 0.074 mm (Invisible to the naked eye)

MODIFIERS

These modifiers provide our estimate of the amount of minor constituents (sand silt or clay size particles) in the soil sample.

PERCENTAGE OF MINOR CONSTITUENT	MODIFIERS
5% to 12%	Slightly Silty, Slightly Clayey, Slightly Sandy Silty, Clayey, Sandy Very Silty, Very Clayey, Very Sandy
12% to 30%	
30% to 50%	

These modifiers provide our estimate of the amount of other components in the soil sample.

APPROXIMATE CONTENT OF OTHER COMPONENTS (SHELL, GRAVEL, ETC.)	MODIFIERS	APPROXIMATE CONTENT OF ORGANIC COMPONENTS
0% to 5%	TRACE FEW SOME MANY	1% to 2%
5% to 12%		2% to 4%
12% to 30%		4% to 8%
30% to 50%		>8%



AUGER BORING RECORDS
"A" Project - Exfiltration Trenches
Fernandina Beach, Florida
AGES Job No. J19501A; Report No. 001

Date Performed: 01/25/21

Performed By: NW, AW, JW, & JM

Auger ID Lat / Longs Elev. (FT-NAVD)	Depth (Feet) ^a	SOIL DESCRIPTION (USCS/AASHTO CLASSIFICATION)
LA1 N 30.65193° W 81.45390° EL.+18.0'	0.0 - 0.5	Grey Brown Slightly Silty Fine SAND (SP-SM/ A-3)
	0.5 - 1.0	Gravel
	1.0 - 1.5	Dark Grey Slightly Silty Fine SAND (SP-SM/ A-3)
	1.5 - 3.0	Light Grey Slightly Silty Fine SAND (SP-SM/ A-3)
	3.0 - 4.0	Dark Brown Slightly Silty Fine SAND (SP-SM/ A-3)
	4.0 - 5.0	Brown Slightly Silty Fine SAND (SP-SM/ A-3)
	5.0 - 15.0 A.B.T. ^b	Dark Brown Slightly Silty Fine SAND (SP-SM/ A-3) GWL ^c = 3.5' (EL.+14.5') Estimated Seasonal High GWL ^c = 2.5' (EL.+15.5')
LA2 N 30.65191° W 81.45296° EL.+19.5'	0.0 - 1.0	Dark Grey Brown Slightly Silty Fine SAND w/ Some Small Rts (SP-SM/ A-3)
	1.0 - 3.0	Grey Slightly Silty Fine SAND (SP-SM/ A-3)
	3.0 - 4.0	Brown Slightly Silty Fine SAND (SP-SM/ A-3)
	4.0 - 15.0 A.B.T. ^b	Dark Brown Slightly Silty Fine SAND (SP-SM/ A-3) GWL ^c = 4.2' (EL.+15.3') Estimated Seasonal High GWL ^c = 3.5' (EL.+16.0')
LA3 N 30.65144° W 81.45299° EL.+18.5'	0.0 - 1.0	Dark Brown Fine SAND (SP/ A-3)
	1.0 - 3.0	Brown Fine SAND (SP/ A-3)
	3.0 - 10.0	Dark Brown Silty Fine SAND (SM/ A-2-4)
	10.0 - 15.0 A.B.T. ^b	Brown Silty Fine SAND (SM/ A-2-4) GWL ^c = 3.5' (EL.+15.0') Estimated Seasonal High GWL ^c = 3.0' (EL.+15.5')
LA4 N 30.65148° W 81.45365° EL.+18.0'	0.0 - 3.0	Light Grey Slightly Silty Fine SAND (SP-SM/ A-3)
	3.0 - 13.0	Dark Brown Slightly Silty Fine SAND (SP-SM/ A-3)
	13.0 - 15.0 A.B.T. ^b	Brown Slightly Silty Fine SAND (SP-SM/ A-3) GWL ^c = 3.4' (EL.+14.6') Estimated Seasonal High GWL ^c = 2.5' (EL.+15.5')
LA5 N 30.65111° W 81.45404° EL.+17.5'	0.0 - 1.0	Gravel
	1.0 - 3.0	Dark Brown Slightly Silty Fine SAND (SP-SM/ A-3)
	3.0 - 4.0	Grey Slightly Silty Fine SAND (SP-SM/ A-3)
	4.0 - 5.0	Dark Brown Silty Fine SAND (SM/ A-2-4)
	5.0 - 15.0 A.B.T. ^b	Dark Brown Slightly Silty Fine SAND (SP-SM/ A-3) GWL ^c = 3.8' (EL.+13.7') Estimated Seasonal High GWL ^c = 3.3' (EL.+14.2')

a - Depth measured below ground surface existing at boring location at time of drilling

b - Auger Boring Terminated (A.B.T.)

c - Groundwater Level (GWL) depth below existing ground surface, recorded at time of drilling, unless otherwise noted
J19501A aug.wpd EP



DOUBLE RING INFILTRATION TEST RESULTS

PROJECT: A" Project - Exfiltration Trenches
 LOCATION: Fernandina Beach, Florida
 JOB NUMBER: J19501A
 TEST NUMBER: DRI1
 LAT/LONG: 30.65187°N, 81.45393°W
 GROUND ELEVATION = +18.0'

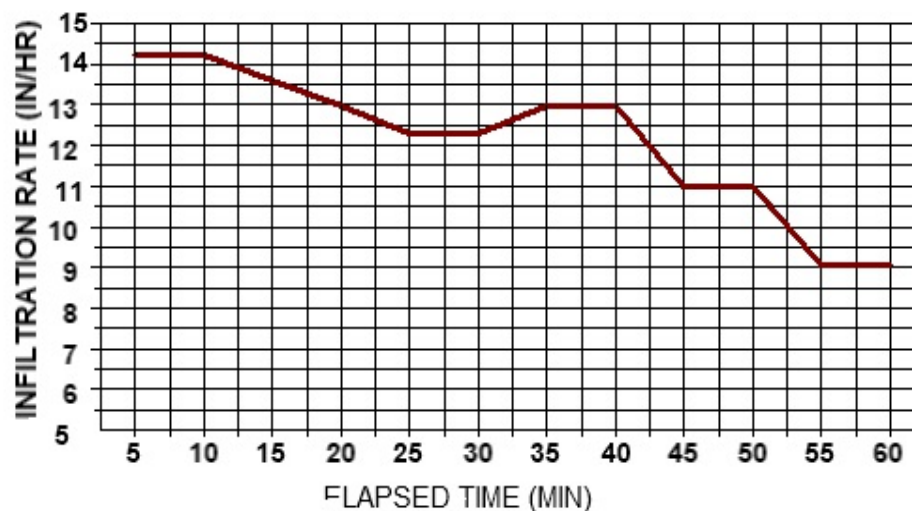
REPORT DATE: 01/29/21
 TEST DATE: 01/15/21
 FIELD PERSONNEL: Noel Wheeler
 METHOD: ASTM D3385
 WATER HEAD: 6"
 TEST DEPTH: 8"

ELAPSED TIME (MINUTES)	WATER QUANTITY (ML)	INFILTRATION RATE (IN/HOUR)
5	2200	14.2
10	2200	14.2
15	2100	13.6
20	2000	12.9
25	1900	12.3
30	1900	12.3
35	2000	12.9
40	2000	12.9
45	1700	11.0
50	1700	11.0
55	1400	9.1
60	1400	9.1

SUMMARY OF TEST DATA & RESULTS

INNER RING SIZE (INCHES): 12
 OUTER RING SIZE (INCHES): 24
 AVERAGE INFILTRATION RATE (IN/HR): 12.1
 STEADY STATE INFILTRATION RATE (IN/HR): 9.1

INFILTRATION RATE VS TIME



SOIL PROFILE

Depth(Ft)	Soil Description (USCS Classification)
0.0 - 0.5	Grey Brown Slightly Silty Fine SAND (SP-SM)
0.5 - 1.0	Gravel
1.0 - 1.5	Dark Grey Slightly Silty Fine SAND (SP-SM)
1.5 - 3.0	Light Grey Slightly Silty Fine SAND (SP-SM)
3.0 - 4.0	Dark Brown Slightly Silty Fine SAND (SP-SM)
4.0 - 5.0	Brown Slightly Silty Fine SAND (SP-SM)
5.0 - 15.0	Dark Brown Slightly Silty Fine SAND (SP-SM)
A.B.T.	GWL= 3.5' (EL.+14.5')

Estimated Seasonal High GWL= 2.5' Below Ground Surface (EL.+15.5')



DOUBLE RING INFILTRATION TEST RESULTS

PROJECT: A" Project - Exfiltration Trenches
 LOCATION: Fernandina Beach, Florida
 JOB NUMBER: J19501A
 TEST NUMBER: DRI2
 LAT/LONG: 30.65191°N, 81.45296°W
 GROUND ELEVATION = +19.5'

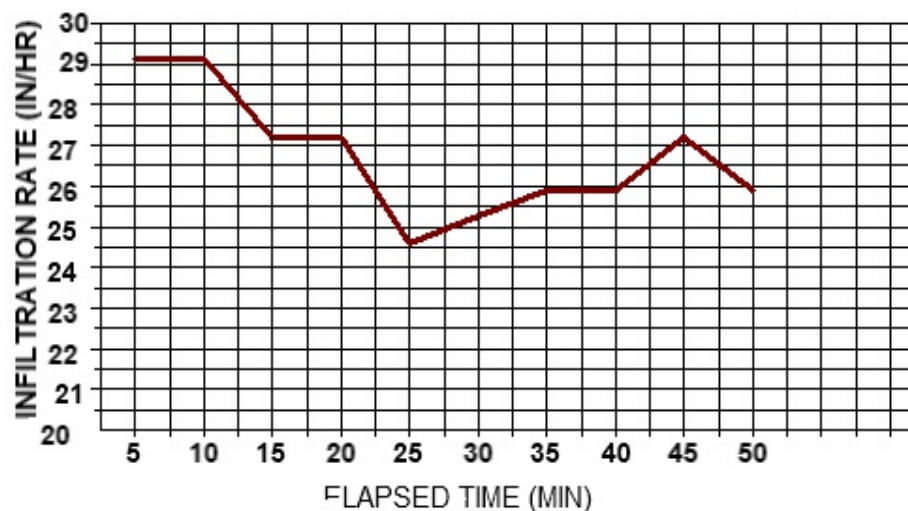
REPORT DATE: 01/29/21
 TEST DATE: 01/15/21
 FIELD PERSONNEL: Noel Wheeler
 METHOD: ASTM D3385
 WATER HEAD: 6"
 TEST DEPTH: 8"

ELAPSED TIME (MINUTES)	WATER QUANTITY (ML)	INFILTRATION RATE (IN/HOUR)
5	4500	29.1
10	4500	29.1
15	4200	27.2
20	4200	27.2
25	3800	24.6
30	3900	25.3
35	4000	25.9
40	4000	25.9
45	4200	27.2
50	4000	25.9

SUMMARY OF TEST DATA & RESULTS

INNER RING SIZE (INCHES): 12
 OUTER RING SIZE (INCHES): 24
 AVERAGE INFILTRATION RATE (IN/HR): 26.7
 STEADY STATE INFILTRATION RATE (IN/HR): 26.5

INFILTRATION RATE VS TIME



Estimated Seasonal High GWL= 3.5' Below Ground Surface (EL.+16.0')

SOIL PROFILE

Depth(Ft)	Soil Description (USCS Classification)
0.0 - 1.0	Dk Gr Br Si Fine SANDw/ Some Rts (SP-SM)
1.0 - 3.0	Grey Slightly Silty Fine SAND (SP-SM)
3.0 - 4.0	Brown Slightly Silty Fine SAND (SP-SM)
4.0 - 15.0	Dark Brown Slightly Silty Fine SAND (SP-SM)
A.B.T.	GWL= 4.2' (EL.+15.3')



DOUBLE RING INFILTRATION TEST RESULTS

PROJECT: A" Project - Exfiltration Trenches
 LOCATION: Fernandina Beach, Florida
 JOB NUMBER: J19501A
 TEST NUMBER: DRI3
 LAT/LONG: 30.65144°N, 81.45299°W
 GROUND ELEVATION = +18.5'

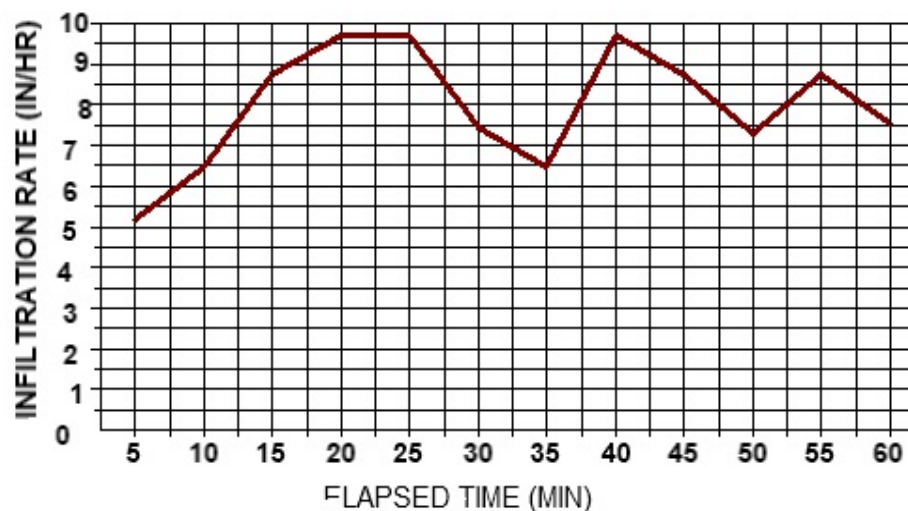
REPORT DATE: 01/29/21
 TEST DATE: 01/15/21
 FIELD PERSONNEL: Noel Wheeler
 METHOD: ASTM D3385
 WATER HEAD: 6"
 TEST DEPTH: 8"

ELAPSED TIME (MINUTES)	WATER QUANTITY (ML)	INFILTRATION RATE (IN/HOUR)
5	800	5.2
10	1000	6.5
15	1350	8.7
20	1500	9.7
25	1500	9.7
30	1150	7.4
35	1000	6.5
40	1500	9.7
45	1350	8.7
50	1350	7.3
55	1350	8.7
60	1400	7.6

SUMMARY OF TEST DATA & RESULTS

INNER RING SIZE (INCHES): 12
 OUTER RING SIZE (INCHES): 24
 AVERAGE INFILTRATION RATE (IN/HR): 8.0
 STEADY STATE INFILTRATION RATE (IN/HR): 7.9

INFILTRATION RATE VS TIME



SOIL PROFILE

Depth(Ft)	Soil Description (USCS Classification)
0.0 - 1.0	Dark Brown Fine SAND (SP)
1.0 - 3.0	Brown Fine SAND (SP)
3.0 - 10.0	Dark Brown Silty Fine SAND (SM)
10.0 - 15.0	Brown Silty Fine SAND (SM)
A.B.T.	GWL= 3.5' (EL.+15.0')

Estimated Seasonal High GWL= 3.0' Below Ground Surface (EL.+15.5')



DOUBLE RING INFILTRATION TEST RESULTS

PROJECT: A" Project - Exfiltration Trenches
 LOCATION: Fernandina Beach, Florida
 JOB NUMBER: J19501A
 TEST NUMBER: DRI4
 LAT/LONG: 30.65144°N, 81.45299°W
 GROUND ELEVATION = +18.0'

REPORT DATE: 01/29/21
 TEST DATE: 01/15/21
 FIELD PERSONNEL: Noel Wheeler
 METHOD: ASTM D3385
 WATER HEAD: 6"
 TEST DEPTH: 8"

ELAPSED TIME (MINUTES)	WATER QUANTITY (ML)	INFILTRATION RATE (IN/HOUR)
5	3200	20.7
10	3400	22.0
15	3000	19.4
20	3500	22.7
25	3800	24.6
30	3400	22.0
35	3650	23.6
40	3700	24.0
45	3800	24.6
50	3800	20.5

SUMMARY OF TEST DATA & RESULTS

INNER RING SIZE (INCHES): 12
 OUTER RING SIZE (INCHES): 24
 AVERAGE INFILTRATION RATE (IN/HR): 22.4
 STEADY STATE INFILTRATION RATE (IN/HR): 23.0

INFILTRATION RATE VS TIME



Estimated Seasonal High GWL = 2.5' Below Ground Surface (EL.+15.5')

SOIL PROFILE

Depth(Ft)	Soil Description (USCS Classification)
0.0 - 3.0	Light Grey Slightly Silty Fine SAND (SP-SM)
3.0 - 13.0	Dark Brown Slightly Silty Fine SAND (SP-SM)
13.0 - 10.0	Brown Slightly Silty Fine SAND (SP-SM)
A.B.T.	GWL= 3.4' (EL.+14.6')



DOUBLE RING INFILTRATION TEST RESULTS

PROJECT: A" Project - Exfiltration Trenches
 LOCATION: Fernandina Beach, Florida
 JOB NUMBER: J19501A
 TEST NUMBER: DRI5
 LAT/LONG: 30.65109°N, 81.45403°W
 GROUND ELEVATION = +17.5'

REPORT DATE: 01/29/21
 TEST DATE: 01/15/21
 FIELD PERSONNEL: Noel Wheeler
 METHOD: ASTM D3385
 WATER HEAD: 6"
 TEST DEPTH: 8"

ELAPSED TIME (MINUTES)	WATER QUANTITY (ML)	INFILTRATION RATE (IN/HOUR)
5	800	5.2
10	1400	9.1
15	1300	8.4
20	1000	6.5
25	1400	9.1
30	1400	9.1
35	1100	7.1
40	1100	7.1
45	1100	7.1
50	1000	5.4
55	1300	7.0
60	1100	5.9

SUMMARY OF TEST DATA & RESULTS

INNER RING SIZE (INCHES): 12
 OUTER RING SIZE (INCHES): 24
 AVERAGE INFILTRATION RATE (IN/HR): 7.2
 STEADY STATE INFILTRATION RATE (IN/HR): 6.1

INFILTRATION RATE VS TIME



SOIL PROFILE

Depth(Ft)	Soil Description (USCS Classification)
0.0 - 1.0	Gravel
1.0 - 3.0	Dark Brown Slightly Silty Fine SAND (SP-SM)
3.0 - 4.0	Grey Slightly Silty Fine SAND (SP-SM)
4.0 - 5.0	Dark Brown Silty Fine SAND (SM)
<u>5.0 - 15.0</u>	Dark Brown Slightly Silty Fine SAND (SP-SM)
A.B.T.	GWL= 3.8' (EL.+13.7')

Estimated Seasonal High GWL= 3.3' Below Ground Surface (EL.+14.2')



INSITU FALLING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches
Fernandina Beach, Florida
AGES Job No. J1901A

Governing Equation (NAVFAC)

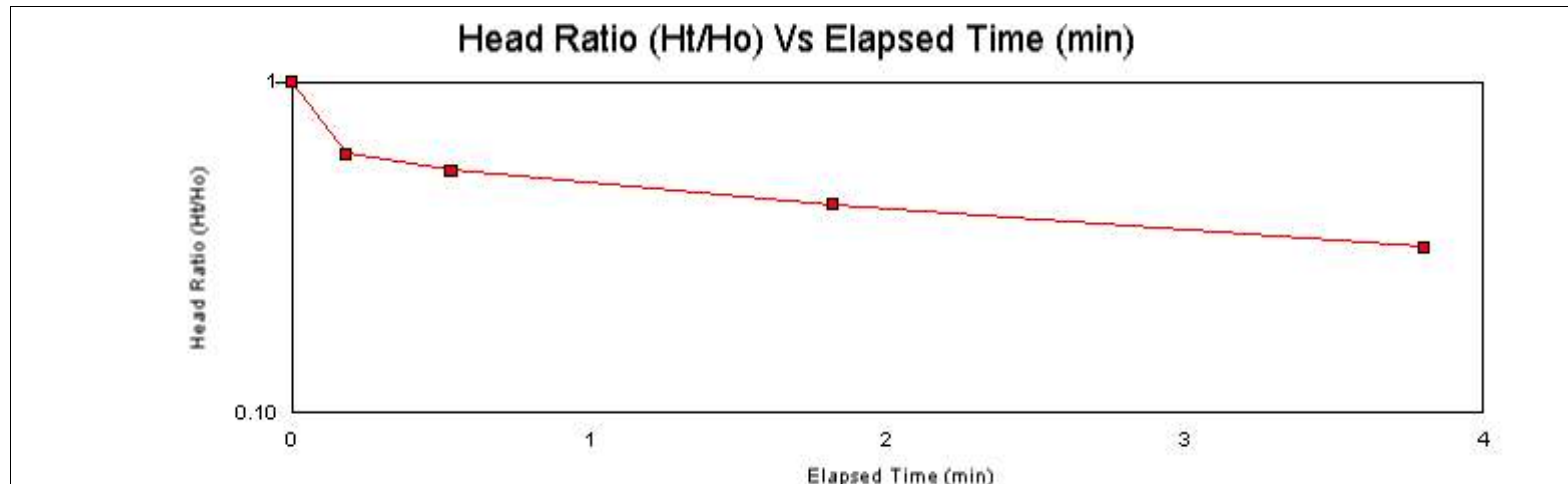
$$K = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

Date Performed 01/23/21

Performed by D Anderson

Well Data	
Test ID	TMW1
Well Radius - R (ft)	0.08
Well Stickup (ft)	3.08
Well Depth below TOC (ft)	15
Saturated Screen Length - L(ft)	8.37
Depth to Static GW below TOC	6.63
Initial Water Depth below TOC Slug In	5.265

Field Data			Water Level TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time t					
min	sec	min			
0	0.01	0.0	5.27	1.365	1.0
0	11	0.2	5.80	0.83	0.6
0	32	0.5	5.89	0.74	0.5
1	49	1.8	6.05	0.58	0.4
3	48	3.8	6.20	0.43	0.3
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.000408 ft/min		0.59	ft/day		2.1E-04 cm/sec





INSITU RISING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches

Fernandina Beach, Florida

AGES Job No. J1901A

Governing Equation (NAVFAC)

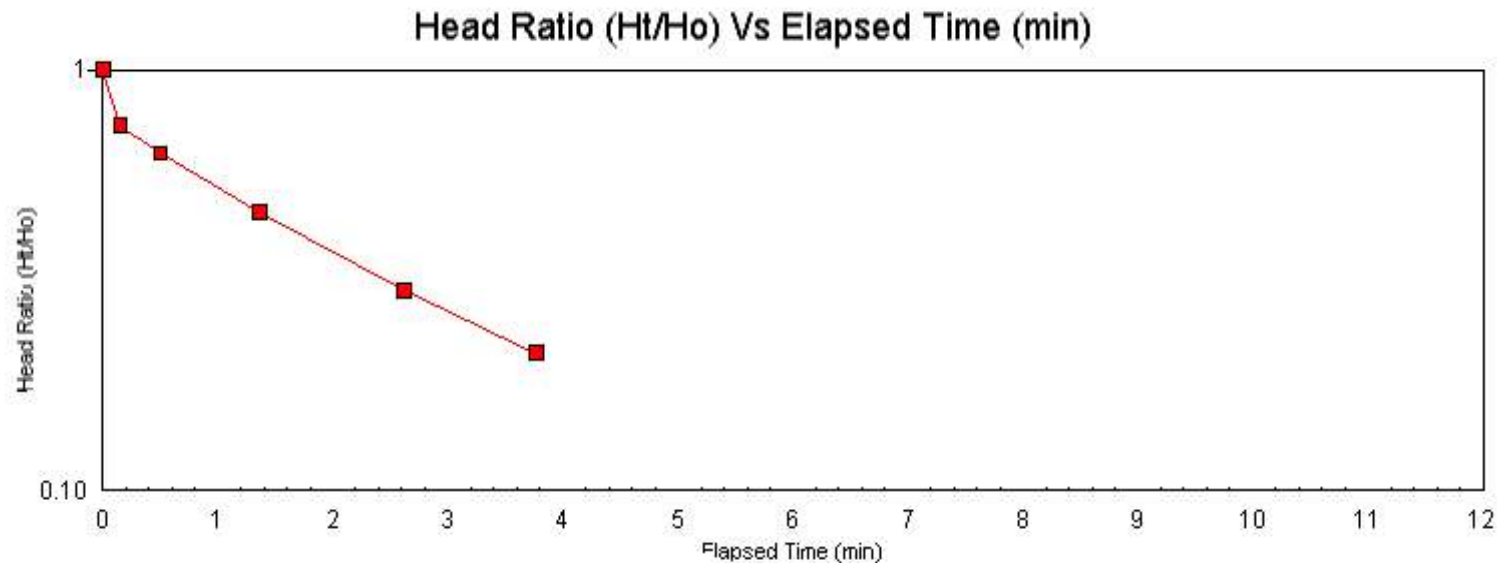
$$K_{hsat} = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

Date Performed 01/23/21

Performed by D. Anderson

Well Data	
Well ID	TMW1
Well Radius - R (ft)	0.083
Saturated Screen Length - L(ft)	8.37
Well Stickup (ft)	3.08
Well Depth below TOC	15.00
Depth to Static GW below TOC	6.63
Initial Drawdown Depth below TOC	7.72

Field Data			Depth Below TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time (t)					
min	sec	min			
0	0.1	0.0	7.716	1.09	1.00
0	9	0.2	7.430	0.80	0.74
0	30	0.5	7.317	0.69	0.63
1	22	1.4	7.127	0.50	0.46
2	37	2.6	6.955	0.32	0.30
3	46	3.8	6.861	0.23	0.21
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.000612 ft/min		0.88	ft/day		3.1E-04 cm/sec





INSITU FALLING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches
Fernandina Beach, Florida
AGES Job No. J19501A

Governing Equation (NAVFAC)

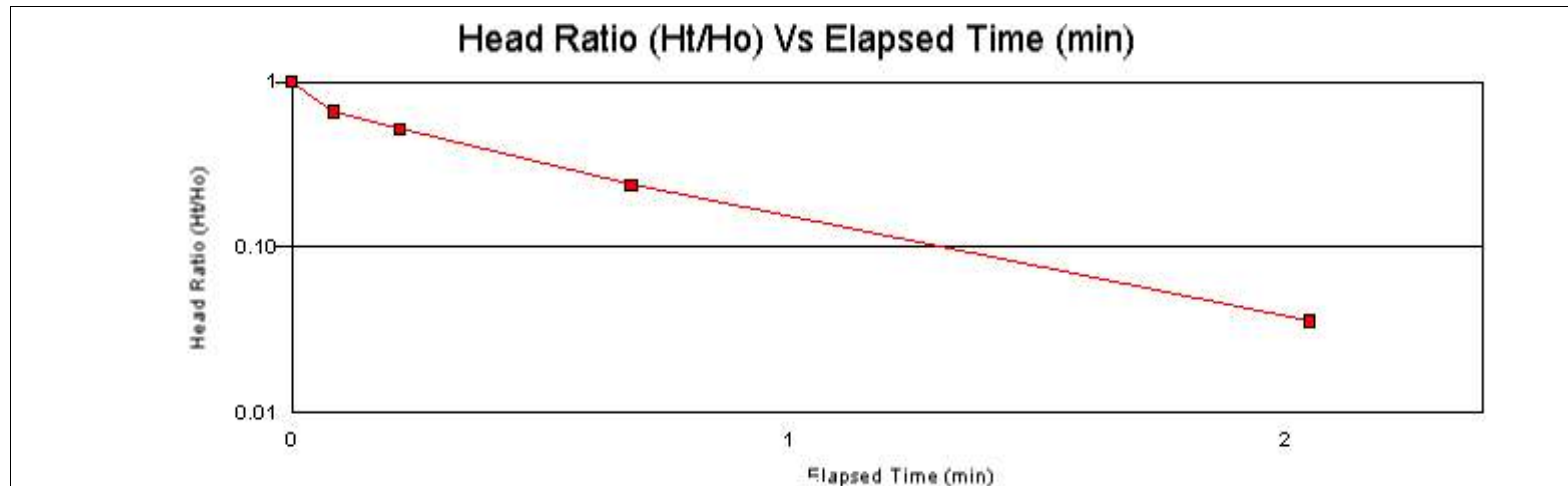
$$K = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

Date Performed 01/23/21

Performed by D Anderson

Well Data	
Test ID	TMW2
Well Radius - R (ft)	0.08
Well Stickup (ft)	3.08
Well Depth below TOC (ft)	15
Saturated Screen Length - L(ft)	7.6
Depth to Static GW below TOC	7.4
Initial Water Depth below TOC Slug In	6.2

Field Data			Water Level TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time t					
min	sec	min			
0	0.01	0.0	6.20	1.2	1.0
0	5	0.1	6.61	0.79	0.7
0	13	0.2	6.78	0.62	0.5
0	41	0.7	7.12	0.28	0.2
2	3	2.1	7.36	0.04	0.0
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.00343	ft/min	4.94	ft/day	1.7E-03	cm/sec





INSITU RISING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches

Fernandina Beach, Florida

AGES Job No. J19501A

Governing Equation (NAVFAC)

$$K_{hsat} = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

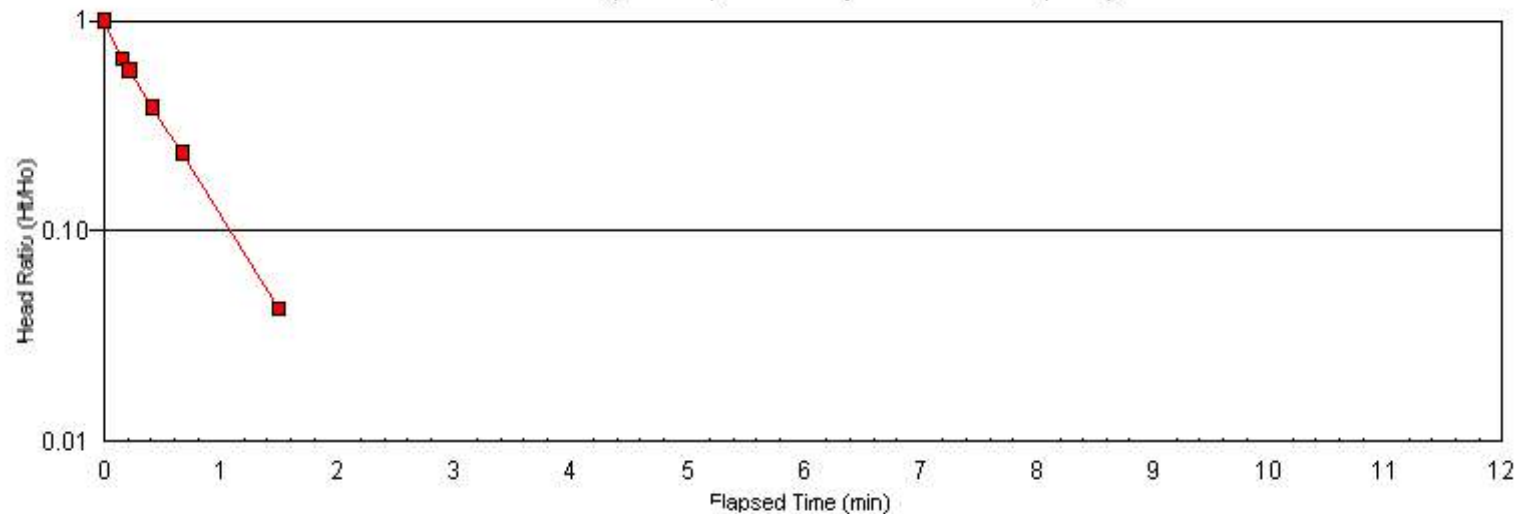
Date Performed 01/23/21

Performed by D. Anderson

Well Data	
Well ID	TMW2
Well Radius - R (ft)	0.083
Saturated Screen Length - L (ft)	7.60
Well Stickup (ft)	3.08
Well Depth below TOC	15.00
Depth to Static GW below TOC	7.40
Initial Drawdown Depth below TOC	8.59

Field Data			Depth Below TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time (t)					
min	sec	min			
0	0.1	0.0	8.590	1.19	1.00
0	9	0.2	8.186	0.79	0.66
0	13	0.2	8.088	0.69	0.58
0	25	0.4	7.859	0.46	0.39
0	40	0.7	7.679	0.28	0.23
1	30	1.5	7.451	0.05	0.04
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.004112 ft/min		5.92	ft/day	2.1E-03	cm/sec

Head Ratio (Ht/Ho) Vs Elapsed Time (min)





INSITU FALLING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches
Fernandina Beach, Florida
AGES Job No. J19501A

Governing Equation (NAVFAC)

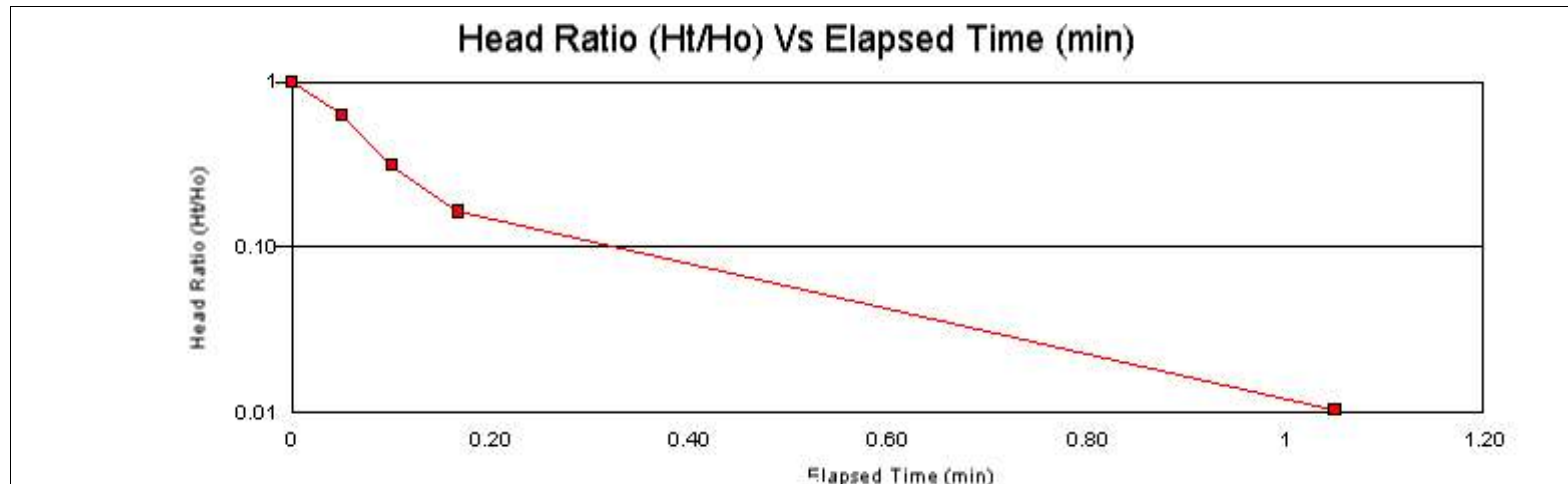
$$K = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

Date Performed 01/23/21

Performed by D Anderson

Well Data	
Test ID	TMW3
Well Radius - R (ft)	0.08
Well Stickup (ft)	3.58
Well Depth below TOC (ft)	15
Saturated Screen Length - L(ft)	7.88
Depth to Static GW below TOC	7.12
Initial Water Depth below TOC Slug In	6.47

Field Data			Water Level TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time t					
min	sec	min			
0	0.01	0.0	6.47	0.65	1.0
0	3	0.1	6.71	0.41	0.6
0	6	0.1	6.92	0.20	0.3
0	10	0.2	7.01	0.11	0.2
1	3	1.1	7.11	0.01	0.0
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.008163 ft/min		11.75 ft/day		4.1E-03 cm/sec	





INSITU RISING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches

Jacksonville,, Florida

AGES Job No. J19501A

Governing Equation (NAVFAC)

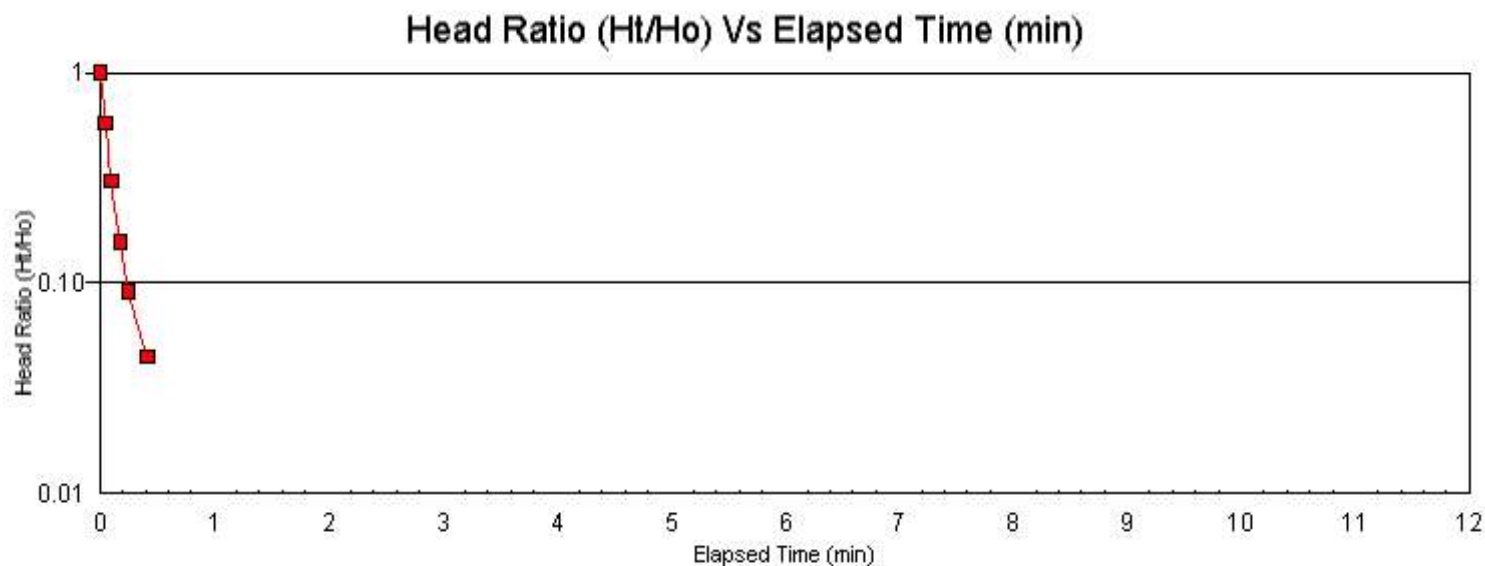
$$K_{hsat} = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

Date Performed 01/23/21

Performed by D. Anderson

Well Data	
Well ID	TMW3
Well Radius - R (ft)	0.083
Saturated Screen Length - L(ft)	7.88
Well Stickup (ft)	3.58
Well Depth below TOC	15.00
Depth to Static GW below TOC	7.12
Initial Drawdown Depth below TOC	8.00

Field Data			Depth Below TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time (t)					
min	sec	min			
0	0.1	0.0	8.000	0.88	1.00
0	3	0.1	7.626	0.51	0.57
0	6	0.1	7.389	0.27	0.31
0	11	0.2	7.258	0.14	0.16
0	15	0.3	7.200	0.08	0.09
0	25	0.4	7.159	0.04	0.04
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.016359 ft/min		23.56 ft/day		8.3E-03 cm/sec	





INSITU FALLING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches
 Jacksonville,, Florida
 AGES Job No. J19501A

Governing Equation (NAVFAC)

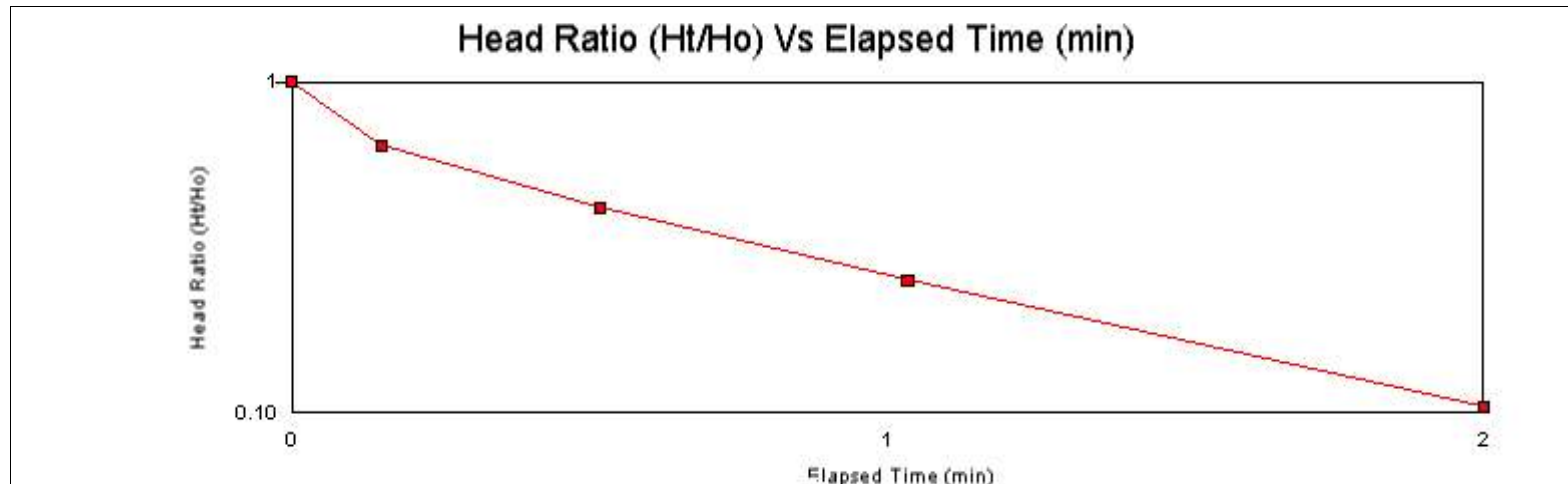
$$K=r^2/2L \ln(L/R) [\ln(H1/H2)/(t2-t1)]$$

Date Performed 01/21/21

Performed by D Anderson

Well Data	
Test ID	TMW4
Well Radius - R (ft)	0.08
Well Stickup (ft)	2.83
Well Depth below TOC (ft)	15
Saturated Screen Length - L(ft)	8.77
Depth to Static GW below TOC	6.23
Initial Water Depth below TOC Slug In	5.4048

Field Data			Water Level TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time t					
min	sec	min			
0	0.01	0.0	5.40	0.8252	1.0
0	9	0.2	5.70	0.53	0.6
0	31	0.5	5.89	0.34	0.4
1	2	1.0	6.02	0.21	0.3
2	0	2.0	6.14	0.09	0.1
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.001937 ft/min		2.79 ft/day		9.8E-04 cm/sec	





INSITU RISING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches

Jacksonville, Florida

AGES Job No. J19501A

Governing Equation (NAVFAC)

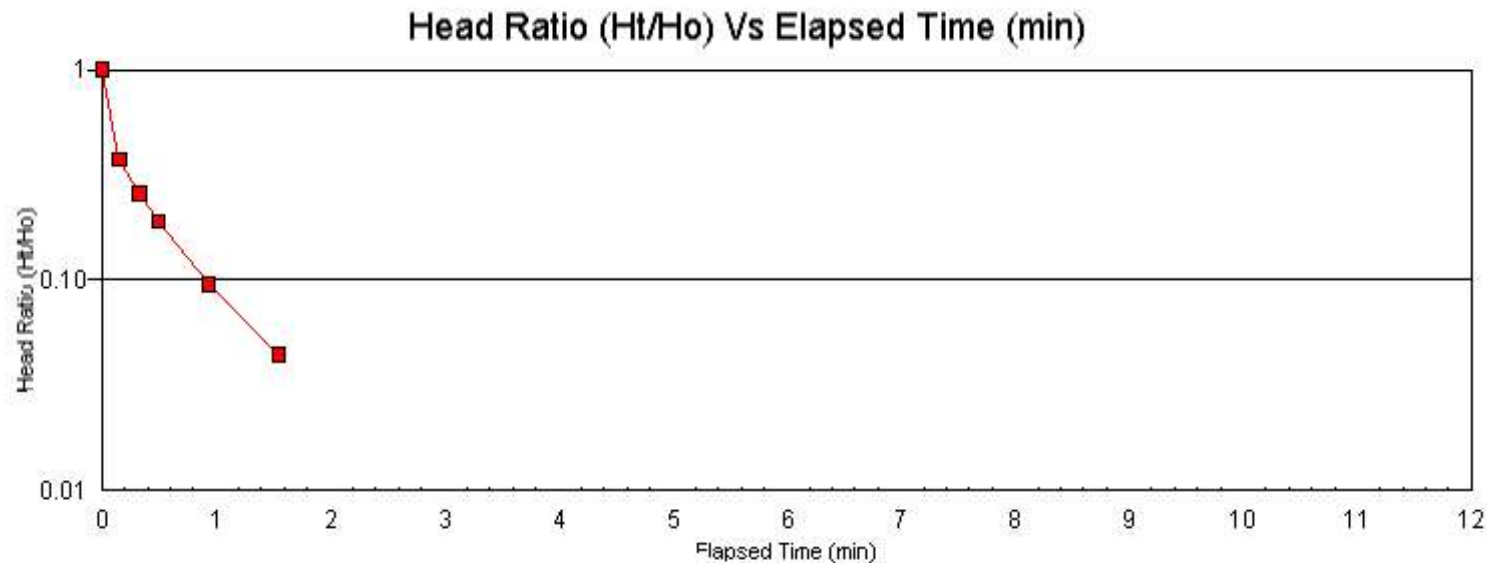
$$K_{hsat} = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

Date Performed 01/23/21

Performed by D. Anderson

Well Data	
Well ID	TMW4
Well Radius - R (ft)	0.083
Saturated Screen Length - L(ft)	8.77
Well Stickup (ft)	2.83
Well Depth below TOC	15.00
Depth to Static GW below TOC	6.23
Initial Drawdown Depth below TOC	8.37

Field Data			Depth Below TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time (t)					
min	sec	min			
0	0.1	0.0	8.369	2.14	1.00
0	9	0.2	7.027	0.80	0.37
0	20	0.3	6.779	0.55	0.26
0	30	0.5	6.636	0.41	0.19
0	56	0.9	6.434	0.20	0.10
1	33	1.6	6.324	0.09	0.04
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.002928 ft/min		4.22	ft/day	1.5E-03	cm/sec





INSITU FALLING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches
Jacksonville, Florida
AGES Job No. J19501A

Governing Equation (NAVFAC)

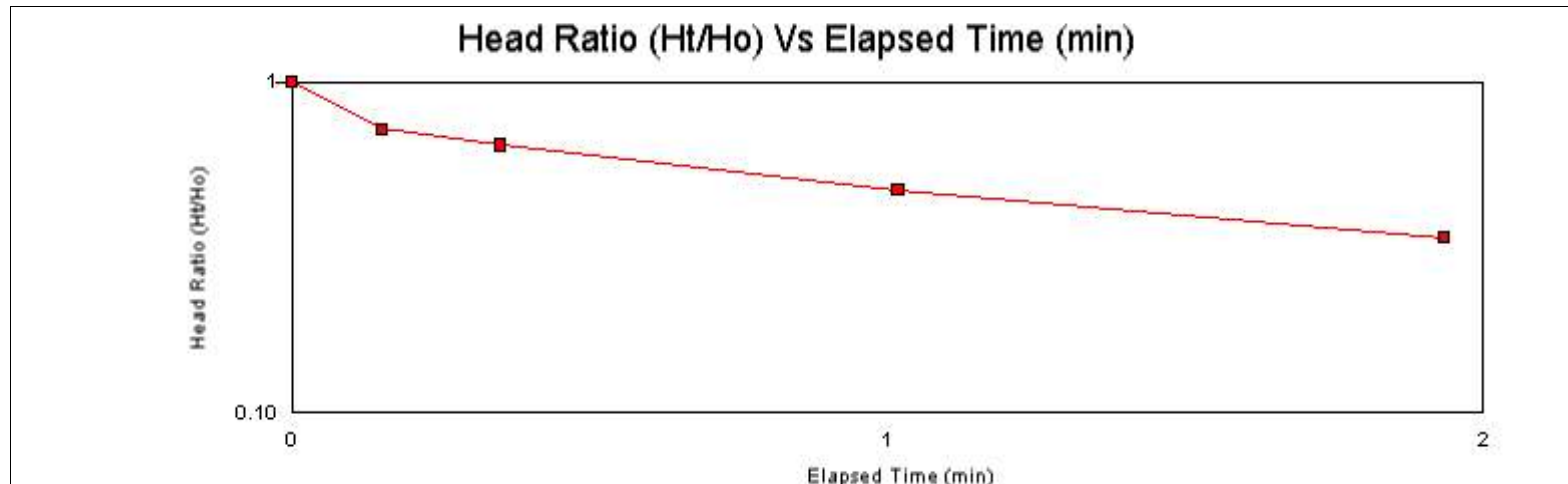
$$K = \frac{r^2}{2L} \ln(L/R) \left[\ln(H_1/H_2) / (t_2 - t_1) \right]$$

Date Performed 01/23/21

Performed by D Anderson

Well Data	
Test ID	TMW5
Well Radius - R (ft)	0.08
Well Stickup (ft)	3
Well Depth below TOC (ft)	15
Saturated Screen Length - L(ft)	8.2
Depth to Static GW below TOC	6.8
Initial Water Depth below TOC Slug In	5.466

Field Data			Water Level TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time t					
min	sec	min			
0	0.01	0.0	5.47	1.334	1.0
0	9	0.2	5.84	0.96	0.7
0	21	0.4	5.94	0.86	0.6
1	1	1.0	6.17	0.63	0.5
1	56	1.9	6.35	0.45	0.3
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.000939 ft/min		1.35	ft/day		4.8E-04 cm/sec





INSITU RISING HEAD HYDRAULIC CONDUCTIVITY TEST

The "A" Project - Exfiltration Trenches

Jacksonville, Florida

AGES Job No. J19501A

Governing Equation (NAVFAC)

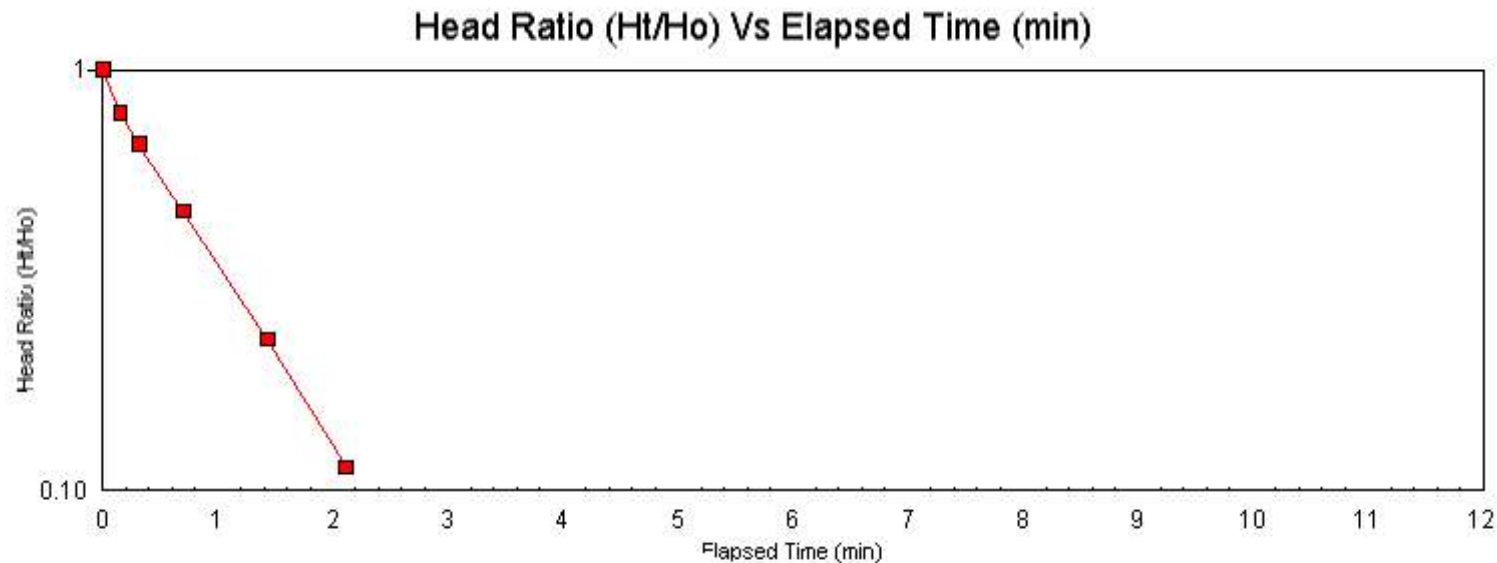
$$K_{hsat} = \frac{r^2}{2L} \ln(L/R) [\ln(H_1/H_2)/(t_2 - t_1)]$$

Date Performed 01/23/21

Performed by D. Anderson

Well Data	
Well ID	TMW5
Well Radius - R (ft)	0.083
Saturated Screen Length - L (ft)	8.20
Well Stickup (ft)	3.00
Well Depth below TOC	15.00
Depth to Static GW below TOC	6.80
Initial Drawdown Depth below TOC	7.86

Field Data			Depth Below TOC (ft)	Head (Ht)	Head Ratio Ht/Ho
Elapsed Time (t)					
min	sec	min			
0	0.1	0.0	7.860	1.06	1.00
0	9	0.2	7.638	0.84	0.79
0	19	0.3	7.504	0.70	0.66
0	42	0.7	7.290	0.49	0.46
1	26	1.4	7.042	0.24	0.23
2	7	2.1	6.920	0.12	0.11
Results: Insitu Horizontal Hydraulic Conductivity (k)					
0.001867 ft/min		2.69 ft/day		9.5E-04 cm/sec	



ATTACHMENT D

CALCULATIONS

Drainage Calculations

**1505 S. 15th Street
FERNANDINA BEACH, FLORIDA
GDG #23-215**

10/13/2025



2225 A1A South, Suite A2 • St. Augustine • Florida • 32080
904.794.4231 • www.gulfstreamdesign.com
Civil Site Design • Permitting
Land Development • Consulting



Project Name: 1505 S. 15th Street
Project No: GDG #23-215

Designer: TVB
Date: 7/18/2025

TIME OF CONCENTRATION CALCULATIONS

Stormwater Basin: PRE-N

Time of concentration for sheet flow from Manning-Kinematic wave equation (1976)

$$T_c = 0.007 * (n * L)^{0.8} / (P_2^{0.5} * S^{0.4})$$

Length:	290 ft	n:	0.15		
High Pt:	19.60 ft	Slope:	0.0055 ft/ft		
Low Pt:	18.00 ft	P ₂ :	5 in/hr	2yr/24hr	
Surface:					T ₁ : 30.75 min

Time of concentration for shallow concentrated flow from SCS TR-55 velocity method.

Length:	235 ft	Slope:	0.005 ft/ft	
High Pt:	18.0 ft	Velocity:	1.391 ft/sec	
Low Pt:	16.9 ft			
Surface:	Paved			T ₂ : 2.82 min

Time of concentration for Rect./Vee/Trap.channel from Manning's Equation.

Length:	ft	Depth:	ft	
High Pt:	ft	Bottom:	ft	
Low Pt:	ft	Side Slope:	ft/ft	
Slope:	ft/ft	Type:	Vee	
Surface:	Clean	R _H :	0.00 ft	
n:	0.022	Velocity:	0.000 ft/sec	
				T ₃ : 0.00 min

Time of concentration for Storm Sewer flow assuming fps velocity.

Length:	ft		
Velocity:	ft/sec		
			T ₄ : 0.00 min

T_c: 33.6 min



Project Name: 1505 S. 15th Street
Project No: GDG #23-215

Designer: TVB
Date: 10/13/2025

DRAINAGE CALCULATIONS

PRE-DEVELOPED DRAINAGE BASIN CHARACTERISTICS

PRE Development Drainage Areas

	Area (sf)	Area (ac)	Impervious Area (ac)	Tc (MIN)	CN
PRE-N	160,381	3.68	0.24	33.6	52.2
PRE-S	8,994	0.21	0.01	10.0	50.8
TOTAL	169375	3.89	0.25		

PRE Development Curve Number & Runoff Coefficient

PRE-N	Land Use	Area (sf)	Area (ac)	CN	wtd "CN"
HSG "A"	Open Space (Fair)	149834	3.44	49	45.8
HSG "A"	Impervious	10547	0.24	98	6.4
	TOTAL		3.68		52.2

PRE-S	Land Use	Area (sf)	Area (ac)	CN	wtd "CN"
HSG "A"	Open Space (Fair)	8672	0.20	49	47.2
HSG "A"	Impervious	322	0.01	98	3.5
	TOTAL		0.21		50.8



Project Name: 1505 S. 15th Street
 Project No: GDG #23-215

Designer: TVB
 Date: 10/13/2025

POST-DEVELOPED DRAINAGE CALCULATIONS - PHASE 1

POST Development Drainage Areas Summary

	Area (sf)	Area (ac)	Impervious Area (ac)	Tc (MIN)	"CN"	"c"
POST-1A	30948	0.71	0.53	10.0	82.2	0.71
POST-1B	39994	0.92	0.46	10.0	68.7	0.53
POST-2 (PRE-N	89439	2.05	0.18	33.6	53.2	0.17
POST-3 (PRE-S)	8994	0.21	0.01	10.0	50.8	0.13
TOTAL	169375	3.89	1.18			

POST Development Curve Number & Runoff Coefficient Calculations

POST-1A	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"	"c"	weighted "c"
HSG "A"	Open Space (Good)	7766	0.18	39	9.8	0.10	0.03
HSG "A"	Permeable Pavers	9760	0.22	95	30.0	0.85	0.27
HSG "A"	Impervious	13422	0.31	98	42.5	0.95	0.41
	TOTAL		0.71		82.2		0.71

POST-1B	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"	"c"	weighted "c"
HSG "A"	Open Space (Good)	19828	0.46	39	19.3	0.10	0.05
HSG "A"	Permeable Pavers	0	0.00	95	0.0	0.85	0.00
HSG "A"	Impervious	20166	0.46	98	49.4	0.95	0.48
	TOTAL		0.92		68.7		0.53

POST-2 (PRE-N)	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"	"c"	weighted "c"
HSG "A"	Open Space (Fair)	81725	1.88	49	44.8	0.10	0.09

POST-DEVELOPED DRAINAGE CALCULATIONS - PHASE 1

HSG "A"	Impervious	7714	0.18	98	8.5	0.95	0.08
TOTAL			2.05		53.2		0.17

POST-3 (PRE-S)	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"	"c"	weighted "c"
	Open Space						
HSG "A"	(Fair)	8672	0.20	49	47.2	0.10	0.10
HSG "A"	Impervious	322	0.01	98	3.5	0.95	0.03
TOTAL			0.21		50.8		0.13



Project Name: 1505 S. 15th Street
 Project No: GDG #23-215

Designer: TVB
 Date: 10/13/2025

Required Treatment Volume (TV) [EXFILTRATION & DRY RETENTION]

PHASE 1: BASINS POST 1A & 1B

Acres	Inches	Ac-ft.	Minimum Treatment Volume (TV) is the Greater of:
1.63	1.00	0.136	1" runoff from drainage area
			or,
1.00	1.25	0.172	1.25" runoff from impervious area + 1/2" over total drainage area
TV=			0.172

Provided Treatment Volume Stage/Storage Calculations

PAVER SECTION EXF-1
EXF-1

Exfiltration Section Description	Elevation (ft.)	Paver Area (ft ²)	% Voids	Incremental Section Vol. (ft ³)	Cumulative DRA Vol. (ft ³)	Cumulative DRA Vol. (Ac.ft.)
21-inch #57 Base	16.50	10282		0	0	0.0000
Weir Elevation	17.75	10282	40%	5141	5141	0.1180
4-inch #8 Base	18.25	10282	40%	2056	7197	0.1652
3-1/8" Paver Base	18.58	10282	40%	1371	8568	0.1967
Min Top of Paver	18.84	10282	10%	268	8836	0.2028
Min Top of Curb	19.34	10282	100%	5141	13977	0.3209

Exfiltration Trench connects to a DRY RETENTION AREA "DRA"

DRA	Elev (ft)	Area (sf)	Area (ac)	Area (ac-ft)	
BOTTOM	16.50	2299	0.053	0.000	
	17.00	3157	0.072	0.031	
WEIR	17.75	4471	0.103	0.097	4225 cu-ft
	18.00	4916	0.113	0.124	
TOP	18.50	5816	0.134	0.186	

Required Treatment volume 0.172 ac-ft @ elev 17.50
 Provided Treatment volume 0.215 ac-ft @ elev 17.75



Project Name: 1505 S. 15th Street
 Project No: GDG #23-215

Designer: TVB
 Date: 10/13/2025

POST-DEVELOPED DRAINAGE CALCULATIONS - BUILDOUT

POST Development Drainage Areas Summary

	Area (sf)	Area (ac)	Impervious Area (ac)	Tc (MIN)	"CN"
POST-1	30948	0.71	0.53	10	82.2
POST-2	40907	0.94	0.46	10	68.1
POST-3	34379	0.79	0.64	10	85.8
POST-4	16516	0.38	0.33	10	89.4
POST-5	38452	0.88	0.73	10	85.7
POST-6	8173	0.19	0.00	10	39.0
TOTAL	169375	3.89	2.70		

POST Development Curve Number & Runoff Coefficient Calculations

POST-1	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"
HSG "A"	Open Space (Good	7766	0.18	39	9.8
HSG "A"	Permeable Pavers	9760	0.22	95	30.0
HSG "A"	Impervious	13422	0.31	98	42.5
	TOTAL		0.71		82.2

POST-2	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"
HSG "A"	Open Space (Good	20741	0.48	39	19.8
HSG "A"	Permeable Pavers	0	0.00	95	0.0
HSG "A"	Impervious	20166	0.46	98	48.3
	TOTAL		0.94		68.1

POST-3	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"
HSG "A"	Open Space (Good	6659	0.15	39	7.6
HSG "A"	Permeable Pavers	9133	0.21	95	25.2
HSG "A"	Impervious	18587	0.43	98	53.0
	TOTAL		0.79		85.8

POST-DEVELOPED DRAINAGE CALCULATIONS - BUILDOUT

POST-4	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"
HSG "A"	Open Space (Good	1996	0.05	39	4.7
HSG "A"	Permeable Pavers	8231	0.19	95	47.3
HSG "A"	Impervious	6289	0.14	98	37.3
TOTAL			0.38		89.4

POST-5	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"
HSG "A"	Open Space (Good	7584	0.17	39	7.5
HSG "A"	Permeable Pavers	12982	0.30	95	31.3
HSG "A"	Impervious	18861	0.43	98	46.9
TOTAL			0.91		85.7

POST-6	Land Use	Area (sf)	Area (ac)	CN	weighted "CN"
HSG "A"	Open Space (Good	8173	0.19	39	39.0
HSG "A"	Permeable Pavers	0	0.00	95	0.0
HSG "A"	Impervious	0	0.00	98	0.0
TOTAL			0.19		39.0



Project Name: 1505 S. 15th Street
 Project No: GDG #23-215

Designer: TVB
 Date: 10/13/2025

Required Treatment Volume (TV) [EXFILTRATION & DRY RETENTION]

TOTAL SITE BUILDOUT

Acres	Inches	Ac-ft.	Minimum Treatment Volume (TV) is the Greater of:
3.89	1.00	0.324	1" runoff from drainage area
			or,
2.70	1.25	0.443	1.25" runoff from impervious area + 1/2" over total drainage area
TV= 0.443			

Provided Treatment Volume Stage/Storage Calculations

COMBINED PAVER SECTIONS EXF-1 THRU EXF-5 (see individual EXF data below)

Paver Section Description	Elevation (ft.)	Paver Area (ft ²)	% Voids	Incremental Section Vol. (ft ³)	Cumulative DRA Vol. (ft ³)	Cumulative DRA Vol. (Ac.ft.)
21-inch #57 Base	16.50	41794	40%	0	0	0.0000
	17.00	41794	40%	8359	8359	0.1919
Weir Elevation	17.50	41794	40%	8359	16718	0.3838
4-inch #8 Base	18.25	41794	40%	12538	29256	0.6716
3-1/8" Paver Base	18.58	41794	40%	5573	34828	0.7995
Min Top of Paver	18.84	41794	10%	1088	35917	0.8245
Min Top of Curb	19.34	41794	100%	20897	56814	1.3043

Exfiltration Trench connects to a DRY RETENTION AREA "DRA"

DRA	Elev (ft)	Area (sf)	Area (ac)	Area (ac-ft)
BOTTOM	16.50	3195	0.073	0.000
	17.00	4188	0.096	0.042
WEIR	17.50	5196	0.119	0.096
	18.00	6218	0.143	0.162
TOP	18.50	7255	0.167	0.239

Required Treatment volume 0.443 ac-ft @ elev 17.42
Provided Treatment volume 0.480 ac-ft @ elev 17.50

INDIVIDUAL EXFILTRATION TRENCH STAGE/STORAGE CALCULATIONS

EXF-1

Exfiltration Section Description	Elevation (ft.)	Paver Area (ft ²)	% Voids	Incremental Section Vol. (ft ³)	Cumulative DRA Vol. (ft ³)	Cumulative DRA Vol. (Ac.ft.)
21-inch #57 Base	16.50	10282		0	0	0.0000
Weir Elevation	17.50	10282	40%	4113	4113	0.0944
4-inch #8 Base	18.25	10282	40%	3085	7197	0.1652
3-1/8" Paver Base	18.58	10282	40%	1371	8568	0.1967
Min Top of Paver	18.84	10282	10%	268	8836	0.2028
Min Top of Curb	19.34	10282	100%	5141	13977	0.3209

EXF-3

Exfiltration Section Description	Elevation (ft.)	Paver Area (ft ²)	% Voids	Incremental Section Vol. (ft ³)	Cumulative DRA Vol. (ft ³)	Cumulative DRA Vol. (Ac.ft.)
21-inch #57 Base	16.50	9780		0	0	0.0000
Weir Elevation	17.50	9780	40%	3912	3912	0.0898
4-inch #8 Base	18.25	9780	40%	2934	6846	0.1572
3-1/8" Paver Base	18.58	9780	40%	1304	8150	0.1871
Min Top of Paver	18.84	9780	10%	255	8405	0.1929
Min Top of Curb	19.34	9780	100%	4890	13295	0.3052

EXF-4

Exfiltration Section Description	Elevation (ft.)	Paver Area (ft ²)	% Voids	Incremental Section Vol. (ft ³)	Cumulative DRA Vol. (ft ³)	Cumulative DRA Vol. (Ac.ft.)
21-inch #57 Base	16.50	8750		0	0	0.0000
Weir Elevation	17.50	8750	40%	3500	3500	0.0803
4-inch #8 Base	18.25	8750	40%	2625	6125	0.1406
3-1/8" Paver Base	18.58	8750	40%	1167	7292	0.1674
Min Top of Paver	18.84	8750	10%	228	7520	0.1726
Min Top of Curb	19.34	8750	100%	4375	11895	0.2731

EXF-5

Exfiltration Section Description	Elevation (ft.)	Paver Area (ft ²)	% Voids	Incremental Section Vol. (ft ³)	Cumulative DRA Vol. (ft ³)	Cumulative DRA Vol. (Ac.ft.)
21-inch #57 Base	16.50	12982		0	0	0.0000
Weir Elevation	17.50	12982	40%	5193	5193	0.1192
4-inch #8 Base	18.25	12982	40%	3895	9087	0.2086
3-1/8" Paver Base	18.58	12982	40%	1731	10818	0.2484
Min Top of Paver	18.84	12982	10%	338	11156	0.2561
Min Top of Curb	19.34	12982	100%	6491	17647	0.4051

ATTACHMENT E
MODEL RESULTS
(PHASE 1)

Node Max Conditions : Multi Item | (sim, name) [Scenario1]

Sim Name	Node Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
25YR-24HR	DRA	0.00	0.00	18.40	0.0010	5.02	2.40	5650
25YR-24HR	EXF-1	18.75	0.00	18.57	0.0010	4.43	1.20	4189
25YR-24HR	GW	0.00	0.00	15.50	0.0000	0.53	0.00	0
25YR-24HR	POST-N	0.00	0.00	17.10	0.0000	5.45	0.00	0
25YR-24HR	POST-S	0.00	0.00	17.10	0.0000	0.53	0.00	0
25YR-24HR	PRE-N	0.00	0.00	17.10	0.0000	5.62	0.00	0
25YR-24HR	PRE-S	0.00	0.00	17.10	0.0000	0.53	0.00	0
MEAN ANNUAL	DRA	0.00	0.00	17.49	0.0010	1.63	0.34	4020
MEAN ANNUAL	EXF-1	18.75	0.00	17.49	0.0010	1.96	0.37	4189
MEAN ANNUAL	GW	0.00	0.00	15.50	0.0000	0.58	0.00	0
MEAN ANNUAL	POST-N	0.00	0.00	17.10	0.0000	0.61	0.00	0
MEAN ANNUAL	POST-S	0.00	0.00	17.10	0.0000	0.08	0.00	0
MEAN ANNUAL	PRE-N	0.00	0.00	17.10	0.0000	0.99	0.00	0
MEAN ANNUAL	PRE-S	0.00	0.00	17.10	0.0000	0.08	0.00	0

Simple Basin: POST-1A

Scenario: Scenario1
Node: EXF-1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.7100 ac
Curve Number: 82.2
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: POST-1B

Scenario: Scenario1
Node: DRA
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.9400 ac
Curve Number: 68.7
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: POST-2

Scenario: Scenario1
Node: POST-N
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number

Time of Concentration: 33.6000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH323
Peaking Factor: 323.0
Area: 2.0500 ac
Curve Number: 53.2
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment: PORTION OF PRE-N

Simple Basin: POST-3

Scenario: Scenario1
Node: POST-S
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH323
Peaking Factor: 323.0
Area: 0.2100 ac
Curve Number: 50.8
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: PRE-N

Scenario: Scenario1
Node: PRE-N
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 33.6000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH323
Peaking Factor: 323.0

Area: 3.6800 ac
 Curve Number: 52.2
 Ia/S: 0.00
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin: PRE-S

Scenario: Scenario1
 Node: PRE-S
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH323
 Peaking Factor: 323.0
 Area: 0.2100 ac
 Curve Number: 50.8
 Ia/S: 0.00
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Node: DRA

Scenario: Scenario1
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 16.50 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.50	0.0530	2309
17.00	0.0720	3136
17.75	0.1030	4487
18.00	0.1130	4922
18.50	0.1340	5837

Comment:

Node: EXF-1

Scenario: Scenario1
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 16.50 ft
Warning Stage: 18.75 ft
Alert Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
16.50	0.00	0
17.75	0.12	5175
18.25	0.17	7196
18.58	0.20	8568
18.84	0.20	8834
19.34	0.32	13978

Comment:

Node: GW

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 15.34 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	15.50
0	0	0	72.0000	15.50

Comment:

Node: POST-N

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 17.10 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Node: POST-S

Scenario: Scenario1

Type: Time/Stage

Base Flow: 0.00 cfs

Initial Stage: 17.10 ft

Warning Stage: 0.00 ft

Alert Stage: 0.00 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Node: PRE-N

Scenario: Scenario1

Type: Time/Stage

Base Flow: 0.00 cfs

Initial Stage: 17.10 ft

Warning Stage: 0.00 ft

Alert Stage: 0.00 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Node: PRE-S

Scenario: Scenario1

Type: Time/Stage

Base Flow: 0.00 cfs

Initial Stage: 17.10 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Weir Link: DRA>99-N

Scenario:	Scenario1	Bottom Clip
From Node:	DRA	Default: 0.00 ft
To Node:	POST-N	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Sharp Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	17.75 ft	Discharge Coefficients
Control Elevation:	0.00 ft	Weir Default: 2.800
Max Depth:	999.00 ft	Weir Table:
Max Width:	1.50 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment:

Percolation Link: DRA>GW

Scenario:	Scenario1	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	DRA	Vertical Flow Termination:	Horizontal Flow Algorithm
To Node:	GW	Perimeter 1:	601.00 ft
Link Count:	1	Perimeter 2:	633.00 ft
Flow Direction:	Both	Perimeter 3:	803.00 ft
Aquifer Base Elevation:	3.00 ft	Distance P1 to P2:	5.00 ft
Water Table Elevation:	15.34 ft	Distance P2 to P3:	50.00 ft
Annual Recharge Rate:	0 ipy	# of Cells P1 to P2:	5
Horizontal Conductivity:	2.930 fpd	# of Cells P2 to P3:	5
Vertical Conductivity:	7.640 fpd		
Fillable Porosity:	0.220		
Layer Thickness:	1.16 ft		

Comment:

Drop Structure Link: EXF>DRA		Upstream Pipe	Downstream Pipe
Scenario:	Scenario1	Invert: 16.75 ft	Invert: 16.50 ft
From Node:	EXF-1	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	DRA	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count:	1	Max Depth: 1.00 ft	Max Depth: 1.00 ft
Pipe Flow Direction:	Both	Bottom Clip	
Solution:	Combine	Default: 0.00 ft	Default: 0.00 ft
Increments:	0	Op Table:	Op Table:
Pipe Count:	1	Ref Node:	Ref Node:
Damping:	0.0000 ft	Manning's N: 0.0000	Manning's N: 0.0000
Length:	200.00 ft	Top Clip	
FHWA Code:	0	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef:	0.00	Op Table:	Op Table:
Exit Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Loss Coef:	0.00	Manning's N: 0.0000	Manning's N: 0.0000
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Pipe Comment:

Weir Component			
Weir: 1		Bottom Clip	
Weir Count: 3		Default:	0.00 ft
Weir Flow Direction: Both		Op Table:	
Damping: 0.0000 ft		Ref Node:	
Weir Type: Sharp Crested Vertical		Top Clip	
Geometry Type: Circular		Default:	0.00 ft
Invert: 17.00 ft		Op Table:	
Control Elevation: 0.00 ft		Ref Node:	
Max Depth: 0.50 ft		Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	18.75 ft	Op Table:	
Control Elevation:	0.00 ft	Ref Node:	
Max Depth:	2.00 ft	Discharge Coefficients	
Max Width:	3.00 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Percolation Link: EXF>GW

Scenario:	Scenario1	Surface Area Option:	Vary Based on Stage/Area
From Node:	EXF-1		Table
To Node:	GW	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	465.00 ft
Flow Direction:	Both	Perimeter 2:	547.00 ft
Aquifer Base Elevation:	3.00 ft	Perimeter 3:	875.00 ft
Water Table Elevation:	15.34 ft	Distance P1 to P2:	5.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	50.00 ft
Horizontal Conductivity:	2.930 fpd	# of Cells P1 to P2:	5
Vertical Conductivity:	7.640 fpd	# of Cells P2 to P3:	5
Fillable Porosity:	0.220		
Layer Thickness:	1.16 ft		

Comment:

Simulation: 25YR-24HR

Scenario: Scenario1
Run Date/Time: 10/14/2025 11:28:35 AM
Program Version: StormWise 4.08.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

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

Output Time Increments

Hydrology

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

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
------	-------	-----	-----------	----------------------

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight: 0.5 dec	Ia/S: 0.20 dec
Fact:	
dZ Tolerance: 0.0010 ft	
Max dZ: 1.0000 ft	Smp/Man Basin Rain: Global
	Opt:
Link Optimizer Tol: 0.0001 ft	OF Region Rain Opt: Global
	Rainfall Name: ~FLMOD
Edge Length Option: Automatic	Rainfall Amount: 9.50 in
	Storm Duration: 24.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area: 100 ft2	Min Node Srf Area: 100 ft2
(2D):	(1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

Simulation: MEAN ANNUAL

Scenario: Scenario1
Run Date/Time: 10/14/2025 11:28:38 AM
Program Version: StormWise 4.08.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

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

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:

Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight	0.5 dec	Ia/S:	0.20 dec
Fact:			
dZ Tolerance:	0.0010 ft		
Max dZ:	1.0000 ft	Smp/Man Basin Rain	Global
		Opt:	
Link Optimizer Tol:	0.0001 ft	OF Region Rain Opt:	Global
		Rainfall Name:	~FLMOD
Edge Length Option:	Automatic	Rainfall Amount:	5.00 in
		Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area	100 ft2	Min Node Srf Area	100 ft2
(2D):		(1D):	
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

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Project Data

Project Name: ISLAND PARK
Simulation Description: EXF RECOVERY (PHASE 1)
Project Number: 23-215
Engineer : TVB
Supervising Engineer: MHL
Date: 10-13-2025

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 3.00
Water Table Elevation, [WT] (ft datum): 15.34
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 2.93
Fillable Porosity, [n] (%): 22.00
Unsaturated Vertical Infiltration Rate, [Iv] (ft/day): 7.64
Maximum Area For Unsaturated Infiltration, [Av] (ft²): 10282.0

Geometry Data

Equivalent Pond Length, [L] (ft): 343.0
Equivalent Pond Width, [W] (ft): 30.0
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft ²)
16.50	10282.0
17.50	10282.0
18.50	10282.0

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Scenario Input Data

Scenario 1 :: 5141 ft³ slug load

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft³) 5141

Initial ground water level (ft datum) 15.34 (default)

<u>Time After Storm Event (days)</u>	<u>Time After Storm Event (days)</u>
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

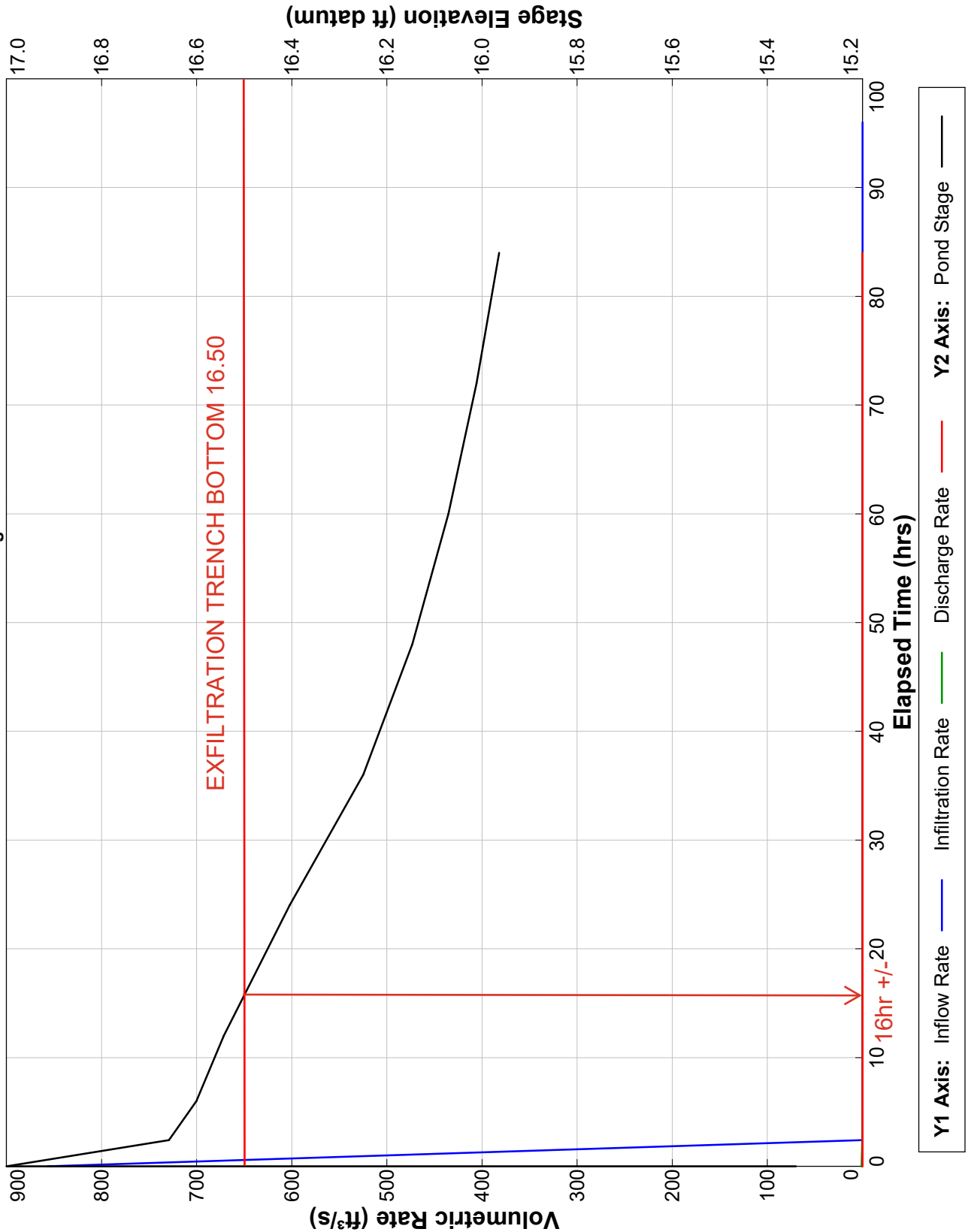
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Summary of Results :: Scenario 1 :: 5141 ft³ slug load

	Time (hours)	Stage (ft datum)	Rate (ft ³ /s)	Volume (ft ³)
Stage				
Minimum	0.000	15.34		
Maximum	0.002	17.00		
Inflow				
Rate - Maximum - Positive	0.002		856.8333	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			5141.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			5141.0
Infiltration				
Rate - Maximum - Positive	0.002		0.9088	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	24.000			5141.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			5141.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	16.25		5141.0
72 Hour Stage and Infiltration Volume	72.000	16.01		5141.0

Plot of Flow Rates and Pond Stage vs Elapsed Time

Scenario 1 :: 5141 ft³ slug load



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Retention Pond Recovery - Refined Method
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Project Data

Project Name: ISLAND PARK
Simulation Description: DRA RECOVERY (PHASE 1)
Project Number: 23-215
Engineer : TVB
Supervising Engineer: MHL
Date: 10-13-2025

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 3.00
Water Table Elevation, [WT] (ft datum): 15.34
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 2.93
Fillable Porosity, [n] (%): 22.00
Unsaturated Vertical Infiltration Rate, [Iv] (ft/day): 7.64
Maximum Area For Unsaturated Infiltration, [Av] (ft²): 4471.0

Geometry Data

Equivalent Pond Length, [L] (ft): 179.0
Equivalent Pond Width, [W] (ft): 25.0
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft ²)
16.50	2299.0
17.00	3157.0
17.75	4471.0
18.00	4916.0
18.50	5816.0

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Scenario Input Data

Scenario 1 :: 4192 ft³ slug load

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft³) 4192

Initial ground water level (ft datum) 15.34 (default)

<u>Time After Storm Event (days)</u>	<u>Time After Storm Event (days)</u>
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

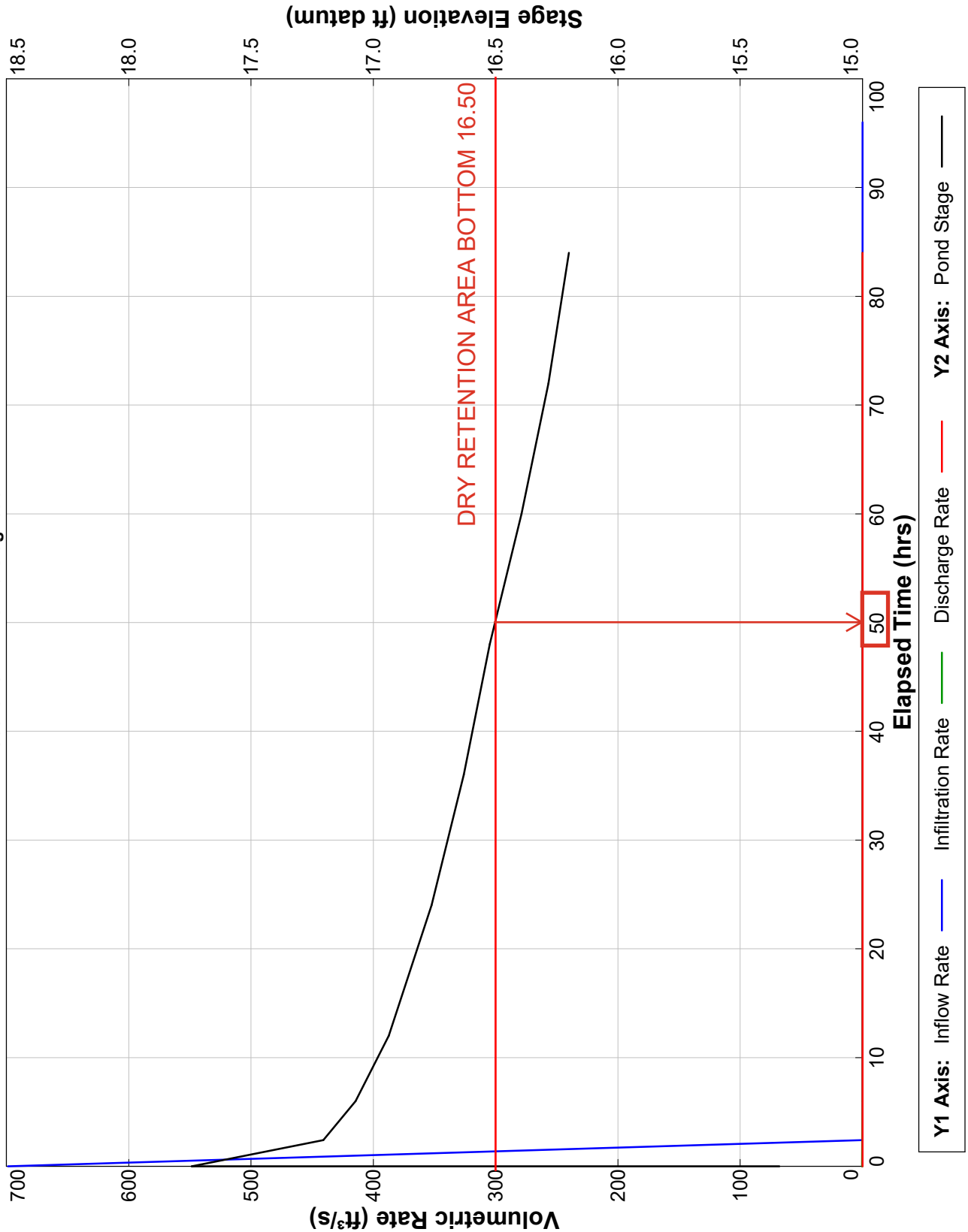
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Summary of Results :: Scenario 1 :: 4192 ft³ slug load

	Time (hours)	Stage (ft datum)	Rate (ft ³ /s)	Volume (ft ³)
Stage				
Minimum	0.000	15.34		
Maximum	0.002	17.74		
Inflow				
Rate - Maximum - Positive	0.002		698.6667	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			4192.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			4192.0
Infiltration				
Rate - Maximum - Positive	0.002		0.3941	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	60.000			4192.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			4192.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	16.63		3879.1
72 Hour Stage and Infiltration Volume	72.000	16.28		4192.0

Plot of Flow Rates and Pond Stage vs Elapsed Time

Scenario 1 :: 4192 ft³ slug load



ATTACHMENT E

MODEL RESULTS

(BUILDOUT)

Node Max Conditions : Multi Item | (sim, name) [Scenario1]

Sim Name	Node Name	Warning Stage [ft]	Alert Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
25YR-24HR	DRA	0.00	0.00	18.41	0.0010	6.92	3.96	7080
25YR-24HR	DUM-1	0.00	0.00	18.42	0.0010	1.28	1.24	177
25YR-24HR	DUM-2	0.00	0.00	18.49	0.0010	1.31	1.16	100
25YR-24HR	DUM-3	0.00	0.00	18.44	0.0010	2.62	2.59	141
25YR-24HR	EXF-1	0.00	0.00	18.47	0.0010	4.26	0.83	4135
25YR-24HR	EXF-3	0.00	0.00	18.65	0.0010	5.13	1.70	3931
25YR-24HR	EXF-4	0.00	0.00	18.43	0.0010	3.54	0.46	3520
25YR-24HR	EXF-5	0.00	0.00	18.52	0.0009	5.71	1.42	5223
25YR-24HR	GW	0.00	0.00	15.50	0.0000	1.18	0.00	0
25YR-24HR	POST-N	0.00	0.00	17.10	0.0000	3.71	0.00	0
25YR-24HR	POST-S	0.00	0.00	17.10	0.0000	0.22	0.00	0
25YR-24HR	PRE-N	0.00	0.00	17.10	0.0000	5.62	0.00	0
25YR-24HR	PRE-S	0.00	0.00	17.10	0.0000	0.53	0.00	0
MEAN ANNUAL	DRA	0.00	0.00	17.46	0.0010	2.17	1.00	5105
MEAN ANNUAL	DUM-1	0.00	0.00	17.46	0.0010	0.58	0.57	177
MEAN ANNUAL	DUM-2	0.00	0.00	17.46	0.0010	0.69	0.65	100
MEAN ANNUAL	DUM-3	0.00	0.00	17.46	-0.0010	1.37	1.34	146
MEAN ANNUAL	EXF-1	0.00	0.00	17.46	0.0007	1.79	0.36	4112
MEAN ANNUAL	EXF-3	0.00	0.00	17.46	0.0010	2.38	0.84	3913
MEAN ANNUAL	EXF-4	0.00	0.00	17.46	0.0007	1.24	0.31	3500
MEAN ANNUAL	EXF-5	0.00	0.00	17.46	0.0009	2.65	0.79	5192
MEAN ANNUAL	GW	0.00	0.00	15.50	0.0000	1.05	0.00	0
MEAN ANNUAL	POST-N	0.00	0.00	17.10	0.0000	0.00	0.00	0
MEAN ANNUAL	POST-S	0.00	0.00	17.10	0.0000	0.01	0.00	0
MEAN ANNUAL	PRE-N	0.00	0.00	17.10	0.0000	0.99	0.00	0
MEAN ANNUAL	PRE-S	0.00	0.00	17.10	0.0000	0.08	0.00	0

Simple Basin: POST-1

Scenario: Scenario1
Node: EXF-1
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.7100 ac
Curve Number: 79.1
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: POST-2

Scenario: Scenario1
Node: DRA
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.9400 ac
Curve Number: 68.1
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: POST-3

Scenario: Scenario1
Node: EXF-3
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number

Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.7900 ac
Curve Number: 85.8
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: POST-4

Scenario: Scenario1
Node: EXF-4
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.3800 ac
Curve Number: 89.4
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: POST-5

Scenario: Scenario1
Node: EXF-5
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0

Area: 0.8800 ac
Curve Number: 85.7
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: POST-6

Scenario: Scenario1
Node: POST-S
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH323
Peaking Factor: 323.0
Area: 0.1900 ac
Curve Number: 39.0
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: PRE-N

Scenario: Scenario1
Node: PRE-N
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 33.6000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH323
Peaking Factor: 323.0
Area: 3.6800 ac
Curve Number: 52.2
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00

% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin: PRE-S

Scenario: Scenario1
Node: PRE-S
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH323
Peaking Factor: 323.0
Area: 0.2100 ac
Curve Number: 50.8
Ia/S: 0.00
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Node: DRA

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.00 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.50	0.0730	3180
17.00	0.0960	4182
17.50	0.1190	5184
18.00	0.1430	6229
18.50	0.1670	7275

Comment:

Node: DUM-1

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.00 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.00	0.0003	13
19.00	0.0003	13

Comment:

Node: DUM-2

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.00 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.00	0.0003	13
19.00	0.0003	13

Comment:

Node: DUM-3

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.00 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.00	0.0003	13
19.00	0.0003	13

Comment:

Node: EXF-1

Scenario: Scenario1
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 16.50 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
16.50	0.00	0
17.50	0.09	4112
18.25	0.17	7196
18.58	0.20	8568
18.84	0.20	8834
19.34	0.32	13978

Comment:

Node: EXF-3

Scenario: Scenario1
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 16.50 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
16.50	0.00	0
17.50	0.09	3912
18.25	0.16	6848
18.58	0.19	8150
18.84	0.19	8403
19.34	0.31	13295

Comment:

Node: EXF-4

Scenario: Scenario1
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 16.50 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
16.50	0.00	0
17.50	0.08	3498
18.25	0.14	6125
18.58	0.17	7292
18.84	0.17	7518
19.34	0.27	11896

Comment:

Node: EXF-5

Scenario: Scenario1
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 16.50 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
16.50	0.00	0
17.50	0.12	5192
18.25	0.21	9087
18.58	0.25	10820
18.84	0.26	11156
19.34	0.41	17646

Comment:

Node: GW

Scenario: Scenario1
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 15.50 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	15.50
0	0	0	72.0000	15.50

Comment:

Node: POST-N

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 17.10 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Node: POST-S

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 17.10 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Node: PRE-N

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 17.10 ft
Warning Stage: 0.00 ft
Alert Stage: 0.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Node: PRE-S

Scenario: Scenario1
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 17.10 ft
 Warning Stage: 0.00 ft
 Alert Stage: 0.00 ft
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	17.10
0	0	0	72.0000	17.10

Comment:

Drop Structure Link: DRA>99-N

Scenario: Scenario1
 From Node: DRA
 To Node: POST-N
 Link Count: 1
 Pipe Flow Direction: Both
 Solution: Combine
 Increments: 0
 Pipe Count: 1
 Damping: 0.0000 ft
 Length: 60.00 ft
 FHWA Code: 0
 Entr Loss Coef: 0.00
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream Pipe

Invert: 16.90 ft
 Manning's N: 0.0130
 Geometry: Circular
 Max Depth: 1.00 ft

Downstream Pipe

Invert: 16.75 ft
 Manning's N: 0.0130
 Geometry: Circular
 Max Depth: 1.00 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000

Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000

Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0000

Pipe Comment:

Weir Component

Weir: 1
 Weir Count: 1
 Weir Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Horizontal
 Geometry Type: Rectangular
 Invert: 18.25 ft
 Control Elevation: 0.00 ft
 Max Depth: 2.00 ft
 Max Width: 3.00 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: 3.200
 Weir Table:
 Orifice Default: 0.600

Orifice Table:

Weir Comment:

Weir Component

Weir: 2
 Weir Count: 1
 Weir Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Sharp Crested Vertical
 Geometry Type: Rectangular
 Invert: 17.50 ft
 Control Elevation: 0.00 ft
 Max Depth: 0.75 ft
 Max Width: 2.00 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: 3.200
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Weir Comment:

Drop Structure Comment:

Percolation Link: DRA>GW

Scenario:	Scenario1	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	DRA	Vertical Flow Termination:	Horizontal Flow Algorithm
To Node:	GW	Perimeter 1:	725.00 ft
Link Count:	1	Perimeter 2:	810.00 ft
Flow Direction:	Both	Perimeter 3:	825.00 ft
Aquifer Base Elevation:	3.00 ft	Distance P1 to P2:	5.00 ft
Water Table Elevation:	15.34 ft	Distance P2 to P3:	50.00 ft
Annual Recharge Rate:	0 ipy	# of Cells P1 to P2:	5
Horizontal Conductivity:	2.930 fpd	# of Cells P2 to P3:	5
Vertical Conductivity:	7.640 fpd		
Fillable Porosity:	0.220		
Layer Thickness:	1.16 ft		

Comment:

Pipe Link: DUM1>DRA

Upstream

Downstream

Scenario:	Scenario1	Invert:	16.30 ft	Invert:	16.00 ft
From Node:	DUM-1	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	DRA	Geometry:	Horizontal Ellipse	Geometry:	Horizontal Ellipse
Link Count:	1	Max Depth:	1.17 ft	Max Depth:	1.17 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	181.00 ft	Op Table:		Op Table:	

FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: DUM2>DUM3		Upstream		Downstream	
Scenario:	Scenario1	Invert:	16.35 ft	Invert:	16.10 ft
From Node:	DUM-2	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	DUM-3	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	120.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: DUM3>DRA		Upstream		Downstream	
Scenario:	Scenario1	Invert:	16.10 ft	Invert:	16.00 ft
From Node:	DUM-3	Manning's N:	0.0120	Manning's N:	0.0120
To Node:	DRA	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:	40.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Weir Link: EXF1>DUM1			
Scenario:	Scenario1	Bottom Clip	
From Node:	EXF-1	Default:	0.00 ft
To Node:	DUM-1	Op Table:	
Link Count:	3	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Sharp Crested Vertical	Op Table:	
Geometry Type:	Circular	Ref Node:	
Invert:	17.00 ft	Discharge Coefficients	
Control Elevation:	0.00 ft	Weir Default:	2.800
Max Depth:	0.50 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	
Comment:			

Percolation Link: EXF1>GW			
Scenario:	Scenario1	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	EXF-1	Vertical Flow Termination:	Horizontal Flow Algorithm
To Node:	GW	Perimeter 1:	465.00 ft
Link Count:	1	Perimeter 2:	547.00 ft
Flow Direction:	Both	Perimeter 3:	875.00 ft
Aquifer Base Elevation:	3.00 ft	Distance P1 to P2:	5.00 ft
Water Table Elevation:	15.34 ft	Distance P2 to P3:	50.00 ft
Annual Recharge Rate:	0 ipy	# of Cells P1 to P2:	5
Horizontal Conductivity:	2.930 fpd	# of Cells P2 to P3:	5
Vertical Conductivity:	7.640 fpd		
Fillable Porosity:	0.220		
Layer Thickness:	1.16 ft		
Comment:			

Weir Link: EXF3>DUM3			
Scenario:	Scenario1	Bottom Clip	
From Node:	EXF-3	Default:	0.00 ft
To Node:	DUM-3	Op Table:	
Link Count:	3	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Sharp Crested Vertical	Op Table:	
Geometry Type:	Circular	Ref Node:	
Invert:	17.00 ft	Discharge Coefficients	
Control Elevation:	0.00 ft	Weir Default:	2.800
Max Depth:	0.50 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Percolation Link: EXF3>GW

Scenario:	Scenario1	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	EXF-3		
To Node:	GW	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	440.00 ft
Flow Direction:	Both	Perimeter 2:	527.00 ft
Aquifer Base Elevation:	3.00 ft	Perimeter 3:	820.00 ft
Water Table Elevation:	15.34 ft	Distance P1 to P2:	5.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	50.00 ft
Horizontal Conductivity:	2.930 fpd	# of Cells P1 to P2:	5
Vertical Conductivity:	7.640 fpd	# of Cells P2 to P3:	5
Fillable Porosity:	0.220		
Layer Thickness:	1.16 ft		

Comment:

Weir Link: EXF4>DUM1

Scenario:	Scenario1	Bottom Clip
From Node:	EXF-4	Default: 0.00 ft
To Node:	DUM-1	Op Table:
Link Count:	3	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Sharp Crested Vertical	Op Table:
Geometry Type:	Circular	Ref Node:
Invert:	17.00 ft	Discharge Coefficients
Control Elevation:	0.00 ft	Weir Default: 2.800
Max Depth:	0.50 ft	Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Comment:

Percolation Link: EXF4>GW

Scenario:	Scenario1	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	EXF-4		
To Node:	GW	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	420.00 ft
Flow Direction:	Both	Perimeter 2:	500.00 ft
Aquifer Base Elevation:	3.00 ft	Perimeter 3:	785.00 ft
Water Table Elevation:	15.34 ft	Distance P1 to P2:	5.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	50.00 ft

Horizontal Conductivity: 2.930 fpd
 Vertical Conductivity: 7.640 fpd
 Fillable Porosity: 0.220
 Layer Thickness: 1.16 ft

of Cells P1 to P2: 5
 # of Cells P2 to P3: 5

Comment:

Weir Link: EXF5>DUM2

Scenario: Scenario1
 From Node: EXF-5
 To Node: DUM-2
 Link Count: 6
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Sharp Crested Vertical
 Geometry Type: Circular
 Invert: 17.00 ft
 Control Elevation: 0.00 ft
 Max Depth: 0.50 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: EXF5>GW

Scenario: Scenario1
 From Node: EXF-5
 To Node: GW
 Link Count: 1
 Flow Direction: Both
 Aquifer Base Elevation: 3.00 ft
 Water Table Elevation: 15.34 ft
 Annual Recharge Rate: 0 ipy
 Horizontal Conductivity: 2.930 fpd
 Vertical Conductivity: 7.640 fpd
 Fillable Porosity: 0.220
 Layer Thickness: 1.16 ft

Surface Area Option: Vary Based on Stage/Area Table
 Vertical Flow Termination: Horizontal Flow Algorithm
 Perimeter 1: 375.00 ft
 Perimeter 2: 455.00 ft
 Perimeter 3: 635.00 ft
 Distance P1 to P2: 5.00 ft
 Distance P2 to P3: 50.00 ft
 # of Cells P1 to P2: 5
 # of Cells P2 to P3: 5

Comment:

Simulation: 25YR-24HR

Scenario: Scenario1
 Run Date/Time: 10/14/2025 11:17:12 AM
 Program Version: StormWise 4.08.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000
	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]	
Min Calculation Time:	60.0000	0.1000	900.0000	
Max Calculation Time:		30.0000		

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight 0.5 dec	Ia/S: 0.20 dec
Fact:	
dZ Tolerance: 0.0010 ft	
Max dZ: 1.0000 ft	Smp/Man Basin Rain Global
	Opt:
Link Optimizer Tol: 0.0001 ft	OF Region Rain Opt: Global
	Rainfall Name: ~FLMOD
Edge Length Option: Automatic	Rainfall Amount: 9.50 in
	Storm Duration: 24.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2	Min Node Srf Area 100 ft2
(2D):	(1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

Simulation: MEAN ANNUAL

Scenario: Scenario1
 Run Date/Time: 10/14/2025 11:17:19 AM
 Program Version: StormWise 4.08.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

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

Output Time Increments

Hydrology

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

Surface Hydraulics

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

Groundwater

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	ET for Manual Basins: False
Over-Relax Weight: 0.5 dec	Ia/S: 0.20 dec
Fact:	
dZ Tolerance: 0.0010 ft	
Max dZ: 1.0000 ft	Smp/Man Basin Rain: Global
	Opt:
Link Optimizer Tol: 0.0001 ft	OF Region Rain Opt: Global
	Rainfall Name: ~FLMOD
Edge Length Option: Automatic	Rainfall Amount: 5.00 in
	Storm Duration: 24.0000 hr
Dflt Damping (2D): 0.0050 ft	Dflt Damping (1D): 0.0050 ft
Min Node Srf Area: 100 ft2	Min Node Srf Area: 100 ft2
(2D):	(1D):
Energy Switch (2D): Energy	Energy Switch (1D): Energy

Comment:

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Project Data

Project Name: ISLAND PARK
Simulation Description: EXF RECOVERY (BUILDOUT)
Project Number: 23-215
Engineer : TVB
Supervising Engineer: MHL
Date: 10-14-2025

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 3.00
Water Table Elevation, [WT] (ft datum): 15.34
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 2.93
Fillable Porosity, [n] (%): 22.00
Unsaturated Vertical Infiltration Rate, [Iv] (ft/day): 7.64
Maximum Area For Unsaturated Infiltration, [Av] (ft²): 41794.0

Geometry Data

Equivalent Pond Length, [L] (ft): 720.0
Equivalent Pond Width, [W] (ft): 58.0
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft ²)
16.50	41794.0
17.50	41794.0
18.50	41794.0

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Scenario Input Data

Scenario 1 :: 16717 ft³ slug load

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft³) 16717

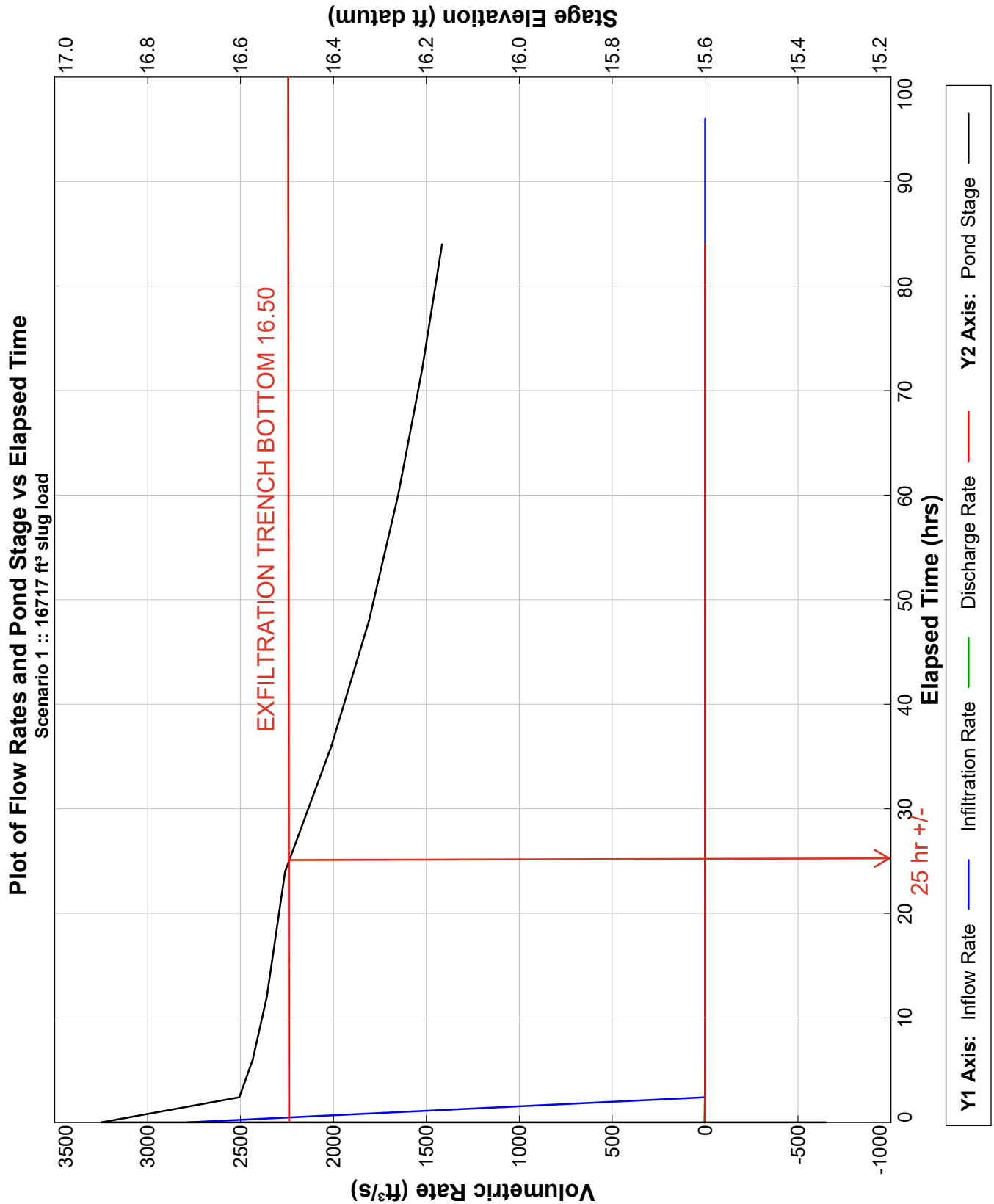
Initial ground water level (ft datum) 15.34 (default)

<u>Time After Storm Event (days)</u>	<u>Time After Storm Event (days)</u>
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

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Summary of Results :: Scenario 1 :: 16717 ft³ slug load

	Time (hours)	Stage (ft datum)	Rate (ft ³ /s)	Volume (ft ³)
Stage				
Minimum	0.000	15.34		
Maximum	0.002	16.90		
Inflow				
Rate - Maximum - Positive	0.002		2786.1670	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			16717.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			16717.0
Infiltration				
Rate - Maximum - Positive	0.002		3.6941	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	36.000			16717.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			16717.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	16.40		16717.0
72 Hour Stage and Infiltration Volume	72.000	16.21		16717.0



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Project Data

Project Name: ISLAND PARK
Simulation Description: DRA RECOVERY (BUILDOUT)
Project Number: 23-215
Engineer : TVB
Supervising Engineer: MHL
Date: 10-14-2025

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum): 3.00
Water Table Elevation, [WT] (ft datum): 15.34
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day): 2.93
Fillable Porosity, [n] (%): 22.00
Unsaturated Vertical Infiltration Rate, [Iv] (ft/day): 7.64
Maximum Area For Unsaturated Infiltration, [Av] (ft²): 4936.0

Geometry Data

Equivalent Pond Length, [L] (ft): 200.0
Equivalent Pond Width, [W] (ft): 25.0
Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft ²)
16.50	3195.0
17.00	4188.0
17.50	5196.0
18.00	6218.0
18.50	7255.0

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Scenario Input Data

Scenario 1 :: 4192 ft³ slug load

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft³) 4192

Initial ground water level (ft datum) 15.34 (default)

<u>Time After Storm Event (days)</u>	<u>Time After Storm Event (days)</u>
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

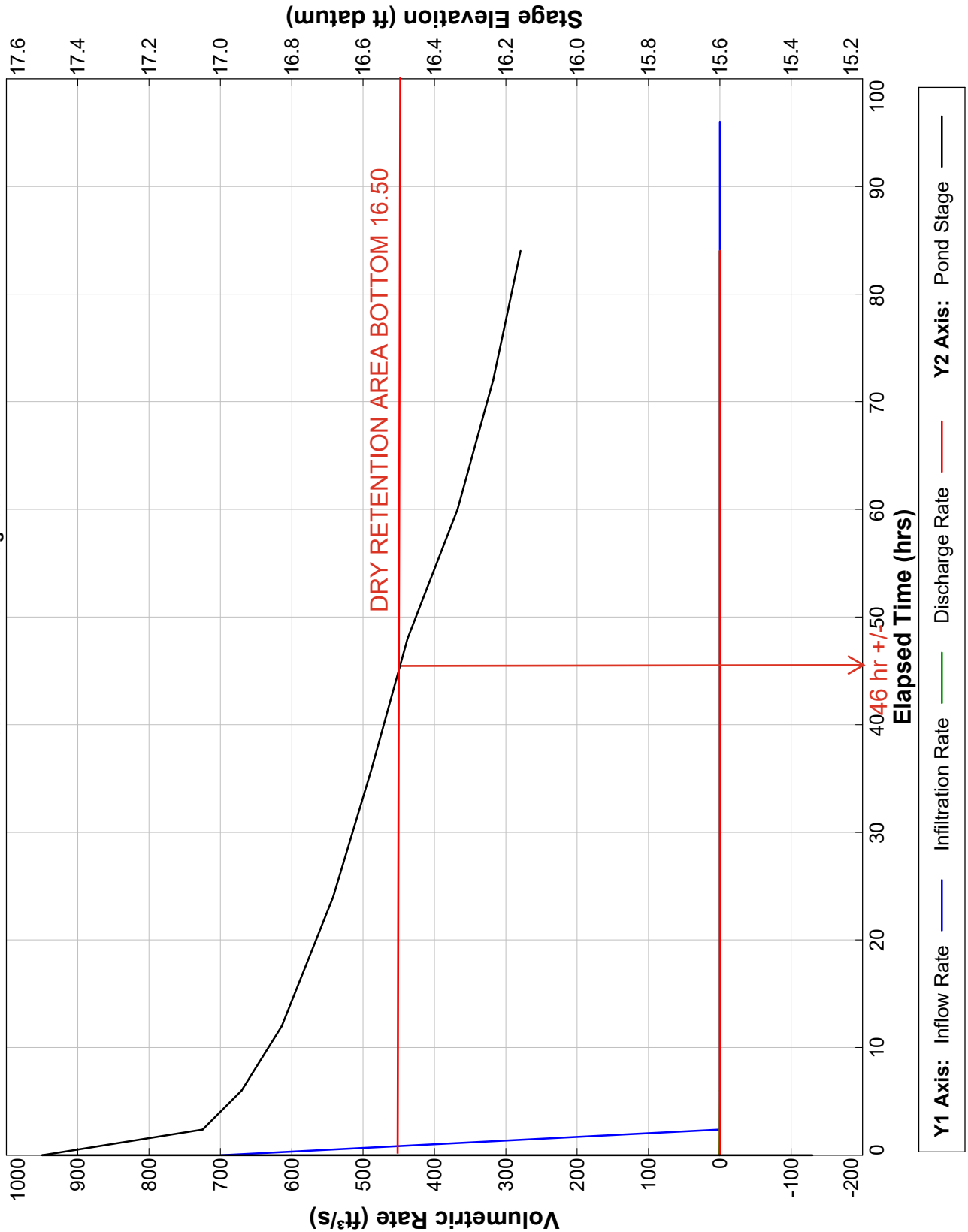
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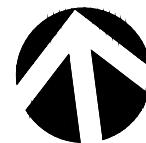
Summary of Results :: Scenario 1 :: 4192 ft³ slug load

	Time (hours)	Stage (ft datum)	Rate (ft ³ /s)	Volume (ft ³)
Stage				
Minimum	0.000	15.34		
Maximum	0.002	17.50		
Inflow				
Rate - Maximum - Positive	0.002		698.6667	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			4192.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			4192.0
Infiltration				
Rate - Maximum - Positive	0.002		0.4363	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	48.000			4192.0
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			4192.0
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	16.58		3946.4
72 Hour Stage and Infiltration Volume	72.000	16.24		4192.0

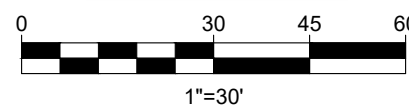
Plot of Flow Rates and Pond Stage vs Elapsed Time

Scenario 1 :: 4192 ft³ slug load

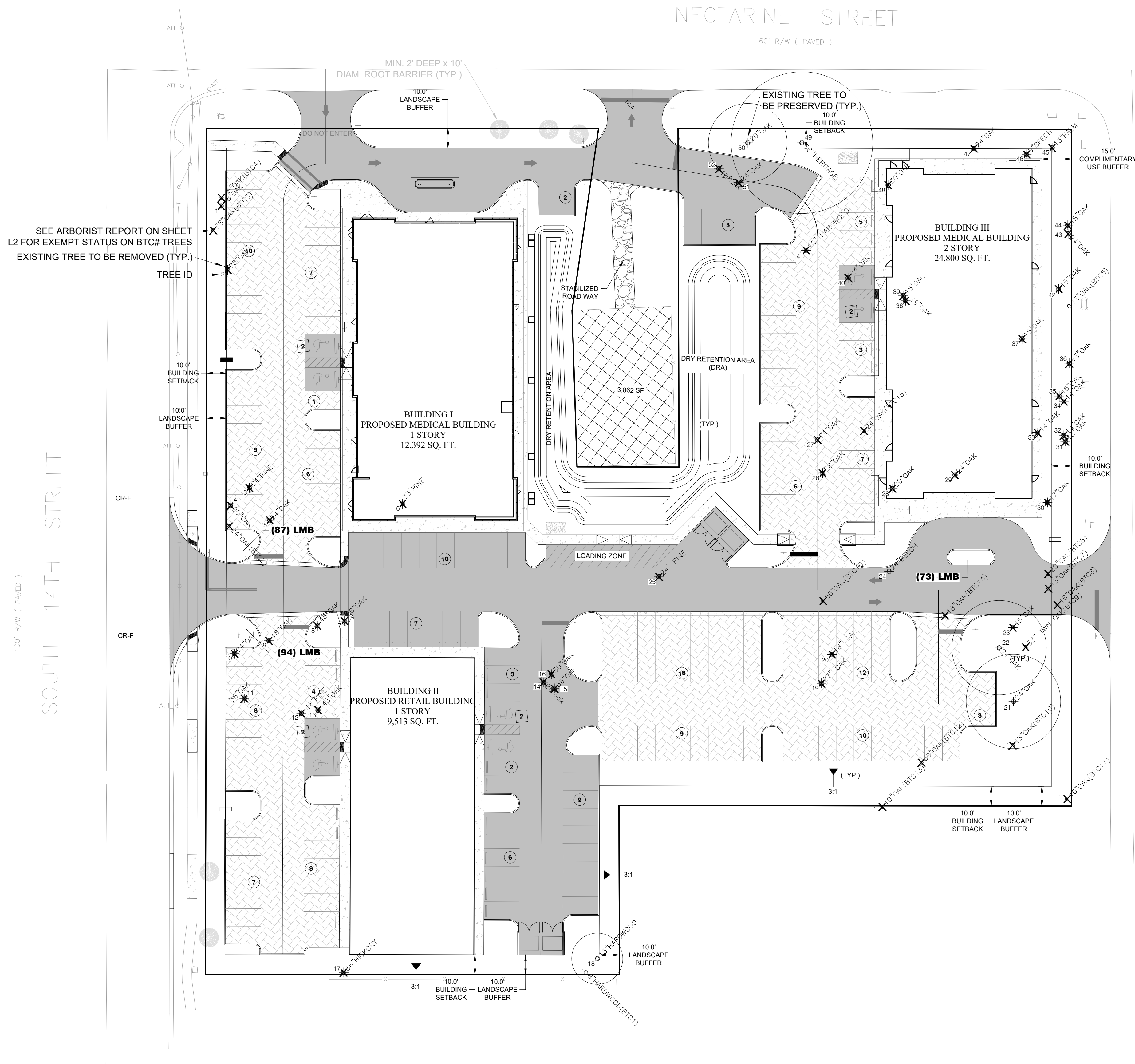




GRAPHIC SCALE



LANDSCAPE ARCHITECTURE / LAND PLANNING
541 Oleander Street, Neptune Beach, FL 32266
Phone: (904) 247-7729 Fax: (904) 373-9177
www.godarddesign.com LC 0000397



TREE REMOVAL/PRESERVATION

Dead, Dying, Diseased Trees

Tree ID	Size	Species	Status	Exempt?
BTC1	8 Hackberry	Remove	Yes	
BTC2	24 Live Oak	Remove	Yes	
BTC3	28 Live Oak	Remove	Yes	
BTC4	18 Live Oak	Remove	Yes	
BTC5	13 Live Oak	Remove	Yes	
BTC6	20 Live Oak	Remove	Yes	
BTC7	13 Live Oak	Remove	Yes	
BTC8	16 Live Oak	Remove	Yes	
BTC9	33 Live Oak	Remove	Yes	
BTC10	18 Live Oak	Remove	Yes	
BTC11	16 Live Oak	Remove	Yes	
BTC12	30 Live Oak	Remove	Yes	
BTC13	19 Live Oak	Remove	Yes	
BTC14	18 Live Oak	Remove	Yes	
BTC15	24 Live Oak	Remove	Yes	
BTC16	56 Laurel Oak	Remove	Yes	

354

See Arborist's report on Sheet L2 for details

Protected Trees

1	18 Oak	Remove	No
2	28 Oak	Remove	No
3	24 Pine	Remove	No
4	20 Oak	Remove	No
5	24 Oak	Remove	No
6	33 Pine	Remove	No
7	36 Oak	Remove	No
8	48 Oak	Remove	No
9	18 Oak	Remove	No
10	24 Oak	Remove	No
11	36 Oak	Remove	No
12	18 Pine	Remove	No
13	43 Oak	Remove	No
14	26 Oak	Remove	No
15	36 Oak	Remove	No
16	30 Oak	Remove	No
17	36 Hickory	Remove	No
18	13 Hardwood	Preserve	No
19	27 Oak	Remove	No
20	18 Oak	Remove	No
21	24 Oak	Preserve	No
22	24 Oak	Preserve	No
23	15 Oak	Remove	No
24	24 Beech	Remove	No
25	24 Pine	Remove	No
26	28 Oak	Remove	No
27	24 Oak	Remove	No
28	20 Oak	Remove	No
29	24 Oak	Remove	No
30	17 Oak	Remove	No
31	13 Oak	Remove	No
32	14 Oak	Remove	No
33	14 Oak	Remove	No
34	14 Oak	Remove	No
35	15 Oak	Remove	No
36	13 Oak	Remove	No
37	15 Oak	Remove	No
38	19 Oak	Remove	No
39	15 Oak	Remove	No
40	24 Oak	Remove	No
41	10 Hardwood	Remove	No
42	15 Oak	Remove	No
43	24 Oak	Remove	No
44	18 Oak	Remove	No
45	13 Palm	Remove	No
46	9 Beech	Remove	No
47	24 Oak	Remove	No
48	30 Oak	Remove	No
49	36 Heritage Oak	Preserve	No
50	20 Oak	Preserve	No
51	24 Oak	Remove	No
52	18 Oak	Remove	No

1177

Total Protected Tree ":	1177
Total Removed Tree ":	1060
Total Preserved Tree ":	117
Exempt " per 4.14.05.B.3.:	588.5
Replacement " Required:	588.5

See Sheet L3 for Replacement calculations

ISLAND PARK

1505 15th Street
Fernandina Beach, FL

Rev.	Date	Comment
1		
2		
3		
4		
5		

Date:	8/29/25
Scale:	1" = 30'
Drawn by:	BMG
Checked by:	BMG
Project No.	25-116

Sheet Title:
TREE REMOVAL PLAN
Sheet No.

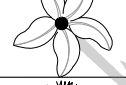
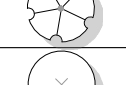
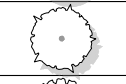
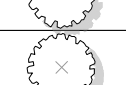
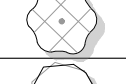
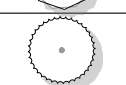
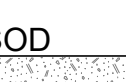
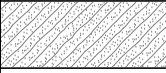
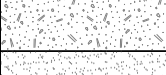
L1 of **5**



Know what's below.
Call before you dig.

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PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	CAL	SIZE		QTY
TREES							
	IAE	Ilex x attenuata 'Eagleston' / Eagleston Holly Min. 12'-14' ht. x 4'-5' sprd., 3' ST	-	2.5"	-Cal.		2
	LIM	Lagerstroemia indica 'Muskogee' / Muskogee Crape Myrtle Min. 4" 1" DBH trunks, 10'-12' ht., 4' DBH.	45-Gallon				9
	LINS	Lagerstroemia indica 'Natchez' / Natchez Crape Myrtle Standard Min. 15' - 16' ht. x 4'-5' sprd., std. trunk, 3.5" DBH	100-Gal.	3.5"	DBH		2
	QV	Quercus virginiana / Southern Live Oak Min. 10' - 12' ht. x 5'-7' sprd., 2.5" DBH	-	2.5"	DBH		21
	UA4	Ulmus alata / Winged Elm Min. 14' - 16' ht.x 6'-8' sprd., 4"-cal.	-	4"	-Cal.		16
PALMS							
	SPT	Sabal palmetto / Cabbage Palmetto Min. 22' - 26' CT, shaved trunks	-		22' - 26' CT		48
	SP	Sabal palmetto / Cabbage Palmetto Min. 8' - 16' CT, shaved trunks, staggered CTs in groups	8'-16" CT				15
SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT			SPACING	QTY
SHRUBS							
	ADM	Asparagus densiflorus 'Myers' / Myers Asparagus Fern Min. 12' - 15' ht. & sprd., 2' o.c.	3-Gallon			24" o.c.	32
	IVS	Ilex vomitoria 'Schillings' / Schillings Yaupon Holly Min. 12' - 15' ht. & sprd., 2'-6" o.c., 3-Gal.	3-Gallon			30" o.c.	51
	JC	Juniperus conferta / Shore Juniper Min. 6"- 10" ht. x 12" - 16" sprd., 2' o.c.	3-Gallon			24" o.c.	106
	PA	Plumbago auriculata / Blue Plumbago Min. 18" - 24" ht. x 16" sprd., 3' o.c.	3-Gallon			36" o.c.	20
	RRR	Rhododendron x 'Red Ruffles' / Red Ruffles Rutherfordiana Azalea Min. 12" - 15" ht. & sprd., 2'-6" o.c.	3-Gallon			30" o.c.	185
	VOD	Viburnum obovatum 'Densa' / Walter's Viburnum Min. 18" ht. x 15" sprd., 3' o.c.	3-Gallon			36" o.c.	426
	VS	Viburnum suspensum / Sandankwa Viburnum Min. 24" ht., x 18" sprd., 3' o.c.	7-Gallon			36" o.c.	19
	ZP	Zamia pumila / Coontie Cycad Min. 11"-15" ht. & sprd., 2'-6" o.c.	3-Gallon			30" o.c.	115
GROUND COVERS							
	LMB	Liriope muscari 'Big Blue' / Big Blue Lilyturf Min. 12" - 15" ht., full clump, 18" o.c.	1-Gallon			18" o.c.	254
SOD							
	PNA	Paspalum notatum 'Argentine' / Bahia Grass 2" - 3" thick, freshly cut	Sod				21,428 sf
	STA	Stenotaphrum secundatum 'Classic' / Classic St. Augustine Grass Sod, 2"-3" thick, freshly cut, weed free	Sod				14,225 sf

GENERAL NOTES :

- All plant material shall conform to the standards for Florida No. 1 grade or better as given in the latest "Grades and Standards for Nursery Plants, Parts I and II," Florida Department of Agriculture and consumer services or to the standards as given in the latest "American Standard for Nursery Stock," American National Standards Institute.
- All specimen trees, shrubs, and ground covers must meet the specifications provided in the plant schedule and plans. Any substitutions for specimen trees must meet with the approval of the landscape architect or the owners' representative.
- Where specified containers and sizes do not match, the larger of the two specifications shall be used.
- Plant schedule takes precedence over plans since this contains all plants required to meet minimum ldc standards.
- All sod areas shall be verified on plan and on site.
- It is the responsibility of the landscape contractor to follow all guidelines set forth from the landscape specifications when provided.
- Contact the landscape architect or the owners' representative for any major site changes which alter landscape beds or berming areas.
- All site work for rough grading, of berms, planters, and planting areas is to be provided by the general contractor, unless otherwise specified by these plans. Fill for all berms and planters shall be of a suitable, sandy gradation which is porous and percolates well, to insure proper water runoff and drainage. Absolutely no plastic, clayey soil may be used in any planting area.
- The landscape contractor is responsible for all final grading of berms, bed areas, and sod areas until acceptable by the landscape architect or owners' representative, both before and after landscape installation has begun.
- Any debris, such as wood, concrete, stucco, bricks, etc., shall be removed by the general contractor and backfilled with suitable material.
- Landscape contractor shall be responsible for providing positive drainage of all landscaped areas around buildings, islands, amenities, and other areas negatively affected by poor drainage. This note covers all areas not specified on engineering or landscape grading plans.
- Vegetation that exceeds twenty-five (25) feet in height at maturity should not be planted closer than fifteen (15) feet of the vertical plane of an existing power line, excluding service wires.
- Balled and burlapped strapping wire, and any synthetic material shall be removed prior to final inspection. Wire baskets should be pulled away from the trunk.
- Mulch shall be provided a minimum of three (3) inches in depth around all newly planted landscaping.
- A mulch ring for all newly planted trees in sodded areas shall be provided at least five (5) feet in diameter and not closer than six (6) inches from the tree trunk.
- Shrubs and groundcovers are to be planted at the required minimum height, not by container size.
- All disturbed areas within the limits of construction which are not otherwise indicated shall be sodded with St. Augustine 'Floratam' sod, unless otherwise noted in these or the engineering plans.
- All planting beds shall be mulched with 3" of 1" - 1 1/2" pine nuggets mulch, except for the edges of the existing tree lines, where 3" of pine straw mulch is indicated. See plans for mulching/sodding requirements along these areas. Planting beds where shrubs and groundcovers are 3' or less from pervious surfaces shall be mulched as noted above. Where shrubs and groundcovers are planted more than 4' from a pervious surface, sod shall be placed as noted in the plans.
- Substitutions shall not be made without the prior written consent of the landscape architect or owners' representative.
- All trees must meet minimum caliper size.
- On multi-trunked planted trees the "three largest stems" will be measured to verify indicated tree credits.
- An automatic underground irrigation system providing 100% coverage shall be installed.
- Trees shall have a minimum height of 8' - 10' and 2.5" dbh, except as noted above.
- No planting will be allowed until the irrigation system is fully operable.
- The fire hydrant and (f/c) fire department connection shall have a clearance of 3 1/2 feet on both sides and 4 foot clearance on the back and no foliage in front to include ground covers.
- All development activity such as clearing and grade changes with the tree protection zone shall be supervised by a certified arborist.
- Pruning standards for all tree work done in the city by any person or entity engaging in any professional or commercial tree removal or pruning business activity, whether for a fee or otherwise, shall follow the latest version of the american national standards institute (ansi) a300, part 1 "pruning standards" as well as ansi z133.1-2000 standards for safety. The personnel and companies who do the tree work shall be jointly and severally responsible for following these pruning specifications and responsible for tree damage or loss. No topping cuts or lions-tailing cuts (over-lifting) will be permitted.

GENERAL LANDSCAPE NOTES

- It is expected that appropriate substitutions of plant material with the intent to improve the quality and appearance of the project relative to the cost and/or availability of material and freeze considerations meet with the approval of the landscape architect.
- All sod areas shall be verified on plan and on site. Landscape architect shall not be responsible for sod quantities as shown on plans, as field conditions may differ from those shown on the plans.
- It is the responsibility of the landscape contractor to follow all guidelines set forth from the plans and landscape specifications, when provided.
- All specimen trees must meet the specifications provided in the plant schedule and plans. Any substitution of trees and/or shrubs and groundcovers must meet with the approval of the landscape architect.
- Contact the landscape architect for any major site changes which affect the ability of the landscape contractor to follow these plans.

TRANSPLANT NOTES:

- General contractor shall coordinate with landscape contractor for removal and temporary storage of trees for transplant prior to demolition/clearing of site.
- Landscape contractor shall be responsible for storage and transplant of existing materials in good health during construction period. Trees which die during storage period or after transplant shall be immediately replaced with same species/variety and size as existing.
- At landscape contractor's option, existing trees for transplant which are in poor health or are not likely to survive transplant period may be replaced with new materials which match species/variety and size as existing. Notify landscape architect of decision to remove/replace or transplant prior to work.

EARTHWORK & SITE PREPARATION:

- The general contractor shall be responsible for verifying the cubic yard quantities of proposed berms and/or planter areas.
- The landscape contractor is responsible for all final grading of berms, bed areas, and sod areas until acceptable to the landscape architect, both before and after landscape installation has begun.
- The landscape contractor is to verify soil condition of all planting areas as to ph level and organic content before planting begins. Recommendations, if any, shall be submitted to the landscape architect for review and record before installation begins. If soil conditions are found to be unsatisfactory, the soil must be amended in accordance with test results and recommendations.
- Any unsuitable materials found in the landscape beds shall be removed by the general contractor to a depth of no less than eighteen (18) inches and back-filled with said suitable material, with a minimum compaction of 90%.
- Any (construction) debris such as wood, concrete, stucco, bricks, steel, etc. Shall be removed by the general contractor and the area shall be back-filled to final grade with suitable material as noted in note #4 above.

LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR (in addition to those noted above):

- Watering in and guaranteeing all other trees as per specifications within these plans or in specification book.
- Providing mulch, peat, potting soil, and/or fertilizer on site as directed by the plans, specifications, and/or landscape architect.
- Providing positive drainage of all landscaped areas around buildings, islands, amenities, and other areas negatively affected by poor drainage. This note covers all areas within the limits of work, but not specified on engineering or landscape plans.

TREE TRANSPLANTING CONTRACTOR IS RESPONSIBLE FOR:

- Locating and verifying all existing underground utilities, including irrigation, in or near the proposed tree locations before any trees are placed, and shall coordinate closely with respective utility contractors involved in those areas.
- Scheduling tree planting operations in any area before sidewalks or other impassable structures are installed.
- Replacing any tree which has died (with the warranty period) due to improper transplanting, as directed by the landscape architect and/or owner.
- Watering in and fertilizing all planted trees, as per specifications, as well as amending the surrounding soil, until said trees are established. Established shall mean when the tree(s) show no signs of shock, lack of water, or overall poor health, until such time as normal watering as supplied by an irrigation system can maintain tree(s) in good health.
- Tree spade contractor shall amend soil in the immediate area of the tree if said soil is not acceptable for transplanting. Notify landscape architect in writing of proposed soil amendments.

LANDSCAPE CALCULATIONS - Island Park

MITIGATION REQUIREMENTS

Protected Tree Removal (in. DBH)	1060
Exempt per 4.05.14.B.2. & 3.	588.5

Required Replacement (in. DBH):

TOTAL REPLACEMENT (in. DBH):

(2) Eagleston Holly @ 2.5"	5
(9) Crepe Myrtle @ 4"	36
(2) Crepe Myrtle Std. @ 3.5"	7
(21) Live Oak @ 2.5"	52.5
(16) Winged Elm @ 2.5"	40
(48) 22'-26' CT Cabbage Palms @ 12"	576
(15) 8'-16' CT Cabbage Palms @ 10"	150
	866.5

Mitigation is satisfied

GENERAL REQUIREMENTS

Gross Site Area - All Phases	169,379 SF
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Shade Trees Req'd. @	1500 SF/GSA	113
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Shade Trees Provided (includes Exist.)

Existing per 4.05.03.B.9:	5
New (Min. 2.5" DBH):	58
3 Palms = 1 Shade Tree	

Total Shade Trees Provided:

Req'd. Planting Area @	20 % GSA	33,876 SF
Planting Area Provided (min.):		36,742 SF

PARKING LOT REQUIREMENTS

Perimeter Requirements

1 Tree / 20 LF	Length	Req'd.	Provided
14th Street	429 LF	21	21
Nectarine Street	339 LF	17	10
15th Street	149 LF	7	7

*Includes Existing per 4.05.03.B.9.

Interior Requirements

Planting Area @ 10% VUA	Req'd.	Provided
Total VUA:	68610 SF	
Planting Area @ 10% VUA	6861	6861
Trees @ 1/400 SF req'd. VUA planting area:	17	50
*Includes Existing per 4.05.03.B.9.		

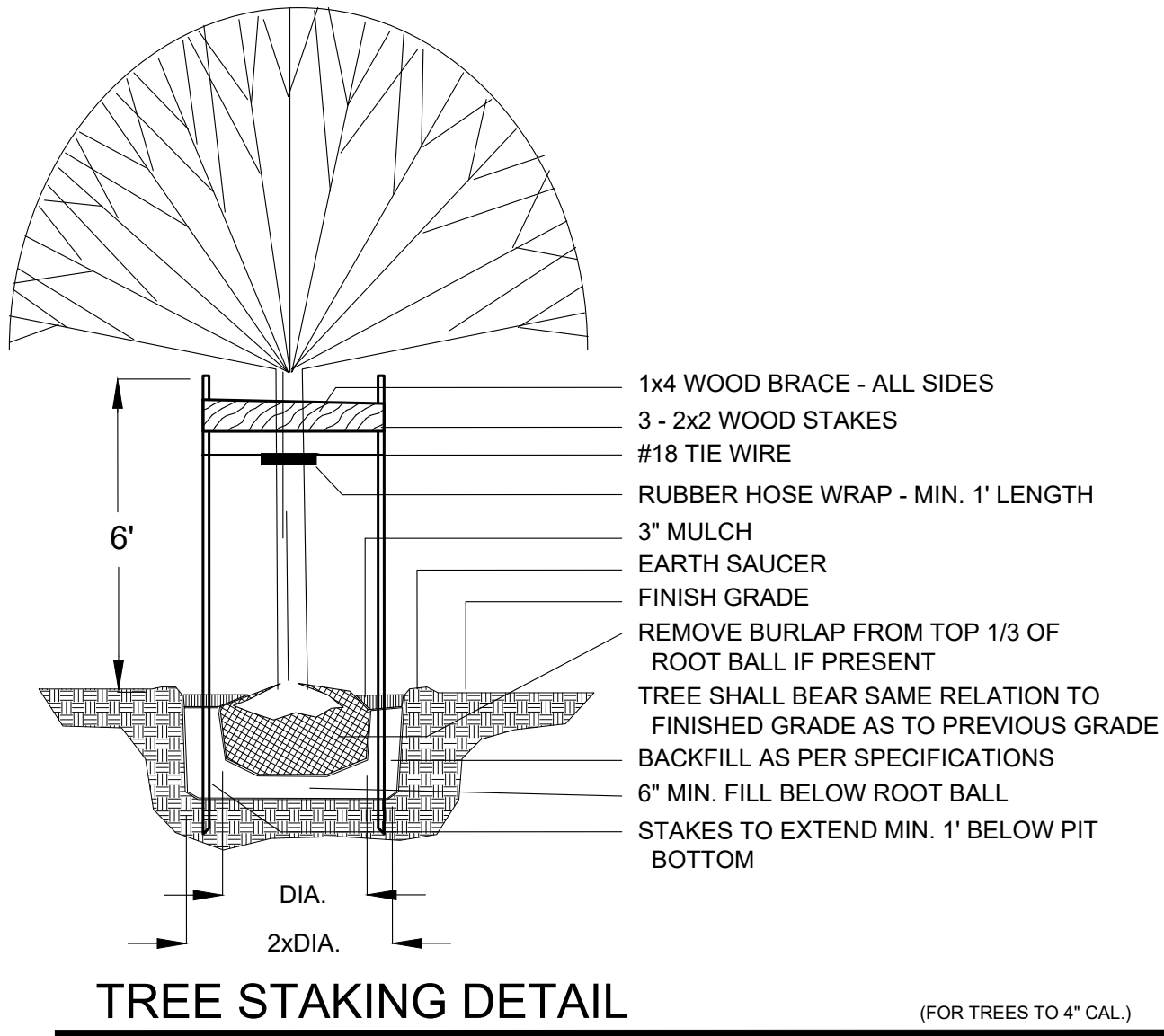
BUFFER REQUIREMENTS

Not Applicable: Compable adjacent zoning/land uses

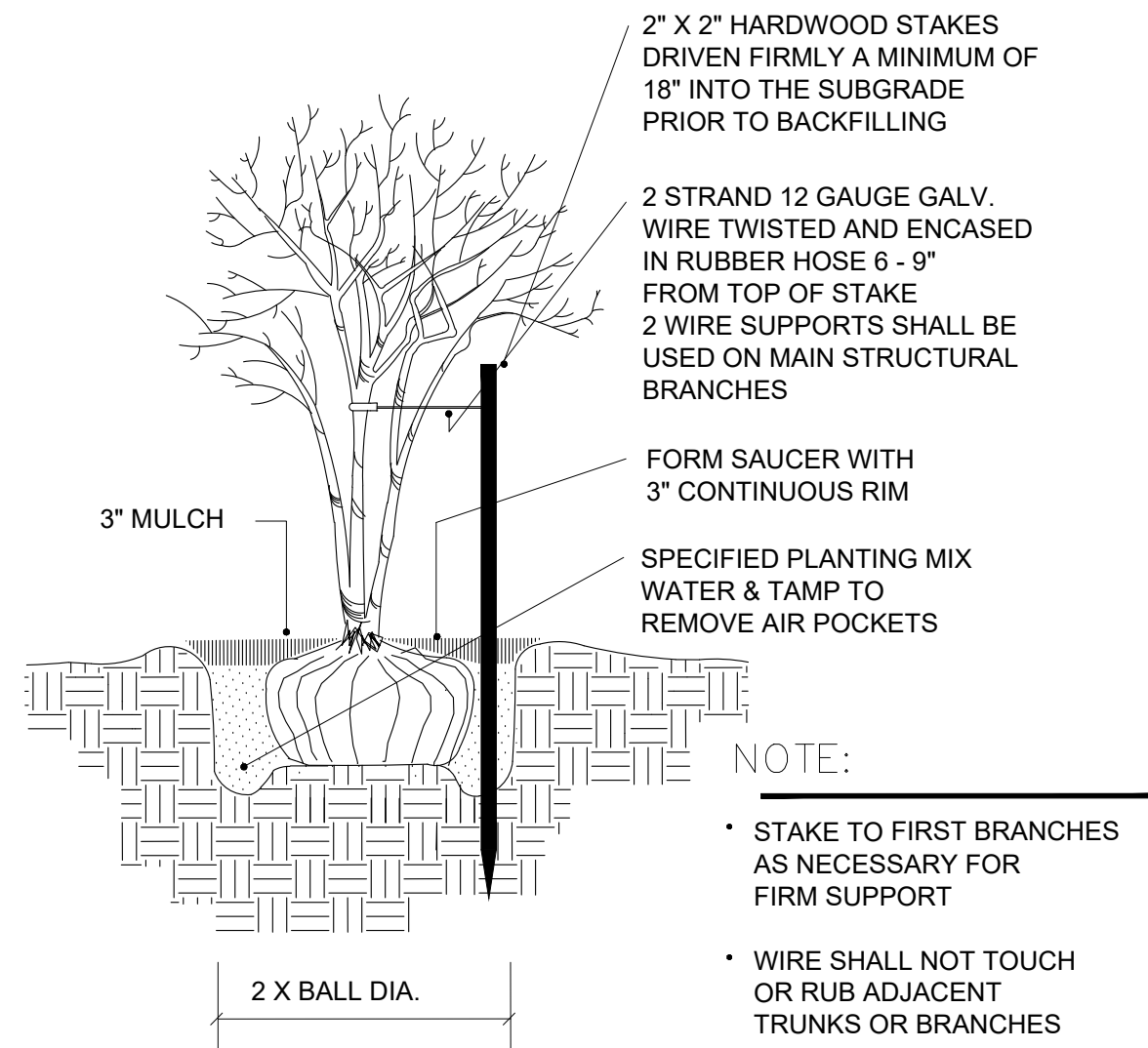
XERISCAPE LANDSCAPING

Design Feature	Points
Irrigation	
Moisture sensing controller	5
Grass	
51% or more of grass areas use drought tolerant species	10
Compacted mulched planting areas at least 3" deep	10
Shrubs	
51% or more of the required shrubs are drought tolerant species	10
Trees	
51% or more of the required trees are drought tolerant species	10
25% increase over the required # of shade trees	5
TOTAL XERISCAPE POINTS	50

PLANTING DETAILS

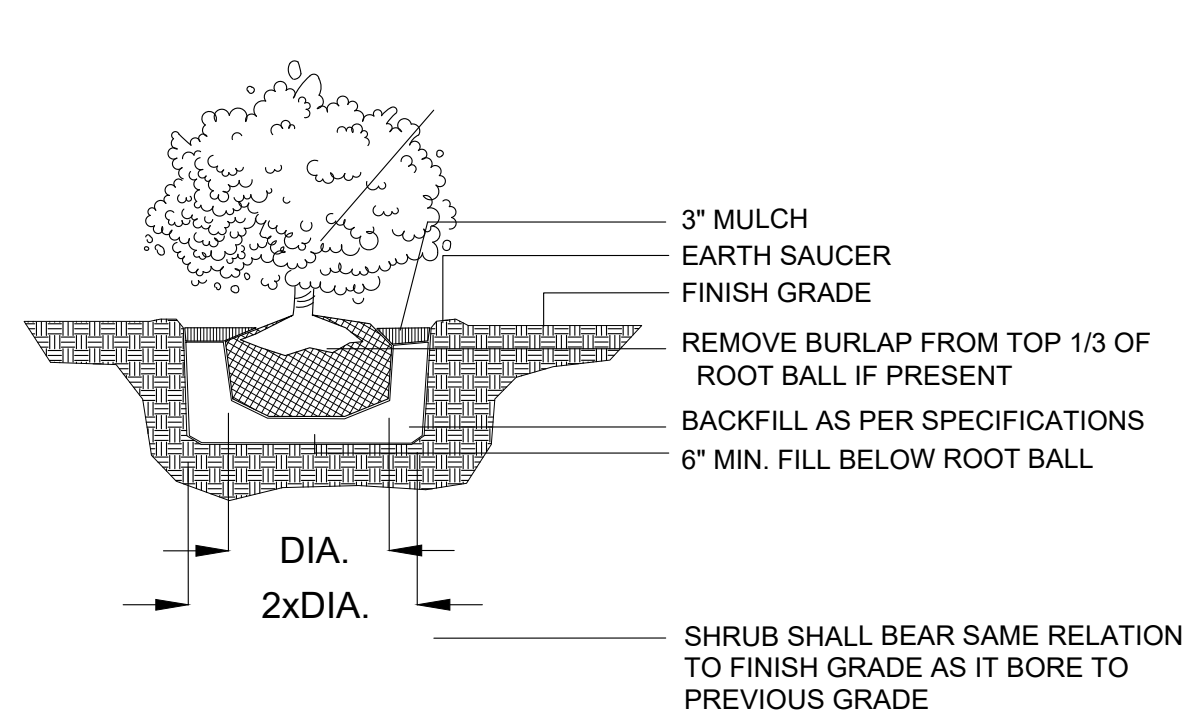


NOT TO SCALE



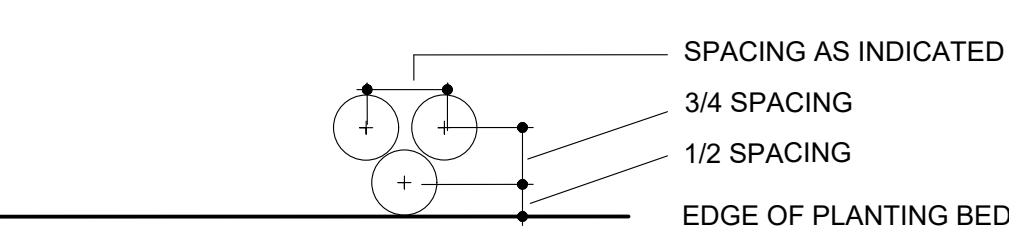
MULTI-TRUNK TREE PLANTING DETAIL

NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE



GROUND COVER SPACING

NOT TO SCALE



LANDSCAPE ARCHITECTURE / LAND PLANNING
541 Oleander Street, Neptune Beach, FL 32266
Phone: (904) 247-7729 Fax: (904) 373-9177
www.godarddesign.com LC 0000397

ISLAND PARK

1505 15th Street
Fernandina Beach, FL

Rev.	Date	Comment
△		
△		
△		
△		

Date:	8/29/25
Scale:	N/A
Drawn by:	BMG
Checked by:	BMG
Project No.	25-116

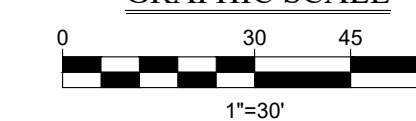
Sheet Title:
LANDSCAPE
GENERAL NOTES
Sheet No.

L3 of 5

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GRAPHIC SCALE



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www.godarddesign.com LC 00003

1505 15th Street
Fernandina Beach, F

Rev.	Date	Comment
1		
2		
3		
4		
5	-	-

Date:	8/29/25
Scale:	1" = 30'
Drawn by:	BMG
Checked by:	BMG
Project No.	25-116

Sheet Title:
**LANDSCAPE
PLAN**
Sheet No.

L4 Of 5



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PART I-GENERAL

1.01 DESCRIPTION OF WORK

A. The work under this section shall include all services, tools, apparatus, materials, labor and other means of construction required for the landscaping work in accordance with drawing and these specifications.

1. Lay out beds, tree locations, shrubs and ground cover as shown on the drawings.
2. The work shall include the preparation of the ground, finish grading, sodding, planting, fertilizing, mulching, preparation and applying peat and fertilizers and all other work required by the drawings and specifications.

1.02 APPLICATION DOCUMENTS

A. The following specifications and standards of the issues listed and referenced to, form a part of this specification to the extent required by the references thereto.

1. American Association of Nurserymen, 1949 Edition of Horticultural Standards, (635 - 638 Southern Building, Washington, DC)
2. The Standard Cyclopedia of Horticulture, L.H. Bailey, 1953 Edition, 3 Volumes by the MacMillan Company, New York, New York
3. Grades and Standards for Nursery Plants, Part 1 and 11, Department of Agriculture, State of Florida, Division of Plant Industry, Post office Drawer 1269, Gainesville, FL 32601.

PART 2 - GENERAL CONDITIONS

2.01 GENERAL REQUIREMENTS

A. Approval and Rejection of Materials and Work: The selection of all materials and operations required under the drawing and specifications shall be subject to the approval of the Landscape Architect. The Landscape Architect or his representative shall have the right to reject any and all work which in his opinion does not meet with the requirements of the specifications at any stage of the operations. All rejected materials shall be removed from the site.

B. Scientific and Common Names: Attention is called to the fact that the scientific and common names used for the plants required under this contract are generally in conformity with the approved names given in the Standard Plant Names, published by the American Joint Committee on the Horticultural Nomenclature. The names of varieties not included therein are generally in conformity with the names accepted in the nursery trade.

C. All plants shall conform to the varieties specified in the Plant Schedule. No substitutions of varieties or colors will be allowed without prior written or verbal approval of the Landscape Architect.

D. All plant materials shall conform to a Florida No. 1 or better (Florida Fancy). Those not listed by "Grades and Standards for Nursery Plants", published by the Division of Plant Industry, shall conform to a Florida No. 1 as to:

1. Health and vitality
2. Condition of foliage
3. Root system
4. Freedom from pest or mechanical damage
5. Heavily branched and densely foliated according to the accepted normal shape of species or sport.

2.02 DEFINITION AND INTENT OF DOCUMENTS

A. The contract documents consist of the contract agreement, the drawings and the specifications, including all modifications thereof incorporated in the documents before their execution, it is specifically agreed upon that this contract shall be in all aspects constructed and interpreted in accordance with the laws of the state in which it is executed.

B. The contract documents are complimentary and what is called for by one shall be as binding as if called for by all. The intent of the documents is to include, unless otherwise stated, all labor, materials, equipment and transportation for the proper execution of the work.

1. Where there is a conflict between requirements called for in both these written specifications and the drawings, the more strict of the two shall be the contractual obligation, unless specifically noted buy the other.

2.03 OWNER'S AUTHORIZED REPRESENTATIVE

A. The Owner shall designate or appoint one (1) person as his representative to work with the Contractor. The Contractor shall be notified in writing of the name and address of this duty appointed representative. This representative shall have full authority to approve work performed by the Contractor, make field changes that are deemed necessary and approve estimate submitted by the Contractor for payment.

2.04 LIABILITY OF CONTRACTOR

A. The contractor shall be liable for any and all damages to property which result from his performance. He shall, with extra cost restore to original condition any areas and/or construction damaged, defaced, disturbed or destroyed by him or his workmen.

B. The contractor shall maintain adequate protection of all his work from damages and shall protect the Owner's and adjacent property from injury or loss arising from this contract.

C. The contractor shall not be obligated to replace, repair or restore any portion of this work which is damaged, defaced, disturbed or destroyed by others or by the owner and/or which results from Owner's negligence.

2.05 TAXES

A. The contractor shall pay all Federal, State and local sales and use tax applicable to materials, processes or devices purchased or used in connection with the work under this contract.

2.06 EXAMINATION AND VERIFICATION OF DRAWINGS AND SITE

A. It shall be the contracting installer's responsibility to report to the Owner's Representative any deviations between drawings, specifications, and the site. Failure to do so prior to installing of the plant material and resulting in replacing and/or relocating same shall be done at the contractor's own expense.

2.07 ORDINANCES AND REGULATIONS

A. All local, municipal and state laws and rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these specifications and their provisions shall be carried out by the contractor. Anything contained in these specifications shall not be construed to conflict with any of the above mentioned Rules and Regulations or requirements, and where the Rules, Regulations or Specifications and/or drawings call for or describe materials, workmanship or construction, or a better quality, higher standard or larger size, these specifications and/or drawings shall take precedent over the requirements of said rules, regulations or codes.

2.08 MATERIALS AND WORKMANSHIP

A. Whenever any material is specified by name or number thereof, such specification shall be deemed to be used for the purpose of facilitating a description of the materials and establishing quality, and shall be deemed and construed to be

followed by the word "OR APPROVED EQUAL." No substitution will be permitted which has not been submitted for prior approval by the Owner's Representative. All materials shall be new and without flaws or defects and shall be the best of their class and kind. Sufficient literature and/or samples must be furnished for any materials submitted as "equal" substitutes. All materials shall be guaranteed for a period of one (1) year against material defects and workmanship.

B. All materials and equipment shall be installed in a neat and workmanlike manner. The Owner's Representative reserves the right to direct the removal and replacement of any items, which in his opinion shall not represent an orderly and reasonably neat workmanlike appearance, provided such work can be properly installed in such and orderly way, by the usual methods in such work. Such removal and replacement shall be done, when directed in writing, at the Contractor's expense without additional cost.

2.09 PROJECT INSPECTION

A. It is the intention of these specifications, together with the accompanying drawings to accomplish the work in an efficient and satisfactory manner according to the workmanlike standards established for the nursery industry. Notwithstanding is the fact that these specifications and drawings may be deficient in setting forth a complete detailed description of the work to be done.

2.10 RECORD DRAWINGS

A. The Owner will furnish the Contractor with two sets of blueine prints, showing all work required under this contract, for the purpose of having the Contractor record on one set of prints all changes that may be made during actual installation of the landscape.

B. After final acceptance of the completed installation, the contractor shall be responsible for having complete drawings prepared showing all such changes and these shall be turned over to the Owner for recording purposes.

2.11 MATERIAL STORAGE AND CLEANUP

A. The contractor shall keep the premises free from rubbish and debris at all times and shall arrange for this storage so as not to interfere with Owners operation of the job. All unused materials, rubbish and debris shall be removed from the site.

2.12 EQUIPMENT, TOOLS AND LABOR

A. The Contractor shall furnish all such equipment, tools and labor necessary to push work, in an acceptable manner, to a speedy completion. This contract is based on the Contractor furnishing and using his equipment, tools and labor which are suitable to carry out this contract in a first class manner, unless otherwise hereinafter specified.

2.13 CHANGES OR ADDITIONAL WORK

A. The Owner may, without invalidating the original contract, order such changes or additions as may from time to time be deemed desirable or necessary. In doing so, the contract price shall be adjusted to the mutual agreement of the contractor and the Owner, with all work being done under the conditions of the original contract, except for such adjustments in price and in extension of time as may be necessary.

B. The contractor shall bring to the attention of the Owner's Representative changes which may necessitate deviation(s) in construction from the original plans by other contractors on the job. Changes in price caused by such deviation(s) shall be agreed upon by both Contractor and Owner's Representative before work proceeds.

PART 3 - MATERIALS

3.01 GENERAL

A. Topsoil: Planting areas may use existing soil on the site as long as it has been cleared of unsightly underbrush and their roots, buried construction debris, pockets of clay, rocks and other extraneous matter.

B. Unsuitable Soil Conditions: Absolutely no plastic or clayey soil is to be used in any planting landscape areas. If such a condition is found, it is to be removed to a depth of 3 feet and 1 foot outside of said planting bed. This area is to be backfilled with materials of suitable sandy gradation which is porous and percolates well with reasonable compaction. If any planting or sod area has a plastic or clayey soil condition which does not allow for proper drainage, then a system of underdrain, turf drain or some other means of releasing underground standing water must be incorporated under the direction of the Landscape Architect and Owner.

C. Soil Tests: The landscape contractor is to test all soil conditions of all existing planting areas, or areas backfilled or composed primarily of existing soil where contents or PH is not previously known, as to its PH and organic content before planting to be sure all unsuitable material has been removed as per 3.1 B. Before any soil addenda are added to the soil, a soil test shall be taken to determine the type and amount of PH controlling materials needed to bring the soil to PH rating of 6.0. Results of soil tests shall be submitted to the Landscape Architect of his representative prior to application of soil addenda.

1. Soil samples shall be taken from 5 different locations throughout the work area. Samples may not be taken closer than 50 feet from any other samples site.

2. Samples shall be mixed and tested accordingly.

D. Fertilizer:

1. Slow-release commercial fertilizer 866 formula: 50% nitrogen requirement shall be derived from organic sources and the secondary plant foods consisting of 4.5% potash-magnesia, 0.5% manganese sulfate, 0.5% copper sulfate, .05% borax.
2. Wettable Sulphur: Shall be finely ground dusting or wettable but must pass a 375 mesh screen. Analysis of sulphur must be between 90% and 93%.
3. Iron Sulfate: Analysis of 18% to 19% metallic iron.
4. Guarantee of Fertilizer Analysis: Before delivery of fertilizer is made, the contractor shall submit the manufacturer's statement of analysis of the fertilizer indicating the properties of organic matter and the availability of the plant food. The fertilizer is to be delivered to the site in the original containers unopened and bearing a guaranteed analysis fulfilling the required specifications.

E. Superabsorbent: White "Terra-Sorb AG" synthetic acrylamide co-polymer crystals with a particle size of 1 to 3 mm, available from Seedsmiths, 781-9400; Jacksonville, Florida, or approved equal.

F. Mulch: Mulch shall consist of either pine straw or cypress (Grade A). Cypress mulch will be placed in all planting beds, planters or any other area whether or not specified on the plans. Pine straw is to be placed in all natural areas or any other area specified on the plan. All mulch is to be clean, bright and free of weeds, moss, sticks, sawwood, chips or other debris. All mulch is to be installed evenly to a depth as noted on the drawings and cover all areas of the planting beds, etc.

G. Water: Water used for landscaping is to be from Owner provided sources. Water for planting occurring prior to final operation of irrigation system shall be supplied by the Contractor at no cost to the Owner.

3.02 TOPSOIL MIXTURE

A. All topsoil which is used to replace existing soil in tree, shrub and ground cover beds for planting operations as labeled shall be of similar organic content and PH as the existing surrounding soil. Where a topsoil mixture is specifically called for, it shall be prepared and conditioned as follows. These operations shall only be made after consulting with Landscape Architect.

1. Mix one part by volume peat and two parts by volume of existing soil and five pounds of 75% organic 6-6-4, 59-8 fertilizer and five pounds of commercial 50% organic 6-6-6 fertilizer to each cubic yard of the mixture. Add wettable sulfur and iron sulphate in quantities necessary to bring the soil to PH rating of 6.0.
2. Fill material for berm areas is to be provided by General Contractor unless otherwise directed by Landscape Architect.

3.03 PLANT MATERIAL

A. Quantity and Size: All plants and trees shall be Florida No. 1 or better, as defined in and in accordance with "Horticultural Standards" (latest edition) of the rules and grading adopted by the American Association of Nurserymen and "Grades and Standards for Nursery Plants". All plants shall have a normal habit of growth and shall be sound, healthy, vigorous and free from insect infestations. Any tree with weak, thin trunks not capable of supporting itself when planted in the open will not be accepted. The minimum acceptable size of all plants, measured before pruning, with branches in normal position, shall conform to dimensions as shown in the Plant Schedule. Specific container sizes, when noted, may be used only when the minimum container size equals the minimum size indicated in the Plant Schedule. Reasonable effort shall be made to locate specific sizes. Smaller sizes may be acceptable only after notification of and approval by Landscape Architect. Larger plants of equal quality may be accepted at no additional cost to the Owner. Specimen trees may be specified to be installed by others at the direction of the Landscape Architect.

B. Balled Plants: Plants that are balled and burrapped (B&B) shall be adequately balled with firm natural balls of soil sized as set forth in "Horticultural Standards". Balls shall be firmly wrapped in burlap or equal approved strong cloth. No balled plant shall be planted if the ball is cracked or broken before or during the process of planting.

C. Balled and Wired Plants: Plants that are wire balled and burrapped (WB&B) shall be dug with solid balls of adequate size, the balls securely wrapped with heavy burlap or equal and tightly bound with mesh.

D. Container Grown Plants: Plants that are container grown shall have been grown in pots, cans, tubs or boxes and shall have sufficient roots to hold earth together intact after removal from containers without being rootbound.

E. Options as to Methods: Any plant may be furnished container grown instead of balled if all other requirements as met.

F. Protection Against Drying Out: All plants shall be handled so that roots will be adequately protected at all times from drying out and from other injury, the balls or balled plants which cannot be planted immediately on delivery shall be well protected with soil or other acceptable material.

G. Plant Labels: Durable, legible labels, stating in weather resistant ink or equal, the correct plant name and size, specified in the plant list, shall be securely attached to all plants, bundles and/or containers or plant material delivered at the planting site, for the purpose of inspection and planting identification.

PART 4 - WORKMANSHIP AND INSTALLATION

4.01 SPECIAL TREATMENT AND HANDLING FOR SPECIMEN PLANTS

A. Trees and shrubs for isolated specimen planting shall be selected for shape and symmetrical branching habit which at maturity will produce a strong, full-foliated tree, bush or other specimen. Particular care shall be exercised in the digging, binding and wrapping of such specimens to assure safe loading, shipment and handling or the entire operation of transportation from growing location to the replanting locations shown on the drawings and in Plant Schedule.

4.02 SOIL TESTS

A. Four (4) weeks prior to planting operations, test existing soil for pH and submit report from the University of Florida Extension (IFAS) Soil Testing Laboratory. Collect soil samples in accordance with recommendations of the Laboratory. A soil test kit may be obtained from the County Extension Service.

4.03 GUYING AND STAKING

A. All trees shall be guyed or staked according to the details provided in the drawings.

1. Hose: Hose shall be suitable garden hose not less than 1/2" inside diameter.
2. Stakes: Stakes for supporting trees and palms shall be of sound wood of uniform size, creosoted or pressure treated by an approved process. Stakes shall not be less than 2 inches by 4 inches nominal dimensions and not less than 2-1/2 feet in length for guying and not less than 9 feet for staking, and shall be in all cases of sufficient dimensions and length to satisfactorily and firmly guy each tree.
3. Wire: Wire shall be galvanized pliable, zinc-coated iron not less than No. 12 gauge.
4. Turnbuckles: Turnbuckles for guying trees shall be galvanized or cadmium-plated and shall be of adequate size and strength to properly maintain tight guy wires.
5. Option of Contractor: at the option of the contractor, the staking and guying of trees may be omitted. The Contractor assumes all responsibility if he does not stake or guy.

B. Water in Trees: All trees, whether balled container or spaded, shall be watered in property, immediately after planting. A water hose is to jet water around the perimeter of the ball at least in three separate places. Watering is to continue until all air pockets have been filled. Additional fill may be needed to bring fill to proper height. Retamp for compaction and grade.

C. Tree Spading Operations (by outside contractor supervised by Landscape Contractor)

1. Spades will be of sufficient size comparable to trunk caliper so as not to damage the root system.
2. Trees are to be set so as not to have any part of the root ball side exposed. If this occurs then the tree spade contractor is responsible for adding additional fill and hand grade to match existing slope. Landscape logs may be used by the contractor if the conditions warrant as directed by the Landscape Architect.
3. Immediately after spading the tree it is to be watered in property and a water dish built to retain the water around the root ball.

4.04 PLANT SCHEDULE

A. The species, size, color or other specific requirements to be furnished, and the number of plants required to complete the planting as indicated on the Landscape Plan are given in the Plant Schedule.

1. All dimensions given under the plant schedule shall be the minimum acceptable sizes, unless otherwise approved per 3.3.A.

4.05 INSPECTION OF PLANTS

A. The contractor shall be responsible for all certificates of inspection of plant materials that may be required by Federal, State or other authorities to accompany shipment of plants. All plants shall be subject to inspection and approval by the Landscape Architect at any place and at any time. Part of the plants required for the work may be inspected at the place of growth but inspection should not in any way impair the right of rejection at the site. All plants must be inspected and approved before they are planted. All plants that are rejected shall be immediately removed from the site.

4.05 PLANTING SEASON

A. The planting of plant materials may proceed at any time or period or season agreed upon by the Landscape Architect or his representative as being satisfactory.

4.07 GRADING PREPARATIONS

A. Before the preparations of the planting area begin, all barricades around the remaining trees and other protective areas shall be removed by the Landscape Contractor.

B. The finish grade of all planting areas shall be 2-1/2" below the top of abutting curbs, walks, paving and abutments.

C. The General Contractor is responsible for removing all construction debris in any areas to be landscaped at least one day prior to the Landscape Contractors schedule of preparation for landscaping. No debris such as boards, drywall, paint containers, metal bands, pipe, cardboard boxes or any other item which may cause the Landscape Contractor any delayed time, shall be left on the site.

4.08 GRADING

A. General Contractor is to verify exact amount of fill needed as shown on civil grading plans and stock pile on job, if feasible.

B. All fill for berming, landscaping areas such as planters, planting beds and in curb islands shall be of suitable construction material.

C. Absolutely no clay, mulch, gumbo or sandy clay may be used. Suitable material will consist of only clean sand, porous gradation.

D. Any unsuitable material found in the above landscaping area will be removed to a depth of three feet and one foot outside the planting bed perimeter, then will be filled with suitable material to reasonable compaction.

E. Rough grading and intermediate rough grading will be done by the General Contractor. Fine grading will be done by the Landscape Contractor.

1. Rough grading is the placement of all dirt in designated areas (including planters), balanced to rough grade and shaped to the general intent of the plans as directed by the Landscape Architect.
2. Intermediate rough grading is that work which is needed, by request of the Landscape Architect, to repair all erosion problems on site, including washouts, into the lake, roadway or around building pads.
3. Fine grading is that work which will be done by the Landscape Contractor exclusively. This work consists of hand grading all areas for sodding, all berms that have been properly balanced and shaped by the General Contractor under rough grading.
4. If fine grading has been completed and severe erosion has taken place before sod or plant material has been installed, then intermediate rough grading will be requested and approved by the Landscape Architect and the work shall be the responsibility of the General Contractor.
5. If severe erosion has taken place after sod or plant material has been installed, then intermediate rough grading will be requested and approved by the Landscape Architect and the work will be the responsibility of the General Contractor.

4.09 PLANTING OPERATIONS

A. Laying Out Plant Locations: Locations for all plants and outlines for planting areas shall be staked or appropriately laid out on the ground prior to digging pits. Before plants are set, orientation of plant faces, foliage and branchings shall be adjusted for best views.

B. Preparation of Plant Pits: All pits shall be circular in outline, at least twice the width in diameter than that of the plant and excavation shall have near vertical sides. The specified for excavation of plant pits shall be the depths below the finished grades and shall be increased as much as may be necessary to accommodate a bed of the topsoil mixture as specified herein beneath the ball of roots.

C. Obstruction Below Ground: any extraneous matter shall be removed to the depths necessary to permit proper installation of planting. If obstruction is not feasible, remove. The Landscape Architect is to be notified and he is to make adjustment of the plant material.

4.10 SETTING PLANTS

A. Shrubs and Ground Covers: All plants except as otherwise specified, shall be centered in pits. Deep planting shall be avoided unless otherwise specified or directed, all plants shall be set at such a level that after settlement, they will bear the same relation to the required grade as they have to the natural grade before being transplanted. Make adjustments of position of plants where necessary and prior to complete planting.

B. Compact topsoil mixture, as specified, around balls or roots the full diameter of plant pit and water thoroughly and form a ridge of soil around edge of pit to form a saucer.

4.11 PRUNING

A. All plant materials shall be trimmed and shaped to provide for the desired effect when indicated on plan. All pruning shall be in accordance with standard modern horticultural practice.

4.12 SHRUB & TREE PLANTING

A. Shrubs, B&B 3 gallons and larger, shall be planted in pits, at least 2 times greater in diameter than the ball of earth. The depth of the pits shall be as deep as necessary to permit the required 6 inches of topsoil mixture beneath the ball and to accommodate the ball or roots when the plant is set to the required grade Backfill with topsoil mixture as specified and thoroughly settle by tamping and watering. A mound of soil shall be formed around each plant so as to produces a shallow saucer.

B. Where required by the plans, spread superabsorbent around new trees only, at a rate recommended by the manufacturer for rapid growth of new plantings. Uniformly spread throughout a 6 foot diameter area centered on each tree. Omit the superabsorbent, if the tree is within an area with a normal high water table.

4.13 GROUND COVER PLANTS

A. Plants planted at a spacing of up to 18 inches and plants of smaller size shall be treated as ground cover plants.

B. Preparation of top six inches (6") of planting soil shall be prepared as follows (unless noted otherwise in Plant Schedule):

1. Fine grade to remove all extraneous matter.
2. Spread three inches (3") of peat moss or humus uniformly over entire ground cover area.
3. Spread the 50% organic fertilizer at the rate of 40 pounds per 1,000 square feet uniformly over the ground cover area.
4. Spread the 75% organic fertilizer at the rate of 25 pounds per 1,000 square feet uniformly over the ground cover area.
5. Rotor mix or mix by other method to a depth of six inches (6").
6. Regrade to the finished grade before mulching.
7. Plant beds that have a spacing of plants that is 12" or less may be mulched before planting.
8. Thoroughly water and firm the plants into the ground cover mixture.

C. Plants shall be oriented so that the spread on the plants will uniformly cover the space between them.

4.14 SODDING

A. The finish level of all grass areas after settlement shall be one inch below the top abutting curbs, walks, paving and wood borders to allow for the building of turf.

B. The sub-grade soil shall be loosened by roto-tiller or other approved method to a minimum of six inches and graded to remove all ridges and depressions so that it will be after settlement everywhere parallel to and at the proper level to provide finished grades specified hereinbefore. All stones over two inches in dimensions, sticks, debris and other extraneous matter shall be moved during this operation.

C. Soil Tests: Before any soil additives are applied to the soil, a soil test shall be taken to determine the type and amount of PH controlling materials needed to bring the soil to a PH rating of 6.0. Results of soil test shall be submitted to the Landscape Architect or his representatives prior to application of soil additives.

D. Correcting PH: Apply the necessary material to correct the PH.

E. After preparation of subsoil, commercial fertilizer 6-6-6 50% organic shall be applied on all grass areas at the uniform rate of 20 pounds per 1,000 square feet.

F. Solid sod shall be sufficiently thick to secure a dense stand of live grass and shall be free from weeds or undesirable grasses. At the time the sod is cut, the grass shall not have a length of more than two inches.

G. Thickness shall be as uniform as possible, approximately 1-1/2 inches or more, depending on the nature of the sod, so that practically all the dense root system of the grasses will be retained, but exposed in the sod strip, and so that the sod can be handled without undue tearing or breaking.

H. Sod shall be watered before lifting and in sufficient quantities to provide a well moistened condition of the sod, full depth to which it is to be cut.

I. The sod shall be live, fresh and uninjured at the time of planting. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until is planted. The sod shall be approved by the Landscape Architect before planting.

J. Sod shall be laid with broken joints and fitted together to form a uniform neat blanket effect. All poor grass, light spots and trash shall be cut out of the sod and patched with good sod.

K. Watering: The grassed areas shall be kept in moist condition for a least two weeks after it is planted and as long as required for a stand of grass.

L. Patching: Weed sodded areas which have to be removed and replaced will be done so by cutting out the affected area - graded to a depth equal to bottom of existing sod adjacent and replaced tightly to form a uniform carpet not noticeable whether the grade is flat or on a slope.

4.15 MULCHING

A. After all plants in a group or in a plant bed have been set and approved, the areas between plants shall be cultivated and raked to an even grade to conform to the required premulching finish grades. All plant beds and plant saucers shall then be uniformly covered with three-inch layer of cypress bark, or as specifically noted on drawings.

B. Trees which are not located in plant beds shall be mulched to 3' radius from center of tree.

C. Ground cover plants (spacing of more than 12 inches) shall be set in the plant beds before mulching is applied to these areas.

PART V - FINAL COMPLETION AND ACCEPTANCE

5.01 CLEAN-UP AND PROTECTION

A. Upon completion of the work, the grounds shall be cleared of all debris, superfluous materials and equipment due to landscape operations.

B. The Contractor shall protect all work included under his contract against trespassing and damage of any kind until final inspection and acceptance. If any material is injured it shall be treated, repaired or replaced as required.

5.02 FINAL INSPECTION

A. At the conclusion of the planting, a final inspection of the work will be made to determine the condition of plant materials. All plants not in a healthy, growing condition as determined by the Landscape Architect or his representative shall be removed from the site and promptly replaced with plants of the like, kind and size in the same manner as specified for the original planting, at no additional cost to the Owner.

B. At the conclusion of this final inspection, if the Landscape Architect or Owner has reason to believe that the plants are not of the specified grade, he will request a regrading inspection by the Division of Plant Industry, and such evidence will be the basis for requesting replacement of plants, and for legal or other action taken by the Division of Plant Industry according to law, should this become necessary.

5.03 HURRICANE DAMAGE OR ACTS OF GOD

A. The Contractor shall not be held responsible for replacement or repairs of plants or planting areas killed or damaged by hurricanes or Acts of God provided he shall have taken all reasonable precautions to minimize their damage.

5.04 GUARANTEE

A. All plants, ground cover materials, trees and palms shall be guaranteed for a period of one (1) year after final inspection and acceptance by the Owner.

5.05 HARM TO PLANT MATERIAL

A. The General Contractor is, responsible for damage to any plant materials or sod which is harmed by foot traffic, ladders in beds, paint brush cleaning, spillage of chemicals in landscaped areas, heavy equipment traffic, construction debris left laying, roofing materials or any other circumstances which is obviously the result of construction work aftermath.



LANDSCAPE ARCHITECTURE / LAND PLANNING

541 Oleander Street, Neptune Beach, FL 32266
Phone: (904) 247-7729 Fax: (904) 373-9177
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ISLAND
PARK

1505 15th Street

Fernandina Beach, FL

Rev.	Date	Comment
△		
△		
△		
△		
△		

Date: 8/29/25

Scale: N/A

Drawn by: BMG

Checked by: BMG

Project No. 25-116

Sheet Title:

LANDSCAPE
SPECIFICATIONS

Sheet No.

L5 of 5

Orlando [Headquarters]
3025 East South Street
Orlando, FL 32803

Cocoa
400 High Point Drive
Suite 400
Cocoa, FL 32926

Jacksonville
11235 St. Johns Industrial Pkwy N
Suite 2
Jacksonville, FL 32246

Key West
1107 Key Plaza
Suite 259
Key West, FL 33040

Lantana
445 West Lantana Road
Suite 5
Lantana, FL 33462

Tallahassee
2560-1 Barrington Circle
Tallahassee, FL 32308

Tampa
6011 Benjamin Road
Suite 101-B
Tampa, FL 33634

Denver
10701 Melody Drive
Suite 304
Northglenn, CO 80234

Raleigh
4338 Bland Road
Raleigh, NC 27609

Charlotte
5105 Monroe Road
Suite A
Charlotte, NC 28205

East Syracuse
6700 Old Collamer Road
Suite 112
East Syracuse, NY 13057

Bismarck
4501 Coleman Street
Suite 103
Bismarck, ND 58503

Austin
3801 N Capital of TX Highway
Suite E-240
Austin, TX 78746

Midland
5114 West County Road 12
Midland, TX 79706

San Antonio
7700 Broadway Street
Suite 104
San Antonio, TX 78209

Orlando [Aquatic & Land
Management Operations]
3825 Rouse Road
Orlando, FL 32817



Bio-Tech Consulting

Environmental and Permitting

May 16, 2025

Kenny McGill
Cross Regions Real Estate Group
1205 Monument Road
Suite 200
Jacksonville, Florida 32225

**RE: 1505 South 15th Street – Arborist Evaluation
(BTC Contract No. 25-724)**

Dear Kenny:

Introduction

On May 5th, 2025 Bio-tech Consulting (BTC) conducted a basic tree risk assessment as described in the *ISA Best Management Practices: Tree Risk Assessment*: International Society of Arboriculture, 2017 of the trees identified on the 1505 S. 15th Street project site. The purpose of this report is to evaluate the individual tree's health of all surveyed trees, with additional reference to City of Fernandina Beach ordinances regarding tree protection. A review of 17 trees within the provided parameters was conducted. 16 of these trees are recommended for immediate removal and the exclusion of any environmental protections due to long term health and safety concern. The additional tree noted in this assessment is a surveyed pine that is no longer present on site. The locations of each "Dead, Dying or Diseased" tree, as well as the missing pine, are plotted in Figures 1.

Regards,

Jeremy Cooper
Project Manager
ISA Certified Arborist FL-9502A

Evan Quigley
Environmental Scientist II
ISA Certified Arborist FL-10131A

Attachments

Attachment 1 – Tree Health Assessment Photo Log
Figure 1 (A&B) – Dead, Dying, and Diseased Trees Maps

BTC-1 – (1062)

Species: Hackberry (*Celtis laevigata*)

DBH: 8”

Condition: Main stem was topped or has previously failed mid-stem, most foliage remaining is from coppice sprouting at wound. High volume of stress sprouts. Slight trunk swelling indicating vascular infection. Poorly structured recovery canopy with weakly attached leader being shaded out by neighboring trees. Tree is diseased, declining and unlikely to fully recover.

Recommendation: Immediate removal.

BTC-2 – (1302)

Species: Live oak (*Quercus virginiana*)

DBH: 24”

Condition: Trunk twisting and cracking bark, incomplete compartmentalization with excessive exposure of cambial tissue. Active decay in exposed areas. Asymmetric and diminishing canopy, in both foliage and structure. 55% live crown ratio, and entire limbs attached while decaying. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-3 – (1394)

Species: Live oak (*Quercus virginiana*)

DBH: 28”

Condition: Many primary and secondary limbs have failed previously, and are decaying while still attached. Remaining foliage from epicormic sprouting on trunk and limbs. Trailers and sidewalk pavement in root zone, inducing further stress. Tree is diseased and declining.

Recommendation: Immediate removal.

BTC-4 – (no ID tag located)

Species: Live oak (*Quercus virginiana*)

DBH: 18”

Condition: Asymmetric canopy form, leaning toward utility lines, with about 35% live crown ratio. Remaining foliage is from stress sprouts and epicormics. Many primary limbs dead and decaying while attached, maintaining open vectors for entry of pathogens. Pavement over root zone. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-5 – (1058)

Species: Live oak (*Quercus virginiana*)

DBH: 13”

Condition: Tree is under severe stress from lions-tail utility pruning. Form is asymmetric with many open wounds left on trunk. 40% live crown ratio and almost all of the remaining foliage is epicormic or stress-induced. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-6 – (1327)

Species: Live oak (*Quercus virginiana*)

DBH: 20”

Condition: Severely damaged canopy with multiple open wounds remaining as vectors for direct pathogenic entry. 35% live crown ratio with remaining foliage almost entirely epicormic stress sprouting. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-7 – (1316)

Species: Live oak (*Quercus virginiana*)

DBH: 13”

Condition: Primary canopy limbs have failed previously and there are many wounds and attached limbs are actively decaying. Due to these failures, canopy form is precarious and remaining foliage is almost entirely epicormic. Tree is diseased, declining, and unlikely to recover.

Recommendation: Immediate removal.

BTC-8 – (1330)

Species: Live oak (*Quercus virginiana*)

DBH: 16”

Condition: Primary and secondary canopy limbs have failed and are left with unprotected wounds as vectors for entry of pathogens. Tree is visibly stressed with the majority of its foliage resulting from epicormic sprouting. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-9 – (1060)

Species: Live oak (*Quercus virginiana*)

DBH: 33”

Condition: Multiple cavities with decay in trunks and primary canopy limbs. Many failed and decaying limbs attached, diminishing the canopy symmetry and spread to about 40% live crown ratio. Trunks are inosculating. Epicormic growth is majority of canopy. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-10 – (1331)

Species: Live oak (*Quercus virginiana*)

DBH: 18”

Condition: Crown is severely compromised, many open wounds from previous failures with visible rot. Multiple decaying primary limbs still attached, and epicormic sprouting in lieu of a functional canopy. Trunk base and rootball crowded by mimosa stump. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-11 – (1317)

Species: Live oak (*Quercus virginiana*)

DBH: 16”

Condition: Canopy is asymmetric and at about 25% live crown ratio. Decaying limbs in the canopy attached to leading stems, open vectors for pathogenic entry. Majority of foliage is from epicormic stress sprouts. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-12 – (1319)

Species: Live oak (*Quercus virginiana*)

DBH: 30”

Condition: Tree supporting very little foliage, much of which is from epicormic sprouting. Many limbs are attached to the main trunks while harboring decay. Trunks leaning precariously and attached weakly at base. RV and trailers parked in root zone compounding stress. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-13 – (no ID tag located)

Species: Live oak (*Quercus virginiana*)

DBH: 19”

Condition: Diminished canopy form and foliar density. 25% live crown ratio, attributed mostly to epicormic sprouting. Active decay on failed and attached primary limbs, acting as entry vectors from pathogens. RV and shed on root zone compounding stress. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-14 – (1332)

Species: Live oak (*Quercus virginiana*)

DBH: 18”

Condition: Diminishing spread of canopy foliage, epicormic sprouts are much of what remain. Entirely dead and decaying primary limbs attached to main stem, and some unprotected attachment wounds, left open for pathogenic entry. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-15 – (no ID tag located)

Species: Live oak (*Quercus virginiana*)

DBH: 24”

Condition: Multiple canopy limbs have failed, leaving open wounds or entirely dead and decaying canopy limbs still attached to the tree. About 35% live crown ratio, with many epicormics. Heavy machinery parked at the base of the trunk. Tree is diseased and dying.

Recommendation: Immediate removal.

BTC-16 – (1400)

Species: Laurel oak (*Quercus laurifolia*)

DBH: 56”

Condition: Interior of both stems completely hollowed out from base clear up the trunk. Active decay in wounds and attached limbs. Precarious trunk leans in both stems from base union. Canopy smothered by vine matte. Tree is diseased and dying.

Recommendation: Immediate removal.

Survey ID: BTC1 – (1062)

Notes:

Main stem was topped or has previously failed mid-stem, most foliage remaining is from coppice sprouting at wound. High volume of stress sprouts. Slight trunk swelling indicating vascular infection. Poorly structured recovery canopy with weakly attached leader being shaded out by neighboring trees.

Photo #	Date of Photograph:
1	5/5/2025



**Species ID: Hackberry
(*Celtis laevigata*)**

Notes:

Main stem was topped or has previously failed mid-stem, most foliage remaining is from coppice sprouting at wound. High volume of stress sprouts. Slight trunk swelling indicating vascular infection. Poorly structured recovery canopy with weakly attached leader being shaded out by neighboring trees.

Photo #	Date of Photograph:
2	5/5/2025



Bio-Tech Consulting

Environmental and Permitting

Survey ID: BTC2 – (1302)

Notes:

Trunk twisting and cracking bark, incomplete compartmentalization with excessive exposure of cambial tissue. Active decay in exposed areas. Asymmetric and diminishing canopy, both in foliage and structure. 55% live crown ratio, and entire limbs attached while decaying.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)****Notes:**

Trunk twisting and cracking bark, incomplete compartmentalization with excessive exposure of cambial tissue. Active decay in exposed areas. Asymmetric and diminishing canopy, both in foliage and structure. 55% live crown ratio, and entire limbs attached while decaying.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC2 – (1302)

Notes:

Trunk twisting and cracking bark, incomplete compartmentalization with excessive exposure of cambial tissue. Active decay in exposed areas. Asymmetric and diminishing canopy, both in foliage and structure. 55% live crown ratio, and entire limbs attached while decaying.

Photo #

3

Date of Photograph:

5/5/2025

**Species ID: Live oak**
(*Quercus virginiana*)**Notes:**

Trunk twisting and cracking bark, incomplete compartmentalization with excessive exposure of cambial tissue. Active decay in exposed areas. Asymmetric and diminishing canopy, both in foliage and structure. 55% live crown ratio, and entire limbs attached while decaying.

Photo #

4

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC3 – (1394)

Notes:

Many primary and secondary limbs have failed previously, and are decaying while still attached. Remaining foliage from epicormic sprouting on trunk and limbs. Trailers and sidewalk pavement in root zone, inducing further stress.

Photo #

1

Date of Photograph:

5/5/2025

Species ID: Live oak
(*Quercus virginiana*)**Notes:**

Many primary and secondary limbs have failed previously, and are decaying while still attached. Remaining foliage from epicormic sprouting on trunk and limbs. Trailers and sidewalk pavement in root zone, inducing further stress.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC4 – (no ID tag)**Notes:**

Asymmetric canopy form, leaning toward utility lines, with about 35% live crown ratio. Remaining foliage is from stress sprouts and epicormics. Many primary limbs dead and decaying while attached, maintaining open vectors for entry of pathogens. Pavement over root zone.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID:** Live oak
(*Quercus virginiana*)**Notes:**

Asymmetric canopy form, leaning toward utility lines, with about 35% live crown ratio. Remaining foliage is from stress sprouts and epicormics. Many primary limbs dead and decaying while attached, maintaining open vectors for entry of pathogens. Pavement over root zone.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC5 – (1058)

Notes:

Tree is in severe decline from lions-tail utility pruning. Form is asymmetric with many open wounds left on trunk. 40% live crown ratio and almost all of the remaining foliage is epicormic or stress-induced.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)****Notes:**

Tree is in severe decline from lions-tail utility pruning. Form is asymmetric with many open wounds left on trunk. 40% live crown ratio and almost all of the remaining foliage is epicormic or stress-induced

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC6 – (1327)

Notes:

Severely damaged canopy with multiple open wounds remaining. 35% live crown ratio with remaining foliage almost entirely epicormic stress sprouting.



Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)**

Notes:

Severely damaged canopy with multiple open wounds remaining. 35% live crown ratio with remaining foliage almost entirely epicormic stress sprouting.



Photo #

2

Date of Photograph:

5/5/2025



Bio-Tech Consulting

Environmental and Permitting

Survey ID: BTC7 – (1316)

Notes:

Primary canopy limbs have failed previously and there are many wounds and attached limbs with active decay. Due to these failures, canopy form is precarious and remaining foliage is almost entirely epicormic.



Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)**

Notes:

Primary canopy limbs have failed previously and there are many wounds and attached limbs with active decay. Due to these failures, canopy form is precarious and remaining foliage is almost entirely epicormic.



Photo #

2

Date of Photograph:

5/5/2025



Bio-Tech Consulting

Environmental and Permitting

Survey ID: BTC8 – (1330)

Notes:

Primary and secondary canopy limbs have failed and are left with unprotected wounds as vectors for entry of pathogens. Tree is visibly stressed with the majority of its foliage resulting from epicormic sprouting.



Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)**

Notes:

Primary and secondary canopy limbs have failed and are left with unprotected wounds as vectors for entry of pathogens. Tree is visibly stressed with the majority of its foliage resulting from epicormic sprouting.



Photo #

2

Date of Photograph:

5/5/2025



Bio-Tech Consulting

Environmental and Permitting

Survey ID: BTC9 – (1060)

Notes:

Multiple cavities with decay in trunks and primary canopy limbs. Many failed and decaying limbs attached, diminishing the canopy symmetry and spread to about 40% live crown ratio. Trunks are inosculating. Epicormic growth is majority of canopy.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)****Notes:**

Multiple cavities with decay in trunks and primary canopy limbs. Many failed and decaying limbs attached, diminishing the canopy symmetry and spread to about 40% live crown ratio. Trunks are inosculating. Epicormic growth is majority of canopy.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC10 – (1331)

Notes:

Crown is severely compromised, many open wounds from previous failures with visible rot. Multiple decaying primary limbs still attached, and epicormic sprouting in lieu of a functional canopy. Trunk base and rootball crowded by mimosa stump.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)****Notes:**

Crown is severely compromised, many open wounds from previous failures with visible rot. Multiple decaying primary limbs still attached, and epicormic sprouting in lieu of a functional canopy. Trunk base and rootball crowded by mimosa stump.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC11 – (1317)

Notes:

Canopy is asymmetric and at about 25% live crown ratio. Decaying limbs in the canopy attached to leading stems, open vectors for pathogenic entry. Majority of foliage is from epicormic stress sprouts.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak**
(*Quercus virginiana*)**Notes:**

Canopy is asymmetric and at about 25% live crown ratio. Decaying limbs in the canopy attached to leading stems, open vectors for pathogenic entry. Majority of foliage is from epicormic stress sprouts.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC12 – (1319)

Notes:

Tree supporting very little foliage, much of which is from epicormic sprouting. Many limbs are attached to the main trunks while harboring decay. Trunks leaning precariously and attached weakly at base. RV and trailers parked in root zone compounding stress.



Photo #	Date of Photograph:
1	5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)**

Notes:

Tree supporting very little foliage, much of which is from epicormic sprouting. Many limbs are attached to the main trunks while harboring decay. Trunks leaning precariously and attached weakly at base. RV and trailers parked in root zone compounding stress.



Photo #	Date of Photograph:
2	5/5/2025



Bio-Tech Consulting

Environmental and Permitting

Survey ID: BTC13 – (no ID tag)

Notes:

Diminished canopy form and foliar density. 25% live crown ratio, attributed mostly to epicormic sprouting. Active decay on failed and attached primary limbs, acting as entry vectors from pathogens. RV and shed on root zone compounding stress.

Photo #

1

Date of Photograph:

5/5/2025



**Species ID: Live oak
(*Quercus virginiana*)**

Notes:

Diminished canopy form and foliar density. 25% live crown ratio, attributed mostly to epicormic sprouting. Active decay on failed and attached primary limbs, acting as entry vectors from pathogens. RV and shed on root zone compounding stress.

Photo #

2

Date of Photograph:

5/5/2025



Bio-Tech Consulting

Environmental and Permitting

Survey ID: BTC14 – (1332)

Notes:

Diminishing spread of canopy foliage, epicormics are much of what remain. Entirely dead and decaying primary limbs attached to main stem, and some unprotected attachment wounds, left open for pathogenic entry.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)****Notes:**

Diminishing spread of canopy foliage, epicormics are much of what remain. Entirely dead and decaying primary limbs attached to main stem, and some unprotected attachment wounds, left open for pathogenic entry.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC15 – (no ID tag)**Notes:**

Multiple canopy limbs have failed, leaving open wounds or entirely dead and decaying canopy limbs still attached to the tree. About 35% live crown ratio, with many epicormics. Heavy machinery parked at the base of the trunk.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Live oak
(*Quercus virginiana*)****Notes:**

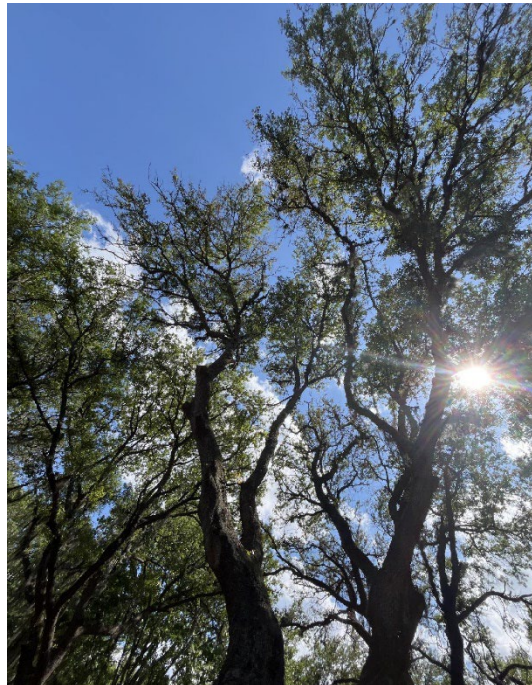
Multiple canopy limbs have failed, leaving open wounds or entirely dead and decaying canopy limbs still attached to the tree. About 35% live crown ratio, with many epicormics. Heavy machinery parked at the base of the trunk.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

Survey ID: BTC16 – (1400)

Notes:

Interior of both stems completely hollowed out from base clear up the trunk. Active decay in wounds and attached limbs. Precarious trunk lean in both stems from base union. Canopy smothered by vine matte.

Photo #

1

Date of Photograph:

5/5/2025

**Species ID: Laurel oak
(*Quercus laurifolia*)****Notes:**

Interior of both stems completely hollowed out from base clear up the trunk. Active decay in wounds and attached limbs. Precarious trunk lean in both stems from base union. Canopy smothered by vine matte.

Photo #

2

Date of Photograph:

5/5/2025

**Bio-Tech Consulting**

Environmental and Permitting

