



**TECHNICAL REVIEW COMMITTEE MEETING
CITY OF ST. PETE BEACH
COMMISSION CHAMBERS**

**Notice of Public Meeting
Technical Review Committee**

**Community Development Department TRC Room
155 Corey Avenue, City Hall, St. Pete Beach, FL 33706**

**Wednesday, May 22, 2024
10:00 AM**

Regular Meeting Agenda

This is an informal meeting between City staff and the applicant(s). The public is invited to attend, however no public comment shall be permitted.

Discussion Items

1. Temporary Use Permit #24029: 6400 Gulf Blvd

Applicant requests to utilize seven parking spaces in front of Agave restaurant and Pappy's Liquors store for commercial parking on Sundays and holidays, when the businesses are closed.

2. Site Plan #24028: 0 Gulf Blvd [Parcel #07-32-16-51660-000-0011] Pinellas County Water Booster Station

Constructing a new two-story building (7,376 sq. ft.) with critical components on the second story and a waterproof pump room on the first floor for sea level rise and flood resiliency purposes. The existing water tank is remaining.

3. Unnecessary & Undue Hardship Variance #24030: 0 Gulf Blvd [Parcel #07-32-16-51660-000-0011] Pinellas County Water Booster Station

Applicant requests unnecessary and undue hardship variances (5) associated with site plan #24028 to:

a) Exceed the 20' maximum front yard setback along 46th Ave (LDC Sec. 38.9.);

b) Reduce the buffer along the Lido Park side from six feet to less than five feet due to parking gravity wall and need for access around the tank (LDC Sec. 22.7.(b)(1));

c) Reduction of the eight-foot buffer along the Gulf Blvd and 45th Ave frontages of the site to five feet or greater should TRC not administratively reduce the buffer width (LDC Sec. 39.10.(b));

d) Eliminate the requirement that the street-level facade be at least 50% transparent (LDC Sec. 39.7.); and,

e) Reduce, along the western, southern and northern sides, the percentage of the facade that must be covered with architectural decoration or windows below the 60% minimum (LDC Sec. 39.8.(b)).

Next Meeting: June 5, 2024

**TECHNICAL REVIEW COMMITTEE MEETING
CITY OF ST. PETE BEACH
COMMISSION CHAMBERS**

Agenda Report

Action Request:

Strategic Objective:

Date: May 22, 2024

Prepared By: Brandon Berry, Senior Planner

Through: Jennifer McMahon, Chief Operating Officer

Summary of Issue: Applicant requests to utilize seven parking spaces in front of the business for commercial parking on Sundays and holidays, when Agave restaurant and Pappy's Liquor store are closed.

Funding:

Attachments:

1. Application & Attachments
2. Site Plan (Previous)
3. Survey with Spaces Shown
4. Survey



TEMPORARY USE PERMIT APPLICATION

CASE NUMBER: 24029

PROPERTY FOR PROPOSED TEMPORARY USE

Legal Description: St Petersburg beach 1st ADD BLK,7 LOTS 6,7,8,9,10 AND 1/2 VAC ALLEY ADJ SW'LY

Parcel ID 36-31-15-78336-007-0060

Address 6400 GULF BLVD ST PETE BEACH FL

Current Zoning: _____ FLUM Designation: _____ Lot Area: 11,112 SF

Existing Use: 1121 STRIP STORE Proposed Use: _____

APPLICANT/AGENT:

Name: Pappys Liquors Inc/ AGAVE RESTAURANT

Address: 6400 GULF BLVD

City: St Pete Beach State: FL

Zip: 33706 Phone: 727-367-2141

Email: pappysliquors@gmail.com

PROPERTY OWNER:

Name: Richard Madison

Address: 6461 3rd Palm point

City: St Pete Beach State: FL

Zip: 33706 Phone: 727-367-2141

Email: pappysliquors@gmail.com

DETAILS OF THE REQUEST: Include length of time requested and hour of the day the use will be utilized (Add additional sheets if necessary) To allow off street parking on our property as a public service, charging a fee similar to our neighbors at the Post Card Inn and Finish Line Scooters. On Sundays from 12 noon - 9pm. The day and hours our businesses are closed to the public. Fees to be collected by staff as paid parking. premises are under video surveillance.

HELLO BRANDON,

THANK YOU FOR PROVIDING THESE FORMS AND
INSTRUCTIONS,

I MUST ADDRESS THE SURVEY, I HAVE PROVIDED A COPY
OF THE SURVEY THAT I HAD ON HAND, AND SCETCHED IN
THE PARKING SPACES. I ALSO PROVIDED A NEWER SITE
PLAN FOR WORK WE HAD DONE IN 2012 THAT ALSO
SHOWS THE PARKING SPOTS IN GREATER DETAIL.

I TRIED TO HAVE A NEW SURVEY DONE AND REACHED
OUT TO 6 DIFFERENT COMPANYS 2 RESPONDED 1
WOULD NOT DO A COMMERCIAL PROJECT, GEORGE F
YOUNG, INC ACCEPTED AND PROVIDED A QUOTE OF
\$7,910.00 THAT IM SURE YOU UNDERSTAND IS
ASTRONOMICAL FOR ITS INTENDED PURPOSE AS WE
HAVE NO INTENTION OF MODIFYING OR SELLING OUR
PROPERTY.

I HOPE THAT WHAT I PROVIDED WILL SUFFICE.

RESPECTFULLY

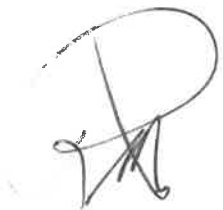
RICHARD MADISON

PAPPY'S LIQUOR, AGAVE RESTAURANT, EL AGAVE BAR . HOURS OF OPERATION MONDAY THRU SATURDAY 12PM-10PM CLOSED SUNDAY AND MAJOR HOLIDAYS.

THE ONLY DAY WE WOULD BE USING OUR FACILITES FOR OFF STREET PARKING WOULD BE ON SUNDAYS FROM 12PM – 9PM AND ON MAJOR HOLIDAYS DEPENDENT ON WEATHER AND TRAFFIC CONDITIONS ON GULF BLVD.

PAYMENT WILL BE COLLECTED BY STAFF ON PREMISE. BE IT CASH OR CREDIT CARD AND PROCESSED VIA OUR POS SYSTEM AS PARKING FEES.

WE DO NOT INTEND TO ADVERTISE OR USE SIGNAGE OF ANY TYPE.



RICHARD MADISON



Owner's Authorization for Agent

I/WE _____
(print name of property owner)

hereby authorize _____
(print name of agent)

to represent me/us in an application for _____
(type of application: variance, conditional use, zoning, etc.)


Signature of Owner

Richard Madison
Print Name of Owner


Signature of Owner

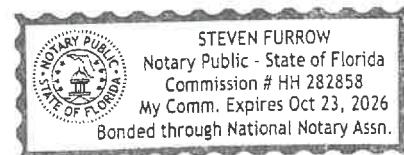
Nina Madison
Print Name of Owner

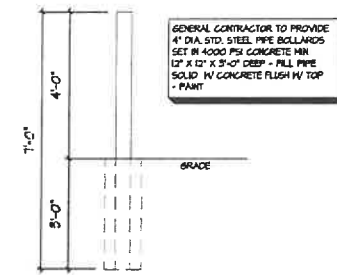
The forgoing instrument was acknowledged before me this 26 day of April
2024, by Richard Madison & Nina Madison who is personally known _____
or produced Drivers License as identification.


(Notary Signature)

4/26/2024
(Date)

My Commission Expires: 10/23/2026





2 BOLLARD DETAIL
SCALE: 1/2" = 1'-0"

1 SITE PLAN
SCALE: 1/8" = 1'-0"

3 SLAB DETAIL
SCALE: 1/2" = 1'-0"

SHEET TITLE
SITE PLAN

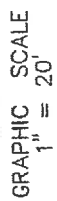
SHEET NUMBER
1

* TO THE BEST OF THE ARCHITECT OR ENGINEER'S KNOWLEDGE AND BELIEF, THESE PLANS AND SPECIFICATIONS COMPLY WITH THE 2010 FLORIDA BUILDING CODE.

* THE DRAWINGS & DESIGN ARE VALID FOR 12 MONTHS FROM DATE OF BEING SEALED.

TO THE BEST OF THE KNOWLEDGE OF THE ARCHITECTS OR ENGINEERS, SAID PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE MINIMUM FIRE SAFETY STANDARDS.

ALL DIMENSIONS AND JOB CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR, AND ALL DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT PRIOR TO COMMENCEMENT OF CONSTRUCTION.



A BOUNDARY SURVEY OF
Lots 6, 7, 8, 9, and 10, and 1/2 of Alley Adjacent to said lots,
Block 7
ST. PETERSBURG BEACH SUBDIVISION FIRST ADDITION
as Recorded in Plat Book 20, Page 11,
Public Records of Pinellas County, Florida
ST. PETE BEACH, FLORIDA

NOTES:

1. George F. Young, Inc. of, and the undersigned make no representations or guarantees pertaining to easements, rights of way, set back lines, reservations, agreements and/or other matters pertaining to survey. Recording information or documentation as to the vacation of the 20 foot wide Alley shown herein was not provided to or obtained by the undersigned.
2. This survey is made for the exclusive use of the current owners of the property and also those who mortgage or guarantee the title thereto within one (1) year from the date hereof.
3. This survey is a graphic depiction of the current boundary and visible improvements in accordance with the legal description shown hereon and may not reflect ownership.
4. The location of structures beneath the ground surface has not been determined.
5. Forty-eight (48) hours before digging, boring, pile driving, planting, etc., call Sunshine State One Call System, 1-800-432-4770 so that underground utilities may be field spotted.
6. As per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 12103C02766; Panel 0276; Suffix G; effective date of September 1, 2003, the above described property appears to be in Zone AE, with a base flood elevation of 11 feet.
7. Additional or deletions to survey maps or reports by other than the signing party or parties are prohibited without written consent of the signing party or parties.
8. This survey is not valid without the signature and the original released seal of a Florida licensed surveyor and mapper.
9. Survey prepared without the benefit of a current title report or commitment for title insurance. (see Note 1 pertaining to Alley).

Nicholas M. Circello
Nicholas M. Circello
 Florida Surveyor's Reg'n, PSM#LS4898

FILE I:\PROJECT\SUR\0513-0601-00\DWG\0513060100BR.DWG

I PLACE ABOVE LINES TO INDICATE
FARKAN SAGES

George F. Young, Inc.
LICENSED BUSINESS 021
ARCHITECTURE • ENGINEERING • ENVIRONMENTAL • LANDSCAPE ARCHITECTURE • PLANNING
ST. PETERSBURG • BRADENTON • GUNESVILLE • GULFPORT • PALM BEACH • SARASOTA
RESPONSIBLE OFFICE: 289 Dr. Martin Luther King Jr. Street North
St. Petersburg FL 33701-0565
Tel. (727) 822-4317 FAX (727) 822-2819



Since 1919

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6:

Liquor, 11
0691-00
15

CERTIFIED TO:	Poppy's
ORDER NO.	05-13-
DATE	12/16/

DATE 12/10/88

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

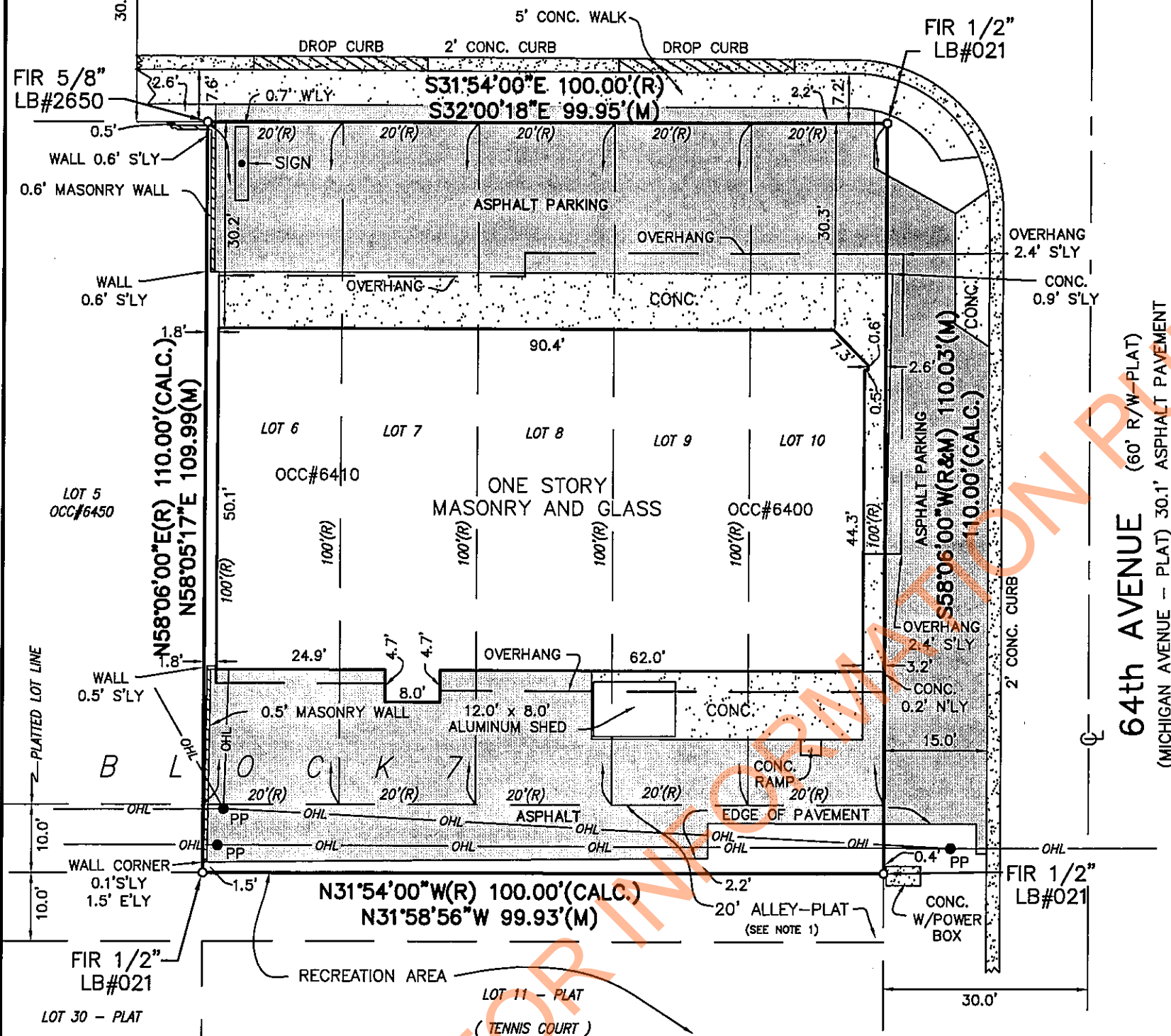
PLANTE

DRAWN ELC
CHECKED NC

GULF BOULEVARD

(60' R/W-PLAT, 80' R/W PER REDI MAP)
(FIFTH STREET - PLAT) 65.1' ASPHALT PAVEMENT

(PLAT)



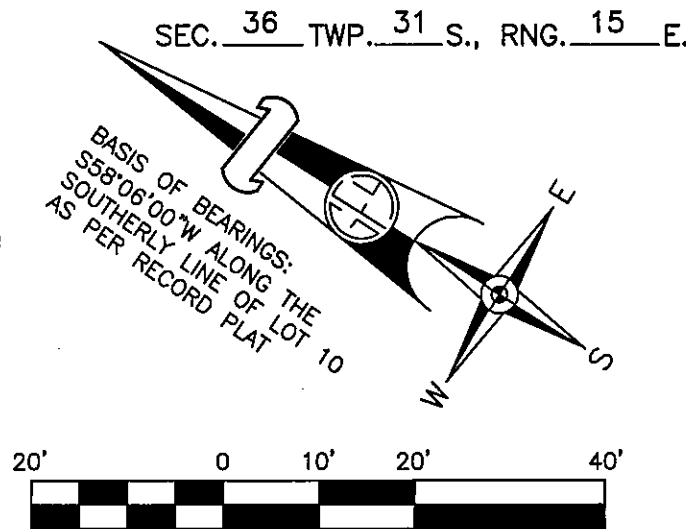
ARC
A/C
BFP
BLDG
C
CALC
CATV
CB
E
CLF
CONC
COV
(D)
DIA
ELEC
ELEV
ESMT
FCM
FIR
FIP
FND
FOP
FPP
FRD
GTE
ID
INV.
LB
(S)
NO

ARC
AIR CONDITIONER
BACK FLOW PREVENTOR
BUILDING
CHORD
CALCULATED
CABLE TELEVISION
CHORD BEARING
CENTER LINE
CHAIN LINK FENCE
CONCRETE
COVERED
DESCRIPTION
DIAMETER
ELECTRIC
ELEVATION
EASEMENT
FOUND CONCRETE MONUMENT
FOUND IRON ROD
FOUND IRON PIPE
FOUND NAIL AND DISK
FOUND OPEN IRON PIPE
FLORIDA POWER CORPORATION
FOUND PINCHED IRON PIPE
FOUND RIVET AND DISK
GENERAL TELEPHONE EXCHANGE
IDENTIFICATION
INVERT
LICENSED BUSINESS
LIGHT POLE
MEASURED
NUMBER

LEGEND

NGVD
OCC
OHL
OR
(P)
PC
PCC
PCP
PI
PLS
PP
PRC
PRM
PSM
PVC
RAD
RCP
(R)
RNG
R/W
SCM
SEC
SIR
SN&D
SR&D
SO
TBM
TV
TWP
TYP
WF
WPP
#

NATIONAL GEODETIC VERTICAL DATUM
OCCUPIED
OVER HEAD LINES
OFFICIAL RECORD
PLAT
POINT OF CURVE
POINT OF COMPOUND CURVE
PERMANENT CONTROL POINT
POINT OF INTERSECTION
PROFESSIONAL LAND SURVEYOR
POWER POLE
POINT OF REVERSE CURVE
PERMANENT REFERENCE MONUMENT
PROFESSIONAL SURVEYOR AND MAPPER
POLY(VINYL CHLORIDE) PIPE
RADIUS
REINFORCED CONCRETE PIPE
RECORD
RANGE
RIGHT OF WAY
SET CONCRETE MONUMENT
SECTION
SET IRON ROD
SET NAIL AND DISK
SET RIVET AND DISK
SOUTH
TEMPORARY BENCH MARK
TELEVISION
TOWNSHIP
TYPICAL
WOOD FENCE
WOOD POWER POLE
NUMBER



GRAPHIC SCALE
1" = 20'

A BOUNDARY SURVEY OF

Lots 6, 7, 8, 9, and 10, and 1/2 of Alley Adjacent to said lots,
Block 7
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as Recorded in Plat Book 20, Page 11,
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- Forty-eight (48) hours before digging, boring, pile driving, planting, etc. call Sunshine State One Call System, 1-800-432-4770 so that underground utilities may be field spotted.
- As per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 12103C0276G, Panel 0276, Suffix G, effective date of September 3, 2003, the above described property appears to be in Zone AE, with a base flood elevation of 11 feet.
- Additions or deletions to survey maps or reports by other than the signing party or parties are prohibited without written consent of the signing party or parties.
- This Survey is not valid without the signature and the original raised seal of a Florida licensed surveyor and mapper.
- Survey prepared without the benefit of a current title report or commitment for title insurance. (see Note 1 pertaining to Alley).

CERTIFIED TO: Pappy's Liquor Inc.

ORDER NO. 05-13-0691-00
DATE 12/16/05



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LICENSED BUSINESS 021
ARCHITECTURE • ENGINEERING • ENVIRONMENTAL • LANDSCAPE ARCHITECTURE • PLANNING • SURVEYING
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RESPONSIBLE OFFICE: 299 Dr. Martin Luther King Jr. Street North
St. Petersburg FL 33701-0683
Tel.: (727) 822-4317 Fax: (727) 822-2919

THIS SURVEY NOT VALID WITHOUT
THE SIGNATURE AND THE ORIGINAL
RAISED SEAL OF A FLORIDA
LICENSED SURVEYOR AND MAPPER.

Nicholas M. Circello

Florida Surveyor's Reg'n. PSM#LS4898

**TECHNICAL REVIEW COMMITTEE MEETING
CITY OF ST. PETE BEACH
COMMISSION CHAMBERS**

Agenda Report

Action Request:

Strategic Objective:

Date: May 22, 2024

Prepared By: Brandon Berry, Senior Planner

Through: Jennifer McMahon, Chief Operating Officer

Summary of Issue: Constructing a new two-story building (7,376 sq. ft.) with critical components on the second story and a waterproof pump room on the first floor for sea level rise and flood resiliency purposes. The existing water tank is remaining.

Funding:

Attachments:

1. Site Plan Application
2. Site Plan Buildout Request
3. Agent Authorization Form
4. Boundary & Topographic Survey [Not ALTA/ACSM]
5. Civil Drawings
6. Landscaping Plans
7. Geotech Report
8. Stormwater Report
9. Title Search Report



Case Number: _____

City of St. Pete Beach
Community Development Department
155 Corey Avenue
St. Pete Beach, Florida 33706
727-367-2735
www.stpetebeach.org

PROPERTY OWNER:

Name: PINELLAS COUNTY UTILITIES

Address: 14 SOUTH FORT HARRISON BLVD, 6TH FL

City: CLEARWATER State: FL

Zip: 33756 Telephone: _____

Email: _____

SUBJECT PROPERTY:

Address: GULF BLVD, ST PETE BEACH

Parcel: 07-32-16-51660-000-0011

APPLICANT/AGENT (Attach agent authorization form):

Name: MICHAEL HOFFMAN

Address: 601 S LAKE DESTINY DR, SUITE 290

City: MAITLAND State: FL

Zip: 32751 Telephone: 407.720.5712

Email: michael.hoffman@wright-pierce.com

Current Name of Business: PINELLAS COUNTY

Name of Project: GULF BEACH WATER BOOSTER STATION

DETAILS OF THE REQUEST, INCLUDING APPLICABLE CODE SECTIONS AND ANY ASSOCIATED CASES (Add additional sheets if necessary):

Site plan submittal and variance request.

Michael Hoffman
Signature of Applicant / Agent

2/5/2024
Date

Site Plan / Buildout Request

Pinellas County Utilities (PCU) is designing improvements to the Gulf Beach Water Booster Station (GBWBS) in St. Pete Beach. The project will replace the existing drinking water booster station with a new booster station that will improve service reliability to residents and meet current industry and operational standards. This includes constructing a new two-story building with critical electrical components on the second floor and a waterproof pump room on the ground floor to reduce the facility's susceptibility to storm-related flooding and anticipated sea level rise.

The ground floor consists of a pipe gallery, a pump room, storage, and stairwells leading to the second floor. The second floor consists of chemical storage, a mechanical room, electrical room, a generator room, and a single bathroom. The building has a total gross floor area of 7376 square feet.



Agent Authorization Form
Building Department
City of St. Pete Beach, Florida 727-363-9241

I THOMAS MENKE

(License holder's printed name)

hereby authorize MICHAEL HOFFMAN

(Agent's printed name)

to represent me in an application for SITE PLAN & BUILDING

(Type of application: Building)

Signature of license holder

THOMAS MENKE

Signature of agent

MICHAEL HOFFMAN

The foregoing instrument was acknowledged before me this 5th day
of February 2024, by Thomas Menke who
is personally known ✓ or produced _____ as
identification.

(Notary Signature)

My commission expires _____



Colleen Whitham
Comm.: HH 342109
Expires: December 15, 2026
Notary Public - State of Florida

2/5/24

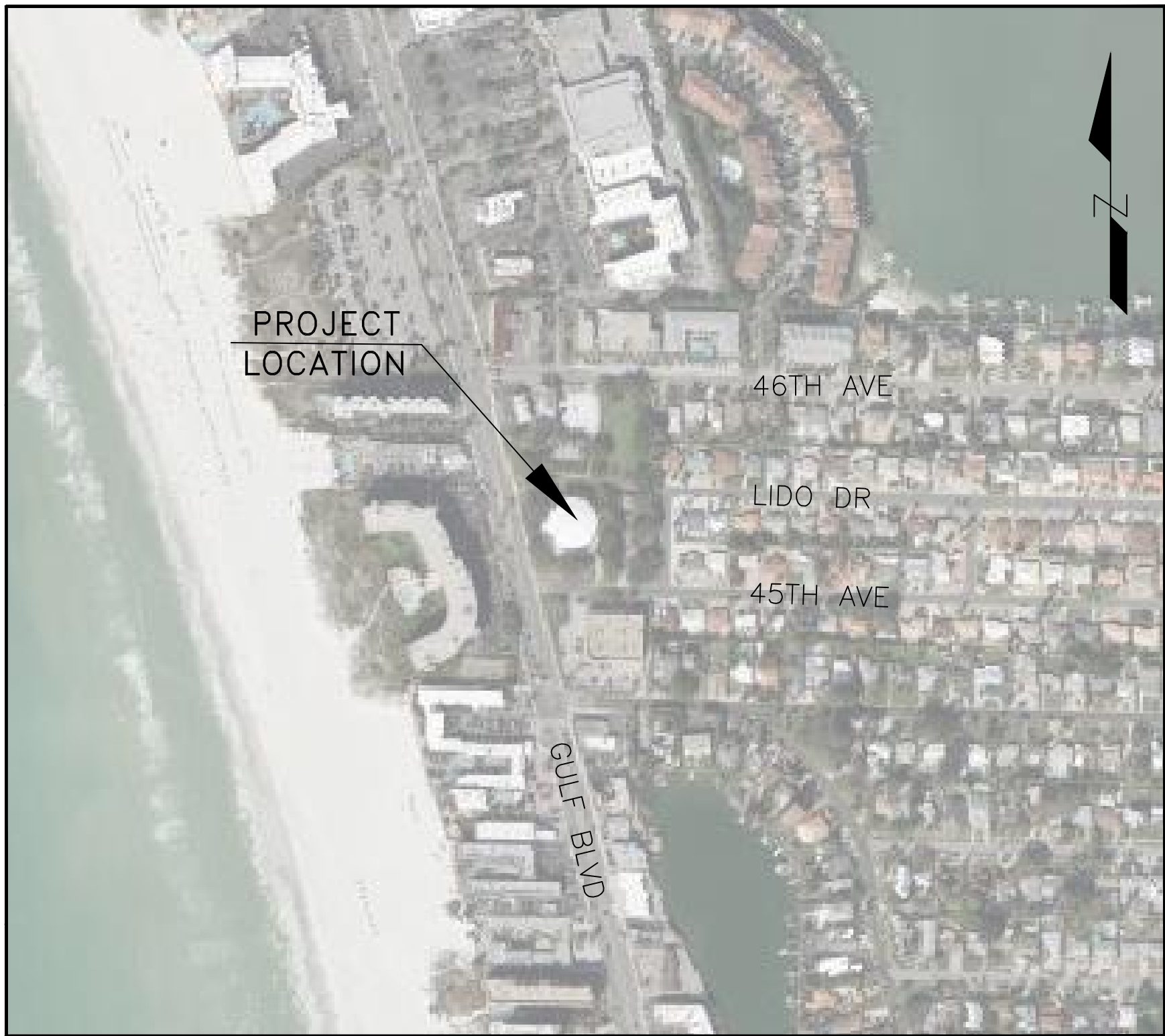
(Date)

GULF BEACH WATER
BOOSTER STATION
4501 GULF BOULEVARD



VICINITY MAP

NOT TO SCALE



SECTION 6&7, TOWNSHIP 32 SOUTH, RANGE 16 EAST

SHEET INDEX

- 1 COVER SHEET / VICINITY MAP / GRAPHIC SYMBOLS
- 2 LAND SURVEYOR REPORT / MONUMENTATION / VERIFIED VERTICAL AND HORIZONTAL UTILITIES / ABBREVIATIONS
- 3 TOPOGRAPHIC SURVEY
- 4 BOUNDARY SURVEY / ENCROACHMENTS

ADDITIONS OR DELETIONS BY OTHER THAN THE PROFESSIONAL SURVEYOR AND MAPPER IN RESPONSIBLE CHARGE ARE PROHIBITED. THIS DOCUMENT HAS BEEN ELECTRONICALLY SIGNED AND SEALED USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Thomas P Young Jr Digitally signed by Thomas P Young Jr
Date: 2024.03.25 11:04:39 -04'00'

THOMAS P YOUNG JR, P.S.M. DATE

PROFESSIONAL SURVEYOR AND MAPPER
LICENSE NO. 7044, STATE OF FLORIDA

ECHO UES, INC.
4803 GEORGE RD, SUITE 350
TAMPA, FL 33634
Phone: (727)431-1580

SURVEY REVISION DATE	SURVEY FILE NO.: 2083
	PID NO.: 002150A
	t2083-c3d-2022.dwg
	SHEET: 1 of 4

GRAPHIC SYMBOLS:

CENTERLINE	---
CONTOUR LINE	---#---
EXISTING TOPOGRAPHIC FEATURE	---
SURFACE WATER /WETLAND BOUNDARY	---
SURVEY REFERENCE LINE	---
RIGHT-OF-WAY (EXISTING)	---
RIGHT-OF-WAY LINE (PROPOSED)	---
PROPERTY OR DEED LINE	---
EASEMENT LINE	---
EASEMENT LINE (PROPOSED)	---
EASEMENT W/ ACQUISITION	---
SECTION LINE	---
ORIGINAL LOT LINE/FORMER OWNERSHIP LINE/VACATED EASEMENTS	---
TREE LINE	---
FENCE LINE	---
DRAINAGE (STORM SEWER) PIPE	---
EXISTING TOP OF BANK AND TOE OF SLOPE	---
SANITARY SEWER GRAVITY LINE	---
COMMUNICATION LINE	---
ELECTRIC POWER LINE/CABLE	---
TRAFFIC POWER/COMMUNICATION LINE	---

FORCE MAIN (SANITARY SEWER)	---
GAS LINE	---
HOT OIL LINE	---
OVERHEAD WIRE	---
RECLAIMED WATER LINE	---
POTABLE WATER	---
UNKNOWN UTILITY	---
FOUND CONCRETE MONUMENT	---
FOUND NAIL & DISC/CAP BRASS DISC	---
FOUND IRON ROD	---
FOUND IRON PIPE	---
FOUND PINCH PIPE	---
SET CONCRETE MONUMENT	---
SET NAIL & DISC/CAP BRASS DISC	---
SET IRON ROD	---
XCUT (FOUND)	---
XCUT (SET)	---
SUB PARCEL NO.	---
BLOCK NUMBER	---
PROPERTY APPRAISER PARCEL NUMBER	---
PROPOSED PARCEL	---

FM	FM	FM
G	G	G
OIL	OIL	OIL
OH	OH	OH
R	R	R
W	W	W
UNK	UNK	UNK
1	2	00/00
P###		

BACKFLOW PREVENTER	---
BENCHMARK	---
BUSH / SHRUB	---
CENTERLINE	---
COMMUNICATIONS BOX	---
COMMUNICATIONS MANHOLE	---
DECIDUOUS TREE (OAK UNLESS OTHERWISE ANNOTATED)	---
DELTA ANGLE	---
DRAINAGE CLEAN OUT	---
DRAINAGE MANHOLE	---
ELECTRICAL EQUIPMENT	---
ELECTRICAL OUTLET	---
EVERGREEN TREE	---
FIRE HYDRANT	---
GAS METER	---
GAS VALVE	---

GRATE INLET	---
GUY WIRE	---
HOSE BIB	---
LIGHT POLE	---
MAILBOX	---
MONITOR WELL	---
PALM TREE	---
PEDESTRIAN SIGNAL	---
POLE/POST	---
POWER BOX	---
PROPERTY LINE	---
RECLAIMED WATER MANHOLE	---
RECLAIMED WATER METER	---
RECLAIMED WATER VALVE	---
SANITARY SEWER CLEANOUT	---

SEWER MANHOLE	---
SEWER VALVE	---
SIGN	---
SPRINKLER HEAD	---
SPRINKLER HEAD VALVE	---
SURVEY LINE	---
TARGET	---
TRAFFIC SIGNAL POLE	---
TRAFFIC SIGNAL PULL BOX	---
UNDERDRAIN BOX	---
UTILITY POLE	---
WATER METER	---
WATER VALVE	---

LAND SURVEYOR REPORT:

1. BEARINGS SHOWN HEREON ARE BASED ON THE EAST RIGHT OF WAY LINE OF GULF BOULEVARD (SR 699) BEING NORTH 13°41'41" WEST. BEARINGS AND DISTANCES SHOWN HEREON ARE MEASURED UNLESS OTHERWISE NOTED.
2. THIS SURVEY DOES NOT DETERMINE OWNERSHIP OF THE LANDS SHOWN HEREON.
3. MEASUREMENT METHODS USED FOR THIS SURVEY MEET STANDARDS OF PRACTICE FOR LAND SURVEYING CHAPTER 5J-17 REQUIREMENTS. DIMENSIONS ARE SHOWN IN UNITED STATES STANDARD SURVEY FEET AND DECIMALS THEREOF UNLESS OTHERWISE NOTED.
4. I HAVE REVIEWED THE TITLE SEARCH REPORT # 32697, DATED 10/20/2023 PERFORMED BY AMERICAN GOVERNMENT SERVICES CORPORATION AND ALL RECORDED SURVEY RELATED ENCUMBRANCES, EXCEPT LIENS, HAVE BEEN SHOWN OR NOTED ON THE SURVEY.
5. RIGHT OF WAY INFORMATION SHOWN HEREON WAS DETERMINED BY FOUND MONUMENTATION, RECORDED PLATS, RECORDED RIGHT OF WAY MAPS, AND INFORMATION OBTAINED ON THE PINELLAS COUNTY PROPERTY APPRAISER'S WEB SITE.
6. ADJACENT PROPERTY INFORMATION SHOWN HEREON THAT WAS NOT FURNISHED TO THIS SURVEYOR WAS OBTAINED BY SEARCHING THE PINELLAS COUNTY PROPERTY APPRAISER'S WEBSITE.
7. FEATURES SHOWN BY SYMBOL AS INDICATED IN THE LEGEND ARE NOT TO SCALE.
8. THE HORIZONTAL POSITIONS FOR ALL FEATURES SHOWN ON THE MAP ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT (NAD 83/11). ZONE 902, FLORIDA WEST. HORIZONTAL CONTROL WAS ESTABLISHED USING THE FLORIDA DEPARTMENT OF TRANSPORTATION'S (FDOT) FLORIDA PERMANENT REFERENCE NETWORK (FRPN), A REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS).
9. VERTICAL CONTROL – VERTICAL CONTROL IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). ALL TOPOGRAPHIC FEATURES WERE COLLECTED CONVENTIONALLY FROM CONTROL POINTS ELEVATED FROM A CLOSED LOOP BENCH RUN FROM NATIONAL GEODETIC SURVEY (NGS) POINT "NOAA D".
10. UNLESS SHOWN, ONLY THOSE VISIBLE FEATURES FOUND WITHIN THE BOUNDARIES OF THIS SURVEY OR IN THE IMMEDIATE VICINITY OF THE ABOVE DESCRIBED PARCEL BOUNDARY HAVE BEEN LOCATED.
11. SUBSURFACE UTILITIES DEPICTED HEREON ARE THE HORIZONTAL LOCATIONS OF PAINT MARKS AND FLAGS PLACED BY SUBSURFACE UTILITY ENGINEERING FIELD TECHNICIANS. THE MARKS WERE DETERMINED USING SURFACE GEOPHYSICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO GROUND PENETRATING RADAR (GPR) AND/OR ELECTROMAGNETIC LOCATORS. UTILITY CHARACTERISTICS, METHODS OF INSTALLATION, SOIL CONDITIONS AND THE SURROUNDING ENVIRONMENT ALL MAY ADVERSELY IMPACT THE RESULTS OF ANY UTILITY INVESTIGATION. FOR THESE REASONS THE LOCATIONS OF THE SUBSURFACE UTILITIES SHOULD BE CONSIDERED APPROXIMATE UNLESS CLEARLY EXPOSED AND VISUALLY VERIFIED AT SPECIFIC LOCATIONS. NO GUARANTEE IS MADE THAT ALL UTILITIES WILL BE FOUND AND IDENTIFIED.
12. ALL SUBSURFACE UTILITY ENGINEERING WORK PERFORMED WAS DONE IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS' (ASCE) STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA (ASCE/CI 38-02). QUALITY LEVELS SHOWN IN THE SURVEY ARE REFERENCED TO ASCE/CI 38-02.
13. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN REPRESENT ALL UTILITIES IN THE AREA, WHETHER IN SERVICE OR ABANDONED, OR THAT THE UNDERGROUND UTILITIES ARE IN THE EXACT LOCATION SHOWN, BUT DOES CERTIFY THAT THEY HAVE BEEN LOCATED AS ACCURATELY AS POSSIBLE FROM AVAILABLE INFORMATION.
14. THE SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
15. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
16. THIS SURVEY IS INTENDED TO BE DISPLAYED AT A SCALE OF 1"=20'
17. THE LAST DATE OF FIELD EFFORT WAS 2/28/2024.

MONUMENTATION/
CONTROL POINT COORDINATES:

POINT#	LATITUDE (NORTH) FT.	DEPARTURE (EAST) FT.	ELEVATION	DESCRIPTION
536870912	1231405. 01	417102. 08	3. 39	SET MAG NAIL & DISK *ECHO UES TP 8184*
536870914	1231401. 47	416973. 88	3. 92	SET MAG NAIL & DISK *ECHO UES TP 8184*
536871234	1231499. 98	417003. 27	4. 17	SET MAG NAIL & DISK *ECHO UES TP 8184*
536870913	1231562. 35	416889. 69	4. 77	SET MAG NAIL & DISK *ECHO UES TP 8184*
536870915	1231628. 59	416912. 17	3. 93	SET MAG NAIL & DISK *ECHO UES TP 8184*
536871848	1231648. 97	416976. 43	5. 25	SET 5/8" IRON ROD & CAP *ECHO UES TP LB 8184*
536871849	1231669. 74	417113. 65	4. 47	SET MAG NAIL & DISK *ECHO UES TP 8184*
55	1231450. 91	417116. 06	2. 62	FOUND 3/4" PINCHED PIPE NO ID
56	1231396. 67	416981. 32	4. 24	FOUND 5/8" IRON ROD AND CAP *JOHNSON FL PSM 5913*
57	1231388. 65	417227. 84	3. 83	FOUND 5/8" IRON ROD NO ID
58	1231302. 57	417003. 92	6. 00	FOUND 5/8" IRON ROD AND CAP *JOHNSON FL PSM 5913*
59	1231669. 50	417236. 50	4. 70	FOUND 5/8" IRON ROD NO ID
60	1231665. 31	417366. 44	4. 17	FOUND 4"x4" CONC MONUMENT NO ID
61	1231644. 68	418016. 16	4. 14	FOUND 5/8" IRON ROD NO ID
62	1231643. 20	417122. 35	4. 53	FOUND 5/8" IRON ROD AND CAP *DEUEL LB 107*
63	1231648. 93	416919. 34	4. 45	FOUND 5/8" IRON ROD AND CAP *HARNER LB 2650*
64	1231451. 77	417116. 20	3. 82	FOUND 5/8" IRON ROD AND CAP *DEUEL LB 107*
65	1231455. 56	416966. 28	3. 81	FOUND 5/8" IRON ROD NO ID
83	1231392. 00	416982. 43	4. 28	FOUND 5/8" IRON ROD AND CAP *HARNER LB 2650*
85	1231770. 72	416889. 74	2. 97	FOUND 4"x4" CONC MONUMENT NO ID

VERIFIED VERTICAL AND HORIZONTAL UTILITIES				
Vvh #	POINT #	LATITUDE (NORTH) FT.	DEPARTURE (EAST) FT.	DESCRIPTION
VVH1	536872014	1231637. 36	416929. 81	EL 0. 66 = TOP OF 16" CI
VVH2	536872011	1231628. 98	416930. 87	EL 1. 57 = TOP OF 16" CI
VVH3	536871146	1231455. 41	416992. 94	EL 1. 91 = TOP OF 6" CI
VVH4	536871114	1231451. 98	417019. 38	EL 2. 05 = TOP OF 6" CI
VVH5	536871018	1231450. 62	417095. 11	EL 1. 60 = TOP OF 6" CI
VVH6	536871551	1231537. 76	416975. 29	EL 2. 62 = TOP OF 4" CI
VVH7	536871458	1231532. 40	416955. 96	EL 0. 18 = TOP OF 4" CI
VVH8	536871151	1231456. 51	416993. 09	EL 2. 26 = TOP OF 2" PE
VVH9	536871225	1231543. 23	416949. 21	EL 0. 00 = TOP OF 1. 5" DBC
AC = TRANSITE CI = CAST IRON CP = CONCRETE PIPE DBC = DIRECT BURIED CABLE CMP = CORRUGATED METAL PIPE CONC= CONCRETE DCT = DUCT DIP = DUCTILE IRON PIPE GALV= GALVANIZED PIPE HDPE= HIGH DENSITY POLYETHYLENE PIPE PE = POLYETHYLENE PIPE PVC = POLYVINYL CHLORIDE STL = STEEL VCP = VITRIFIED CLAY PIPE PCCP= PRESTRESSED CYLINDER CONCRETE PIPE RCP = REINFORCED CONCRETE PIPE				

ABBREVIATIONS:

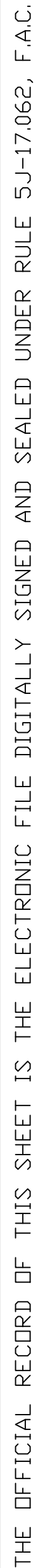
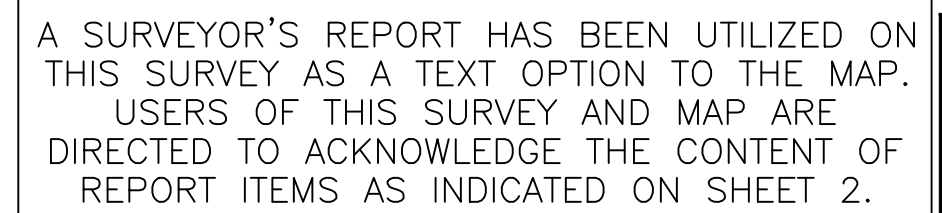
(C)	CALCULATED DATA	DWGRVL	DRIVEWAY, GRAVEL	HWF	HOG WIRE FENCE	RT	RIGHT
(M)	MEASURED (IN FIELD)	DWGS	DRIVEWAY, GRASS	ID	IDENTIFICATION	RTK	REAL TIME KINEMATIC
(P)	PLAT DATA	DWM	DRIVEWAY, MARL	INV	INVERT	RW	RIGHT-OF-WAY
(R)	RECORD DATA	DWS	DRIVEWAY, STONE	JBOX	JUNCTION BOX	SCM	SET CONCRETE MONUMENT
A	ARC LENGTH	ECL	EROSION CONTROL LINE	L	LENGTH	SEC ###-###-###	SECTION, TOWNSHIP, RANGE
AC	ACRE(S)	ECMP	ELLIPTICAL CMP	LL	LANE LINE	SFN	SURVEY FILE NUMBER
AD	AMERICANS WITH DISABILITIES ACT	ELEC	ELECTRIC	LT	LEFT	SIR	SET IRON ROD
ASPH	ASPHALT	ELEV	ELEVATION	MES	MITERED END SECTION	SNC	SET NAIL AND CAP
AUS	AUSTRALIAN	EPA	EDGE OF PAVEMENT, ASPHALT	MH	MANHOLE	SND	SET NAIL AND DISK
BC	BACK OF CURB	EPC	EDGE OF PAVEMENT, CONCRETE	MHW	MEAN HIGH WATER	SNS	SET NAIL AND SHINER
BE	BURIED ELECTRICAL	EQ	EQUATION	MLW	MEAN LOW WATER	SDC	SET DRANGE CAP
BFP	BACKFLOW PREVENTER	EQUIP	EQUIPMENT	MTLF	METAL FENCE	SPLVY	SPILLWAY
BG	BELOW GROUND	ERCP	ELLIPTICAL RCP	NFV	NOT FIELD VERIFIED	SR	STATE ROAD
BLDG	BUILDING	ERD	EDGE OF ROAD, DIRT	NGS	NATIONAL GEODETIC SURVEY	SRC	SET RED CAP
BM	BENCHMARK	ERG	EDGE OF ROAD, GRAVEL	NTS	NOT TO SCALE	SRL#	SURVEY REFERENCE LINE
BDXC	BOX CULVERT	ERM	EDGE OF ROAD, MARL	O/A	OVERALL	SRVT	SET RIVET
BRG	BEARING	ERSH	EDGE OF ROAD, SHELL	QAK C	QAK CLUSTER	SR&D	SET RIVET AND DISK
BWF	BARBED WIRE FENCE	ES	EXISTING STORM	QH(#)	OVERHEAD UTILITY (NUMBER OF LINES)	STA	STATION
C#	CURVE NUMBER	ESMT	EASEMENT	DHW	ORDINARY HIGH WATER	STY	STORY
CALC	CALCULATED	ESS	EXISTING SANITARY SEWER	DR	OFFICIAL RECORD	SWBR	SIDEWALK, BRICK/PAVER
CB	CATCH BASIN	FAC	FLORIDA ADMINISTRATIVE CODE	D/S	OFFSET	SWK	SIDEWALK
CBS	CONCRETE BLOCK STRUCTURE	FCM	FOUND CONCRETE MONUMENT	PALM C	PALM CLUSTER	SYC	SET YELLOW CAP
CCR####	CERTIFIED CORNER RECORD NUMBER	FFE	FINISHED FLOOR ELEVATION	PB	PLAT BOOK	TB	TOP OF BANK
CCCL	COASTAL CONSTRUCTION CONTROL LINE	FIR	FOUND IRON ROD	PC	POINT OF CURVATURE	TBM	TEMPORARY BENCHMARK
CH	CHORD	FIP	FOUND IRON PIPE	PCC	POINT OF COMPOUND CURVATURE	TREE C	TREE CLUSTER
CIP	CAST IRON PIPE	FL	FLOWLINE	PCED	PINELLAS COUNTY ENGINEERING DEPT	TS	TOP OF SLOPE
CL	CENTERLINE	FM	FORCE MAIN	PCSD	PINELLAS COUNTY SURVEY DIVISION	TYP	TYPICAL
CLF	CHAIN LINK FENCE	FNC	FOUND NAIL AND CAP	PG	PAGE	UDBX	UNDERDRAIN BOX
CMP	CORRUGATED METAL PIPE	FDEP	FLORIDA DEPT OF ENVIRONMENTAL PROTECTION	PID	POINT OF INTERSECTION	UNK	UNKNOWN
COMM	COMMUNICATIONS	FDOT	FLORIDA DEPT OF TRANSPORTATION	PID	PROJECT IDENTIFICATION NUMBER	UP ####	UTILITY POLE NUMBER
CONC	CONCRETE	FNDK	FOUND NAIL AND DISK	PINE C	PINE CLUSTER	VCP	VITRIFIED CLAY PIPE
CONDO	CONDOMINIUM	FND	FOUND	PLNTR	PLANTER	VVH	VERIFIED VERTICAL AND HORIZONTAL
CONST	CONSTRUCTION	FNS	FOUND NAIL AND SHINER	PLS	PROFESSIONAL LAND SURVEYOR	WM	WOOD FENCE
CDR	CORNER	FDC	FOUND DRANGE CAP	PNT	POINT	W/	WITH
CDRR	CORRUGATED	FDP	FOUND OPEN PIPE	PQB	POINT OF BEGINNING	WKWY	WALKWAY
CR	COUNTY ROAD	FPP	FOUND PINCHED PIPE	PDC	POINT ON COMMENCEMENT	W/D	WITHOUT
DIA	DIAMETER	FRC	FOUND RED CAP	PRG	POINT OF REVERSE CURVATURE	WR	WATER MAIN
D	DELTA/CENTRAL ANGLE	FRRS	FOUND RAILROAD SPIKE	PSM	PROFESSIONAL SURVEYOR AND MAPPER	WLK	CROSS WALK
DB	DEED BOOK	FRVT	FOUND RIVET	PT	POINT OF TANGENCY		
DESC	DESCRIPTION	FS	FLORIDA STATUTES	PVC	POLYVINYL CHLORIDE		
DIA	DIAMETER	FIDL	FLEXIBLE DELINEATOR	PVCF	POLYVINYL CHLORIDE FENCE		
DIP	DUCTILE IRON PIPE	FYC	FOUND YELLOW CAP	R	RADIUS		
DIR	DIRECTION	GALV	GALVANIZED	RCP	REINFORCED CONC PIPE		
DWA	DRIVEWAY, ASPHALT	GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM	RCW	RECLAIMED WATER		
DWB	DRIVEWAY, BRICK	GPR	GROUND PENETRATING RADAR	REF	REFERENCE		
DWC	DRIVEWAY, CONCRETE	GRIL	GUARD RAIL	RLS	REGISTERED LAND SURVEYOR		
DWD	DRIVEWAY, DIRT	HDPE	HIGH DENSITY POLYETHYLENE	RPRP	RIPRAP		
DWG	DRAWING	HW	HEADWALL	RR	RAILROAD		

REVISIONS			BY	DATE	SURVEY BOOK No.: TPA-61		GULF BEACH WATER BOOSTER STATION		LAND SURVEYOR REPORT		PINELLAS COUNTY, FLORIDA		SURVEY FILE NO.: 2083	
					SURVEY SECTION	BY	4501 GULF BOULEVARD		MONUMENTATION, VVH,		PUBLIC WORKS		PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.	
					TECHNICIAN	CM			ABBREVIATIONS		22211 U.S. HWY. 19 NORTH		PID No.: 002150A	
					CHECKED	TY					CLEARWATER, FLORIDA 33765-2347		f2083-c3d-2022.dwg	
					DESIGN SECTION						PHONE (727) 464-8904		SHEET: 2 of 4	
					DESIGNED									
					DRAWN									
					CHECKED									

Z:\Projects\Wright-Pierce\22-177_PINCD_GulfBeach_BoosterStation\4_ProjectWork\CAD\ACAD\F2083-c3d-2022.dwg, Mar 25, 2024 - 1059am

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SHEET: 3 of 4

SECTION 6&7, TOWNSHIP 32 SOUTH, RANGE 16 EAST

LEGAL DESCRIPTION:

THE LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 2556, PAGE 55, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, LYING IN GOVERNMENT LOT 1 IN SECTION 7, TOWNSHIP 32 SOUTH, RANGE 16 EAST, PINELLAS COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

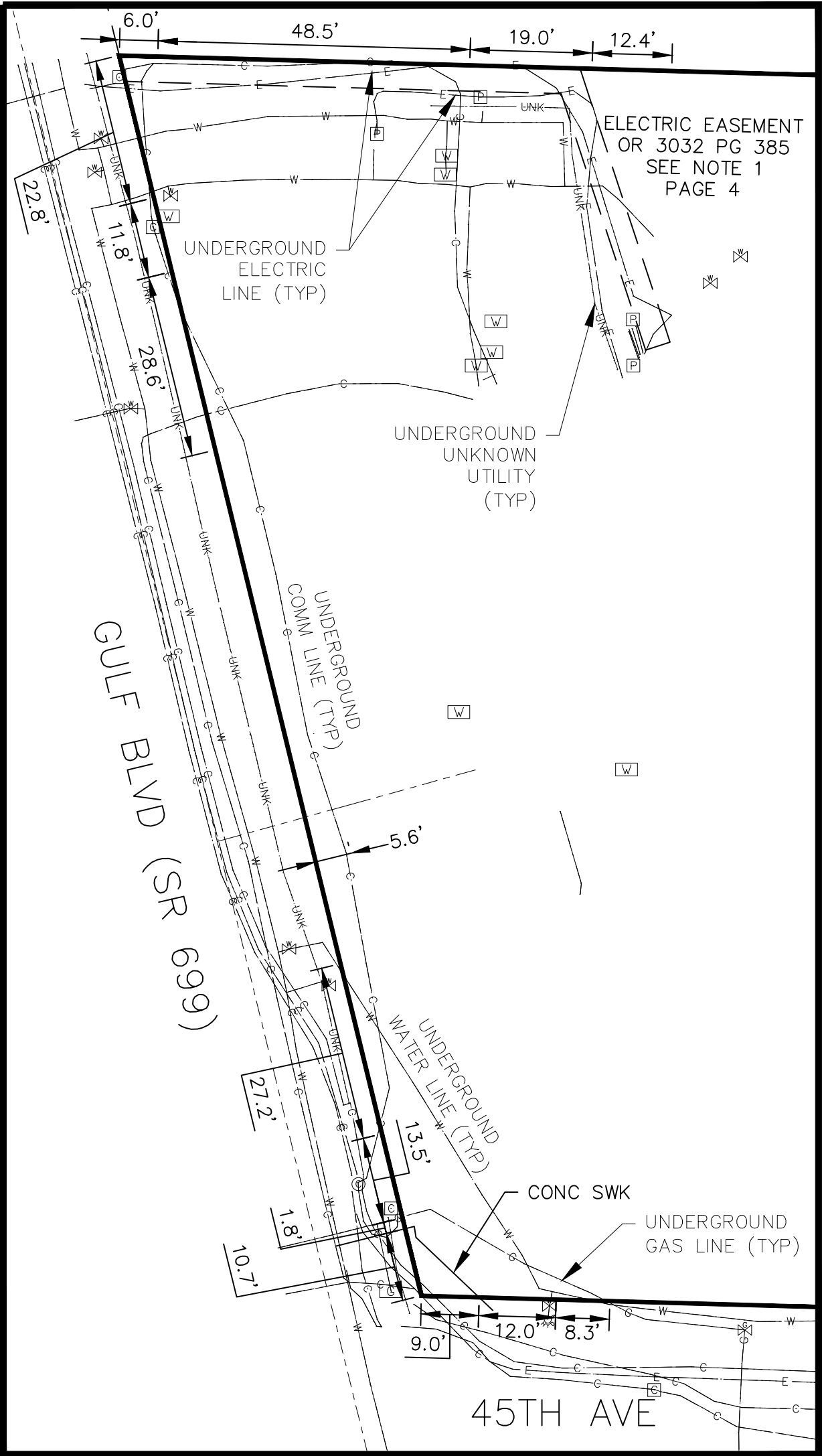
TRACT A, LESS THE NORTH 120 FEET, LESS THE EAST 113.62 FEET, LIDO BEACH SUBDIVISION, SECTION 7, TOWNSHIP 32 SOUTH, RANGE 16 EAST, AS RECORDED IN PLAT BOOK 34, PAGE 7, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA

SAID PARCEL CONTAINS 0.78, ACRES MORE OR LESS.

NOTE 1 - ELECTRICAL EASEMENT DESCRIBED IN OR 3032 PG 385 LOCATION APPROXIMATED BY SKETCH AND UNDERGROUND UTILITY LOCATION DUE TO RECORDING DOCUMENT BEING DIFFICULT TO READ AND NO RELEVANT LEGAL DESCRIPTION

NOTE 2 - RIGHT OF USE FOR WALKING ACCESS EASEMENT DESCRIBED IN DB 1504 PG 407 DOES NOT AFFECT SUBJECT PARCEL

EXHIBIT A
ENCROACHMENTS



A SURVEYOR'S REPORT HAS BEEN UTILIZED ON THIS SURVEY AS A TEXT OPTION TO THE MAP. USERS OF THIS SURVEY AND MAP ARE DIRECTED TO ACKNOWLEDGE THE CONTENT OF REPORT ITEMS AS INDICATED ON SHEET 2.

PLAZA BEACH MOTEL LLC
OR 22079 PG 1477

"LESS NORTH 120.00 FEET"

LIDO BEACH SUBDIVISION
PB 34 PG 7

LOT 1
BLOCK 1

LOT 2
BLOCK 1

FOUND
5/8" IRON ROD & CAP
NO ID
0.03' N, 0.29' W

FOUND
4"x4" CONC MON
NO ID
0.03' S, 0.28' W

S 88° 23' 23" E
S 88° 13' 36" E

LIDO DRIVE
PB 34 PG 7
50' RW

LOT 11
BLOCK 2

LIDO BEACH SUBDIVISION
PB 34 PG 7

LOT 1
BLOCK 2

1ST STREET E
PB 34 PG 7
50' RW

CITY OF ST PETE BEACH
OR 4075 PG 1363

"LESS EAST 113.62 FEET"

LIDO BEACH SUBDIVISION
PB 34 PG 7

TRACT A

PINELLAS COUNTY
ORDER OF TAKING
OR 2556 PG 55
FINAL JUDGMENT
OR 2675 PG 444

FOUND
1/2" IRON ROD & CAP
"DEUEL LB 107"
0.02' N, 0.07' E

ELECTRIC EASEMENT
OR 3032 PG 385
SEE NOTE 1
PAGE 4

SEE EXHIBIT A FOR
ENCROACHMENTS

FOUND
5/8" IRON ROD & CAP
"HARNER BL 2650"
0.07' N, 0.07' E

S 88° 23' 23" E
203.09' (C)

S 88° 23' 23" E
113.62' (C)

S 1° 49' 10" W
120.00' (C)

S 1° 46' 24" W
S 1° 49' 10" W
311.50' O/A (P)
311.50' O/A (C)

S 1° 49' 10" W
191.50' (C)

1012

S 1° 49' 10" W
191.50' (C)

1014

1005

FOUND
1/2" IRON ROD & CAP
"DEUEL LB 107"
0.00' N, 0.00' E
3/4" PINCHED PIPE
NO ID

0.43' S, 0.01' E

S 88° 23' 23" E
S 88° 13' 36" E
149.99' (C)
0.86' S, 0.14' W
263.50' (C)
263.62' (P)

45TH AVE
PB 34 PG 7
60' RW

FOUND
5/8" IRON ROD & CAP
NO ID
0.04' N, 0.03' W

1007

S 88° 23' 23" E
S 88° 13' 36" E
247.22' (C)
246.50' (P)

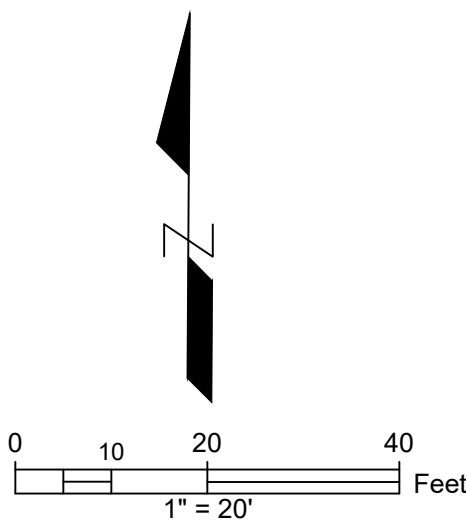
TRACT B

FOUND
5/8" IRON ROD & CAP "JOHNSON FL PSM 5913"
0.21' N, 0.55' E
5/8" IRON ROD & CAP "HARNER LB 2650"
1.66' S, 4.46' E

1006

1001

GULF BOULEVARD (SR 699)
100' RW



REVISIONS

BY

DATE

SURVEY BOOK No.: TPA-61

SURVEY SECTION BY DATE

SURVEYED AT 05/23

TECHNICIAN CM 05/23

CHECKED TY 05/23

DESIGN SECTION

DESIGNED . .

DRAWN . .

CHECKED . .

GULF BEACH WATER
BOOSTER STATION
4501 GULF BOULEVARD

BOUNDARY SURVEY

PINELLAS COUNTY, FLORIDA
PUBLIC WORKS

SURVEY AND MAPPING DIVISION
22211 U.S. HWY. 19 NORTH
CLEARWATER, FLORIDA 33765-2347
PHONE (727) 464-8904

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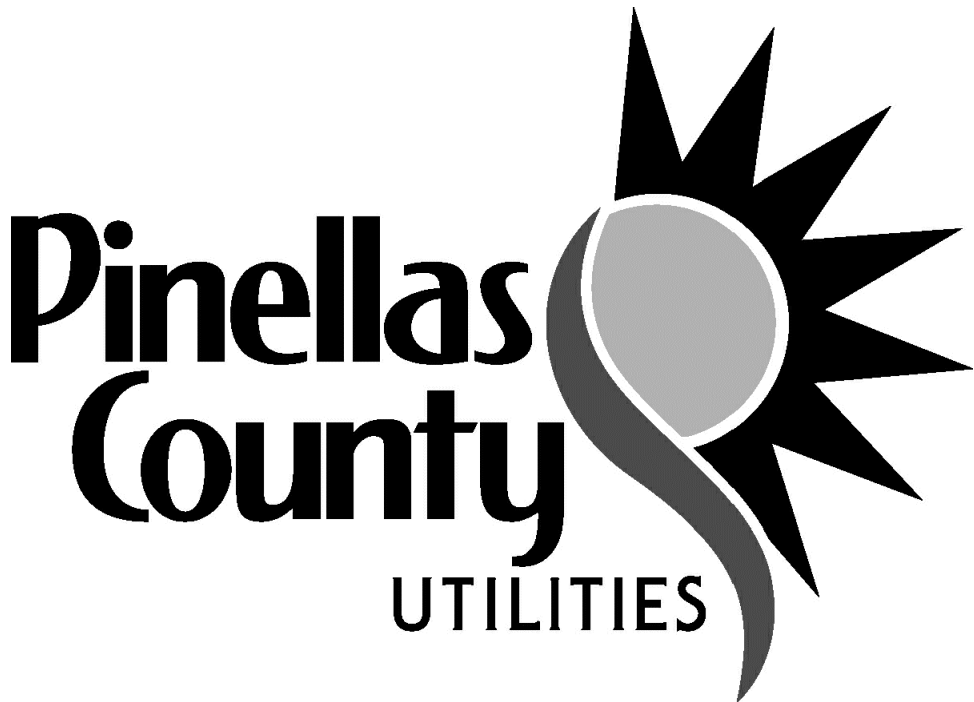
SURVEY FILE No.: 2083

PID.: 002150A

f2083-c3d-2022.dwg

SHEET: 4 of 4

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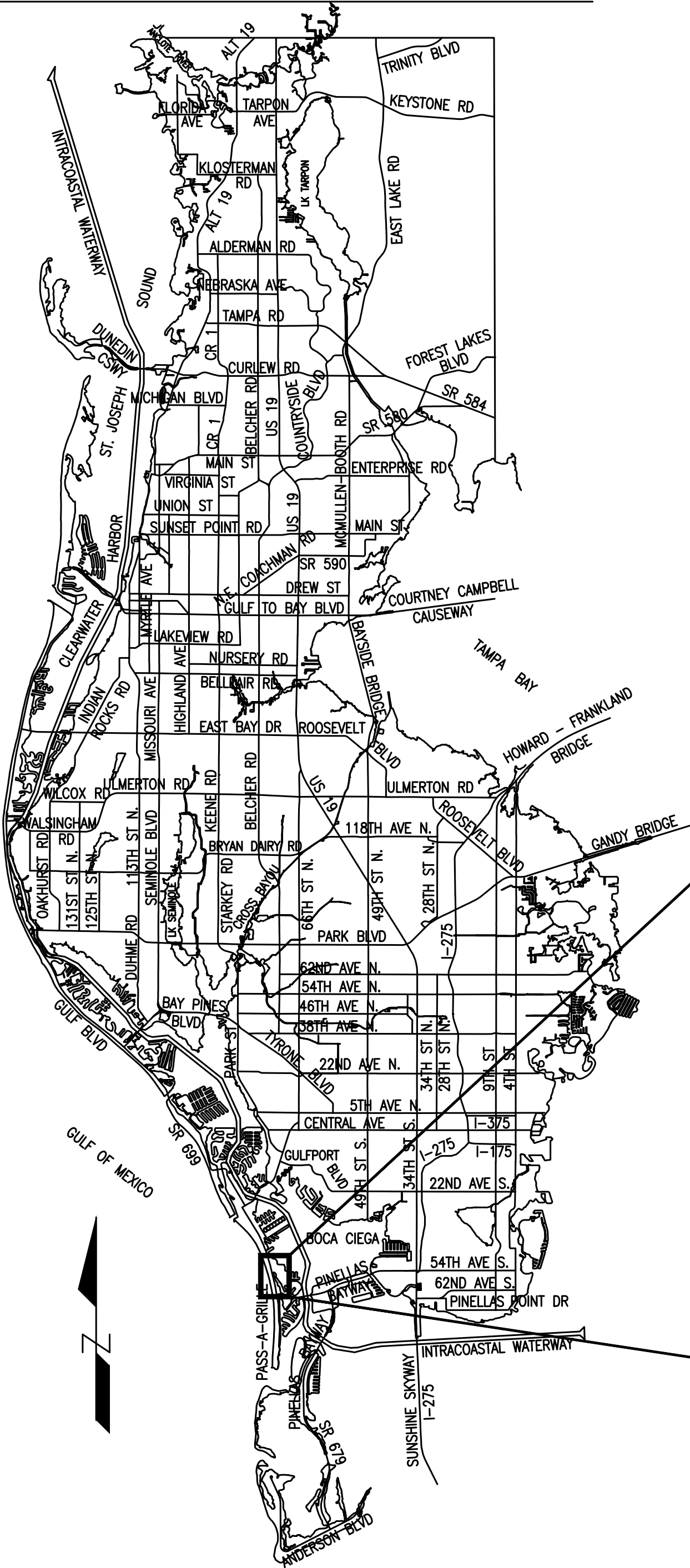


PINELLAS COUNTY, FLORIDA

GULF BEACH WATER BOOSTER

STATION IMPROVEMENTS

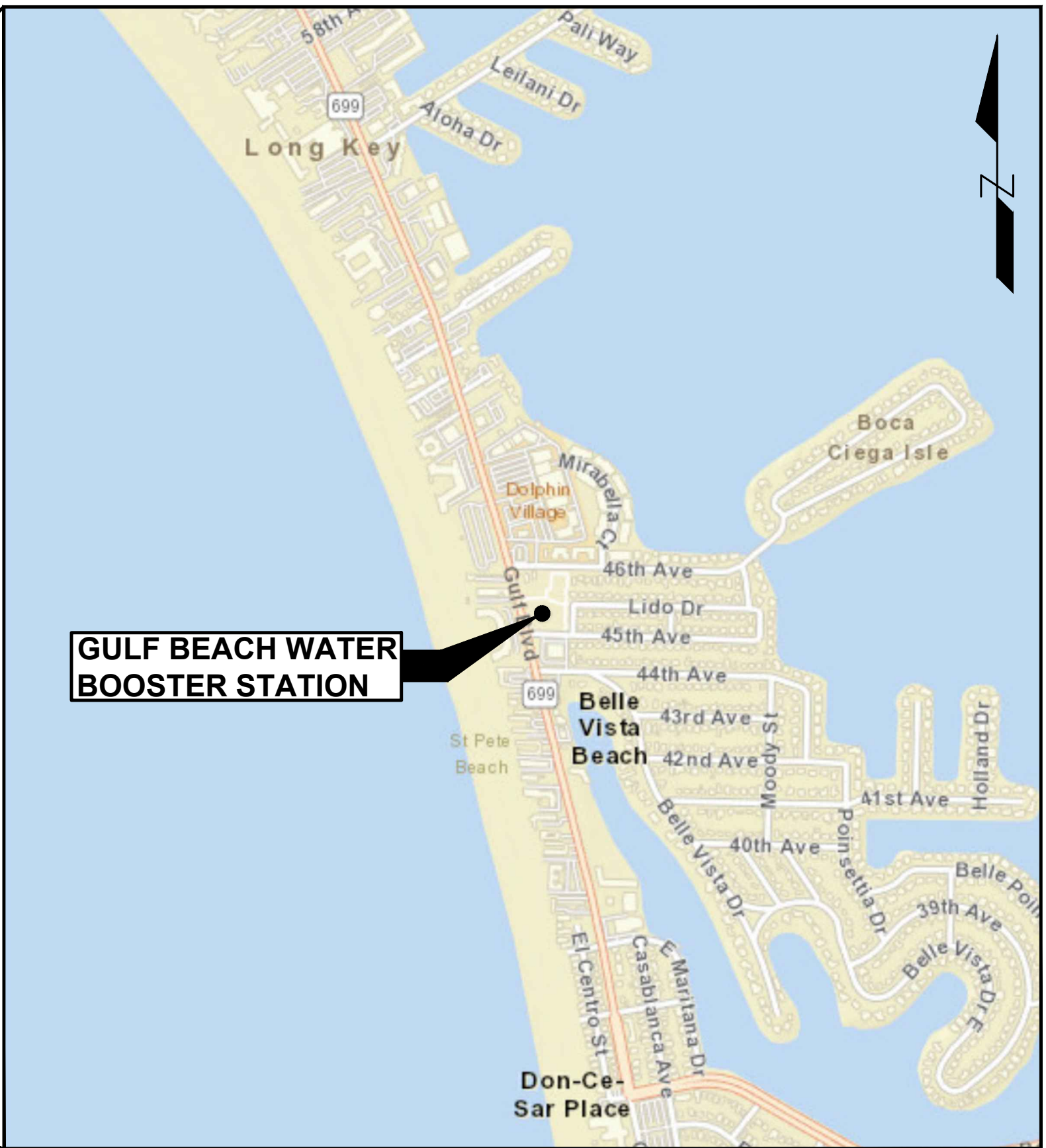
PINELLAS COUNTY
LOCATION MAP



PID 002150A

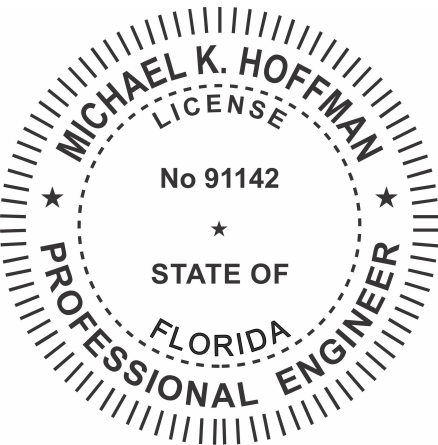
PERMIT SUBMITTAL

INDEX OF DRAWINGS	
C-1	LEGEND AND ABBREVIATIONS
C-2	GENERAL NOTES
C-3	EXISTING SITE PLAN
C-4	DEMOLITION PLAN
C-5	PROPOSED SITE PLAN
C-6	GRADING AND DRAINAGE PLAN
C-7	SITE PIPING PLAN
C-8	INTERIM SOURCE REMOVAL PLAN
C-9	CROSS SECTIONS I
C-10	CROSS SECTIONS II
C-11	CIVIL DETAILS I
C-12	CIVIL DETAILS II
C-13	CIVIL DETAILS III
C-14	STORMWATER POLLUTION PREVENTION PLAN
C-15	STORMWATER POLLUTION PREVENTION NOTES I
C-16	STORMWATER POLLUTION PREVENTION NOTES II
C-17	STORMWATER POLLUTION PREVENTION DETAILS
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE DETAILS
IR-1	IRRIGATION PLANS
IR-2	IRRIGATION DETAILS



4501 GULF BOULEVARD
ST PETE BEACH, FLORIDA 33706

KEY MAP
NOT TO SCALE



THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY MICHAEL
K. HOFFMAN, PE ON THE DATE
ADJACENT TO THE SEAL.

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Michael K. Hoffman
2024.04.30 14:37:27 04707

PREPARED BY:
WRIGHT-PIERCE, INC.
3820 NORTHDALE BOULEVARD, SUITE 202
TAMPA, FL 33624
PHONE: 800-422-1095

SUBMITTED FOR APPROVAL:

MICHAEL HOFFMAN, PE
WRIGHT-PIERCE, INC. _____ DATE _____

RECOMMENDED FOR APPROVAL:

_____ DATE _____

GRAPHIC SYMBOLS:

	CENTERLINE
	CONTOUR LINE
	EXISTING TOPOGRAPHIC FEATURE
	SURFACE WATER/WETLAND BOUNDARY
	SURVEY REFERENCE LINE
	RIGHT-OF-WAY (EXISTING)
	RIGHT-OF-WAY LINE (PROPOSED)
	(EXISTING W/ ACQUISITION)
	PROPERTY OR DEED LINE
	EASEMENT LINE
	EASEMENT LINE (PROPOSED)
	(EXISTING W/ ACQUISITION)
	SECTION LINE
	ORIGINAL LOT LINE/FORMER OWNERSHIP LINE/ VACATED EASEMENTS
	TREE LINE
	FENCE LINE
	DRAINAGE (STORM SEWER) PIPE
	EXISTING TOP OF BANK AND TOE OF SLOPE
	SANITARY SEWER GRAVITY LINE
	COMMUNICATION LINE
	UNDERGROUND ELECTRIC POWER LINE/CABLE
	TRAFFIC POWER/COMMUNICATION LINE
	FORCE MAIN (SANITARY SEWER)
	GAS LINE
	HOT OIL LINE
	OVERHEAD WIRE
	RECLAIMED WATER LINE
	POTABLE WATER
	UNKNOWN UTILITY

- FOUND CONCRETE MONUMENT

△

FOUND NAIL & DISC/CAP BRASS DISC

○

FOUND IRON ROD

○

FOUND IRON PIPE

▮

FOUND PINCH PIPE

■

SET CONCRETE MONUMENT

▲

SET NAIL & DISC/CAP BRASS DISC

●

SET IRON ROD

×

XCUT (FOUND)

×

XCUT (SET)
- ①

SUB PARCEL NO.
- ②

BLOCK NUMBER
- 00/00

PROPERTY APPRAISER PARCEL NUMBER
- P###

PROPOSED PARCEL

△

GROUND TARGET BENCHMARK

⚡

BACKFLOW PREVENTER

⬮

BENCHMARK

○

BUSH / SHRUB

○

BOLLARD

⊕

BORING

℄

CENTERLINE

⊠

COMMUNICATIONS BOX

⊙

COMMUNICATIONS MANHOLE

⊙

DECIDUOUS TREE
(OAK UNLESS OTHERWISE ANNOTATED)

△

DELTA ANGLE

⊠

DRAINAGE CLEAN OUT

⊙

DRAINAGE MANHOLE

⊠

ELECTRICAL EQUIPMENT

⊙

ELECTRICAL OUTLET

⊙

EVERGREEN TREE

⚡

FIRE HYDRANT

⊠

GAS METER

⚡

GAS VALVE

⚡

GATE VALVE

⊠

GRATE INLET

└

GUY WIRE

⊠

HOSE BIBB

⚡

LIGHT POLE

⊠

MAILBOX

⚡

MONITOR WELL

⚡

PALM TREE

⚡

PEDESTRIAN SIGNAL

□

POLE/POST

⊠

POWER BOX

℄

PROPERTY LINE

⊙

RECLAIMED WATER MANHOLE

⊠

RECLAIMED WATER METER

⚡

RECLAIMED WATER VALVE

⊠

SANITARY SEWER CLEANOUT

⊙

EXISTING SANITARY SEWER CLEANOUT

⊙

EXISTING PRIVATE SEWER MANHOLE

⊙

EXISTING PUBLIC SEWER MANHOLE

+

MISCELLANEOUS

○

PROPOSED PUBLIC SEWER MANHOLE

⚡

ROAD ELEVATION POINTS

⚡

SATELLITE/ANTENNAE

└

SIGN

⚡

SPRINKLER HEAD

⚡

SPRINKLER HEAD VALVE

℄

SURVEY LINE

⊠

TARGET

⊠

TEST PIT

⚡

TRAFFIC SIGNAL POLE

⊠

TRAFFIC SIGNAL PULL BOX

⊠

UNDERDRAIN BOX

⚡

UTILITY POLE

⊠

WATER METER

⚡

WATER VALVE

ABBREVIATIONS:

(C)	CALCULATED DATA	DWM	DRIVEWAY, MARL	LBR	LIMEROCK BEARING RATIO	SCM	SET CONCRETE MONUMENT
(W)	MEASURED (IN FIELD)	DWS	DRIVEWAY, STONE	LF, L. F.	LINEAR FEET	SEC ###-##-##	SECTION, TOWNSHIP, RANGE
(P)	PLAT DATA	E	EASTING	LL	LANE LINE	SCH	SCHEDULE
(R)	RECORD DATA	ECL	EROSION CONTROL LINE	LT	LEFT	SD	STORM DRAIN
A	ARC LENGTH	ECMP	ELLIPTICAL CMP	MAX	MAXIMUM	SE	SOUTHEAST
AC	ACRE(S), ACTIVITY CENTER	ELEV	ELEVATION	MES	METERED END SECTION	SFI	SURVEY FILE NUMBER
ADA	AMERICANS WITH DISABILITIES ACT	EPA	EDGE OF PAVEMENT, ASPHALT	MH	MANHOLE	SIR	SET IRON ROD
ALUM	ALUMINUM	EPC	EDGE OF PAVEMENT, CONCRETE	MHW	MEAN HIGH WATER	SNC	SET NAIL AND CAP
ASPH	ASPHALT	EQ	EQUATION	MIN	MINIMUM	SND	SET NAIL AND DISK
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	EQUIP	EQUIPMENT	MLW	MEAN LOW WATER	SPI	SET NAIL AND SHINER
AUS	AUSTRALIAN	ERCP	ELLIPTICAL RCP	MNPT	MALE NATIONAL PIPE TAPERED	SDC	SET DRAINAGE CAP
BC	BACK OF CURB	ERD	EDGE OF ROAD, DIRT	MPH	MILES PER HOUR	SP	SUPERPAVE
BE	BURIED ELECTRICAL	ERG	EDGE OF ROAD, GRAVEL	MTLF	METAL FENCE	SPEC	SPECIFICATIONS
BF	BLIND FLANGE	ERM	EDGE OF ROAD, MARL	NTS	NORTHING	STA	STANDARD PLANS INDEX
BFV	BUTTERFLY VALVE	ERSH	EDGE OF ROAD, SHELL	NAVDB88	NORTH AMERICAN VERTICAL DATUM OF 1988	SPLWY	SPILLWAY
BLDG	BUILDING	ES	EXISTING STORM	NE	NORTHEAST	SQ	SQUARE
BM	BENCHMARK	ESMT	EASEMENT	NFV	NOT FIELD VERIFIED	SR	STATE ROAD
BDXC	BDX CULVERT	ESS	EXISTING SANITARY SEWER	NGS	NATIONAL GEODETIC SURVEY	SRC	SET RED CAP
BRG	BEARING	EV	EACH WAY	NTS	NOT TO SCALE	SRL#	SURVEY REFERENCE LINE
BWF	BARBED WIRE FENCE	FAC	FLORIDA ADMINISTRATIVE CODE	NW	NORTHWEST	SRVT	SET RIVET
C#	CURVE NUMBER	FCM	FOUND CONCRETE MONUMENT	D/A	OVERALL	SR&D	SET RIVET AND DISK
C/C	CENTER TO CENTER	FDI	FOOT DESIGN MANUAL	DAK C	DAK CLUSTER	SST	STAINLESS STEEL
CALC	CALCULATED	FDE	FINISHED FLOOR ELEVATION	DD	OUTSIDE DIAMETER	STA	STATION
CB	CATCH BASIN	FIR	FOUND IRON ROD	DH#	OVERHEAD UTILITY (NUMBER OF LINES)	STD	STANDARD
CBS	CONCRETE BLOCK STRUCTURE	FIP	FOUND IRON PIPE	DR	ORDINARY HIGH WATER	STY	STORY
CCR####	CERTIFIED CORNER RECORD NUMBER	FL	FLOWLINE	D/S	OFFICIAL RECORD	SW	SOUTHWEST
CCOL	COASTAL CONSTRUCTION CONTROL LINE	FLG	FLANGE	D/S	OFFSET	SVBR	SIDEWALK, BRICK/PAVER
C.F.R.	CODE OF FEDERAL REGULATIONS	FM	FORCE MAIN	PALM C	PALM CLUSTER	SWJ	SOLVENT WELDED JOINT
CH	CHORD	FNC	FOUND NAIL AND CAP	PB	PLAT BOOK	SWLK	SIDEWALK
CI	CAST IRON	FDEP	FLORIDA DEPT OF ENVIRONMENTAL PROTECTION	PC	POINT OF CURVATURE	SYC	SET YELLOW CAP
CIP	CAST IRON PIPE	FDT	FLORIDA DEPT OF TRANSPORTATION	PCC	POINT OF COMPOUND CURVATURE	TB	TOP OF BANK
CL	CENTERLINE	FNDK	FOUND NAIL AND DISK	PCED	PINELLAS COUNTY ENGINEERING DEPT	TBM	TEMPORARY BENCHMARK
CLF	CHAIN LINK FENCE	FND	FOUND	PCSD	PINELLAS COUNTY SURVEY DIVISION	TREE C	TREE CLUSTER
CMP	CORRUGATED METAL PIPE	FNP	FEMALE NATIONAL PIPE TAPERED	PG	PAGE	TS	TOE OF SLOPE
COMM	COMMUNICATIONS	FNS	FOUND NAIL AND SHINER	P1	POINT OF INTERSECTION	TYP	TYPICAL
CONE	CONCRETE	FOD	FOUND ORANGE CAP	PID	PARCEL IDENTIFICATION NUMBER	UD	UNDERDRAIN
CONDD	CONDOMINIUM	FOP	FOUND OPEN PIPE	PINE C	PINE CLUSTER	UDBX	UNDERDRAIN BOX
CONST	CONSTRUCTION	FPP	FOUND PINCHED PIPE	PLNTR	PLANTER	UNK	UNKNOWN
COR	CORNER	FRC	FOUND RED CAP	PLS	PROFESSIONAL LAND SURVEYOR	UP ####	UTILITY POLE NUMBER
CORR	CORRUGATED	FRRS	FOUND RAILROAD SPIKE	PNT	POINT	USEPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CR	COUNTY ROAD	FRVT	FOUND RIVET	PDB	POINT OF BEGINNING	VCP	VITRIFIED CLAY PIPE
CRL	CONSTRUCTION REFERENCE LINE	FS	FLORIDA STATUTES	PDC	POINT ON COMMENCEMENT	VVH	VERIFIED VERTICAL AND HORIZONTAL
D	DELTA/CENTRAL ANGLE	FW	FINISH WATER	PRC	POINT OF REVERSE CURVATURE	WDF	WOOD FENCE
DB	DEED BOOK	FYDL	FLEXIBLE DELINEATOR	PSM	PROFESSIONAL SURVEYOR AND MAPPER	W	WEST
DBI	DITCH BOTTOM INLET	FYC	FOUND YELLOW CAP	PT	POINT OF TANGENCY	W/	WITH
DESC	DESCRIPTION	GALV	GALVANIZED	PVC	POLYVINYL CHLORIDE	W/D	WITHOUT
DHW	DESIGN HIGH WATER	GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM	PVCF	POLYVINYL CHLORIDE FENCE	WM	WATER MAIN
DIA	DIAMETER	GPR	GROUND PENETRATING RADAR	R	RADIUS	XWLK	CROSS WALK
DI	DUCTILE IRON	GRIL	GUARD RAIL	RCP	REINFORCED CONCRETE PIPE		
DIP	DUCTILE IRON PIPE	HDPE	HIGH DENSITY POLYETHYLENE	RCW	RECLAIMED WATER		
DR	DRIVEWAY, ASPHALT	HW	HEADWALL	REF	REFERENCE		
DWA	DRIVEWAY, BRICK	HWF	HOT WIRE FENCE	RLS	REGISTERED LAND SURVEYOR		
DWB	DRIVEWAY, CONCRETE	ID	INNER DIAMETER	RPRP	RAILROAD		
DWC	DRIVEWAY, DIRT	IE	INVERT ELEVATION	RR	RAILROAD		
DWD	DRAWING	INV	INVERT	RT	RIGHT		
DWG	DRIVEWAY, GRAVEL	JBDX	JUNCTION BOX	RTK	REAL TIME KINEMATIC		
DWGRVL	DRIVEWAY, GRASS	L	LENGTH	R/W	RIGHT-OF-WAY		
DWGS				S	SOUTH, SANITARY		

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				DESIGNED	M.HOFFMAN		PROJECT:	PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION:	LEGEND AND ABBREVIATIONS	 800.422.1095 www.wright-pierce.com 3820 NORTHDIALE BOULEVARD, SUITE 2028, TAMPA, FL 33624	APPROVED BY:	DATE:	04-2024		
				DRAWN	D.METZ									PROJECT NO.	002150A	
				CHECKED	W.NICKEL										SHEET:	C-1
REV. NO.	DATE	DESCRIPTION	REV. BY										DATE			

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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GENERAL NOTES

1. THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS LISTED IN THE SUPPLEMENTARY OR SPECIAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL OBTAINED PERMITS ARE AVAILABLE FOR REVIEW FROM THE OWNER. ALL OTHER PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL RIGHTS_OF_WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE OWNER.
3. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
4. CONTRACTOR SHALL COMPLY WITH THE COORDINATION REQUIREMENTS AND RELATED COSTS, IF ANY, AS SPECIFIED IN SPECIFICATION SECTION 01 31 13.

EXISTING SITE CONDITIONS

1. THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE BASED ON PREVIOUS CONSTRUCTION DESIGN PLANS AND SURVEY, WHICH ARE DIGITALLY AVAILABLE UPON REQUEST. NO GUARANTEE IS MADE THAT UTILITIES OR STRUCTURES WILL BE ENCOUNTERED WHERE SHOWN, OR THAT ALL UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN. ALL LOCATIONS AND SIZES OF EXISTING UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD WITH TEST PITS AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES OR PIPING THAT MAY BE AFFECTED. THE CONTRACTOR WILL REALIGN NEW PIPE LOCATIONS AS REQUIRED TO CONFORM TO EXISTING LINES AND AS APPROVED BY THE ENGINEER.
2. BELOW GRADE UTILITY INFORMATION IS BASED ON INFORMATION PROVIDED BY THE SURVEYOR. LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 01 31 13. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

ELECTRIC:
DUKE ENERGY-ST PETERSBURG
DUKE'S CUSTOMER SERVICE CENTER
(407) 629-1010

WATER/SEWER/RECLAIMED:
PINELLAS COUNTY UTILITIES
CARLOS SOLIS
(727) 464-5317

SEWER/RECLAIMED:
CITY OF ST PETE BEACH
BRETT WARNER
(407) 629-1010

CABLE/FIBER:
CHARTER COMMUNICATIONS
DUFFY MCCLELLAND
(352) 527-2189

CATV/COMM:
FRONTIER COMMUNICATIONS
TONI CANNON
(813) 875-1014

FIBER/COMM:
MCI
INVESTIGATIONS TEAM
(800) 624-9675 x2

CONDUIT/FIBER/SIGNAL:
PINELLAS COUNTY HWY/ENG
JAMES JOHNSON
(727) 464-8981

GAS:
TECO PEOPLES GAS-ST PETERSBURG
JOAN DOMNING
(813) 275-3783

FIBER:
UNITI FIBER LLC
CHARLIE CROFT
(215) 214-7059

FIBER:
ZAYO GROUP / FORMERLY LIGHTWAVE, LLC
HENRY KLOBUCAR
(406) 496-6510

DIGSAFE:
SUNSHINE 811
(800) 432-4770

3. THERE ARE NO KNOWN HAZARDOUS ENVIRONMENTAL CONDITIONS WITHIN THE AREA OF WORK. IF THE PRESENCE OF HAZARDOUS ENVIRONMENTAL CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY. ALL ACTIVITIES, HANDLING AND DISPOSAL OF HAZARDOUS ENVIRONMENTAL CONDITIONS AND MATERIALS SHALL BE IN ACCORDANCE WITH OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS.

SITE DEMOLITION

1. A GREY CROSS HATCH HIGHLIGHTS AND REPRESENTS DEMOLITION ON AN ITEM(S) IN THE AREA ASSOCIATED WITH THE HATCH.
2. REFER TO THE EXISTING SITE PLAN, FOR ADDITIONAL INFORMATION REGARDING EXISTING FACILITIES. REFER TO THE LAYOUT DRAWING FOR LIMITS OF WORK.
3. REFER TO ARCHITECTURAL, STRUCTURAL, PROCESS, MECHANICAL, PLUMBING, INSTRUMENTATION AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION REGARDING DEMOLITION AND REMOVAL.
4. REFER TO SPECIFICATION SECTION 01 11 01, WHICH CONTAINS INFORMATION ON CONSTRAINTS OF CONSTRUCTION SEQUENCING.
5. DEMOLISH/REMOVE EXISTING PIPING AS REQUIRED FOR CONSTRUCTION OF NEW FACILITIES. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE SHALL BE COORDINATED WITH THE OWNER AND ENGINEER BEFORE COMMENCING THAT WORK. EXISTING PIPING THAT NEEDS TO BE REMOVED TO CONSTRUCT THE NEW FACILITIES, BUT IS TO REMAIN, SHALL BE REINSTALLED/REPLACED AS NEEDED. EXISTING PIPES AND CONDUIT DESIGNATED AS "ABANDONED" MAY BE REMOVED IF THE CONTRACTOR SO CHOOSES. IF ABANDONED PIPE CONFLICTS WITH NEW SITE PIPING OR FACILITIES, THEN A PORTION OF THE ABANDONED PIPE SHALL BE REMOVED, AND THE NEW ENDS OF ABANDONED PIPE CAPPED OR PLUGGED WITH CONCRETE.
6. ALL EXISTING PIPING AND UTILITIES WHICH ARE BENEATH PROPOSED STRUCTURES, AND ARE TO BE ABANDONED, SHALL BE REMOVED TO A MINIMUM OF 5-FEET OUTSIDE OF THE STRUCTURE. PIPE AND UTILITIES BENEATH PROPOSED STRUCTURES THAT ARE TO REMAIN SHALL BE CONCRETE ENCASED, UNLESS OTHERWISE INDICATED. REFER TO THE STRUCTURAL DRAWINGS FOR DETAILS.
7. SEVERING OF EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTINGS, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. PLUG ENDS OF ABANDONED PIPE SEGMENTS WITH CONCRETE UNLESS SPECIAL CIRCUMSTANCES DICTATE PLUGGING ABANDONED PIPES WITH BLIND FLANGES, RESTRAINED MECHANICAL JOINT PLUGS, ETC. AS APPROPRIATE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER. REFER TO SPECIFICATION SECTION 02 41 00.

9. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01 78 39.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THAT ALL PROCESS FLOWS ARE MAINTAINED DURING CONSTRUCTION. GRAVITY OR PUMPED BYPASSES AND OTHER MEANS OF MAINTAINING FLOW SHALL BE SUBJECT TO THE REVIEW AND ACCEPTANCE OF THE ENGINEER. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY STOPPAGES OR BYPASSES WITH THE OWNER AND ENGINEER. FEDERAL AND STATE REGULATIONS REQUIRE THAT THE TREATMENT FACILITY REMAIN IN OPERATION (ALL TREATMENT, DISINFECTION, SLUDGE HANDLING AND DISPOSAL PROCESSES) THROUGHOUT CONSTRUCTION, AND THAT DISCHARGE PERMITS ARE MET. REFER TO SPECIFICATION SECTION 01 11 01.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND GROUNDWATER DEWATERING OPERATIONS.

SITE CLEARING, GRUBBING AND GRADING

1. STRIPPING OF TOPSOIL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 31 14 00. REFER TO THE LAYOUT AND GRADING DRAWINGS FOR LIMIT OF WORK AND STRIPPING.
2. CONTRACTOR SHALL MINIMIZE CLEARING OPERATIONS. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 31 11 00. CLEARING LIMITS SHALL BE AS INDICATED ON THE DRAWINGS, BUT AT ALL TIMES WITHIN EXISTING ROAD RIGHTS_OF_WAY AND PROPERTY LINES ON STATE OR COUNTY OWNED PROPERTY OR EASEMENTS. ALL CLEARING AND GRUBBING MATERIAL SHALL BE THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT A SITE PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS.
3. CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINE SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION AND GRADING. PRIOR TO BEGINNING EXCAVATION WORK, EROSION CONTROL FENCE SHALL BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE ACTUAL LIMITS OF GRUBBING AND/OR GRADING, AND AS SHOWN ON THE DRAWINGS. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM, CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES. EROSION CONTROL FENCE SHALL ALSO BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION. ALL INSTALLED EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE END OF THE PROJECT. REFER TO SPECIFICATION SECTION 31 25 00.
4. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY HAY BALE FILTERS TO PREVENT ENTRY OF SEDIMENT FROM RUNOFF WATERS DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL COLLECTED SEDIMENT, AND THAT WHICH COLLECTS IN THE STORM DRAIN SYSTEM. REFER TO THE CIVIL DETAIL DRAWINGS.
5. THE GEOTECHNICAL DATA REPORT FOR THE PROJECT SITE IS INCLUDED IN APPENDIX A OF THE SPECIFICATIONS.
6. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01 57 26.
7. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS AND PLANT DRIVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.
8. ALL CATCH BASINS, MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
9. THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS.
10. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.
11. ALL NON-PAVED AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE SODDED, UNLESS OTHERWISE NOTED. REFER TO SPECIFICATION SECTION 32 92 19.

CIVIL SITE LAYOUT

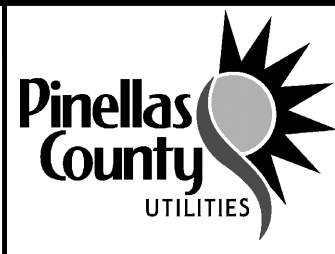
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THIS PROVIDED LAYOUT INFORMATION THROUGHOUT THE COURSE OF CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
2. REFER TO THE SITE PIPING AND SITE GRADING DRAWINGS FOR ADDITIONAL LAYOUT INFORMATION.
3. CONTRACTOR SHALL EXCAVATE TEST PITS, WHERE NECESSARY, PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO THE ENGINEER FOR REVIEW FOR CONFORMANCE TO THE PLANS. TEST PITS ARE REQUIRED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
4. IN GENERAL, THE GIVEN STRUCTURE LOCATIONS ARE TO THE OUTSIDE FACE OF THE STRUCTURE FOUNDATION WALL, NOT FOOTINGS. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING AND STRUCTURE DIMENSIONS. RADII SHOWN FOR ROADS ARE TO EDGE OF PAVEMENT.
5. PLACE CRUSHED STONE MOWING STRIP AROUND THOSE STRUCTURES AS INDICATED ON THE DRAWINGS. REFER TO THE CIVIL DETAIL DRAWINGS.
6. THE LOCATIONS AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER. THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THESE AREAS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETTING ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY CONSTRUCTION. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA, AT NO ADDITIONAL COST TO THE OWNER.
8. WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
9. BOLLARD LOCATIONS SHOWN ARE APPROXIMATE. COORDINATE BOLLARD LOCATIONS WITH THE ENGINEER. REFER TO THE CIVIL DETAIL DRAWINGS.
10. ALL ELEVATIONS REFER TO THE NAVD88 DATUM. HORIZONTAL POSITIONS FOR ALL FEATURES ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT, ZONE 902, FLORIDA WEST. HORIZONTAL CONTROL WAS ESTABLISHED USING THE FDOT FLORIDA PERMANENT REFERENCE NETWORK, A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM. ALL TOPOGRAPHIC FEATURES WERE COLLECTED CONVENTIONALLY FROM CONTROL POINTS ELEVATED FROM A CLOSED LOOP BENCH RUN FROM NATIONAL GEODETIC SURVEY POINT "NOAA D". CONTRACTOR SHALL VERIFY BENCHMARK ELEVATIONS PRIOR TO USING IN CONSTRUCTION.
11. EXISTING CONDITIONS SITE PLAN DEVELOPED FROM SURVEY DRAWING PREPARED BY ECHO UES, INC, DATED 9/19/2023, AND EXISTING RECORD DRAWING INFORMATION.

CIVIL SITE PIPING

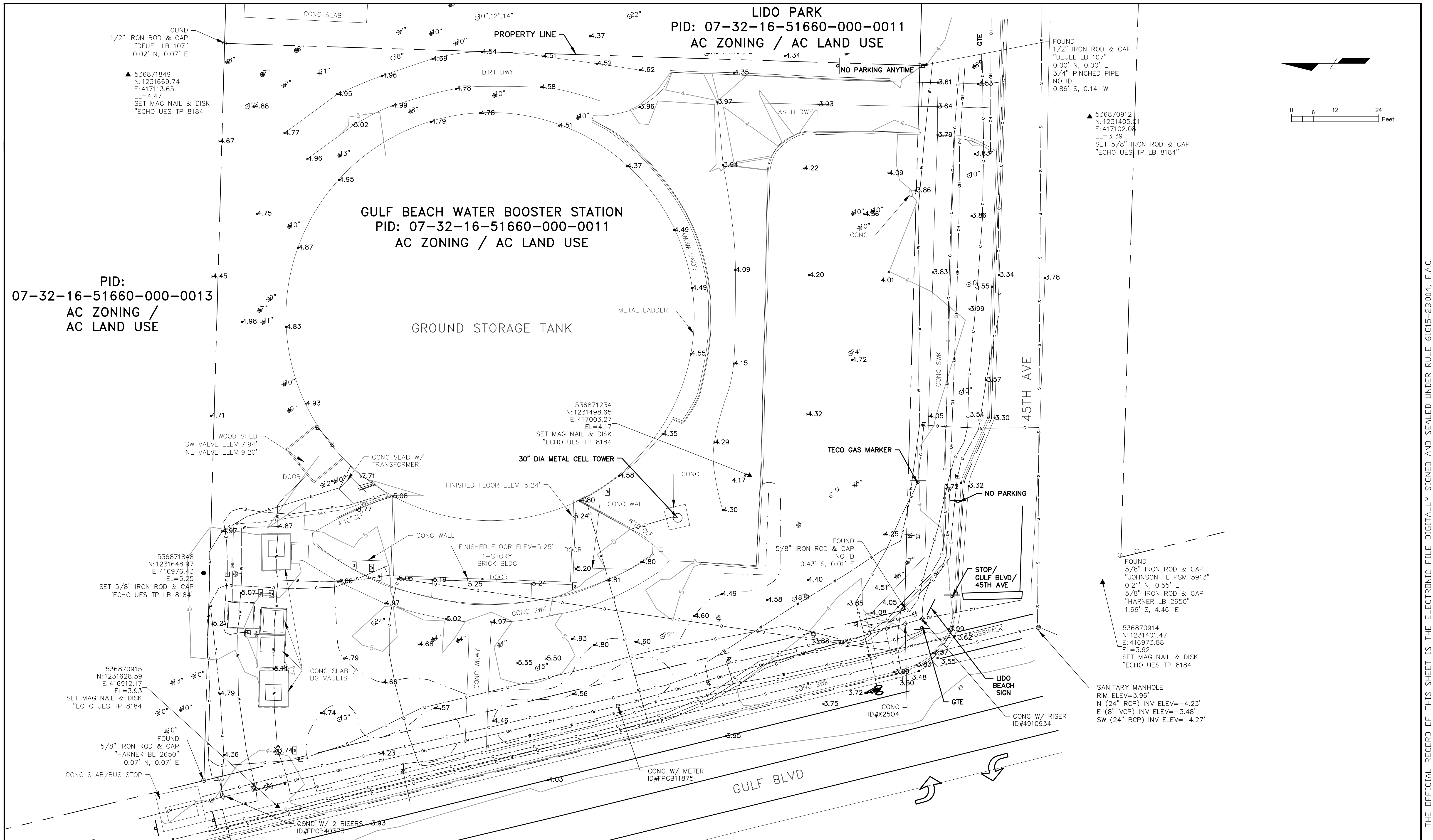
1. PROCESS FLOW DIAGRAM AND PIPING LEGEND ARE ON THE PROCESS DRAWINGS. THE PROCESS PIPING SCHEDULE AND ADDITIONAL PIPING NOTES ARE LOCATED IN SPECIFICATION SECTION 40 05 00.
2. ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN PIPING WILL BE PERMITTED. CONCRETE THRUST BLOCKS OR OTHER ACCEPTABLE RESTRAINT SYSTEM IS REQUIRED ON ALL FITTINGS ON PRESSURE PIPE. WHERE A RESTRAINED JOINT SYSTEM IS USED, THE NUMBER OF PIPES WITH RESTRAINED JOINTS ON EITHER SIDE OF THE FITTING SHALL BE DESIGNED TO REFLECT THE PROJECT SOIL CONDITIONS AND PEAK SURGE PRESSURE IN THE PIPING SYSTEM. SEE THE CIVIL DETAIL DRAWINGS FOR THRUST BLOCK DETAILS. PROVIDE ALL BENDS (HORIZONTAL AND VERTICAL) AS REQUIRED TO MEET THE GRADES AND ALIGNMENT INDICATED ON THE DRAWINGS.
3. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING PIPING AND UTILITIES IN THE FIELD BY TEST PIT EXCAVATION PRIOR TO COMMENCING INSTALLATION OF ANY OF THE NEW PIPING AFFECTED. WHERE NEW PIPE CONNECTS TO EXISTING PIPING OR STRUCTURAL PENETRATION, CONTRACTOR SHALL VERIFY ELEVATION BY TEST PIT, AS REQUIRED, PRIOR TO INSTALLATION OF ANY OF THE ASSOCIATED/AFFECTED NEW PIPING. IDENTIFIED CONFLICTS WITH EXISTING PIPING AND UTILITIES WILL BE REVIEWED WITH THE ENGINEER PRIOR TO COMMENCING INSTALLATION. THE HORIZONTAL ALIGNMENT OF NEW PIPING MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR REVIEW AND ACCEPTANCE OF THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS AND REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
4. ALL WASTEWATER PIPING (EXCLUDING BUILDING DRAINS) AND ALL PRESSURIZED PIPES (I.E. PLANT WATER, CITY WATER, SOLUTION LINES, HEAT, ETC.) INSTALLED BENEATH STRUCTURES SHALL BE ENCASED IN CONCRETE. SEE STRUCTURAL DRAWING FOR DETAILS.
5. ALL BURIED CONNECTIONS TO STRUCTURES SHALL HAVE SLEEVE TYPE FLEXIBLE CONNECTIONS APPROXIMATELY 4-FEET FROM THE STRUCTURES. ALL SLEEVE TYPE COUPLINGS ON PRESSURE LINES SHALL BE RESTRAINED (SOLID SLEEVE). REFER TO SPECIFICATION SECTION 40 05 06.
6. PROVIDE CAST OR DUCTILE IRON WALL CASTINGS, OR GALVANIZED STEEL PIPE SLEEVES, FOR ALL PIPE PENETRATIONS MADE THROUGH CONCRETE FOUNDATIONS, WALLS AND SLABS. ALL WALL SLEEVES AND WALL CASTINGS SHALL HAVE WATERSTOPS. SEE PROCESS, MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS OF PENETRATIONS. NEW PENETRATIONS THROUGH EXISTING STRUCTURE WALLS SHALL BE BY CORING MACHINE AND LINK-TYPE SEALS, UNLESS OTHERWISE INDICATED. OPENINGS TO BE COMPATIBLE WITH REQUIRED PIPING AND STANDARD LINK SEAL SIZES. SEE PROCESS DETAIL DRAWINGS. REFER TO SPECIFICATION SECTION 15092.
7. MANHOLES ARE 4-FEET IN DIAMETER UNLESS OTHERWISE NOTED. THE TOP OF MANHOLE FRAMES SHALL BE SET FLUSH WITH FINISH GRADE, UNLESS OTHERWISE NOTED ON DRAWINGS. SEWER MANHOLE INVERTS SHOWN ON THE DRAWINGS ARE TO THE INSIDE FACE OF THE MANHOLE.
8. PIPES WITHIN VALVE PITS (MANHOLES) SHALL BE SUPPORTED 12-INCHES ABOVE BOTTOM OF MANHOLE ON ADJUSTABLE PIPE SADDLE SUPPORTS, IN ACCORDANCE WITH SPECIFICATION SECTION 40 05 10, UNLESS OTHERWISE INDICATED.
9. CONTRACTOR SHALL RE-SHAPE INVERTS AS REQUIRED WHEN CONNECTING INTO EXISTING MANHOLES.
10. REFER TO SPECIFICATION SECTION 31 23 00 FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
11. COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 31 23 00. ANY SETTLEMENT OCCURRING WITHIN ONE-YEAR OF FINAL COMPLETION OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
12. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTICE TO THE RESPECTIVE UTILITY POLE OWNER. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
13. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.
14. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED ON THE CIVIL EXISTING CONDITIONS AND DEMOLITION PLAN. ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL DEMOLITION MATERIALS IN ACCORDANCE WITH SPECIFICATION SECTION 02 41 00.
16. WHENEVER SEWER AND WATER MAINS MUST CROSS, WATER LINES SHOULD BE INSTALLED ABOVE WASTEWATER OR SLUDGE LINES. A MINIMUM SEPARATION OF 18-INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE WASTEWATER OR SLUDGE LINE SHALL BE MAINTAINED. WHERE A WATER LINE CROSSES UNDER A WASTEWATER OR SLUDGE LINE, A FULL LENGTH OF PIPE SHALL BE CENTERED ABOVE THE WATER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE.
17. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE OWNER.
18. PIPING ON THE SITE PIPING PLAN HAS BEEN SHOWN BROKEN FOR CLARITY ONLY. PIPE BREAKS DO NOT INDICATE RELATIVE ELEVATIONS OF PIPING.
19. ELECTRICAL CONDUIT RUNS ARE INDICATED ON THE ELECTRICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION, EXCAVATION AND BACKFILLING REQUIRED FOR THE ELECTRICAL CONDUITS, AND SHALL FURNISH AND INSTALL ELECTRICAL MANHOLES AND HANDHOLES. COORDINATE THE LOCATION OF THE ELECTRICAL MANHOLES AND HANDHOLES, AND THE REQUIRED OPENING SIZES, WITH THE ELECTRICAL CONTRACTOR.
20. WHENEVER PROPOSED STRUCTURES ARE LOCATED PARTLY WITHIN A PAVED AREA AND PARTLY IN A NON-PAVED AREA, A BITUMINOUS CONCRETE PAVED APRON 2-FEET WIDE SHALL BE SUPPLIED AROUND THE PROPOSED COVER. PAVEMENT SHALL SLOPE AWAY FROM THE COVER.

GULF BOULEVARD RIGHT OF WAY

1. ALL DISTURBED AREAS IN THE GULF BOULEVARD RIGHT OF WAY SHALL BE SODDED.
2. ALL WORK WITHIN THE GULF BOULEVARD RIGHT OF WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FY 2024-2025 FDOT STANDARD SPECIFICATIONS AND FY 2024-2025 FDOT STANDARD PLANS.
3. SIDEWALK WITHIN THE GULF BOULEVARD RIGHT OF WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT STANDARD PLAN INDEX 522-001. DETECTABLE WARNINGS AND CURB RAMPS WITHIN THE GULF BOULEVARD RIGHT OF WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT STANDARD PLAN INDEX 522-002.

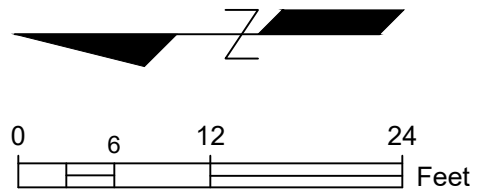
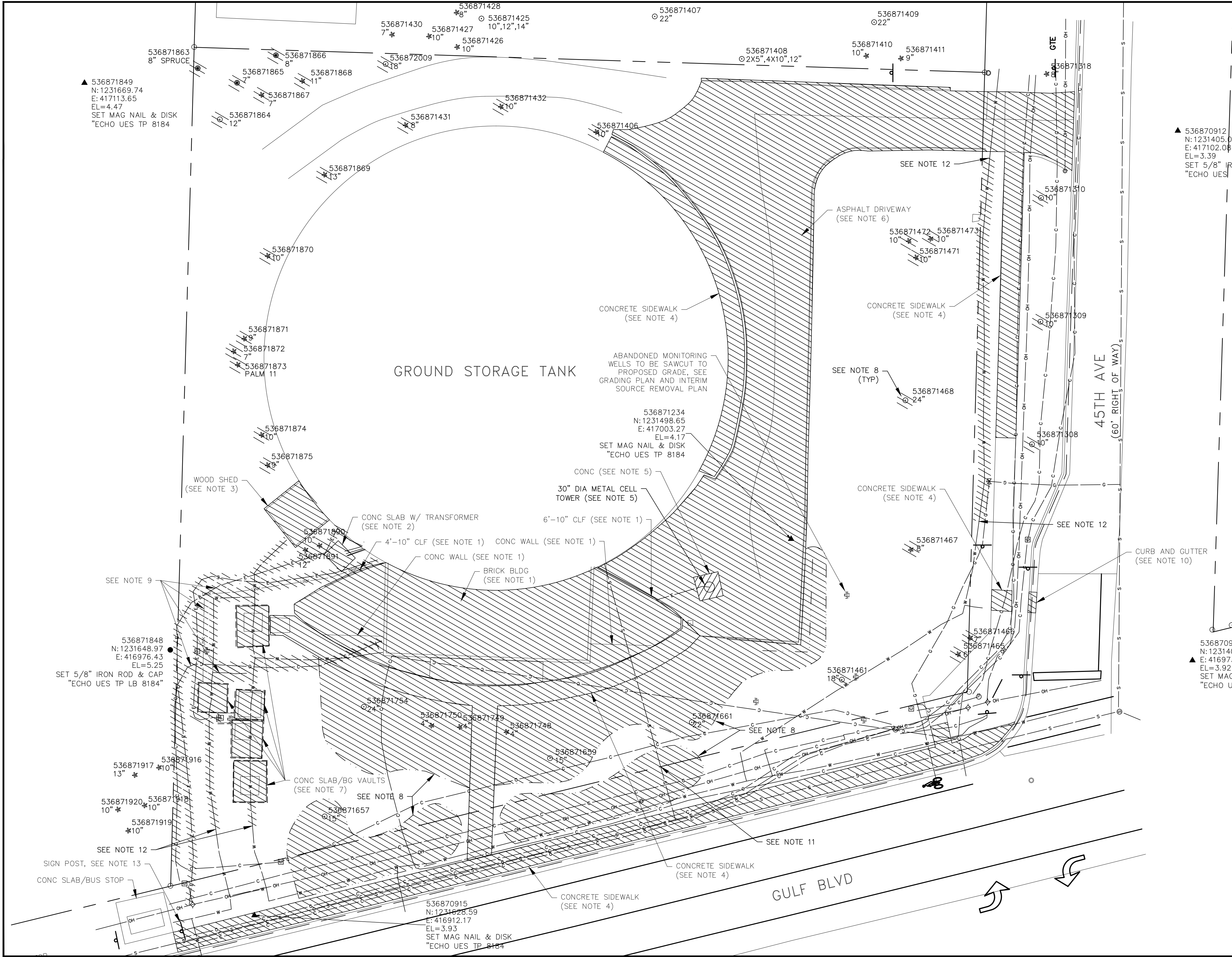
				DESIGNED	M.HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: GENERAL NOTES	 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: _____ DATE	DATE:	04-2024
				DRAWN	D.METZ						PROJECT NO.	002150A
				CHECKED	W.NICKEL						SHEET:	C-2
REV. NO.	DATE	DESCRIPTION			REV. BY							

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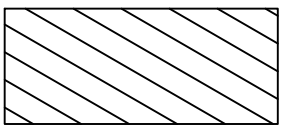


				DESIGNED	M. HOFFMAN		PROJECT:	PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION:	EXISTING SITE PLAN	 800.422.1095 www.wright-pierce.com 3820 NORTHDALÉ BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY:	DATE:	04-2024
				DRAWN	D. METZ								PROJECT NO.	002150A
				CHECKED	W. NICKEL									
REV. NO.	DATE	DESCRIPTION	REV. BY											

J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CTV\P002150A-DEM.dwg, Apr 30, 2024 -- 11:00am



TREE DEMO	
SURVEY TREE NUMBER	SIZE REPLACEMENT TREE REQUIRED
536871308	10"
536871309	10"
536871310	10"
536871406	10"
536871431	8"
536871432	10"
536871461	18"
536871465	6"
536871466	7"
536871467	8"
536871468	24"
536871471	10"
536871472	10"
536871473	10"
536871657	15"
536871661	22"
536871748	4"
536871749	4"
536871750	4"
536871754	24"
536871863	8"
536871864	12"
536871865	7"
536871866	8"
536871867	7"
536871868	11"
536871869	13"
536871870	10"
536871871	9"
536871872	7"
536871873	11"
536871874	10"
536871875	9"
536871890	10"
536871891	12"
536872009	18"



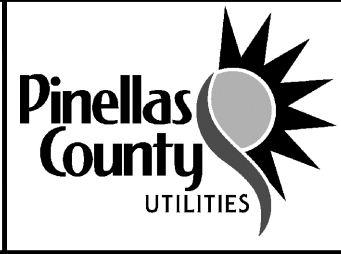
LIMITS OF DEMOLITION

NOTES:

- DEMOLISH BRICK BUILDING, CONCRETE WALLS AND CHAIN LINK FENCES.
- REMOVE TRANSFORMER AND DEMOLISH CONCRETE SLAB.
- DEMOLISH WOOD SHED.
- DEMOLISH CONCRETE SIDEWALK.
- REMOVE CELL TOWER AND DEMOLISH CONCRETE SLAB.
- DEMOLISH ASPHALT DRIVEWAY AND CURBS.
- DEMOLISH CONCRETE SLABS AND BG VAULTS.
- REMOVE TREES AND VEGETATION.
- REMOVE ELECTRIC, WATER, COMMUNICATION AND UNKNOWN UTILITIES TO THE EXTENTS SHOWN.
- DEMOLISH CURB AND GUTTER.
- DEMOLISH SANITARY LATERAL TO ROW.
- CUT EXISTING CI WATER MAIN. REPAIR SURFACE AND LINING OF EXISTING CI WM TO REMAIN.
- REMOVE SIGN POST.

REV. NO.	DATE	DESCRIPTION

DESIGNED	M.HOFFMAN
DRAWN	D.METZ
CHECKED	W.NICKEL



PROJECT:	PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS
DESCRIPTION:	DEMOLITION PLAN

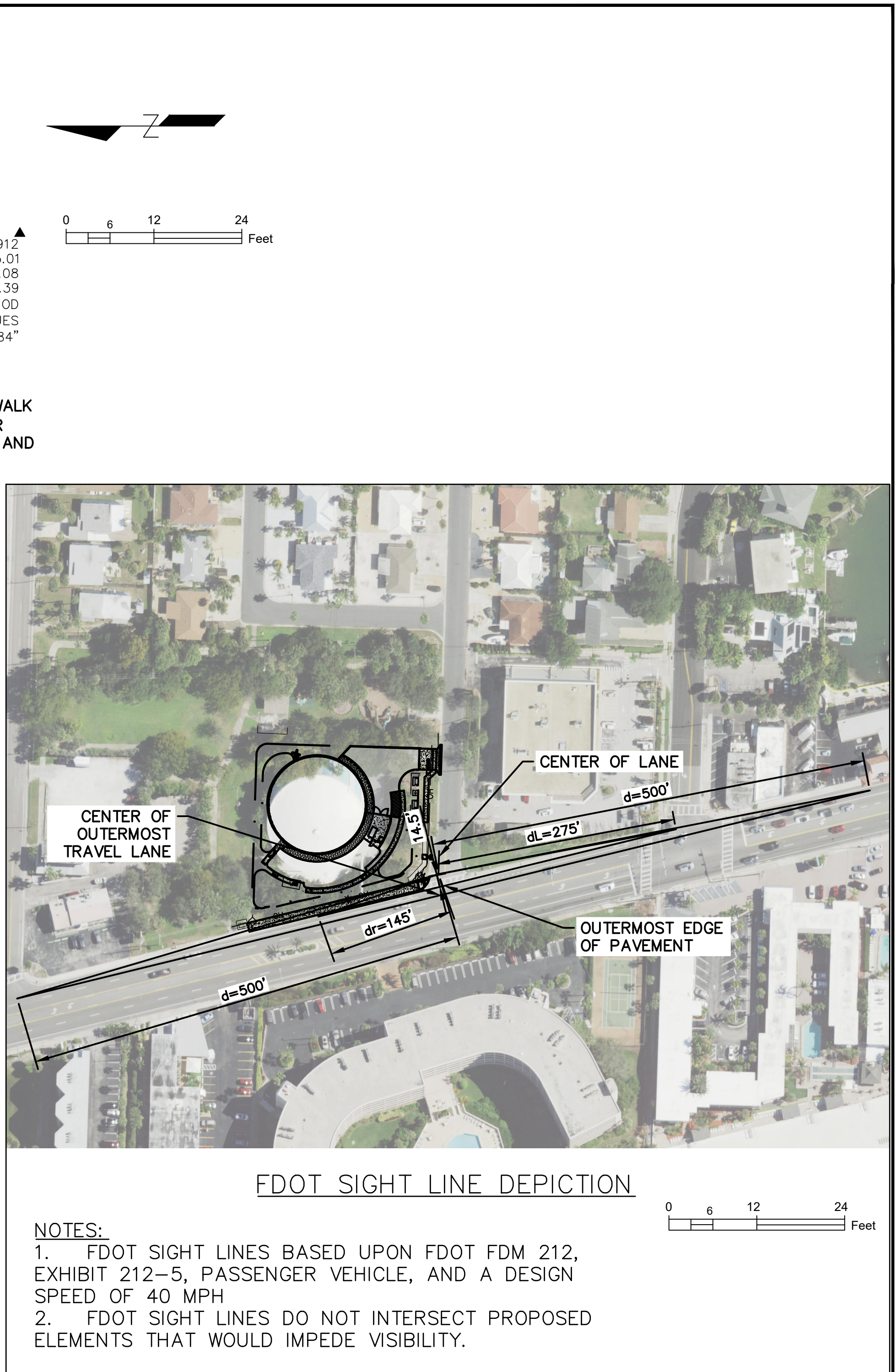
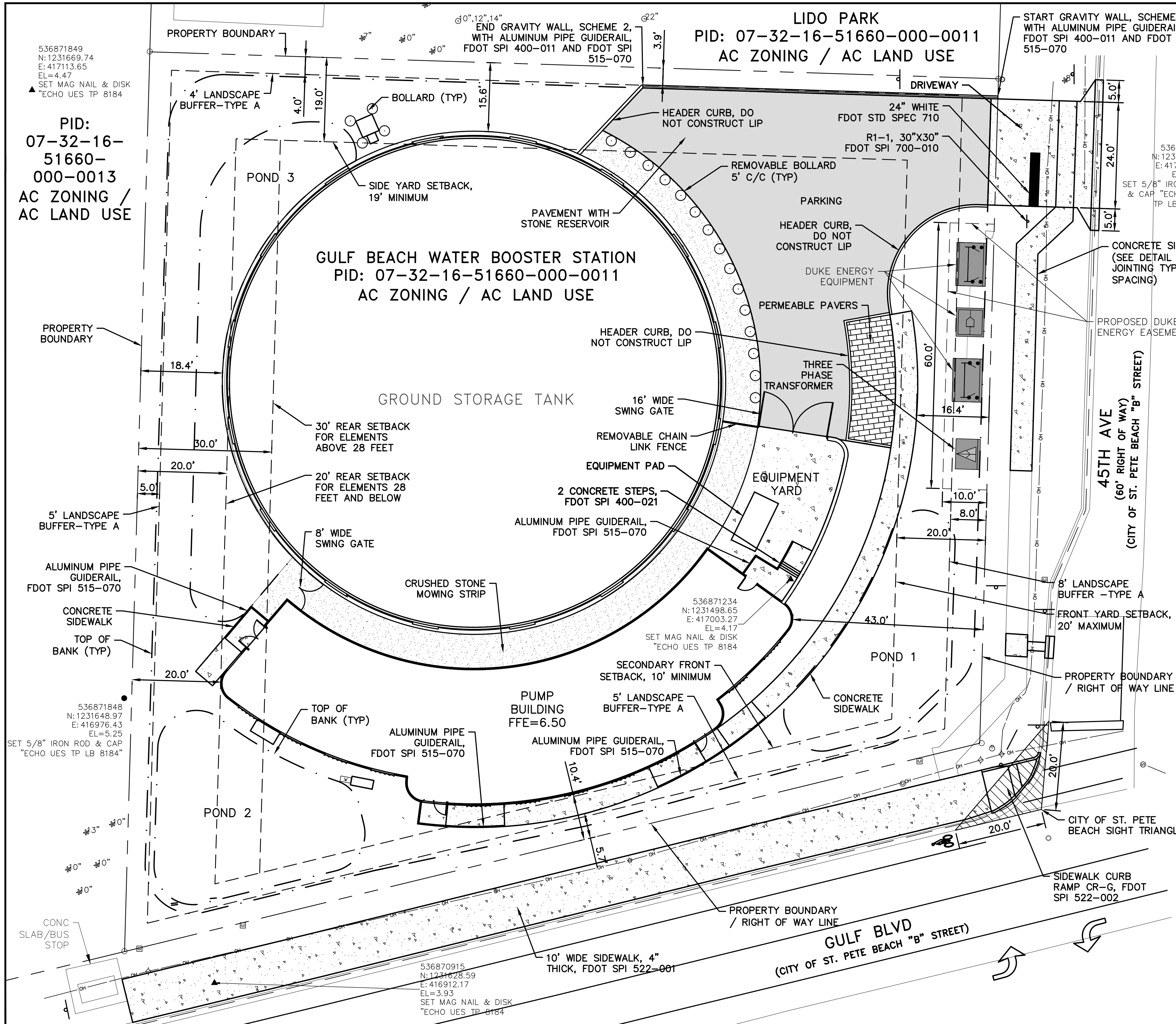
WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:	DATE

DATE:	04-2024
PROJECT NO.	002150A
SHEET:	C-4

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NOTES:
1. FDOT SIGHT LINES BASED UPON FDOT FDM 212, EXHIBIT 212-5, PASSENGER VEHICLE, AND A DESIGN SPEED OF 40 MPH
2. FDOT SIGHT LINES DO NOT INTERSECT PROPOSED ELEMENTS THAT WOULD IMPEDE VISIBILITY.

PARCEL ID: 07-32-16-51660-000-0011
EXISTING USE: UTILITIES
PROPOSED USE: UTILITIES

PARCEL AREA: 0.78 ACRES
IMPERVIOUS SURFACE RATIO: 0.65
ALLOWABLE MAX IMPERVIOUS SURFACE RATIO : 0.85
FLOOR AREA RATIO: 0.22
ALLOWABLE MAX FLOOR AREA RATIO: 0.75

				DESIGNED	M. HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: PROPOSED SITE PLAN	 800.422.1095 www.wright-pierce.com 3820 NORTHDALÉ BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: _____ DATE	DATE:	04-2024
				DRAWN	D. METZ						PROJECT NO.	002150A
REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED	W. NICKEL						SHEET:	C-5

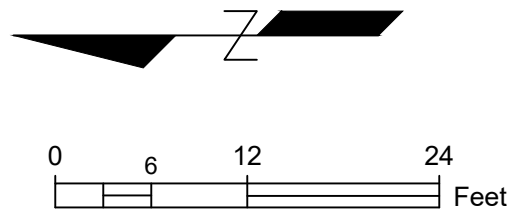
J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CV\002150A-CRAD.dwg, Apr 30, 2024 - 11:01am

536871849
N: 1231669.74
E: 417113.65
EL=4.47
SET MAG NAIL & DISK
"ECHO UES TP 8184"

PID:
07-32-16-
51660-
000-0013
AC ZONING /
AC LAND USE

LIDO PARK
PID: 07-32-16-51660-000-0011
AC ZONING / AC LAND USE

536870912
N: 1231405.01
E: 417102.08
EL=3.39
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"



S-7
TYPE C DBI
INV. W 1.40' 18"
INV. S 1.40' 18"
RIM EL= 6.03
14 L.F. 18" SD
TOP OF
BANK (TYP)

83 L.F. 18" SD

S-6
TYPE C DBI
INV. NW 1.40' 18"
RIM EL= 4.00
14 L.F. 18" SD

50 L.F. 18" SD

536871848
N: 1231648.97
E: 416976.43
EL=5.25
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"

CONC
SLAB/BUS
STOP

536870915
N: 1231628.59
E: 416912.17
EL=3.93
SET MAG NAIL & DISK
"ECHO UES TP 8184"

GULF BEACH WATER
BOOSTER STATION
PID:
07-32-16-51660-000-0011
AC ZONING / AC LAND USE

GROUND STORAGE TANK

(2) CONCRETE STEPS WITH ALUMINUM RAILING,
FDOT SPI 400-021 AND FDOT SPI 515-070

536871234
N: 1231498.65
E: 417003.27
EL=4.17
SET MAG NAIL & DISK
"ECHO UES TP 8184"

EXISTING GRADE
CONTOURS (TYP)

SAWCUT ABANDONED
MONITORING WELL TO
FINISHED GRADE

PUMP BUILDING
FFE=6.50

PROPOSED GRADE
CONTOURS (TYP)

S-4
3.5' DIA. P-7 MH WITH 1-PIECE COVER
INV. SE 1.40' 18"
INV. N 1.40' 18"
RIM EL= 6.04
87 L.F. 18" SD

S-5
TYPE C DBI
INV. S 1.40' 18"
INV. E 1.40' 18"
RIM EL= 4.00

45TH AVE
(60' RIGHT OF WAY)

S-2
3.5' DIA. P-7 MH WITH 1-PIECE COVER
INV. NW 4.25' 4"
INV. E 4.25' 4"
INV. SE 4.25' 4"
INV. NE 4.25' 4"
INV. W 1.40' 18"
RIM EL= 5.68

TOP OF
BANK (TYP)

4" YARD DRAIN
INV. S 4.10 4" SD
RIM =5.4

13 L.F. OF 4" SD

15 L.F. DOUBLE 4" SD

536870914
N: 1231401.47
E: 416973.88
EL=3.92
SET MAG NAIL & DISK
"ECHO UES TP 8184"

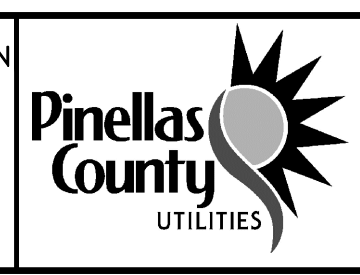
S-1
TYPE C DBI, MODIFIED
INV. S 4.00' 4"
INV. N 4.50' 3"
RIM EL= 5.70

S-3
TYPE C DBI
INV. NW 1.40' 18"
INV. E 1.40' 18"
RIM EL= 4.00

GULF BLVD

REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED M. HOFFMAN
DRAWN D. METZ
CHECKED W. NICKEL



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:
GRADING AND DRAINAGE PLAN

WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY: _____
DATE _____

DATE: 04-2024
PROJECT NO. 002150A
SHEET: C-6

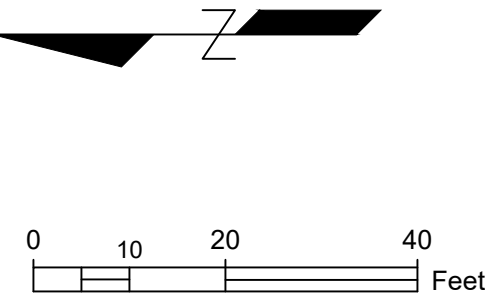
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PID:
07-32-16-
51660-
000-0013
AC ZONING /
AC LAND USE

536871849
N:1231669.74
E:417113.65
EL=4.47
SET MAG NAIL & DISK
"ECHO UES TP 8184"

LIDO PARK
PID: 07-32-16-51660-000-0011
AC ZONING / AC LAND USE



536870912
N:1231405.01
E:417102.06
EL=3.39
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"

TH 1-5
TOP EL: 2.05

GULF BEACH WATER BOOSTER STATION
PID: 07-32-16-51660-000-0011
AC ZONING / AC LAND USE

GROUND STORAGE TANK

S-2
RELOCATE
WATER MAIN

EQUIPMENT
YARD

45TH AVE
(60' RIGHT OF WAY)

TH 1-4
TOP EL: 1.60

TH 1-3
TOP EL: 1.91

536870914
N:1231401.47
E:416973.88
EL=3.92
SET MAG NAIL & DISK
"ECHO UES TP 8184"

SANITARY MANHOLE
RIM ELEV=3.96'
N (24" RCP) INV ELEV=-4.23'
E (8" VCP) INV ELEV=-3.48'
SW (24" RCP) INV ELEV=-4.27'

GULF BLVD

536871234
N:1231498.65
E:417003.27
EL=4.17
SET MAG NAIL & DISK
"ECHO UES TP 8184"

TH 1-7
TOP EL: 0.18

TH 1-6
TOP EL: 2.62

PUMP
BUILDING
FFE=6.50

4" WYE
INV=AS REQUIRED
4" S LATERAL
(1% MIN SLOPE)
S-4
4" WYE
INV=0.40

4" WYE
INV=0.24
SEWER LATERAL
CLEANOUT (TYP)

4" S LATERAL
(1% MIN SLOPE)

TH 1-9
TOP EL: 0.00

EXISTING 6" CI
SANITARY LATERAL

536870915
N:1231628.59
E:416912.17
EL=3.93
SET MAG NAIL & DISK
"ECHO UES TP 8184"

REDUCED PRESSURE
PREVENTER

16" FW
INV=0.14
EXISTING
16" CI WM

16" FW
INV=-1.49

SERVICE TAP

1-1/2" PWS-1
METER AND BOX

4" GATE VALVE
DOUBLE CHECK
BACKFLOW PREVENTER

16" FW
INV=-1.13

12" FW
INV=-0.78

16" FW
INV=-3.58
16"X4" TEE

536871848
N:1231648.97
E:416976.43
EL=5.25
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"

S-5
16" FW
INV=-0.96

16" BFV

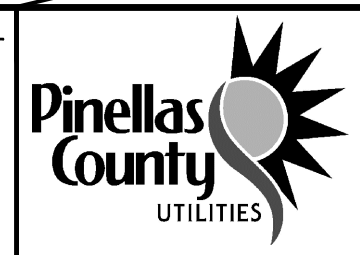
16" SLEEVE

16" FW
INV=-0.76
TH 1-1
TOP EL: 0.66

CONC SLAB/BUS
STOP

REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED	C.BAGGETT
DRAWN	D.METZ
CHECKED	W.NICKEL



PROJECT:	PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS
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DESCRIPTION:	SITE PIPING PLAN
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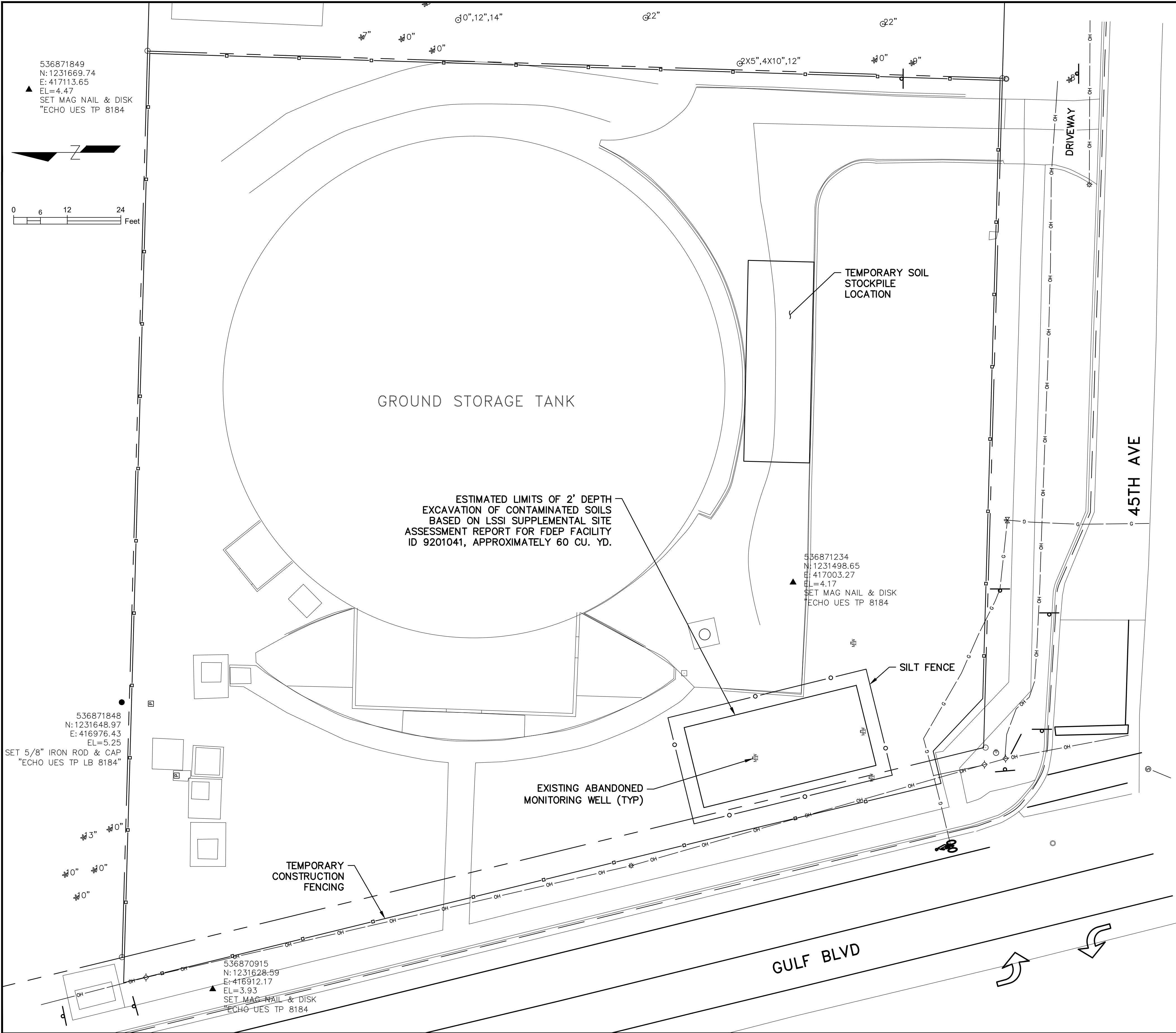
WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDAL BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:	DATE

DATE:	04-2024
PROJECT NO.	002150A
SHEET:	C-7

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INTERIM SOURCE REMOVAL NOTES:

- CONTRACTOR SHALL PROVIDE TO FDEP A WRITTEN NOTIFICATION IN ACCORDANCE WITH THE TIME FRAMES IN TABLE A, THAT INCLUDES A DESCRIPTION OF THE TYPE OF CONTAMINATION, ESTIMATED VOLUME OF SOIL OR SEDIMENT TO BE REMOVED, AND PROPOSED DISPOSAL METHODS TO BE UTILIZED.
- CONTAMINATION SHALL NOT BE SPREAD INTO PREVIOUSLY UNCONTAMINATED AREAS OR LESS CONTAMINATED AREAS THROUGH UNTREATED DISCHARGES, IMPROPER TREATMENT, IMPROPER DISPOSAL, OR IMPROPER STORAGE.
- FLAMMABLE PRODUCTS SHALL BE HANDLED IN A SAFE MANNER.
- WHEN A SOIL VACUUM EXTRACTION SYSTEM IS NECESSARY TO ABATE AN IMMINENT THREAT TO HUMAN LIFE, HEALTH, OR SAFETY WITHIN A STRUCTURE OR UTILITY CONDUIT, THEN THE VACUUM EXTRACTION SYSTEM SHALL BE DESIGNED AND OPERATED BY THE CONTRACTOR ONLY TO ABATE THE IMMINENT THREAT. THE DEPARTMENT SHALL BE NOTIFIED BY THE CONTRACTOR, WITHIN 24 HOURS, OF THE IMMINENT THREAT AND THE INTENT TO USE A SOIL VACUUM EXTRACTION SYSTEM. THE AIR EMISSIONS MONITORING AND FREQUENCY OF MONITORING SHALL BE PERFORMED BY THE CONTRACTOR PURSUANT TO PARAGRAPHS 62-780.700(4)(A) AND (11)(I), F.A.C
- CONFIRMATORY SOIL OR SEDIMENT SAMPLES SHALL BE COLLECTED BY THE CONTRACTOR AT THE BOTTOM OF THE EXCAVATION AND WALLS OR PERIMETER OF THE EXCAVATION. THESE SAMPLES SHALL BE TESTED WITH FDEP APPROVED METHODOLOGY TO DETERMINE THE CLEAN POINTS OF THE EXCAVATION.
- CONTRACTOR SHALL PERFORM TESTING OF THE CONTAMINATED SOIL TO DETERMINE IF THE SOIL OR SEDIMENT CONTAINS HAZARDOUS WASTE AS LISTED IN 40 C.F.R. PART 261 SUBPART D (7-1-12 EDITION)
- CONTRACTOR SHALL PERFORM TESTING OF THE CONTAMINATED SOIL USING USEPA TEST METHOD 1311, TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) AND SUBSEQUENT ANALYZING OF THE LEACHATE ON A SUFFICIENT NUMBER OF SAMPLES TO DETERMINE WHETHER OR NOT THE CONTAMINATED SOIL OR SEDIMENT EXCEEDS MAXIMUM CONCENTRATIONS FOR THE TOXICITY CHARACTERISTICS OF THE CONSTITUENTS IDENTIFIED IN 40 C.F.R 261.24 (7-1-12 EDITION).

7.1 PURSUANT TO 40 C.F.R. 261.4(B)(10), SUBPART A (7-1-12 EDITION), PETROLEUM CONTAMINATED MEDIA AND DEBRIS, ASSOCIATED WITH AN UNDERGROUND STORAGE TANK SYSTEM, THAT FAIL THE TEST FOR THE TOXICITY CHARACTERISTIC OF 40 C.F.R 261.24, SUBPART C (HAZARDOUS WASTE CODES D018 THROUGH D043 ONLY) ARE SOLID WASTE, NOT HAZARDOUS WASTE. CONTAMINATED SOIL ASSOCIATED WITH AN UNDERGROUND STORAGE TANK SYSTEM, WHICH WILL BE MANAGED AS SOLID WASTE, IS NOT SUBJECT TO THE REQUIREMENT THAT TCLP EXTRACTION AND SUBSEQUENT ANALYSIS OF THE LEACHATE BE PERFORMED.
- WHEN EXCAVATED CONTAMINATED SOIL OR SEDIMENT IS TEMPORARILY STORED OR STOCKPILED ONSITE, THE SOIL OR SEDIMENT SHALL BE PLACED ON AN IMPERMEABLE SURFACE TO PREVENT LEACHATE INFILTRATION AND SECURED IN A MANNER THAT PREVENTS HUMAN EXPOSURE TO CONTAMINATED SOIL OR SEDIMENT AND PREVENTS SOIL OR SEDIMENT EXPOSURE TO PRECIPITATION THAT MAY CAUSE SURFACE RUNOFF. ANY EXCAVATION SHALL BE SECURED TO PREVENT ENTRY BY THE PUBLIC.
- THE TEMPORARY STORAGE OR STOCKPILING OF EXCAVATED CONTAMINATED SOIL OR SEDIMENT SHALL NOT EXCEED 60 DAYS.
- CONTRACTOR SHALL DISPOSE OF CONTAMINATED SOIL AT A FDEP APPROVED AND ACCEPTING LANDFILL IN A LEGAL MANNER.
- PREVIOUS DISCUSSIONS WITH FDEP HAVE INDICATED THAT A GROUNDWATER SAMPLE WILL NOT BE REQUIRED. IF THIS CONDITION CHANGES, A SAMPLE SHALL BE COLLECTED AS FOLLOWS:

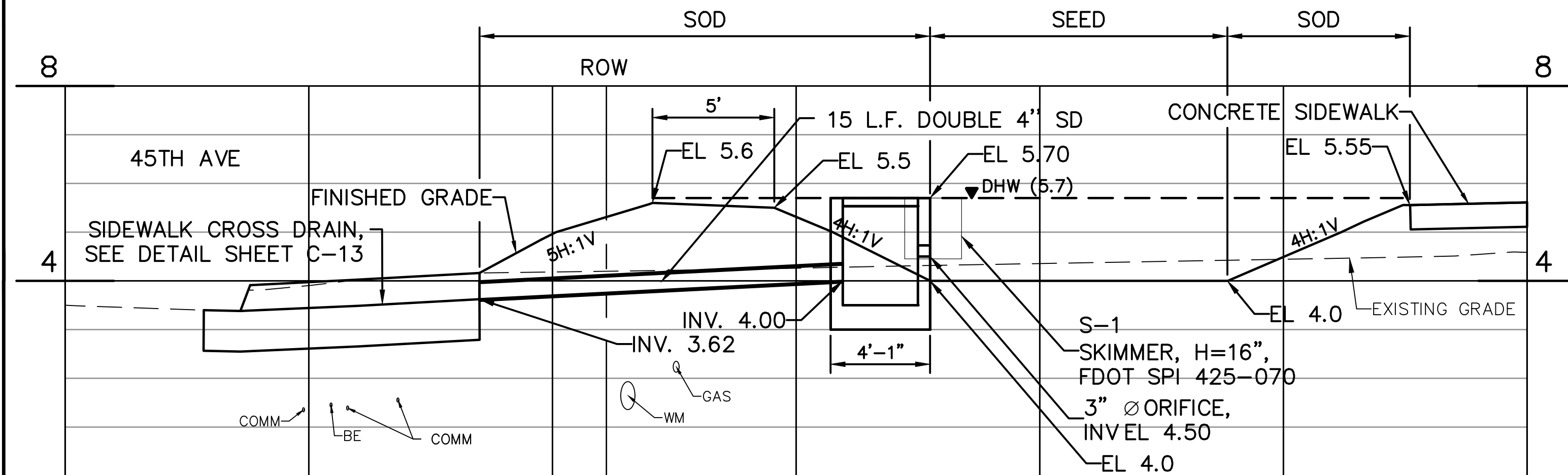
11.1 A GROUNDWATER SAMPLE SHALL BE COLLECTED FROM THE VICINITY OF THE EXCAVATION AREA FOLLOWING COMPLETION OF EXCAVATION ACTIVITIES. GROUNDWATER SAMPLE SHALL BE TESTED IN ACCORDANCE WITH FAC 62-780.680(1).
- WITHIN THE TIME FRAMES SPECIFIED IN TABLE A, THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC OR PAPER COPY OF AN INTERIM SOURCE REMOVAL REPORT TO FDEP AND THE ENGINEER FOR REVIEW.

12.1 IF ANALYTICAL RESULTS OBTAINED AFTER COMPLETION OF THE INTERIM SOURCE REMOVAL, DEMONSTRATE THAT THE NO FURTHER ACTION CRITERIA OF SUBSECTION 62-780.680(1), F.A.C., ARE MET, A SITE ASSESSMENT REPORT PURSUANT TO SUBSECTION 62-780.600(7), F.A.C., MAY BE SUBMITTED IN LIEU OF AN INTERIM SOURCE REMOVAL REPORT.
- CONTRACTOR SHALL OBTAIN A NO FURTHER ACTION WITHOUT INSTITUTIONAL CONTROLS DECISION FROM FDEP UPON COMPLETION OF THE SOURCE REMOVAL.
- ABANDONED MONITORING WELLS TO BE CUT TO FINISH GRADE. SEE DRAINAGE AND GRADING PLAN. MONITORING WELLS WERE ABANDONED ON 10/31/2023 BY GROUTING THE WELLS FROM THE BOTTOM OF THE WELL SCREEN, 12 FEET BELOW LAND SURFACE, TO LAND SURFACE.
- ESTIMATED EXCAVATION LIMITS AND DEPTH PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE LIMITS OF SOIL CONTAMINATION ON-SITE, VERTICALLY AND HORIZONTALLY, BASED ON PREVIOUS COLLECTED DATA AND, IF REQUIRED, ADDITIONAL TESTING.

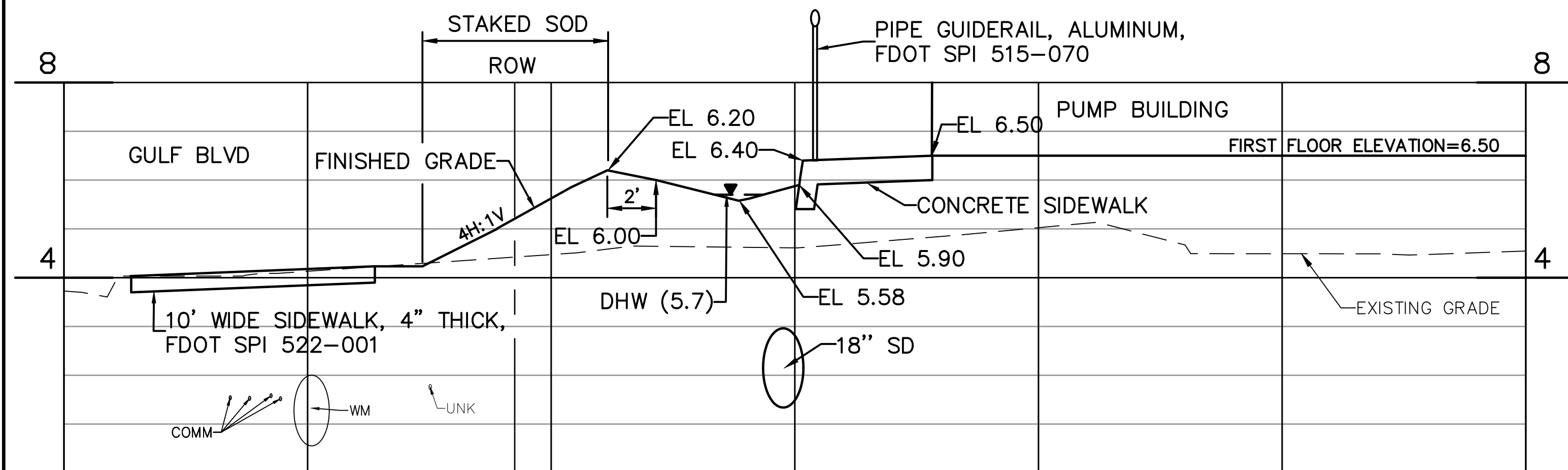
FDEP PROJECT MANAGER: MELISSA BROCK, 850-245-8903, Melissa.Brock@FloridaDEP.gov

TABLE A	
SUBMITTALS AND TIME FRAMES	
TYPE OF REPORT OR ACTIVITY	ACTION OR SUBMITTAL TIME FRAMES
NOTICE OF INTERIM SOURCE REMOVAL ACTION	WITHIN 24 HOURS OF INITIATION OF THE ACTION
INTERIM SOURCE REMOVAL STATUS REPORT	WITHIN 60 DAYS OF INITIATING INTERIM SOURCE REMOVAL ACTIVITIES AND EVERY 60 DAYS THEREAFTER
INTERIM SOURCE REMOVAL REPORT	WITHIN 60 DAYS OF COMPLETION OF INTERIM SOURCE REMOVAL ACTIVITIES
NO FURTHER ACTION PROPOSAL	WHEN SITE MEETS THE CRITERIA FOR NO FURTHER ACTION PER 62-780.80, FAC

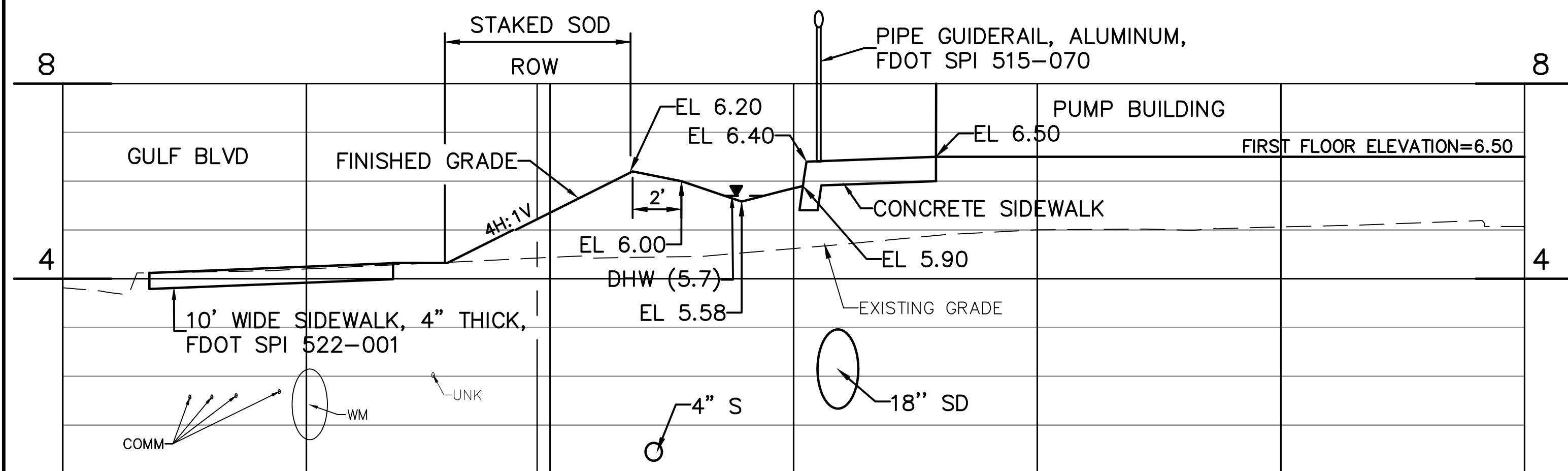
DESIGNED	M.HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: INTERIM SOURCE REMOVAL PLAN	 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY:	DATE:
DRAWN	D.METZ						04-2024
CHECKED	W.NICKEL						PROJECT NO. 002150A
REV. NO.	DATE	DESCRIPTION	REV. BY			DATE	SHEET: C-8



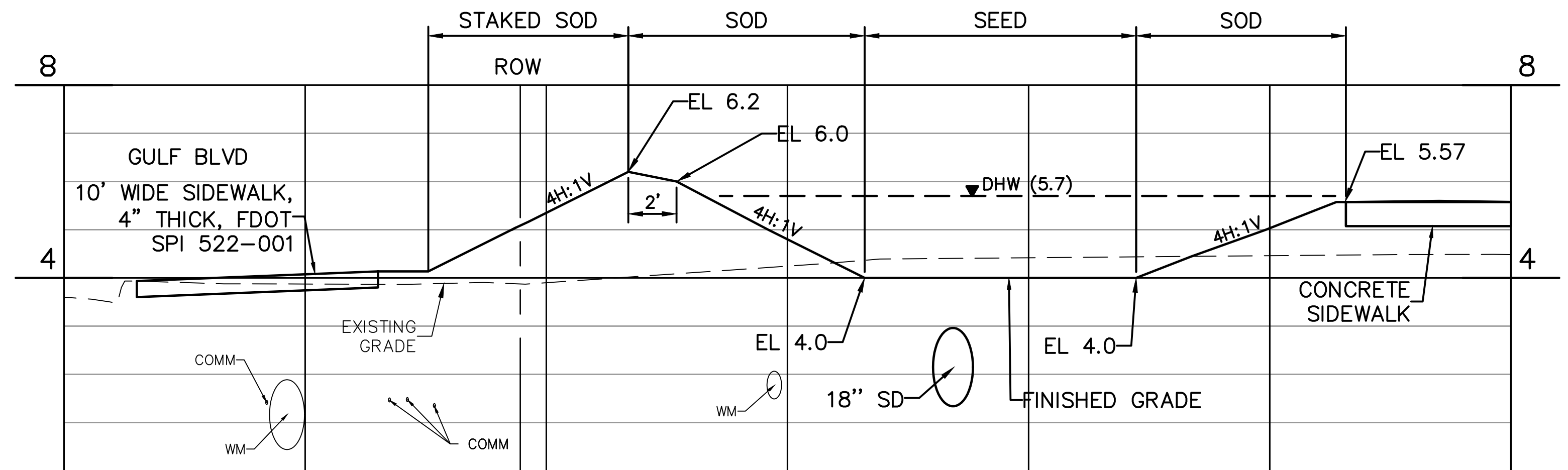
1 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



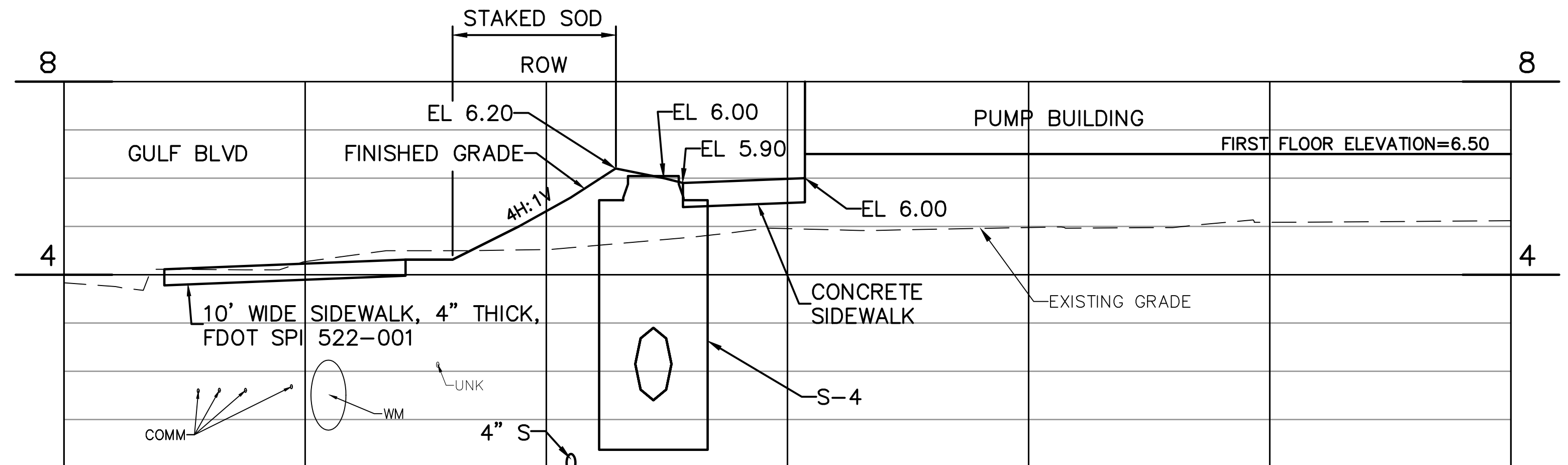
3 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



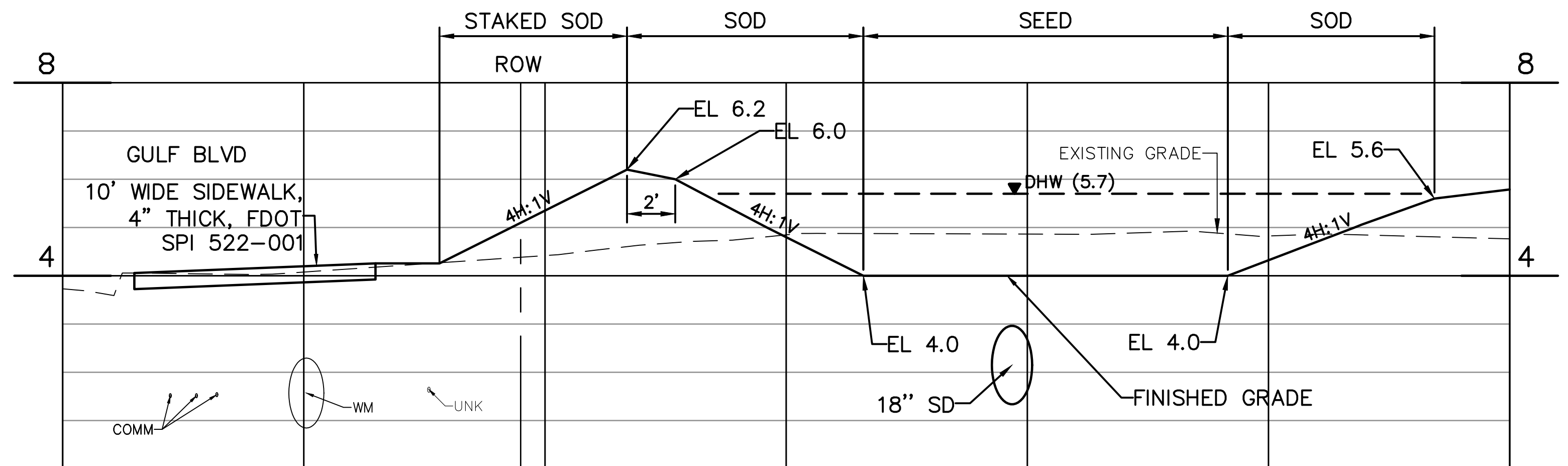
5 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



2 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



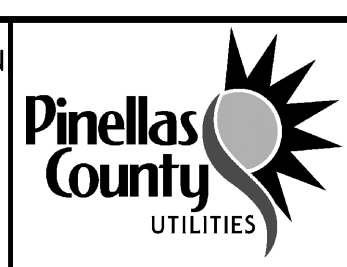
4 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



6 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'

REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED M.HOFFMAN
DRAWN D.METZ
CHECKED W.NICKEL



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:

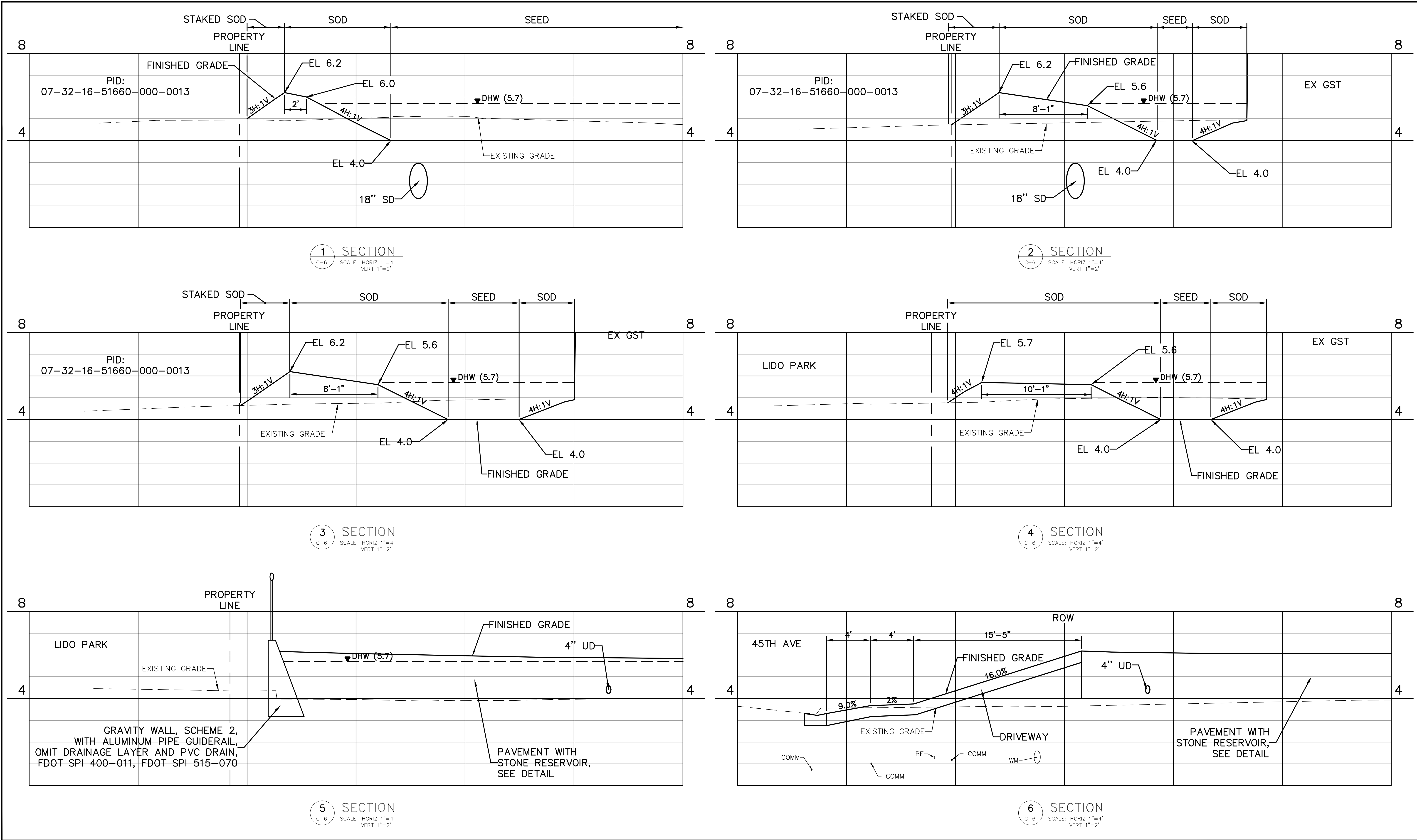
CROSS SECTIONS I



APPROVED BY: _____ DATE _____

DATE:	04-2024
PROJECT NO.	002150A
SHEET:	C-9

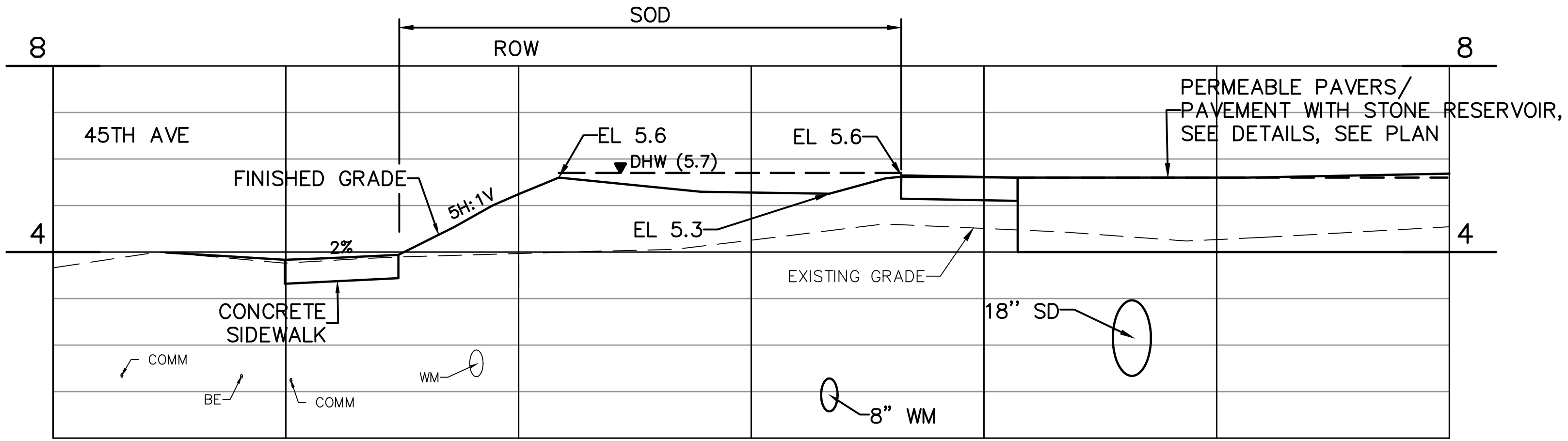
J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CTV\002150A-XS02.dwg, Apr 30, 2024 - 11:03am



			DESIGNED M. HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: CROSS SECTIONS II	 800.422.1095 www.wright-pierce.com 3820 NORTHDALIE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: DATE	DATE: 04-2024
			DRAWN D. METZ						PROJECT NO. 002150A
REV. NO. DATE DESCRIPTION			CHECKED W. NICKEL						SHEET: C-10

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

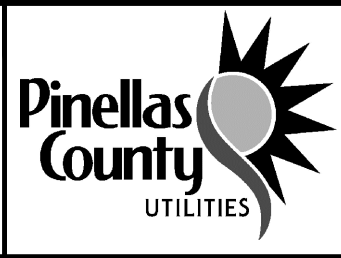
J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CIV\002150A-XS03.dwg, Apr 30, 2024 - 11:04am



1 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'

REV. NO.	DATE	DESCRIPTION

DESIGNED	M.HOFFMAN
DRAWN	D.METZ
CHECKED	W.NICKEL



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:
CROSS SECTIONS III

WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALÉ BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:

DATE

DATE: 04-2024
PROJECT NO. 002150A
SHEET: C-11

1. $\frac{1}{2}$ " EXPANSION JOINT EVERY 500', BETWEEN CURB SECTIONS, AT RADII. END OF POUR AND STRUCTURES. (CONTRACTION JOINTS EVERY 10', LONGITUDINALLY. SEE SECTION 520 OF THE F.D.O.T. STANDARD SPECIFICATIONS.)
2. IF CURB IS BUILT IN CROSSWALK, DO NOT CONSTRUCT THE LIP PER FDOT STANDARD PLANS INDEX 522-002, PAVEMENT RELIEF DETAILS



CURB AND GUTTER TYPE A AND HEADER CURB
NTS

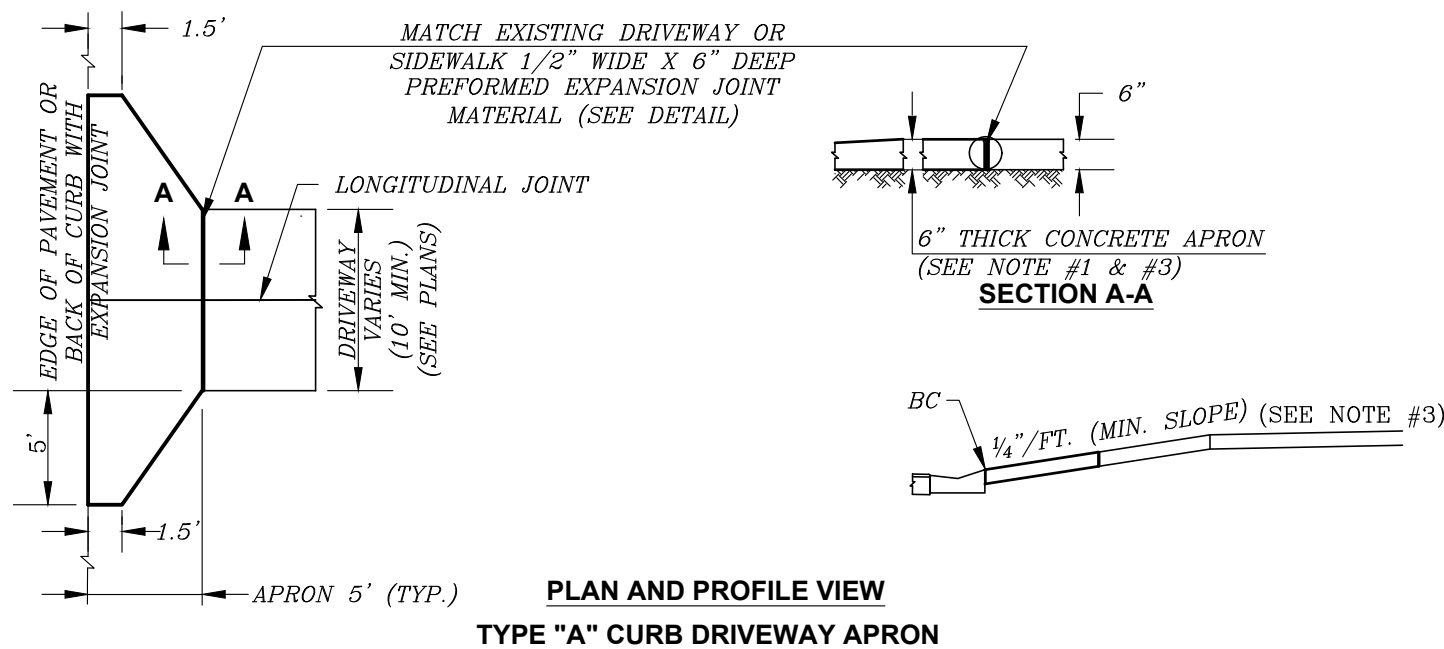
1. SURFACE OF PAVEMENT SHALL BE $\frac{1}{4}$ " ABOVE LIP OF GUTTER.
2. INSTALL $\frac{1}{2}$ " EXPANSION JOINT AS SHOWN AND AT CENTERLINE OF SIDE STREET, WITH (SAWCUT) CONTRACTION JOINTS EVERY 10', LONGITUDINALLY. (SEE SECTION 520 OF THE F.D.O.T. STANDARD SPECIFICATIONS).



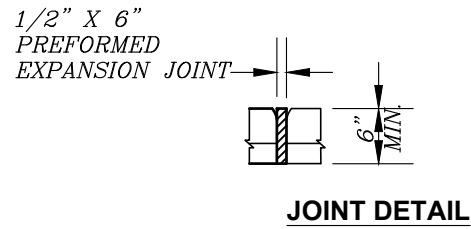
VALLEY GUTTER NOTE:
ALL REFERENCES TO VALLEY
GUTTER AND DIMENSIONS FOR
VALLEY GUTTER SHALL BE
REPLACED BY DETAILS FOR FDOT
DROP CURB, SEE FDOT SPI
520-001 FOR MORE DETAIL.

VALLEY GUTTER AND TRANSITION

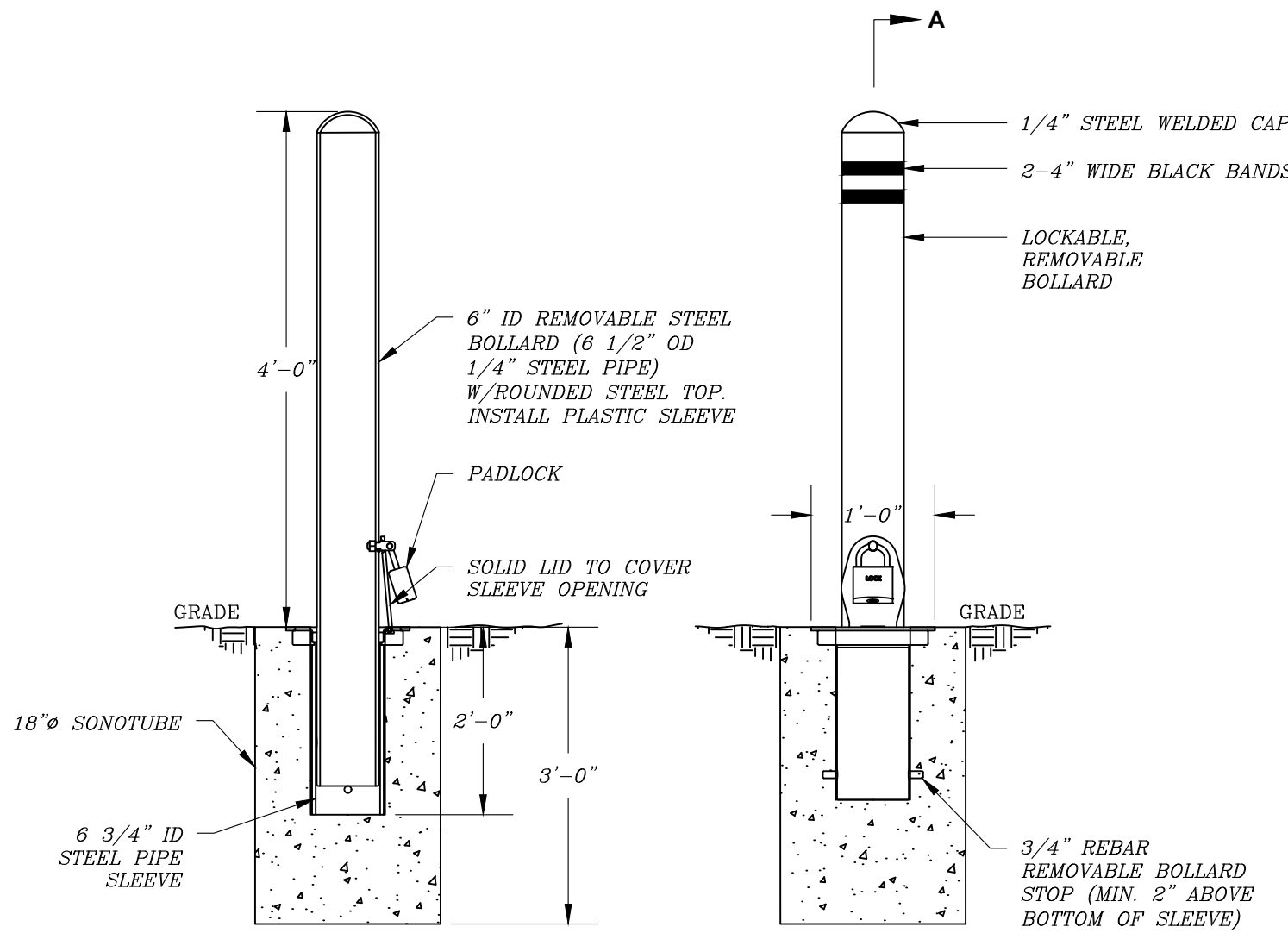
1. CEMENT DRIVEWAY APRONS AND SIDEWALK CROSSINGS SHALL BE CONSTRUCTED OF CONCRETE. DRIVEWAY (3000 PSI), 6" THICK REINFORCED WITH 6" X 6" #10@10" WELDED WIRE FABRIC, (12" MINIMUM CURE) AND SIDEWALK (3000 PSI), 4" THICK REINFORCED WITH 6" X 6" #10@10" WELDED WIRE FABRIC, (12" MINIMUM CURE).
2. FIBER REINFORCED CONCRETE 3000 PSI (MIN.) MAY BE USED IN PLACE OF THE REQUIREMENTS OF NO 1 ABOVE.
3. CONSTRUCTION OF APRON/DRIVEWAY CROSS SLOPES AND SIDEWALK CROSS SLOPE THROUGH THE DRIVEWAY SHALL COMPLY WITH F.D.O.T. INDEX NO. 522-003 FOR ADA REQUIREMENTS.
4. REMOVE TREE ROOTS WITHIN 10' OF PROPOSED GRADE.
5. WHEN THERE IS EXISTING SIDEWALK CROSSING THE PROPOSED DRIVEWAY, IT MUST BE REMOVED TO THE NEAREST JOINT BEYOND THE DRIVEWAY.
6. SIDEWALKS AND DRIVEWAY JOINT LINES SHALL NOT HAVE A CROSS SLOPE GREATER THAN 2% PER F.D.O.T. INDEX 522-001.
7. THERE SHOULD BE AT LEAST ONE LONGITUDINAL CONTROL JOINT AT THE CENTER LINE FOR ALL DRIVEWAYS UP TO 18'-0" WIDE. LONGITUDINAL CONTROL JOINT SHOULD NOT EXCEED 8'-0" ON ALL DRIVEWAYS WIDER THAN 18'-0" MATCH JOINTS IN CURB AND GUTTER TO JOINTS IN DRIVEWAYS.



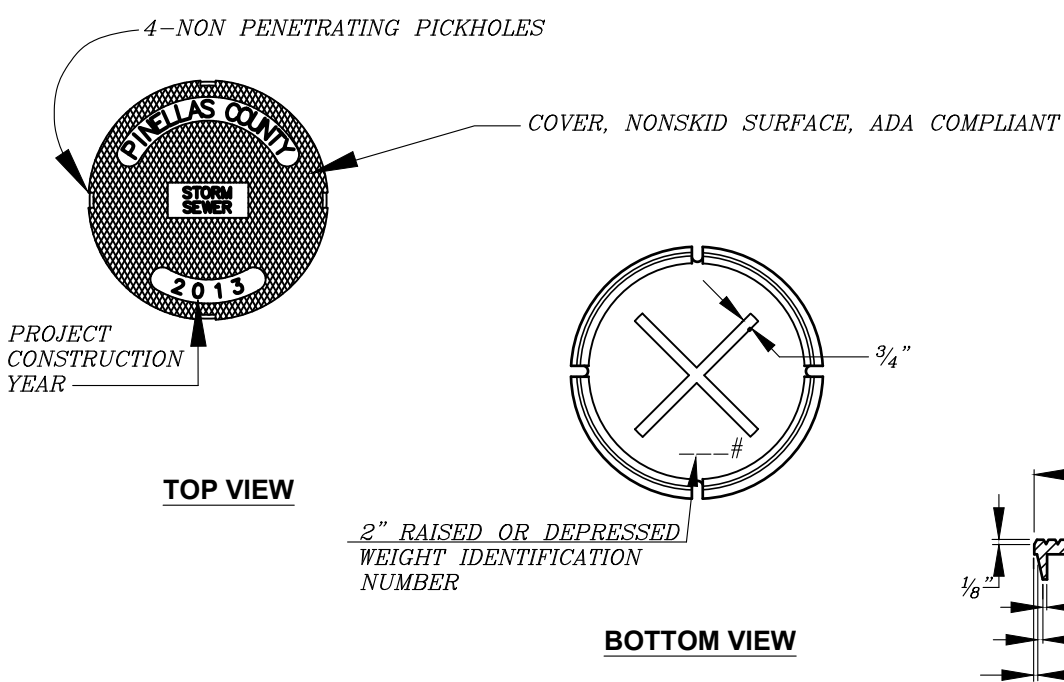
CONCRETE DRIVEWAY APRON
NTS



REMOVABLE LOCKING BOLLARD
NTS

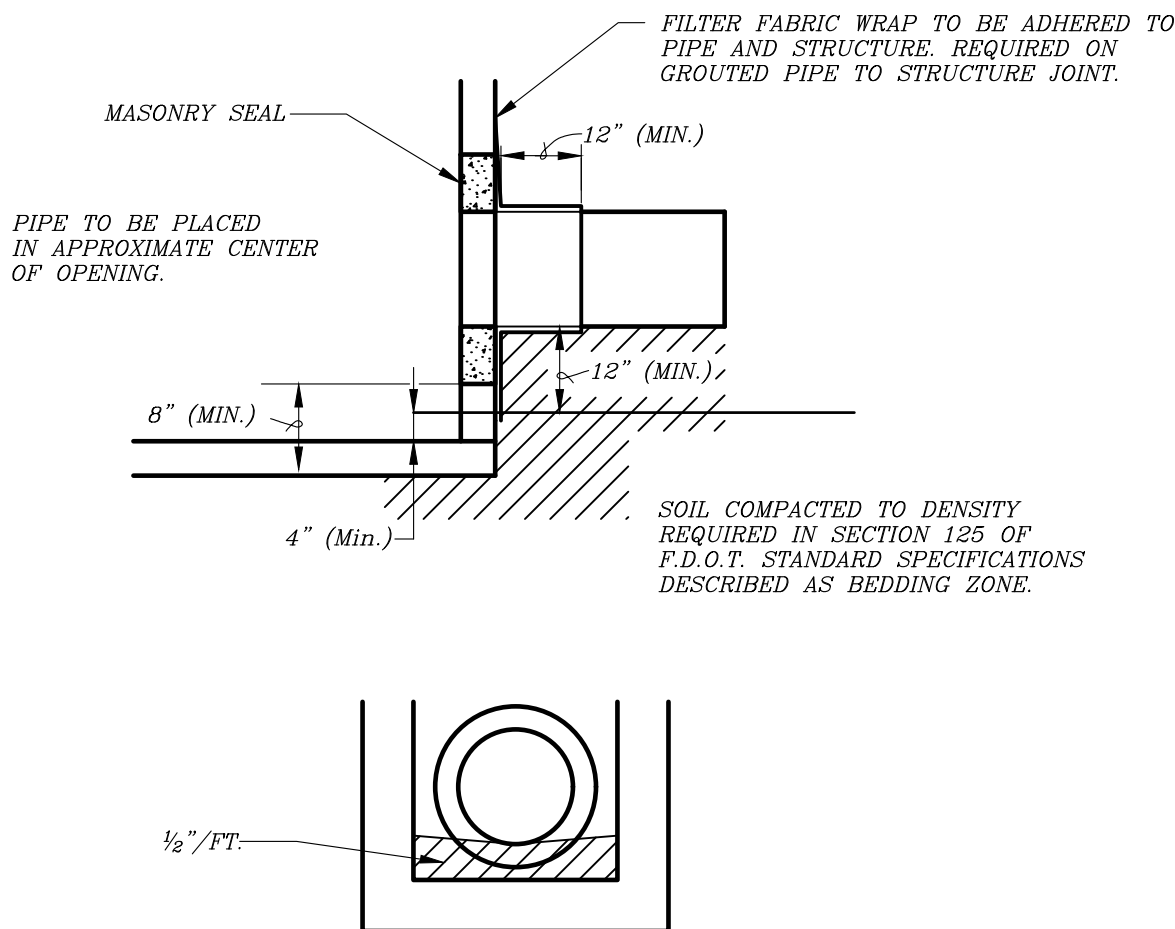


1. THIS COVER IS NOT TO BE USED FOR SANITARY SEWER MANHOLES.
2. THIS COVER MAY BE USED WITH FRAME TYPE I, II OR III AS DETAILED IN F.D.O.T. INDEX No. 425-001. TYPE I SHALL BE USED UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. MATERIALS AND FABRICATION SHALL CONFORM TO SECTION 425 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. COVERS FOR UNDERDRAIN INSPECTION BOXES SHALL BE LABELED UNDERDRAIN AND NOT STORM SEWER.



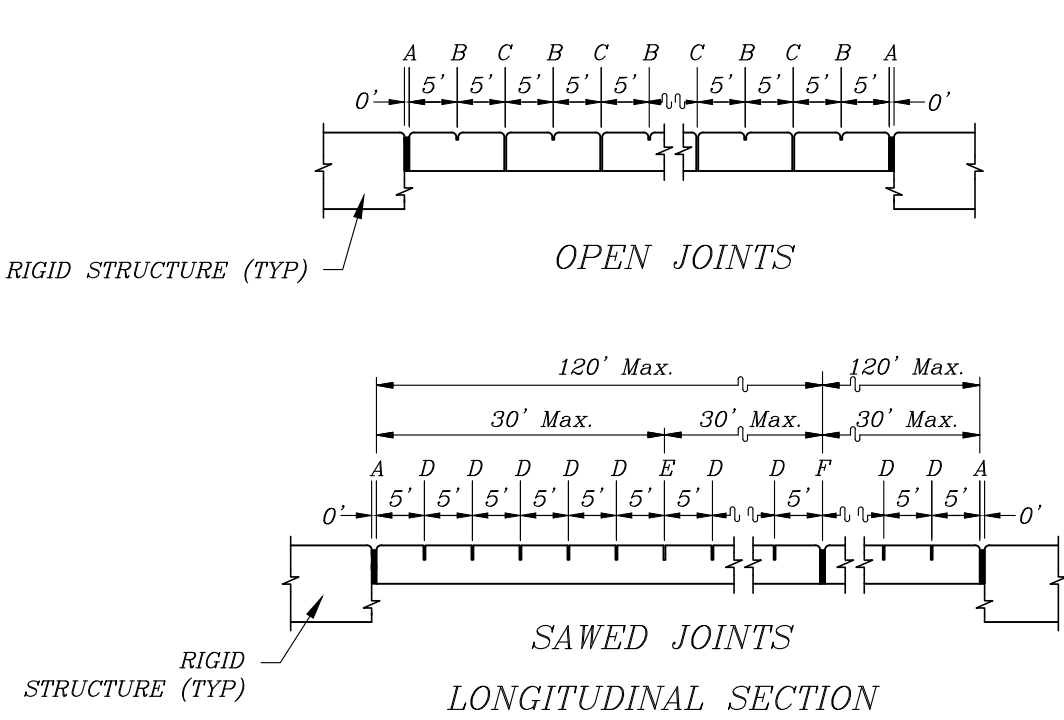
STORM SEWER COVER
NTS

1. GROUT TO CONSIST OF 3:1 SAND-CEMENT MIXTURE OR ANY CLASS CONCRETE.
2. FOR ALL STRUCTURES, UNLESS EXCLUDED BY SPECIAL DETAIL, BRICKS SHALL NOT BE USED IN THIS AREA, UNLESS THEY ARE COVERED WITH 4" THICK (MIN.) CONCRETE ABOVE THE BRICKS.



FILTER FABRIC WRAP AND GROUT AT STRUCTURES

1. SEE SITE LAYOUT AND GRADING PLAN FOR WIDTH.
2. CONSTRUCT SIDEWALKS IN ACCORDANCE WITH SPECIFICATION 02510.
3. BOND BREAKER MATERIAL CAN BE ANY IMPERMEABLE COATED OR SHEET MEMBRANE OR PREFORMED MATERIAL HAVING A THICKNESS OF NOT LESS THAN 6 MILS AND NOT MORE THAN 1/2".
4. CONCRETE SIDEWALK TO HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI.
5. USE 1/2" EXPANSION JOINT (PREFORMED JOINT FILLER) BETWEEN SIDEWALK AND ALL OTHER FIXED OBJECTS.



A- 1/2" EXPANSION JOINTS (PREFORMED JOINT FILLER) BETWEEN THE SIDEWALK AND; DRIVEWAYS, SIDEWALK-INTERSECTIONS, AND ALL OTHER FIXED OBJECTS (E.G. DRAINAGE INLETS AND UTILITY POLES).

B- $\frac{1}{8}$ " CONTRACTION JOINTS, TOOLED

C- 1/8" FORMED OPEN JOINTS

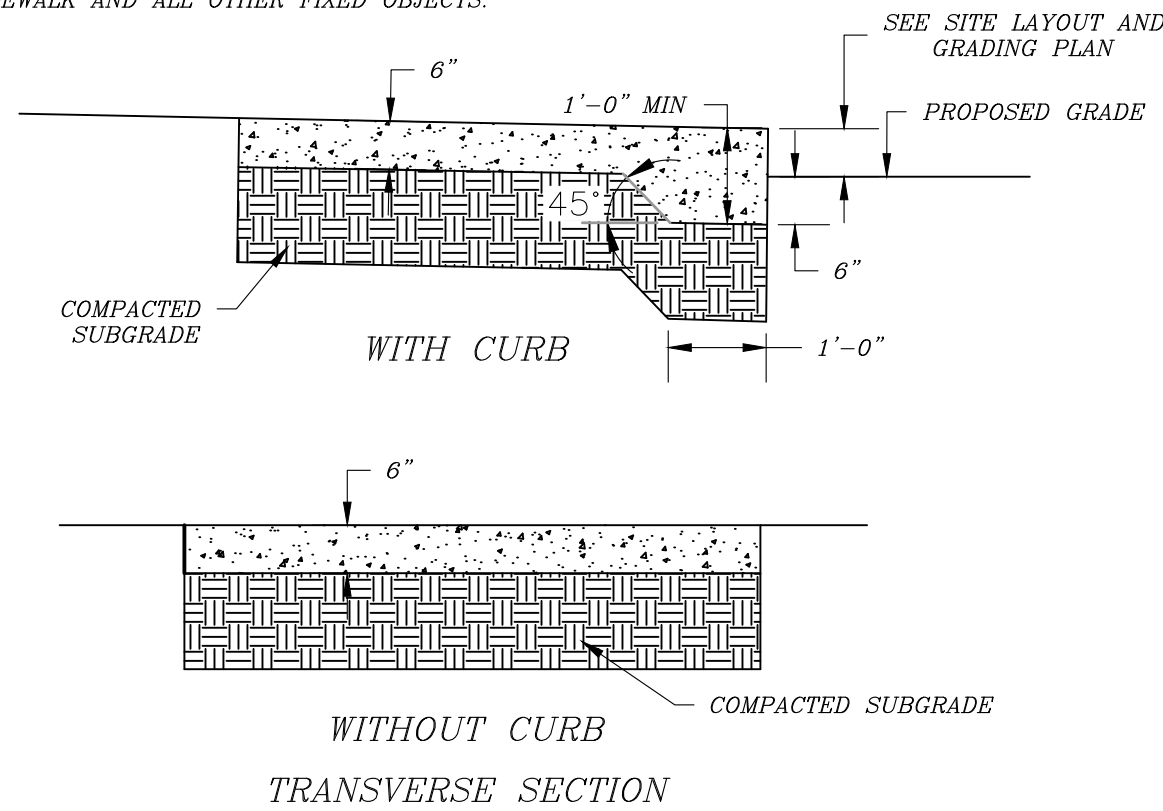
D- $\frac{3}{16}$ " SAW CUT JOINTS, $1\frac{1}{2}$ " DEEP (WITHIN 96 HOURS) MAX. 5' CENTERS

E- $\frac{3}{16}$ " SAW CUT JOINTS, $1\frac{1}{2}$ " DEEP (WITHIN 12 HOURS) MAX. 30' CENTERS JOINT(S) REQUIRED WHEN LENGTH EXCEEDS 30

F- 1/2" EXPANSION JOINT WHEN RUN OF SIDEWALK EXCEEDS 120'. INTERMEDIATE LOCATIONS WHEN CALLED FOR IN THE PLANS OR AT LOCATIONS AS DIRECTED BY THE ENGINEER.

G- COLD JOINT WITH BOND BREAKER, TOOLED

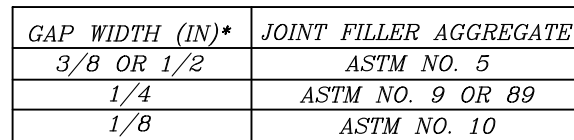
CONCRETE SIDEWALK
NTS

Page 31 of 248

1. PARENT SOIL TO HAVE A MAXIMUM COMPACTION OF 95% AND A MINIMUM COMPACTION OF 92% MODIFIED PROCTOR DENSITY (ASTM D-1557) TO A TOTAL DEPTH OF 24 INCHES.
2. PARENT SOIL UNDERLYING AREAS WITH PREVIOUSLY EXISTING PAVEMENT SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 24 INCHES AND RE-GRADE TO PREVIOUSLY MENTIONED COMPACTION.
3. MATERIAL FINER THAN NO. 100 SIEVE SHALL NOT EXCEED 2 PERCENT FOR ANY AGGREGATE LAYER.



1. PARENT SOIL TO HAVE A MAXIMUM COMPACTION OF 95% AND A MINIMUM COMPACTION OF 92% MODIFIED PROCTOR DENSITY (ASTM D-1557) TO A TOTAL DEPTH OF 24 INCHES.
2. PARENT SOIL UNDERLYING AREAS WITH PREVIOUSLY EXISTING PAVEMENT SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 24 INCHES AND RE-GRADE TO PREVIOUSLY MENTIONED COMPACTION.
3. MATERIAL FINER THAN NO. 100 SIEVE SHALL NOT EXCEED 2 PERCENT FOR ANY AGGREGATE LAYER.



STRUCTURE OR BUILDING FACE

2'-0" MIN

OR AS SHOWN ON PLANS

4" CRUSHED STONE STRIP

LOAM

FINISH GRADE

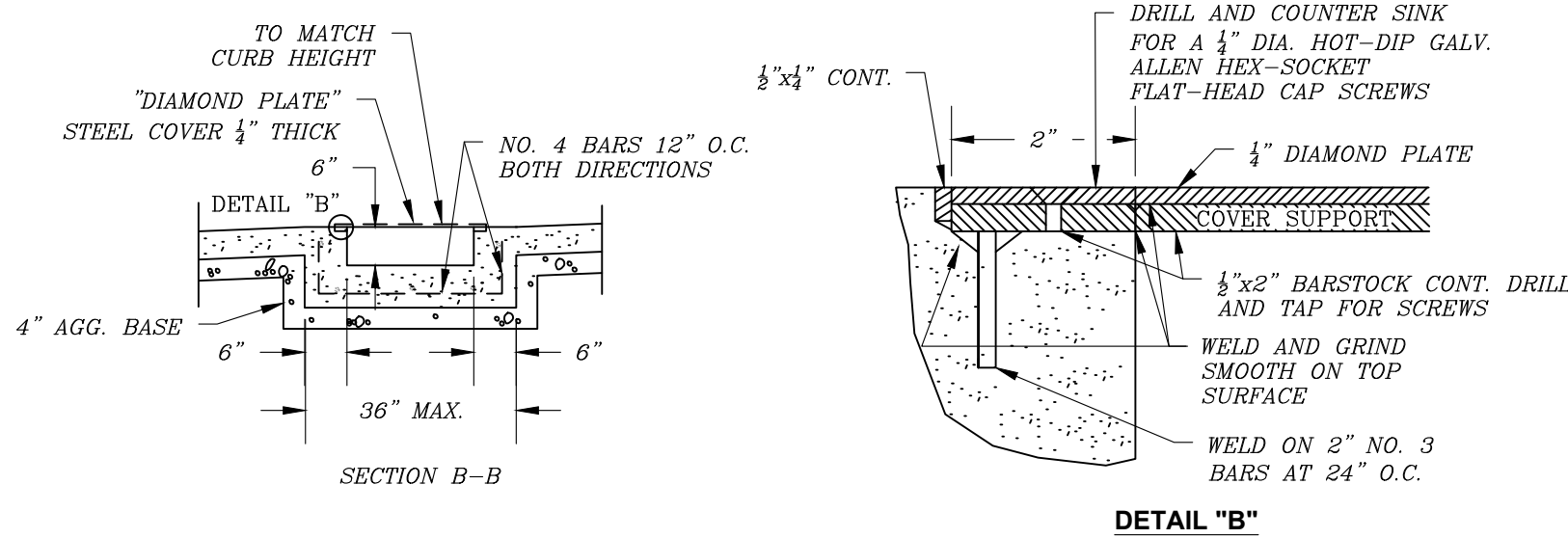
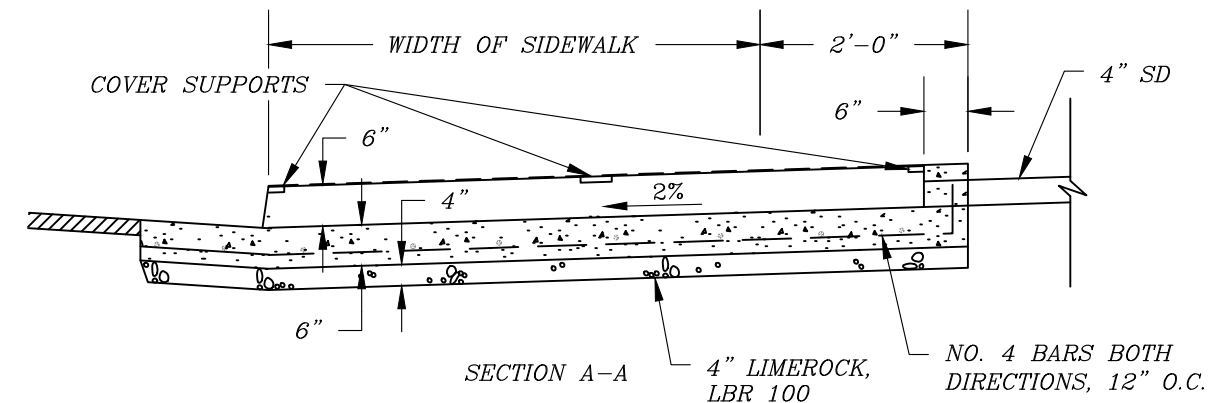
1/4"x4" STEEL OR POLYETHYLENE EDGING WITH 16" LONG STAKES SPACED 2'-6" O.C. SET EDGING FLUSH WITH TOP OF STONE AND LOAM

GEOTEXTILE FOR WEED CONTROL

UNDISTURBED/COMPACTED SUBGRADE

[illegible]

PLAN VIEW



VARIES, SEE PLANS

10'-0" (MAX)

8'-0"

PROVIDE HORIZONTAL BRACE ON PULL, CORNER AND END POSTS

DIAGONAL BRACE AND TURNBUCKLE

5'-0"

PROVIDE S.S. LOCK AND CHAIN

TOP OF GATE KEEPER TO BE FLUSH WITH ROAD SURFACE

TENSION WIRE

1'-6" Ø

12" (TYP)

1. SECURE POSTS IN CONCRETE AS SHOWN AT PULL, CORNER AND END POSTS (INCLUDING GATE POSTS)
2. IF CHAINLINK FENCE IS INSTALLED IN UNFRACTURED ROCK, POST SHALL PENETRATE 2'-0" INTO THE ROCK AND SHALL BE GROUTED INTO 6"Ø HOLE

A technical diagram showing a cross-section of a stone reservoir. A circular filter fabric sock is installed at the bottom. A vertical pipe, labeled as a 3" underdrain, passes through the center of the sock. Arrows point from descriptive text to the sock, the pipe, and the bottom of the reservoir.

*FILTER FABRIC SOCK.
FDOT STD SPEC 948-B*

*SEE PERMABLE
PAVERS/PARKING WITH
STONE RESERVOIR DETAIL*

*3" UNDERDRAIN. SEE PLAN FOR
SIZE, PERFORATED PIPE.
FDOT STD SPEC 440*

CHAINLINK FENCE AND LOCKING DOUBLE GATE
NTS

Page 32 of 248

3/4" HOSE BIBB WITH INTEGRAL VACUUM BREAKER

3/4" BV

3/4" GS 2-HOLE TRAP SST BOLTS

4" PSW-2 TO BE INSTALLED PLUMB

SST HOSE RACK SUPERKLEAN MODEL 11-S OR EQUAL

SECURE HOSE RACK TO ANGLE OR HANDRAIL W/316 SST NUTS, BOLTS, AND WASHERS

3"x4" ALUM CHANNEL SUPPORT

BOLT TOGETHER W/ 1/4"x1" SST BOLTS OR WELD

SLAB OR CONCRETE PAD

PS-2 3/4" 90 DEGREE BEND

PS-2 ADAPTER W/ REDUCER AS REQUIRED

SUPPLY LINE SEE PLANS FOR SIZE AND MATERIAL

Diagram illustrating the connection between a service line and a water meter assembly. The components shown include:

- VALVE FNPT**: A valve with female national pipe thread (FNPT) connections.
- SW 1 x MNPT SCH 80 PVC ADAPTER**: A short adapter with one end having a standard water (SW) connection and the other end having male national pipe thread (MNPT) for a schedule 80 PVC pipe.
- SCH 80 PVC SERVICE LINE**: The main water service line pipe.
- BRONZE METER FLANGE (METER FLG x FNPT)**: A flange that connects the service line to the water meter, featuring a bronze body and female FNPT connections.
- WATER DISC METER**: The main water meter unit.

The diagram shows the SCH 80 PVC SERVICE LINE connected to the BRONZE METER FLANGE, which is then connected to the WATER DISC METER. The VALVE FNPT is also connected to the BRONZE METER FLANGE. The SW 1 x MNPT SCH 80 PVC ADAPTER is shown as an alternative connection point for the service line.

AN & EL		PROJECT: P GU
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Technical drawing of a 48" CURB & GUTTER section. The drawing includes a side elevation and two circular cross-sections.

Side Elevation: Shows a curb with a height of 2" and a 1" CHAMFER. The curb is supported by a base with two #3 CLOSED TIE @ 5" OC, 2" FROM TOP.

Circular Cross-Sections: Two circular views showing the curb's profile. The left view is labeled "SET FLUSH W/ ASPHALT". The right view shows the curb's height and the 1" CHAMFER.

Labels:

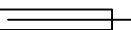
- SET FLUSH W/ ASPHALT
- 1" CHAMFER
- 2"
- FINISHED ASPHALT
- FINISHED GRADE
- (2) - #3 CLOSED TIE @ 5" OC, 2" FROM TOP

4'x6'

INCORPORATION STOP.
AS THE SERVICE LINE
RWISE NOTED.

ATION STOP

SCH 80 PVC PIPE
SERVICE LINE



x MNPT SCH 80
ADAPTER

DESCRIPTION:	CIVIL
---------------------	--------------

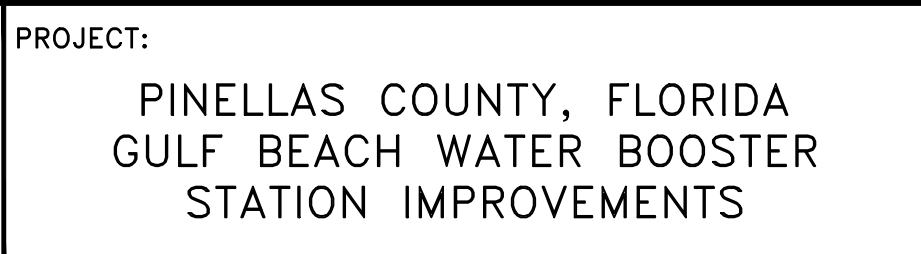
1"

SEE STRUCTURAL DWGS
FOR CONNECTION TO TANK

12" DR-1
 $\xi_{EL} = -0.38$

ERCE  wright-pierce.com TE 202B, TAMPA, FL 33624	APP —
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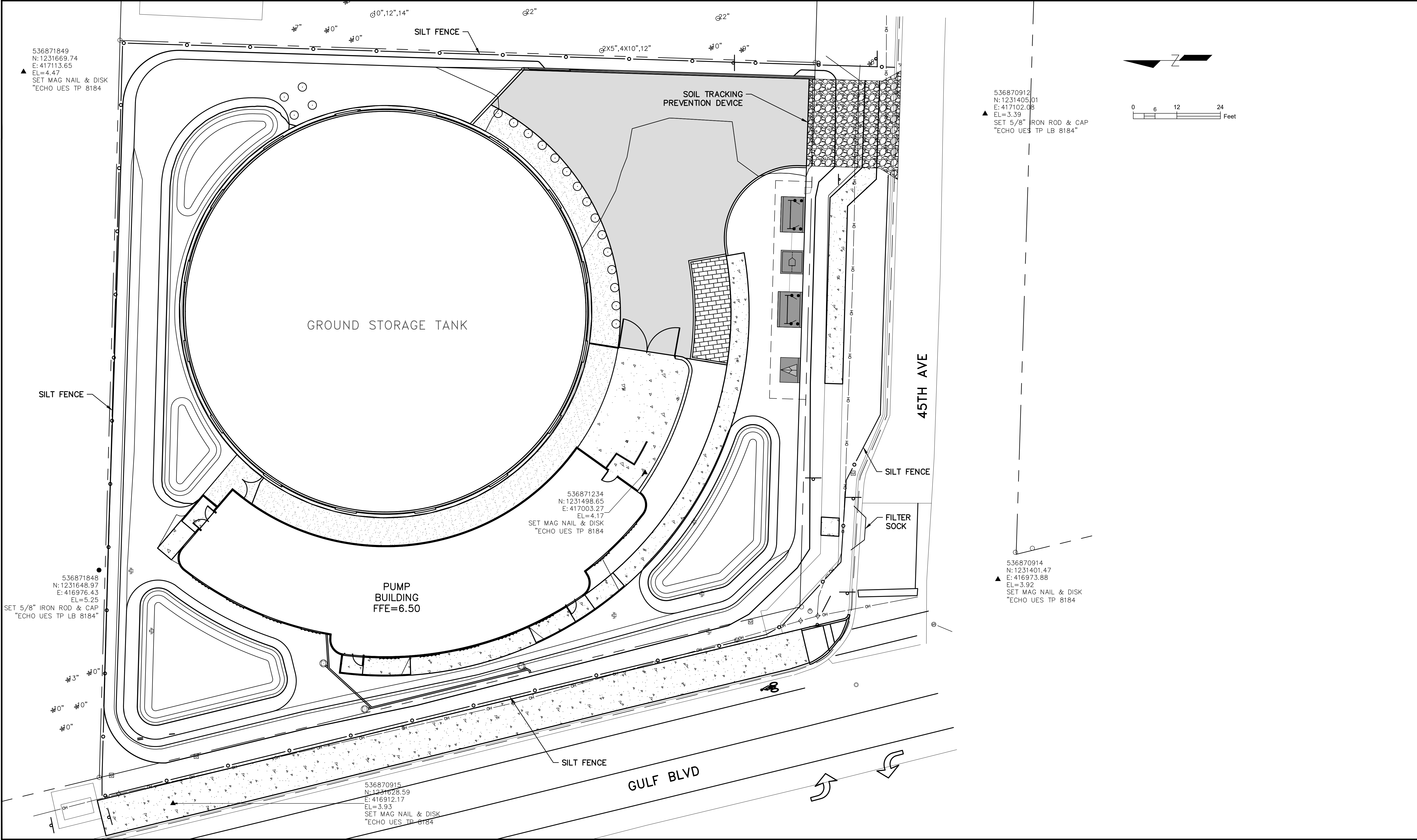
DESIGNED M.HOFFMAN
DRAWN D.METZ
CHECKED W.NICKEL

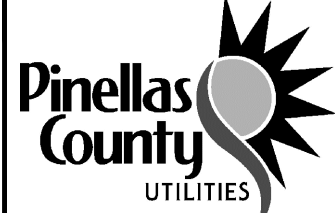


WRIGHT-PIERCE 
800.422.1095 | www.wright-pierce.com
3820 NORTHDAL E BOULEVARD, SUITE 202B, TAMPA, FL 33624

DATE:	04-2024
PROJECT NO.	002150A
SHEET:	C-14

J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CIV\P002150A-SVPP.dwg, Apr 30, 2024 - 11:05am



				DESIGNED <u>M. HOFFMAN</u>		PROJECT:	DESCRIPTION:	 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 2028, TAMPA, FL 33624	APPROVED BY:	DATE:
				DRAWN <u>D. METZ</u>		PINELLAS COUNTY, FLORIDA	STORMWATER POLLUTION		04-2024	
				CHECKED <u>W. NICKEL</u>		GULF BEACH WATER BOOSTER	PREVENTION PLAN		PROJECT NO.	
						STATION IMPROVEMENTS			002150A	
REV. NO.	DATE	DESCRIPTION	REV. BY							SHEET:
										C-15

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I. SITE DESCRIPTION

A. CONSTRUCTION ACTIVITY

THE PROPOSED IMPROVEMENTS CONSIST OF REMOVAL AND REPLACEMENT OF A PUMP BUILDING; REMOVAL AND REPLACEMENT OF SIDEWALKS; REMOVAL AND REPLACEMENT OF THE PARKING LOT; REMOVAL AND REPLACEMENT OF THE DRIVEWAY CONNECTION TO 45TH AVENUE; STORMWATER MANAGEMENT FACILITIES; AND VARIOUS UTILITY IMPROVEMENTS.

B. PROJECT LIMITS

PID: 07-32-16-51660-000-0011, PORTION OF GULF BLVD ROW, PORTION OF 45TH AVE ROW

C. PROJECT DESCRIPTION

THE GBWBS FUNCTIONS AS A RE-PUMP STATION, RECEIVING WATER FROM THE NORTHERN ISLE OF CAPRI WASTER BOOSTER STATION TO STORE IN THE GBWBS ON-SITE GROUND STORAGE TANK (GST) DURING LOW DEMAND PERIODS, AND PUMPING WATER TO THE SOUTHERN PORTION OF PCU'S WATER DISTRIBUTION SYSTEM TO MAINTAIN SYSTEM PRESSURES DURING PEAK DEMAND PERIODS AND TO SATISFY FIRE FLOW NEEDS. THE PURPOSE OF THE PROJECT IS TO UPGRADE THE GBWBS TO MEET CURRENT INDUSTRY AND OPERATION STANDARDS.

D. MAJOR SOIL DISTURBING ACTIVITIES

CLEARING AND GRUBBING, DEMOLITION, GRADING OF SITE

TOTAL PROJECT AREA: 0.8 ACRES
TOTAL AREA TO BE DISTURBED: 0.8 ACRES

F. RUNOFF DATA

	100-YEAR/24-HOUR DISCHARGE (CFS)
EXISTING CONDITION	0.9
PROPOSED CONDITION	0.5

G. SOIL DATA

19-PALM BEACH FINE SAND: FINE SAND, EXCESSIVELY DRAINED, HYDROLOGIC SOIL GROUP "A"

H. DRAINAGE AREA (ATTACH DRAINAGE MAP OR PROVIDE DRAINAGE AREA IN ACRES)

0.75 ACRES

I. RECEIVING WATERS

BOCA CIEGA BAY (CENTRAL SOUTH), WATERBODY ID 1694A2

J. WETLANDS AREAS

NOT APPLICABLE

II. CONTROLS

ALL CONTROLS SHALL BE CONSISTENT WITH PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORM-WATER TREATMENT SET FORTH IN s.62-40.432, F.A.C., THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, THE APPLICABLE STORM-WATER OR ENVIRONMENTAL RESOURCE PERMITTING REQUIREMENTS OF THE DEPARTMENT OR A WATER MANAGEMENT DISTRICT, THE GUIDELINES CONTAINED IN THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEP, 1988) AND ANY SUBSEQUENT AMENDMENTS.

A. SEQUENCE OF MAJOR ACTIVITIES

- INSTALLATION OF PERIMETER CONTROL MEASURES AND SOIL TRACKING PREVENTION DEVICES.
- NTERIM SOURCE REMOVAL AND CLEARING AND GRUBBING
- DEMOLITION AND TEMPORARY UTILITY SYSTEMS AS DESCRIBED IN PROCESS DRAWINGS
- CONSTRUCTION OF STORMWATER MANAGEMENT FEATURES.
- SITE CONSTRUCTION & INTERIM EROSION CONTROL MEASURES.
- FINAL VEGETATION

WHEN CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE EROSION PROTECTION DEVICES AND CONSTRUCTION ENTRANCE AS REQUIRED.

B. EROSION AND SEDIMENT CONTROL CONSTRUCTION ACTIVITIES

THE CONTRACTOR IS REQUIRED TO REVIEW THE SITE SPECIFIC EROSION CONTROL PLAN. THE CONTRACTOR MAY ALSO BE REQUIRED TO MODIFY THE PLAN OR MATERIALS TO ADAPT TO SEASONAL VARIATIONS OR SITE CONDITIONS. CONTRACTOR WILL COMPLY WITH E & S PLAN. ANY MODIFICATIONS TO THIS PLAN MUST BE SIGNED BY A PROFESSIONAL ENGINEER REPRESENTING THE CONTRACTOR. THE EROSION CONTROL DEVICES, DETAILS, AND NOTES APPLICABLE TO THESE ACTIVITIES ARE SPECIFIED IN THE PLANS. THE PROJECT ENGINEER IS RESPONSIBLE FOR DETERMINING IF ADDITIONAL CONTROLS ARE THE PROJECT ENGINEER MAY REQUIRE ADDITIONAL CONTROLS TO MEET STANDARDS AND REGULATIONS.

PERFORM WEEKLY INSPECTION OF EROSION AND SEDIMENT CONTROLS AND AFTER EVERY ½" RAINFALL

REMOVE ALL SEDIMENTS THAT HAVE MIGRATED OFF SITE AND RESTORE AFFECTED AREAS AS DIRECTED BY THE ENGINEER

C. STABILIZATION PRACTICES

DURING CONSTRUCTION THE CONTRACTOR WILL PROVIDE STABILIZATION FOR AREAS WHICH HAVE BEEN CLEARED AND NOT REWORKED WITHIN FOURTEEN (14) CALENDAR DAYS. THE CONTRACTOR MAY UTILIZE TEMPORARY SEEDING OR TEMPORARY SODDING IN ACCORDANCE WITH SECTION 570 OF THE "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".

- TEMPORARY SODDING
- TEMPORARY GRASSING
- PERMANENT SODDING OR SEEDING
- PRESERVATION OF NATURAL RESOURCES
- BUFFER ZONES

D. STRUCTURAL PRACTICES

- SYNTHETIC BALES (LF)
- ARTIFICIAL COVERINGS/ ROLLED EROSION CONTROL PRODUCTS (SY)
- INLET PROTECTION SYSTEM (EA)
- LITTER REMOVAL AND DISPOSAL (AC)
- MOWING (AC)
- SLOPE DRAINS (TEMPORARY)/ RUNOFF CONTROL STRUCTURES (LF)
- SOIL TRACKING PREVENTION DEVICE (EA)
- SEDIMENT BASINS/CONTAINMENT SYSTEMS (EA)
- SEDIMENT BASIN/ CONTAINMENT SYSTEM CLEANOUT (EA)
- FLOATING TURBIDITY BARRIER (LF)
- STAKED SILT FENCE (LF)
- CHEMICAL TREATMENT - POWDERED (SY)
- CHEMICAL TREATMENT (FLOC LOGS, DRUMS OF PRODUCT) (EA)
- OTHER

E. DESCRIPTION OF STORM WATER MANAGEMENT

FOUR STORMWATER MANAGEMENT FACILITIES ARE PROPOSED. THREE OF THESE FACILITIES ARE DRY RETENTION PONDS AND ONE OF THE FACILITIES IS A PERMEABLE PAVEMENT SYSTEM. ALL FACILITIES WILL BE CONNECTED BY EQUALIZER PIPES, SO THE SYSTEM FUNCTIONS AS ONE COMBINED DRY RETENTION FACILITY.

F. WASTE DISPOSAL

THE CONTRACTOR SHALL PROVIDE LITTER CONTROL AND COLLECTION WITHIN THE PROJECT BOUNDARIES DURING CONSTRUCTION ACTIVITIES. ANY CHEMICAL CONTAINERS SHALL BE DISPOSED OF BY THE CONTRACTOR ACCORDING TO EPA'S STANDARD PRACTICES AS DETAILED BY THE MANUFACTURER. NO SOLID MATERIALS INCLUDING BUILDING & CONSTRUCTION MATERIALS SHALL BE DISCHARGED TO WETLANDS OR BURIED ON SITE. ALL WASTE MATERIAL WILL BE COLLECTED AND STORED IN DUMPSTERS PER LOCAL SOLID WASTE REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF TWICE A WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED TO THE APPROPRIATE COUNTY LOCATION FOR DUMPING.

G. OFFSITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS AND INSPECTED/MAINTAINED DAILY. THE PAVED STREETS WILL BE CLEANED AS DIRECTED BY THE CONSTRUCTION INSPECTOR AND ENGINEER TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM OR TO THE SITE WILL BE COVERED WITH A TARPAULIN AT ALL TIMES.

H. SANITARY WASTE

FDOT STANDARD SPEC. FOR ROAD AND BRIDGE CONSTRUCTION" SECTION 7 - 6 "SANITARY PROVISIONS. "THE CONTRACTOR SHALL PROVIDE AND MAINTAIN, IN A NEAT AND SANITARY CONDITION, SUCH ACCOMMODATION FOR THE USE OF HIS EMPLOYEES AS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS AND REGULATIONS OF THE STATE AND LOCAL BOARDS OF HEALTH. COMMIT NO PUBLIC NUISANCE."

I. HAZARDOUS WASTE

THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE COUNTY IN WRITING IF ANY HAZARDOUS WASTE MATERIAL IS ENCOUNTERED DURING SITE INVESTIGATION OR CONSTRUCTION.

THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR NOTIFYING THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) WITHIN 24 HOURS OF THE DISCOVERY.

ALL HAZARDOUS WASTE MATERIALS, IF ENCOUNTERED, WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

IN CASE OF DISPOSING ANY HAZARDOUS WASTE MATERIAL FOLLOWING LOCAL, STATE, AND FEDERAL REGULATIONS, A COPY OF DISPOSAL MANIFEST HAS TO BE PROVIDED TO THE COUNTY IN TIMELY FASHION.

J. APPROVED STATE, LOCAL PLANS, OR STORM WATER PERMITS

NONE AT THE TIME OF PERMITTING

PERMITTEE CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

XXXX X. XXXXXXX, P.E., MANAGER
DIVISION, PUBLIC WORKS, PINELLAS COUNTY.

DATE

CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH , THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

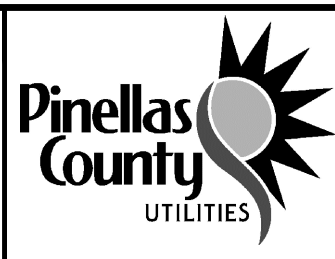
GENERAL CONTRACTOR NAME & TITLE

DATE

COMPANY NAME

COMPANY STREET ADDRESS

CITY, STATE, ZIP CODE

				DESIGNED <u>M.HOFFMAN</u>		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: STORMWATER POLLUTION PREVENTION NOTES I	 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: _____ DATE _____	DATE: 04-2024
				DRAWN <u>D.METZ</u>						PROJECT NO. 002150A
				CHECKED <u>W.NICKEL</u>						SHEET: C-16
REV. NO.	DATE	DESCRIPTION	REV. BY							

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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III. MAINTENANCE

A. ALL OF THE CONTROLS SHALL BE MAINTAINED AT ALL TIMES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTION AND MAINTENANCE OF ALL PERMANENT AND TEMPORARY EROSION CONTROL DEVICES THROUGHOUT ALL CONSTRUCTION PHASES OF THE PROJECT. MAINTENANCE SHALL BE IN ACCORDANCE WITH THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, PINELLAS COUNTY "STANDARD TECHNICAL SPECIFICATIONS FOR ROADWAY AND RELATED CONSTRUCTION", AND THE PROJECT CONSTRUCTION CONTRACT.

B. INSPECTION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE PINELLAS COUNTY NPDES / SWPPP CONSTRUCTION INSPECTION REPORT AFTER ANY ½" RAINFALL OR WEEKLY, IF NO RAIN EVENT OCCURRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN RAIN GAUGES ON THE PROJECT SITE AND RECORD WEEKLY RAIN FALL. THE CONTRACTOR SHALL NOTIFY PINELLAS COUNTY DIVISION OF ENVIRONMENTAL MANAGEMENT OF ANY NON-COMPLIANCE PER SECTION 58-244 TO 246 OF THE PINELLAS COUNTY CODE. COUNTY INSPECTOR MAY INSPECT SITE FOR COMPLIANCE AT ANY TIME.

C. NON-STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES MAY OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:

- WATER FROM WATER LINE FLUSHING
- PAVEMENT WASH WATERS (WHERE NO SPILL OR LEAKS OF VEHICLE AND HAZARDOUS MATERIALS HAVE OCCURRED)
- UNCONTAMINATED GROUNDWATER FROM DE-WATERING ACTIVITIES

ALL NON-STORM WATER DISCHARGES SHOULD BE CONTAINED ON SITE AND DIRECTED TO SEDIMENT TREATMENT BMPs. UNTREATED OFF SITE DISCHARGES WILL BE REPORTED TO THE COUNTY INSPECTOR AND PINELLAS COUNTY DIVISION OF ENVIRONMENTAL MANAGEMENT FOR FURTHER INVESTIGATION. IF CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, DEWATERING SHOULD CEASE IMMEDIATELY AND THE ENGINEER WILL BE CONTACTED.

D. MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL HANDLING PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF:

1. THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON-SITE DURING THE CONSTRUCTION PROJECT.

- STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB ON SITE.
- ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR ORIGINAL MANUFACTURER'S LABELED CONTAINERS UNDER A ROOF OR OTHER CONTAINED ENCLOSURE.
- SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- WHENEVER POSSIBLE, ALL OF A PRODUCT SHALL BE USED BEFORE DISPOSING OF THE CONTAINER. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
- THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE.

2. THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RE-SEALABLE.
- SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL OPENED CONTAINERS. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE KEPT ON-SITE ON THE CONSTRUCTION OFFICE TRAILER.
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS OR LOCAL STATE RECOMMENDED METHODS OF PROPER DISPOSAL SHALL BE FOLLOWED.
- THE CONTRACTOR MUST IDENTIFY A DESIGNATED FUEL TANK STORAGE AREA, AWAY FROM DRAINAGE STRUCTURES, PONDS, BASINS, AND WETLANDS, WITH SECONDARY CONTAINMENT (SPILL COLLECTION).

3. CONCRETE TRUCKS

- CONTRACTOR SHALL DESIGNATE AN AREA AWAY FROM DRAINAGE STRUCTURES, PONDS, BASINS, AND WETLANDS FOR DISCHARGE OF SURPLUS CONCRETE OR DRUM WASH WATER AND SHALL INSTALL A CONTAINMENT BERM AROUND THIS AREA TO PREVENT RUNOFF TO THE REMAINDER OF THE SITE.
- HARD DEBRIS SHALL BE DISPOSED OF BY CONTRACTOR UPON COMPLETION OF THE PROJECT.
- DISPOSAL OF CONCRETE SLURRY DIRECTLY INTO PUBLIC DRAINAGE SYSTEMS IS A VIOLATION OF THE "ILLICIT DISCHARGE" PROVISION OF THE PINELLAS COUNTY LAND DEVELOPMENT CODE AND SECTION 58-244 OF THE PINELLAS COUNTY CODE.
- SECTION 58-239 OF THE PINELLAS COUNTY CODE AUTHORIZES PENALTIES OF UP TO \$10,000.00 FOR EACH OFFENSE.

4. SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIALS MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP.

- MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION CLEANUP SUPPLIES.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
- THE SPILL PREVENTION PLAN WILL BE PREPARED BY THE CONTRACTOR AND KEPT IN THE CONSTRUCTION OFFICE TRAILER AND WILL INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE ARE OTHERS. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED. ALL SPILLS AND RESPONSES WILL BE REPORTED TO THE APPROPRIATE AGENCY.
- THE SITE SUPERINTENDENT WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON SITE.
- USE AND CHARACTERISTICS OF FUEL OR CHEMICAL STORAGE TANK ON SITE SHALL COMPLY WITH ALL RELATED FEDERAL, STATE, AND LOCAL REGULATIONS. STORAGE TANKS MUST BE LOCATED AS FAR AS POSSIBLE FROM ANY DRAINAGE STRUCTURES, DITCHES, AND/OR SURFACE WATERS. IN ADDITION, THE CONTRACTOR MUST PROVIDE A SECONDARY CONTAINMENT WITH A LINER CHEMICALLY RESISTANT TO THE FUEL OR CHEMICAL STORED ON SITE. THE SECONDARY CONTAINMENT MUST BE SIZED TO CONTAIN MINIMUM OF ONE AND A HALF TIME THE TOTAL CAPACITY OF STORAGE TANK BEING USED. CONTRACTOR HAS TO PROVIDE A DAILY INSPECTION LOG FOR THE SECONDARY CONTAINMENT WITH INDICATION OF DATE, INSPECTORS NAME AND INSPECTION REPORT. FURTHERMORE, ANY CONTAMINATION HAS TO BE IMMEDIATELY CONTAINED AND THE COUNTY INSPECTOR MUST BE NOTIFIED OF THE NATURE AND EXTEND OF THE CONTAMINATION.

PERMITTEE CERTIFICATION

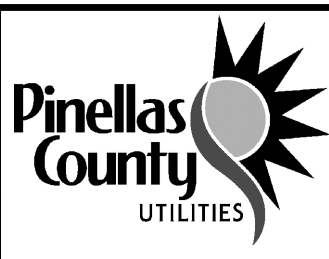
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

XXXX X. XXXXXXXX, P.E., MANAGER
DIVISION, PUBLIC WORKS, PINELLAS COUNTY.

CONTRACTOR CERTIFICATION

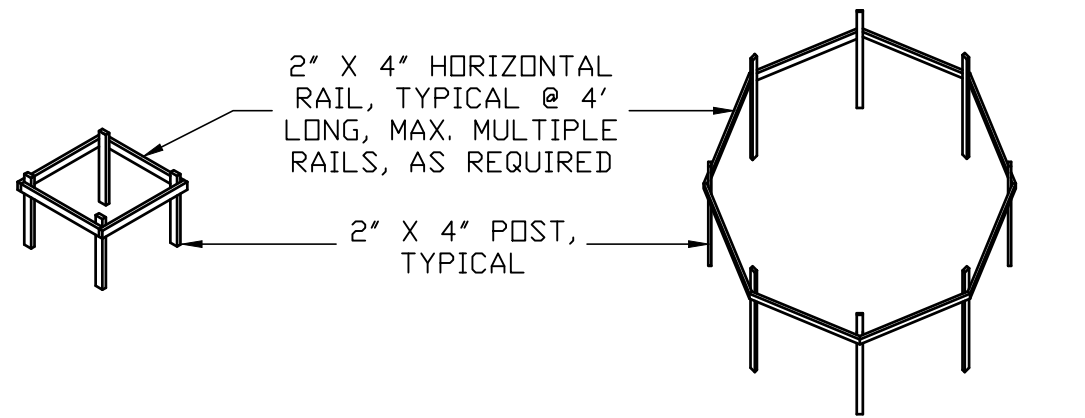
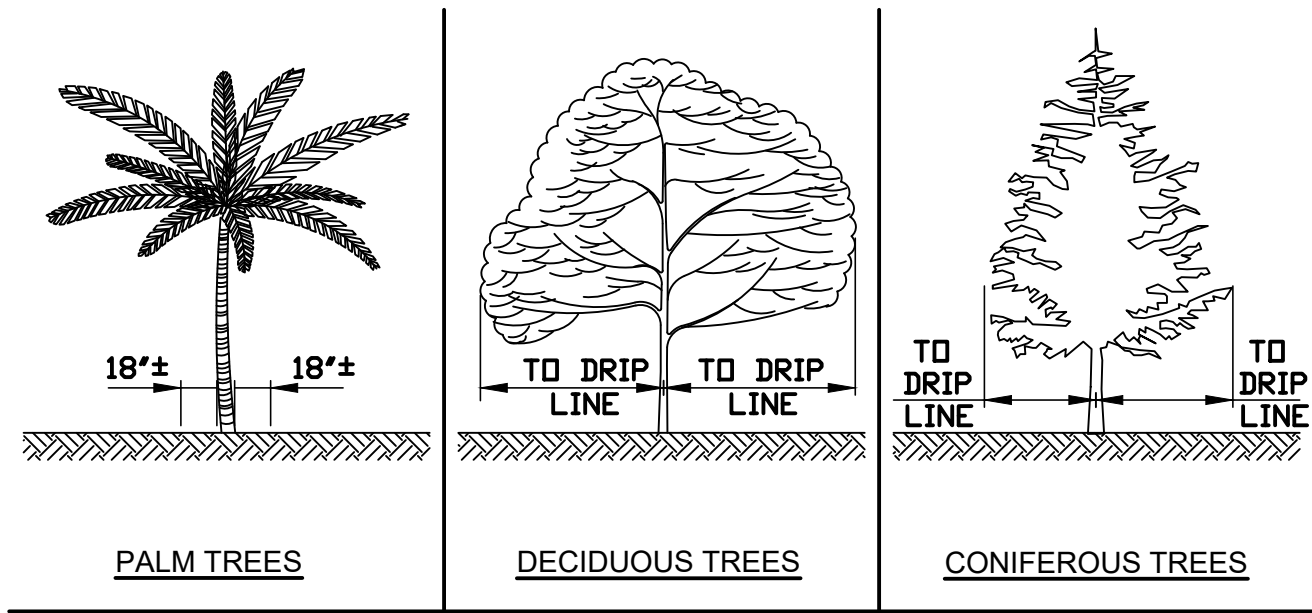
I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH , THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

GENERAL CONTRACTOR NAME & TITLE
DATE
COMPANY NAME
COMPANY STREET ADDRESS
CITY, STATE, ZIP CODE

				DESIGNED <u>M.HOFFMAN</u>		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: STORMWATER POLLUTION PREVENTION NOTES II	 800.422.1095 www.wright-pierce.com 3820 NORTHDALÉ BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY:	DATE: 04-2024
				DRAWN <u>D.METZ</u>					PROJECT NO. 002150A	
				CHECKED <u>W.NICKEL</u>					SHEET: C-17	
REV. NO.	DATE	DESCRIPTION	REV. BY							

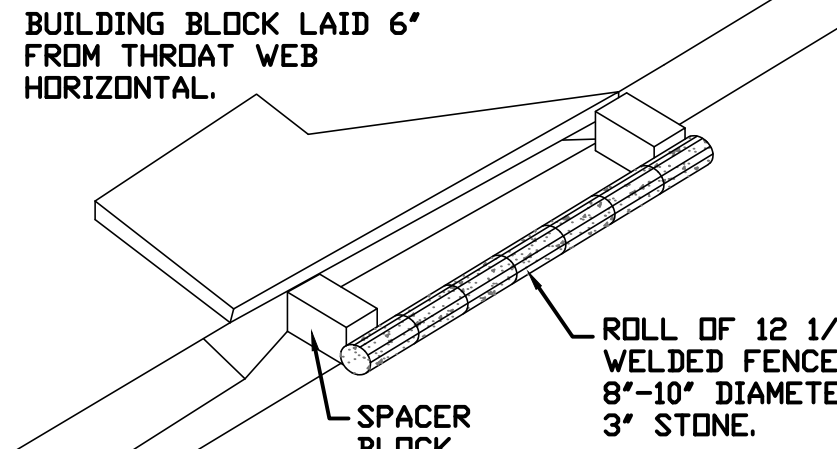
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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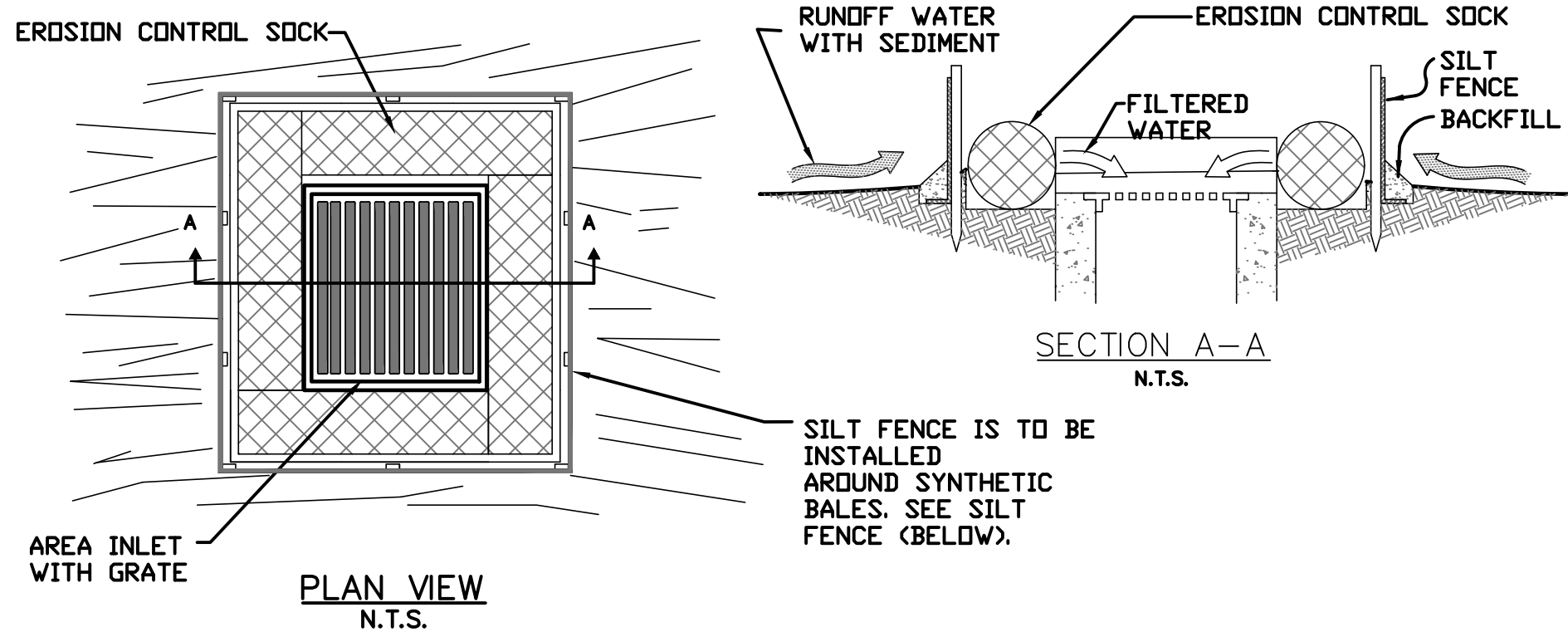
- NOTES:
1. NO TRUCKS OR HEAVY EQUIPMENT ALLOWED WITHIN BARRIERS, ONLY HAND LABOR ALLOWED.
 2. NO CONSTRUCTION MATERIALS, SOIL DEPOSITS, OR SOLVENTS SHALL BE ALLOWED WITHIN BARRIERS.
 3. BARRIERS ARE TO BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN TREE AREA.
 4. BARRIERS ARE TO STAY IN PLACE UNTIL ALL PAVING, CONSTRUCTION, AND HEAVY EQUIPMENT IS REMOVED FROM THE AREA.

TREE PROTECTION BARRIERS DETAIL
NTS



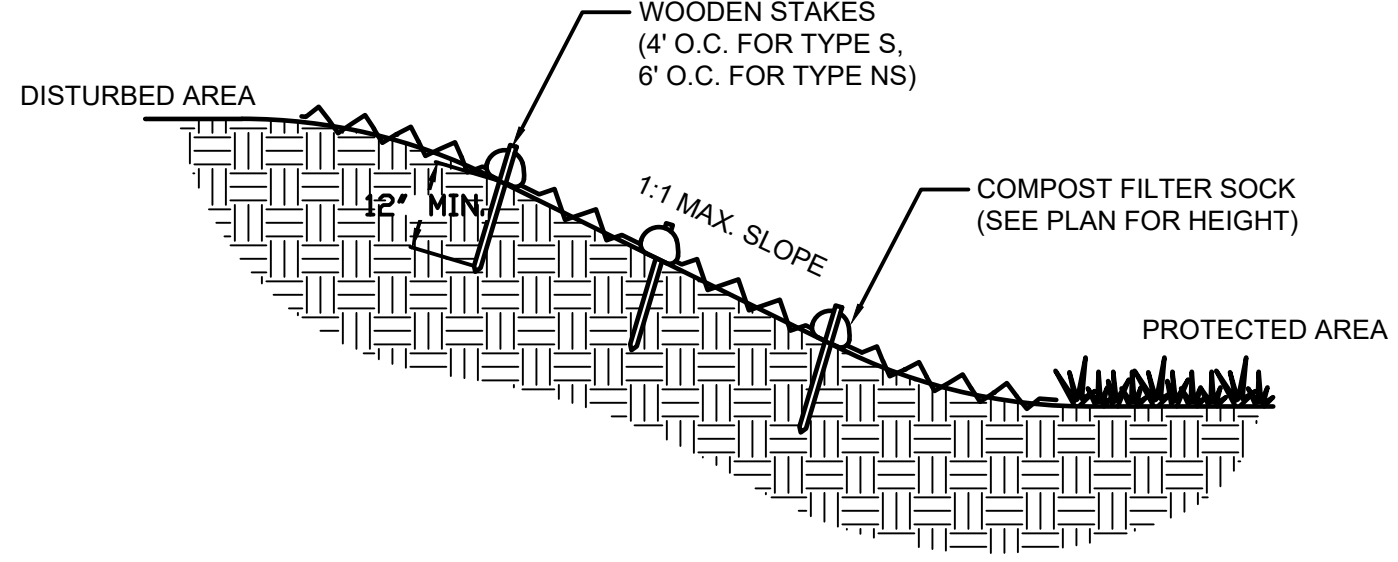
CURB INLET FILTER SOCK
N.T.S.

- NOTES:
1. FIBROUS FILLER MATERIAL IN FRONT OF BLOCK PREVENTS GRAVEL FROM WASHING INTO STRUCTURE.
 2. 2"X4" BEHIND BLOCK AND ACROSS THROAT HELPS KEEP BLOCK IN PLACE. PLACE IN OUTER HOLE OF SPACER BLOCK.

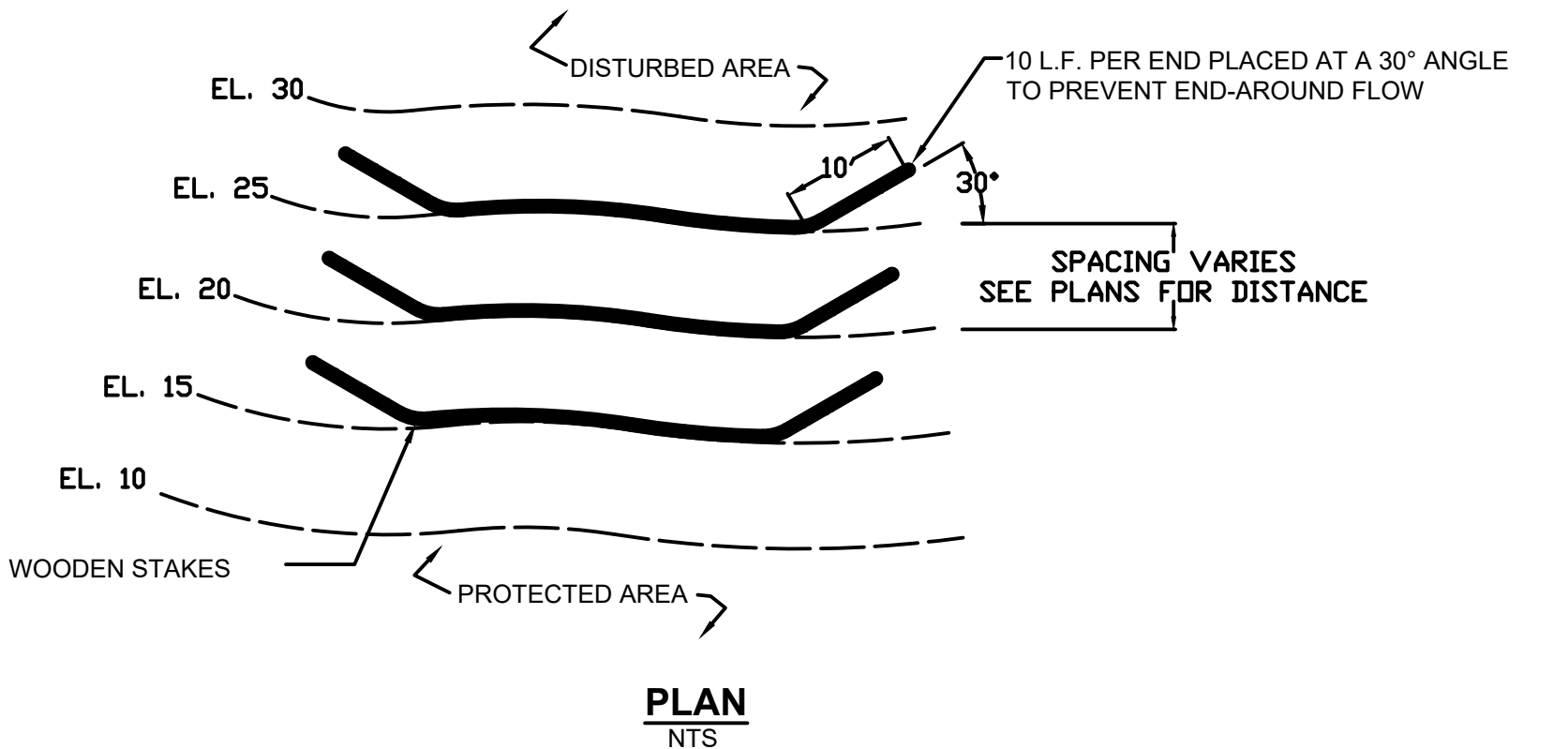


PLAN VIEW
N.T.S.

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5%) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 CFS) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS STREET OR HIGHWAY MEDIANS.



SECTION
NTS

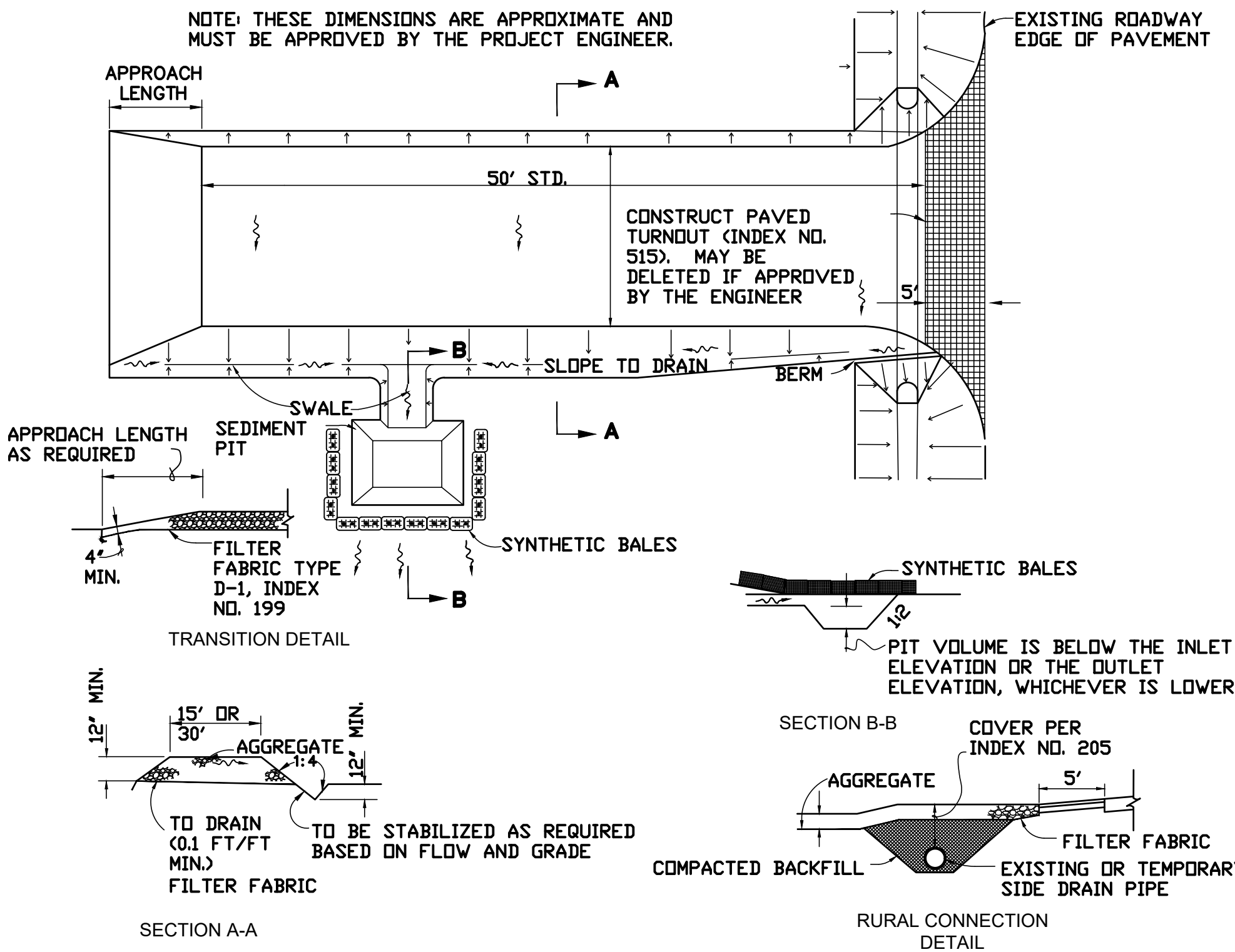


PLAN
NTS

SYNTHETIC BALES OR APPROVED BARRIERS
NTS

SOIL TRACKING PREVENTION DEVICE NOTES

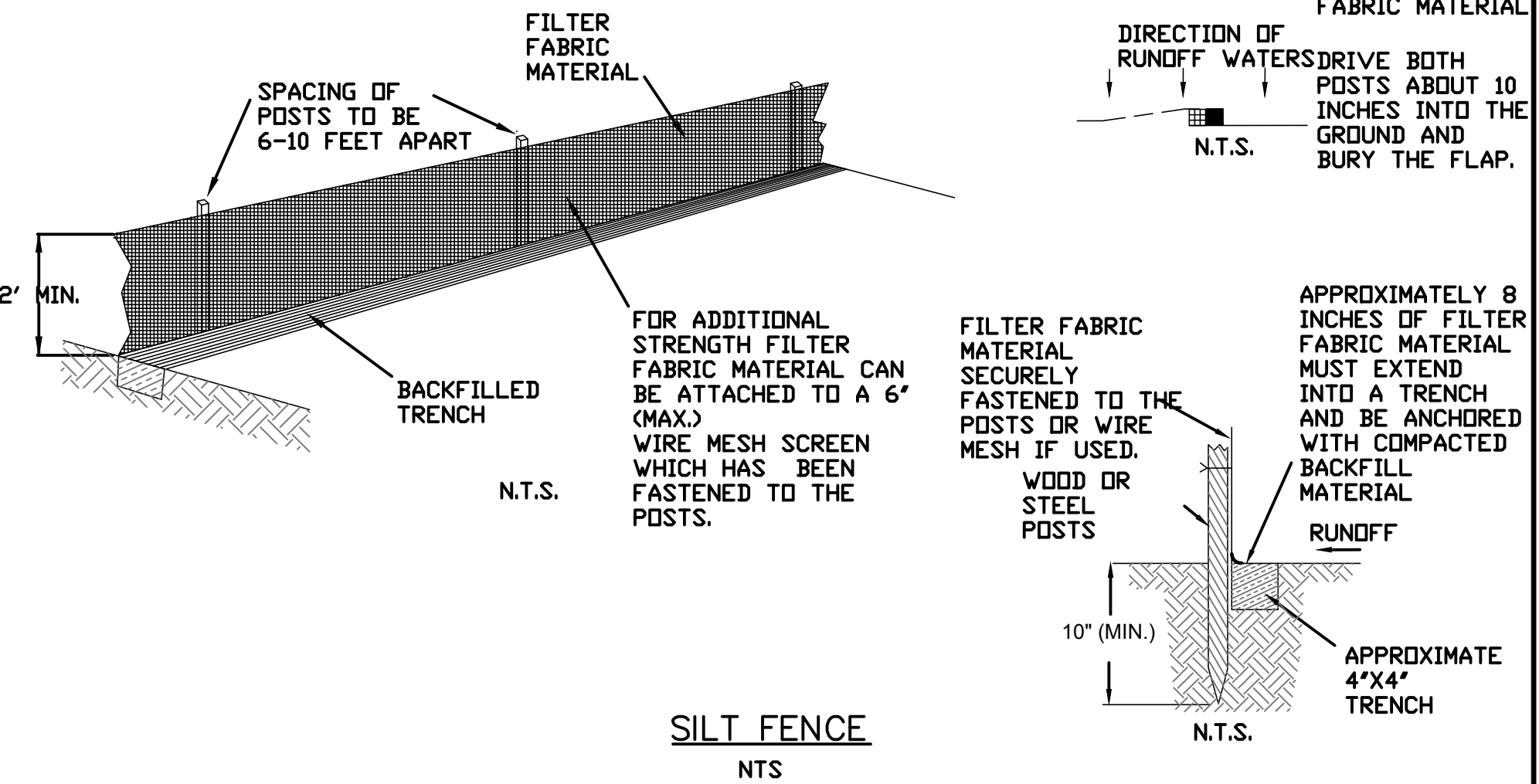
1. A SOIL TRACKING PREVENTION DEVICE (STPD) SHALL BE CONSTRUCTED AT LOCATIONS DESIGNATED BY THE ENGINEER FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFF SITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THROUGH STPD BARRIERS. FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STPD.
2. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFF SITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STPD AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
4. AGGREGATES SHALL BE DESCRIBED IN SECTION 901 EXCLUDING 901-2.3. AGGREGATES SHALL BE FDOT SIZE #1. IF THIS SIZE IS NOT AVAILABLE, THE NEXT AVAILABLE SMALLER SIZE AGGREGATE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE NOT SUITABLE.
5. THE SEDIMENT PIT SHOULD PROVIDE A RETENTION VOLUME OF 3600 CUBIC FEET/ACRE OF SURFACE AREA DRAINING TO THE PIT. WHEN THE STPD IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT:
15'X50'=100 FT³
30'X50'=200 FT³
AS AN OPTION TO THE SEDIMENT PIT, THE WIDTH OF THE SWALE BOTTOM CAN BE INCREASED TO OBTAIN THE VOLUME. WHEN THE SEDIMENT PIT OR SWALE VOLUME HAS BEEN REDUCED TO ONE HALF, IT SHALL BE CLEANED. WHEN A SWALE IS USED, SYNTHETIC BALES OR SILT FENCE SHALL BE PLACED ALONG THE ENTIRE LENGTH.
6. THE SWALE DITCH DRAINING THE STPD SHALL HAVE A 0.2% MINIMUM AND A 1.0% MAXIMUM GRADE ALONG THE STPD AND TO THE SEDIMENT PIT.
7. MITERED END SECTIONS ARE NOT REQUIRED WHEN THE SIDE DRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.
8. THE STPD SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFFSET TRACKING, THE STPD SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THROUGH THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STPD MAY BE REQUIRED TO LIMIT MUD TRACKED.
9. A STPD SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SOIL TRACKING PREVENTION DEVICE, EA. THE UNIT PRICE SHALL CONSTITUTE FULL COMPENSATION FOR CONSTRUCTION, MAINTENANCE, REPLACEMENT OF MATERIALS, REMOVAL, AND RESTORATION OF THE AREA UTILIZED FOR THE STPD: INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TEMPORARY PIPE (INCLUDING M.E.S. WHEN REQUIRED), FILTER FABRIC, AGGREGATE, PAVED TURNOUT (INCLUDING ASPHALT AND BASE CONSTRUCTION), DITCH STABILIZATION, APPROACH ROUTE STABILIZATION, SEDIMENT REMOVAL AND DISPOSAL, WATER, RINSING AND CLEANING OF THE STPD AND CLEANING OF PUBLIC ROADS, GRASSING AND SOD. SYNTHETIC BALES SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR HAY OR STRAW BALED, EA. SILT FENCE SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE, L.F.
10. THE NOMINAL SIZE OF A STANDARD STPD IS 15'X50' UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUME OF ENTERING AND EXITING VEHICLES WARRANT, A 30' WIDTH STPD MAY BE USED IF APPROVED BY THE ENGINEER. WHEN A DOUBLE WIDTH (30') STPD IS USED, THE PAY QUANTITY SHALL BE 2 FOR EACH LOCATION.



SOIL TRACKING PREVENTION DEVICE
TYPE A
NTS

ATTACHING TWO SILT FENCES
1ST FENCE 2ND FENCE

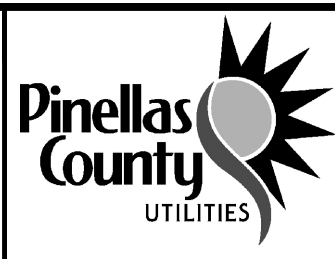
- PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.
- ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
- DIRECTION OF RUNOFF WATER
- DRIVE BOTH POSTS ABOUT 10 INCHES INTO THE GROUND AND BURY THE FLAP.



SILT FENCE
NTS

REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED	M. HOFFMAN
DRAWN	D. METZ
CHECKED	W. NICKEL



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:
STORMWATER POLLUTION
PREVENTION DETAILS

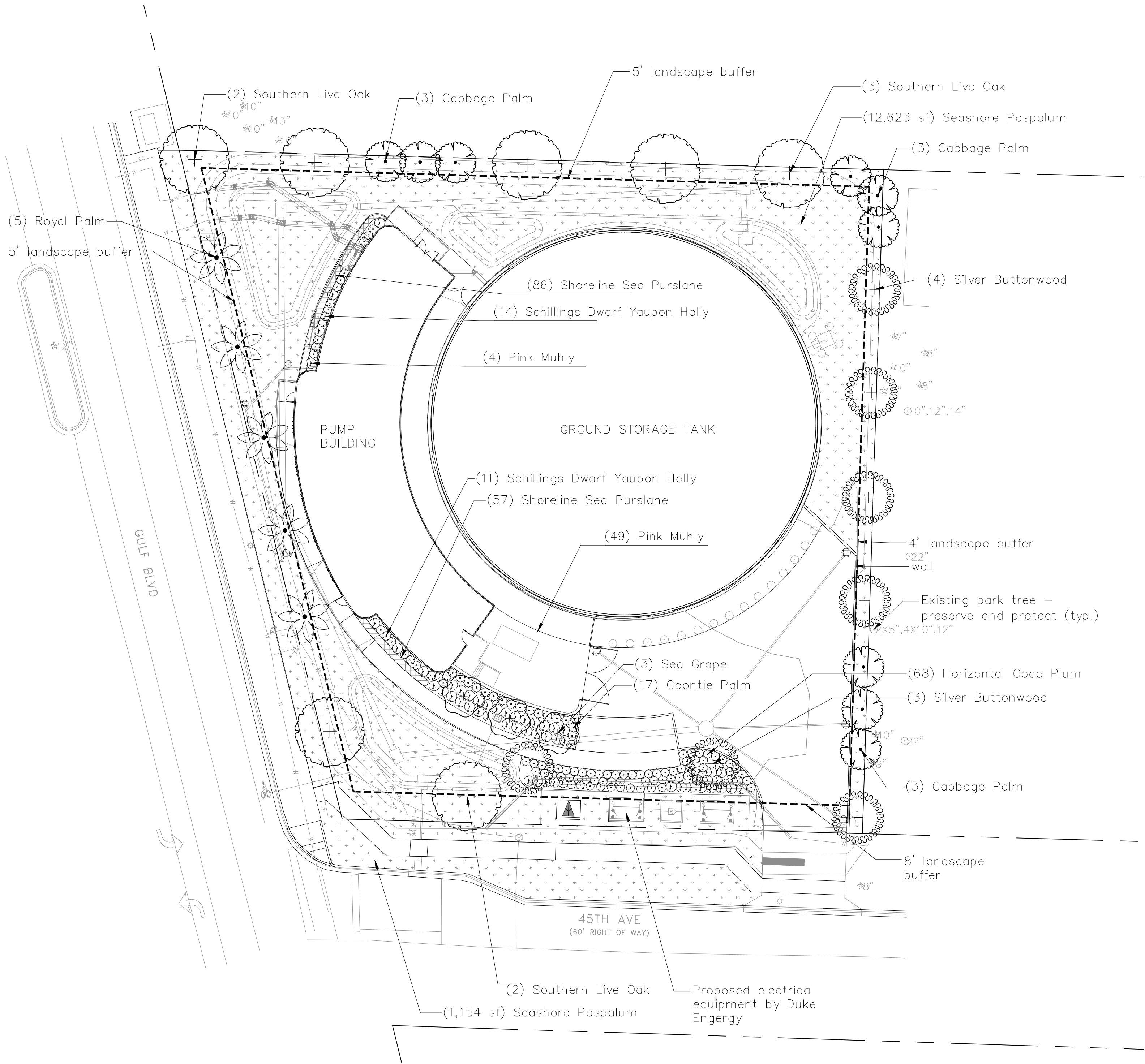
WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:

DATE

DATE:	04-2024
PROJECT NO.	002150A
SHEET:	C-18

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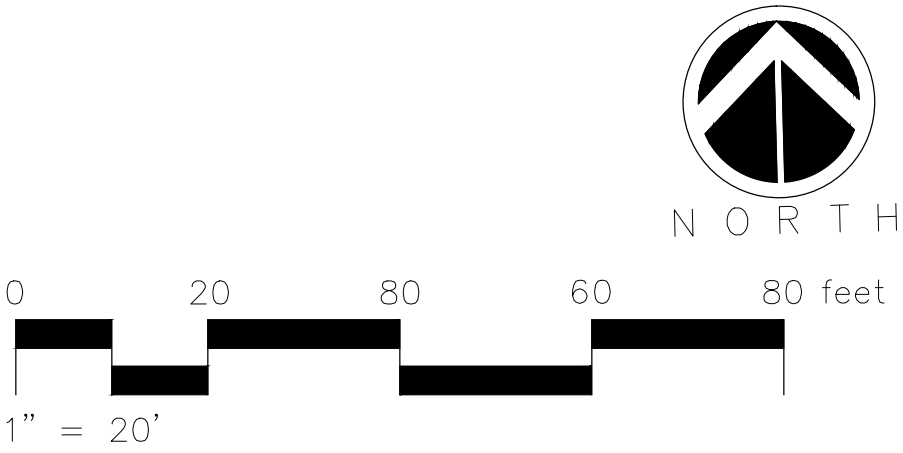


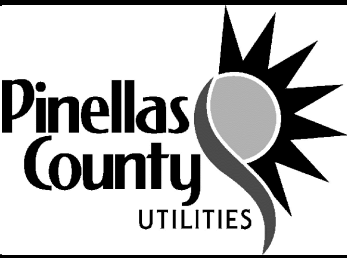
PLANT SCHEDULE				
SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT	SIZE
TREES				
	3	Coccoloba uvifera / Sea Grape	15 gal.	2" DBH, 8' HT. MIN
	7	Conocarpus erectus sericeus / Silver Buttonwood	25 gal	2" CAL, 6' HT MIN
	7	Quercus virginiana / Southern Live Oak	100 gal	4" CAL, 10' HT, 6' SPRD
	5	Roystonea regia / Royal Palm	45 gal.	12' C.T.
	9	Sabal palmetto / Cabbage Palm	B & B	10' HT CT
SHRUBS				
	67	Chrysobalanus icaco 'Horizontalis' / Horizontal Coco Plum	3 gal	24" HT X 24" SPRD
	25	Ilex vomitoria 'Schillings Dwarf' / Schillings Dwarf Yaupon Holly	3 gal	24" HT X 24" SPRD
	17	Zamia floridana / Coontie Palm	7 gal	24" HT X 24" SPRD
GRASSES				
	53	Muhlenbergia capillaris / Pink Muhly	3 gal.	36" Ht
GROUND COVERS				
	13,883 sf	Paspalum vaginatum / Seashore Paspalum	1 gal	Sod
	143	Sesuvium portulacastrum / Shoreline Sea Purslane	1 gal.	12" HT X 12" SPRD



This item has been electronically signed and sealed by Matti Rukholm using a Digital Signature (date is to right). Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Matti Rukholm
Location: 3918 N Highland Ave., Tampa, FL 33603
Madrid CPWG, LC no. LA001411, Matti Rukholm PLA no. LA6667261.
This item has been digitally signed and sealed by Matti Rukholm. Printed copies of this document are not considered signed & sealed. The signature must be verified on the electronic documents.
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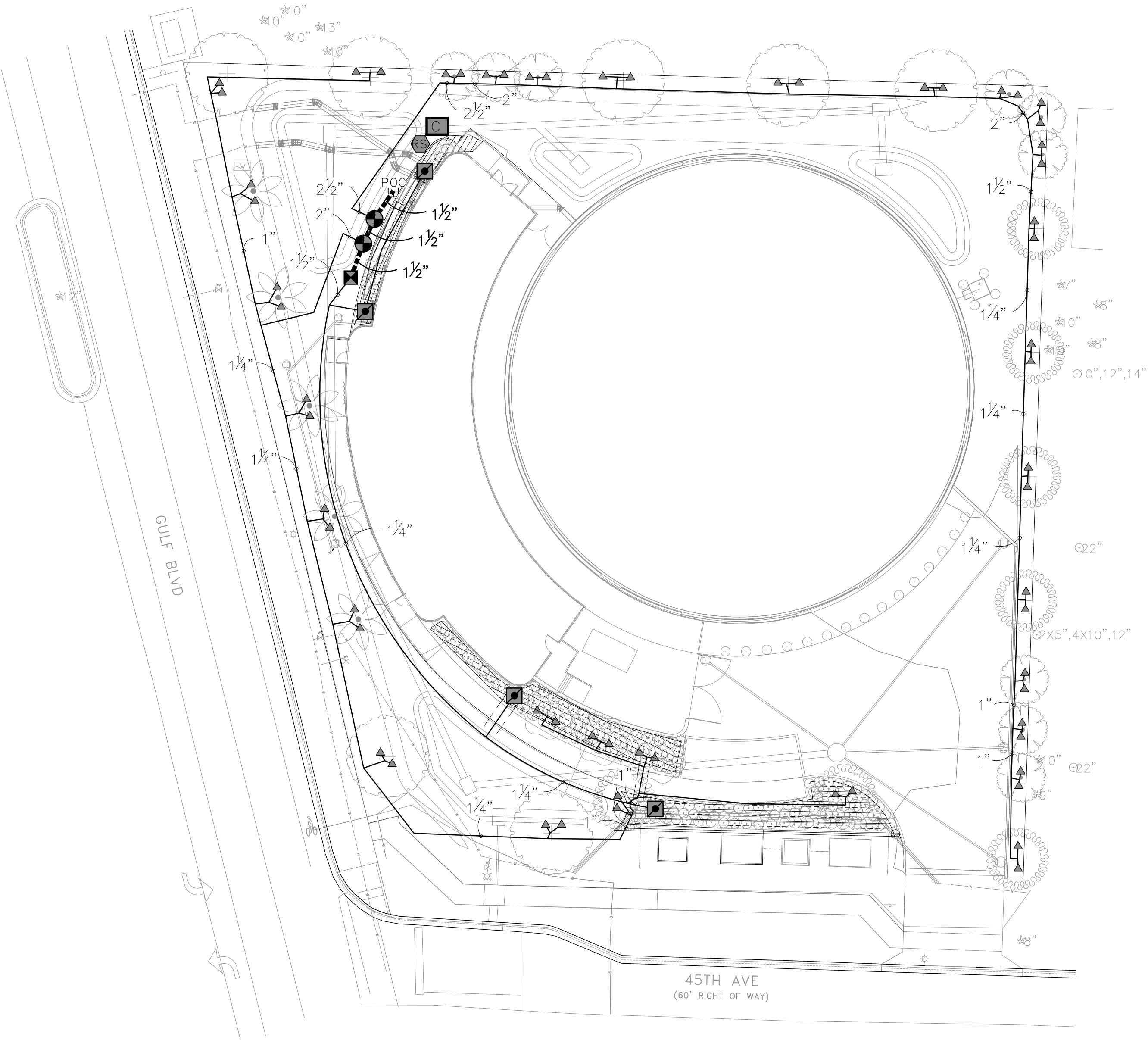


			DESIGNED	MR		PROJECT: RESTORE ACT WASTEWATER COLLECTION SYSTEM IMPROVEMENTS – BOCA CIEGA	DESCRIPTION: LANDSCAPE PLAN	PREPARED BY: WRIGHT-PIERCE 407.906.1776 www.wright-pierce.com 601 S LAKE DESTINY ROAD, SUITE 290, MAITLAND, FL 32751	ADMINISTERED BY:  5001 N Nebraska Ave., Ste. A, Tampa, FL 33603 Phone: 813.361.2644 www.MadridCPWG.com MATTI RUKHOLM, P.L.A., FL LIC NO. LA6667261, CPWG LC NO. 2600439	DATE:	MARCH 2023
			DRAWN	MR/JR						PROJECT NO.	5015A
			CHECKED	GH						SHEET:	L-1
REV. NO.	DATE	DESCRIPTION	REV. BY								



- Existing site soil to be used whenever possible.
- All soils (existing and imported) shall not be amended with peat, compost, pine bark, manure, or other organic material, unless otherwise directed to do so by the Landscape Architect.
- Top 9–12" of existing soil in all planting areas to be tilled prior to planting.
- All soils (existing and imported) shall be free of weeds, roots, stumps, rocks, and/or other debris larger than 1/2–inch diameter.
- All soils (existing and imported) shall be free of organic muck, hard pan, toxic substances detrimental to plant growth, and construction debris such as lime rock, concrete, and asphalt pieces.
- Imported soil shall be fine sand or loamy fine sand indigenous to the area and suitable for plant growth. Imported soils shall be delivered in a normal moist condition, neither muddy nor wet and shall meet the following criteria measured in accordance with the appropriate AASHTO and ASTM standard.
 - USDA Texture: fine yellow sand, loamy fine sand
 - AASHTO Classification: A–3
 - Ph Range 5.5 – 6.0
- All imported soils shall have the above–mentioned characteristics resulting from a current agronomic and full textural class analysis of soil samples collected from the actual soil proposed to be used.
- The Landscape Contractor is responsible for soil analysis of all soils (existing and imported) prior to installation of plantings and all costs shall be at the expense of the Landscape Contractor.
- The results of the soil tests shall be submitted to the Landscape Architect 3 weeks prior to the anticipated date of the start of soil installation and must include sample date and reference the collection location.
- One soil sample for each separate imported soil source is required.
- 4 soil sample locations are required for tested existing site soil. Sample locations to be approved by Landscape Architect.
- If tests of imported soil fail to meet the specifications, Landscape Contractor is to obtain other sources of material, retest and resubmit until accepted by the Landscape Architect.
- Existing site soil shall be tested for pH levels, organic matter, and nutrient levels by parts per million including: nitrogen, phosphorus, potassium, magnesium, manganese, iron, zinc and calcium.
- Nutrient test shall include the testing laboratory recommendations for supplemental additions to the soil for optimum growth of the plantings specified. Granulated commercial grade slow-release fertilizer shall be added to the existing soil as recommended by the soil testing laboratory.

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				DRAWN	MR/JR						PROJECT NO.	5015A
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REV. NO.	DATE	DESCRIPTION	REV. BY									

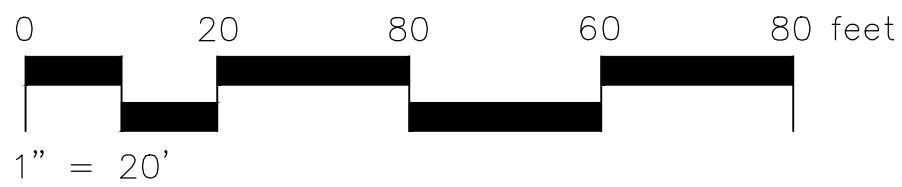


IRRIGATION SCHEDULE

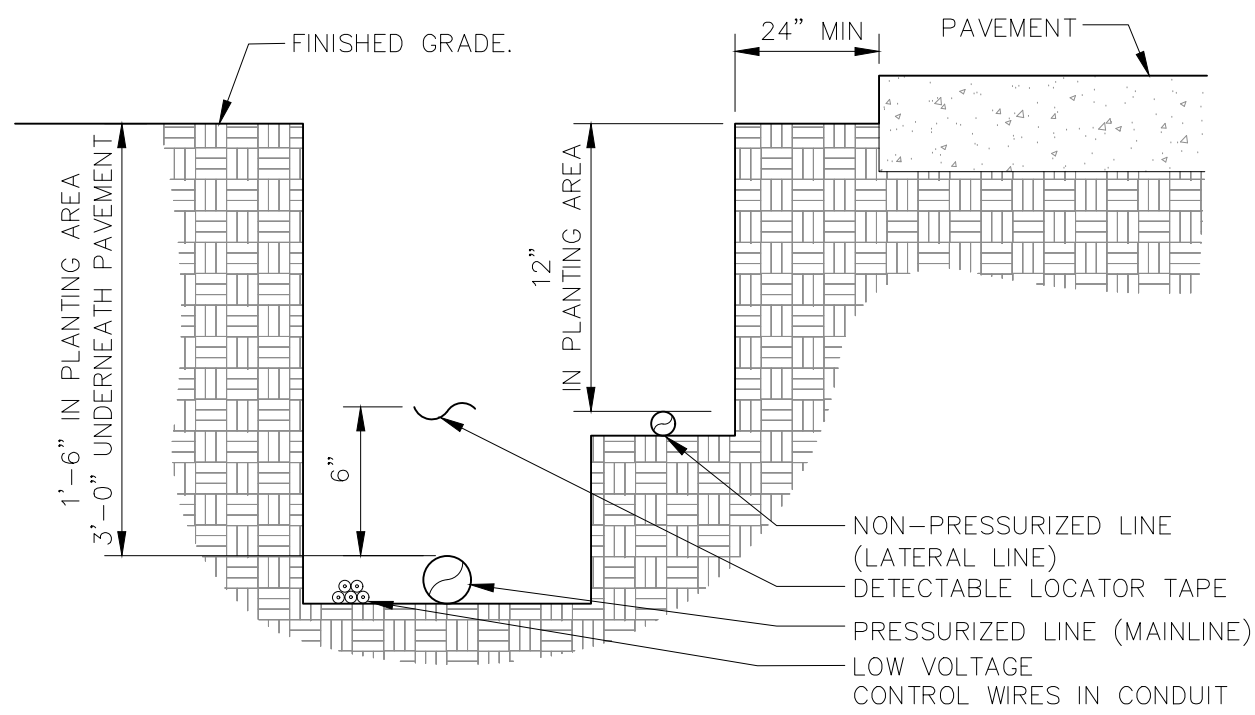
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
▲ 1401 1402 1404 1408	Rain Bird 1804–1400 Flood Flood Bubbler 4.0in. popup	62	20
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
■	Rain Bird X CZ–100–IVMQ Wide Flow IVM Drip Control Kit for Commercial Applications. 1in. Ball Valve with 1in. PESBIVM Smart Valve w/ factory installed IVM–SOL 0.3–20 gpm and 1in. Pressure Regulating 40psi Quick–Check Basket Filter 0.3–20 gpm	1	
■	Pipe Transition Point above grade Pipe transition point from PVC lateral to drip tubing with riser to above grade installation.	4	
	Area to Receive Dripline Rain Bird XFDe–09–12 XFDe On–Surface Pressure Compensating Landscape Dripline. 0.9 GPH emitters at O.C. Dripline laterals spaced at RR apart, with emitters offset for triangular pattern. UV & Kink Resistant. Use XF insert fittings.	1,090 l.f.	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
●	Rain Bird PEB 1in., 1–1/2in., 2in. Plastic Industrial Valves. 2 Low Flow Operating Capability, Globe Configuration. With IVM	2	
■	Hunter P2C–400 Light Commercial & Residential Controller, 1 4–station base module controller, 120 VAC, Outdoor/Indoor model	1	
■	Hunter MINI–CLIK Rain Sensor, mount as noted	1	
POC	Point of Connection Potable water line. Refer to Civil Engineering plans for water meter and backflow prevention details.	1	
—	Irrigation Lateral Line: PVC Schedule 40	1,239 l.f.	
-----	Irrigation Mainline: PVC Class 200 SDR 21	23.4 l.f.	
=====	Pipe Sleeve: PVC Schedule 40	27.5 l.f.	
	Valve Callout — Valve Number — Valve Flow — Valve Size		

IRRIGATION NOTES

- Irrigation system to meet the 2023 Florida Building Code Plumbing, Eighth Edition, Appendix F (Proposed Construction Building Codes for Turf and Landscape Irrigation Systems), Chapters 13, and Chapter 14 'Reserved' regarding reclaimed/effluent water pipe, valve, and valve box identification. Per Appendix F, all pipe, valves, and valve boxes used with effluent water systems shall be designated for nonpotable use by either label or by the industry standard color purple. Irrigation pipe, valves, and valve boxes are to be purple.
- Irrigation is from the Point of Connection (POC) only. Refer to plan for POC location.
- Contractor shall notify Landscape Architect immediately if water pressure is below 65 PSI or above 80 PSI.
- Prior to construction, Contractor to establish the location of all utility and service lines within work area(s). All damage to utilities as a result of construction are responsibility of the Contractor. Necessary repairs must be undertaken at no additional cost to the owner.
- Irrigation equipment shown in hardscape and outside property lines for clarity only. All irrigation shall be installed within landscape areas unless noted within a sleeve.
- This plan is diagrammatic. The exact location of valves and irrigation heads are to be determined in the field by the contractor. Do not scale drawing.
- All components to be installed as per manufacturer's recommendations.
- Refer to manufacturer's installation details.
- Refer to manufacturer's catalog for performance specifications.
- All head spray patterns shall be adjusted to eliminate all over spray onto hardscape & roadway surfaces.
- Mainline depth to be no less than 18". Lateral line depth to be no less than 12". Backfill with rock free soil and compact to 90% of the maximum density for the material used as determined by ASTM D–698 (Standard).
- Lateral lines are to be located within the 6' wide cemetery walkway area and the 10' wide vehicle access route area. The mainline and laterals shall not be located within the area of the burial plots.
- Allow 12" minimum space between heads and edge of concrete bench pads.
- Electric control valves to be covered with 12" valve box or larger flush with grade. Group nearby valves in one valve box.
- Wiring between controller and remote control valve shall be in conduit. Conduit shall have a minimum 12" cover. All wiring shall be 14 gauge or larger per specifications.
- Tracer wire shall be installed on all mains and laterals.
- Electrical wiring shall be installed in the same trench as the pipe; install wire above pipe, taped to the pipe every 10'.
- Locate drain valves at the lowest point(s) of elevation within each section.
- Coordinate with owner when programming controller. Watering times shall be from midnight to early morning.
- Locate valves as far back from existing trees as possible and conceal from view to the greatest extent possible. Install all valves within turf or planting areas.
- Wire splice connections to be waterproof.
- All pipes run underneath hardscape shall be installed inside sleeves.
- Sleeve inside diameter shall be two times the size of the outside diameter of the pipe(s) going through it. Sleeves to extend 12" past the hard surface and are to be marked with flags.
- Install all components as per local, state, and federal codes.
- All electrical wire shall be for 110/ 220 volt service. Wiring shall be installed by a licensed and competent electrician and installed to City code.
- All work performed shall conform to applicable City building and plumbing codes.
- Contractor is responsible for his/her own take-offs and is to verify all quantities. In the event of a conflict between the quantities on the irrigation schedule and the plans, the plans shall take precedence and the discrepancy shall be brought to the attention of the Landscape Architect prior to bid.
- Items such as wiring, valve boxes, connectors etc. are considered incidental to construction and are the responsibility of the contractor.
- Care is to be taken when digging around near existing tree roots. Contractor to hand dig around existing tree roots to minimize damage. All roots larger than 1" in diameter shall be root pruned. Contractor to bore under the tree when installing mainline within the dripline of a tree.
- All air/vacuum relief valves, valves, pressure reducing valves, pumps, pump control valves, etc. must be tagged or labeled indicating whether it is on the reclaimed water or potable water system.



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				DRAWN	MR/JR						PROJECT NO. 5015A
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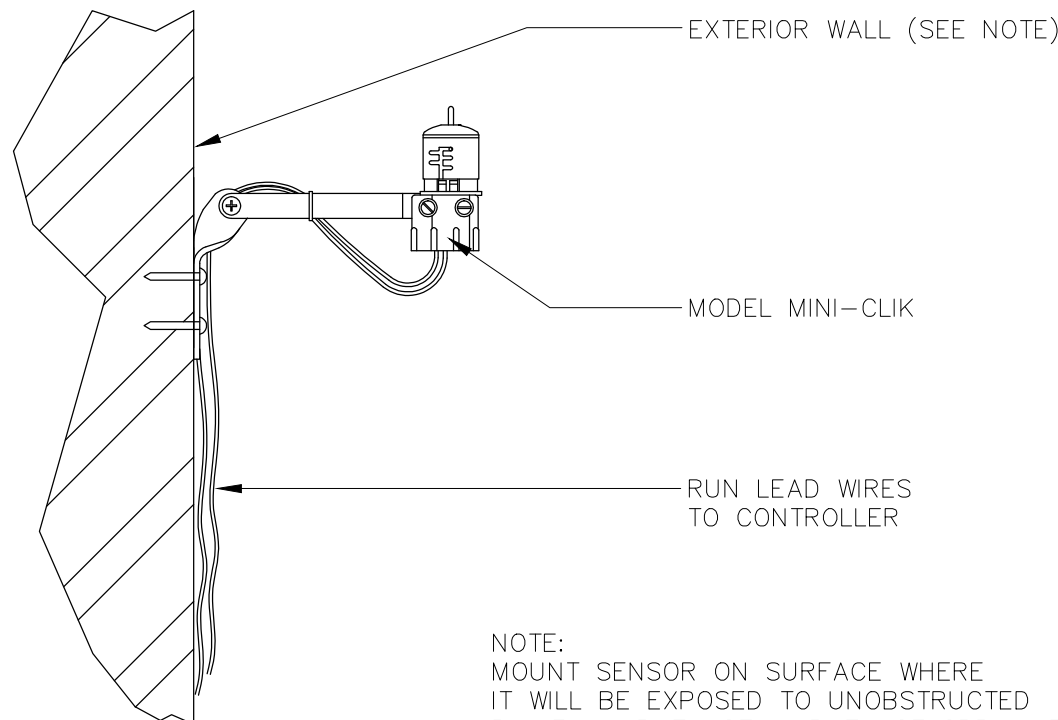


NOTES:
1- SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
2- IRRIGATION WIRE SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT.
3- DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

1 IRRIGATION TRENCHING

NTS

URBAN TREE FOUNDATION © 2014
OPEN SOURCE: FREE TO USE
P-CO-JIM-07

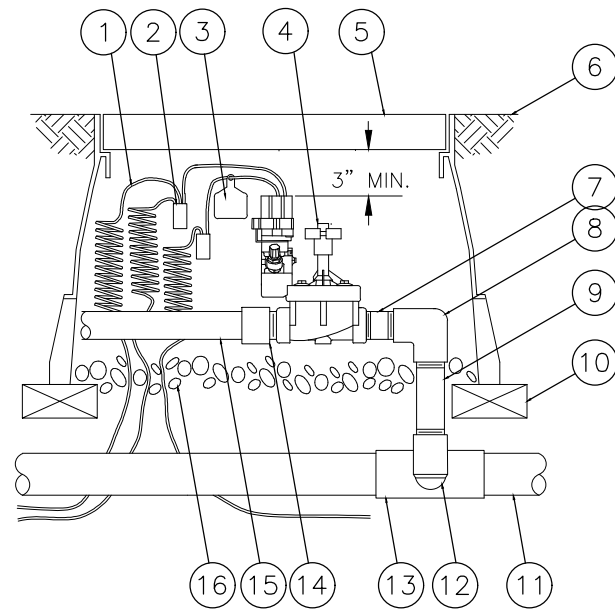


NOTE:
MOUNT SENSOR ON SURFACE WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY.

2 MINI-CLIK RAIN SENSOR

NTS-OR APPROVED EQUAL

P-CO-JIM-10

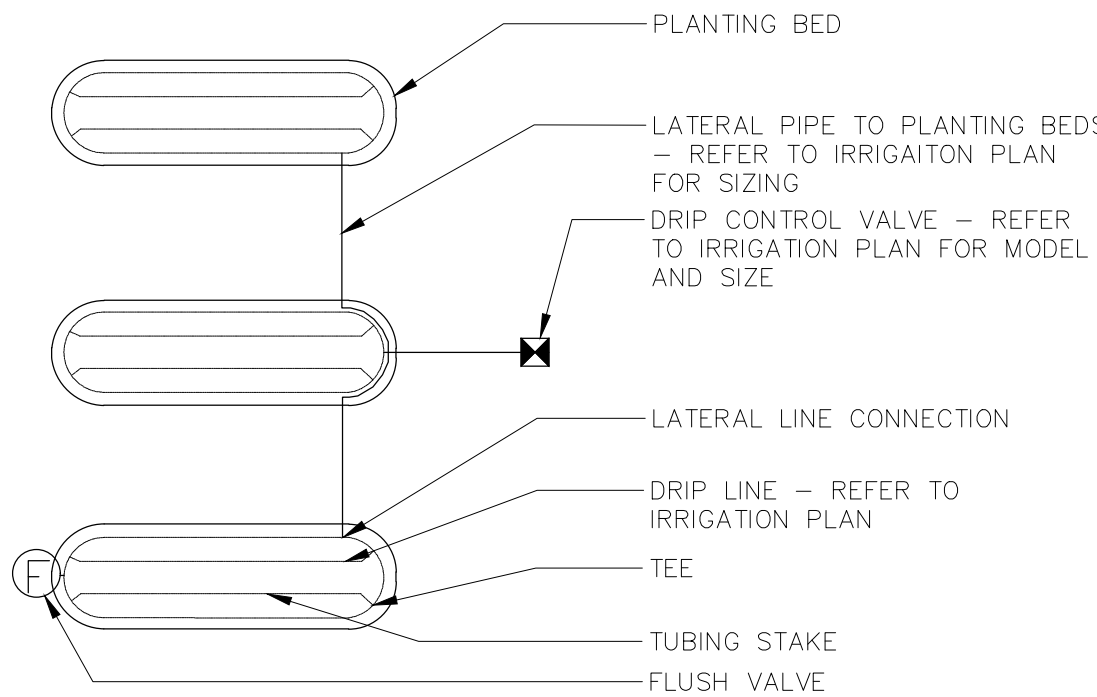


- 1 30-INCH LINEAR LENGTH OF WIRE, COILED
- 2 WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)
- 3 ID TAG: RAIN BIRD VID SERIES
- 4 REMOTE CONTROL VALVE: RAIN BIRD PEB
- 5 VALVE BOX WITH COVER: RAIN BIRD VB-STD
- 6 FINISH GRADE/TOP OF MULCH
- 7 PVC SCH 80 NIPPLE (CLOSE)
- 8 PVC SCH 40 ELL
- 9 PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- 10 BRICK (1 OF 4)
- 11 PVC MAINLINE PIPE
- 12 SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
- 13 PVC SCH 40 TEE OR ELL
- 14 PVC SCH 40 MALE ADAPTER
- 15 PVC LATERAL PIPE
- 16 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

3 ELECTRIC REMOTE-CONTROL VALVE - PEB SERIES

NTS -OR APPROVED EQUAL

P-CO-JIM-13

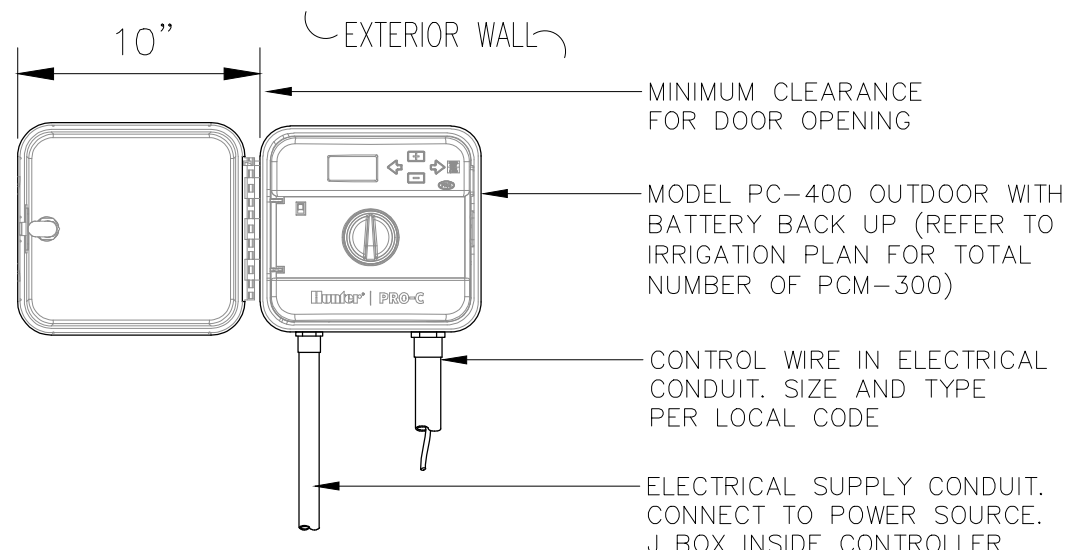


4 DRIPLINE LAYOUT - PLANTING BEDS

N.T.S.

P-CO-JIM-14

-OR APPROVED EQUAL

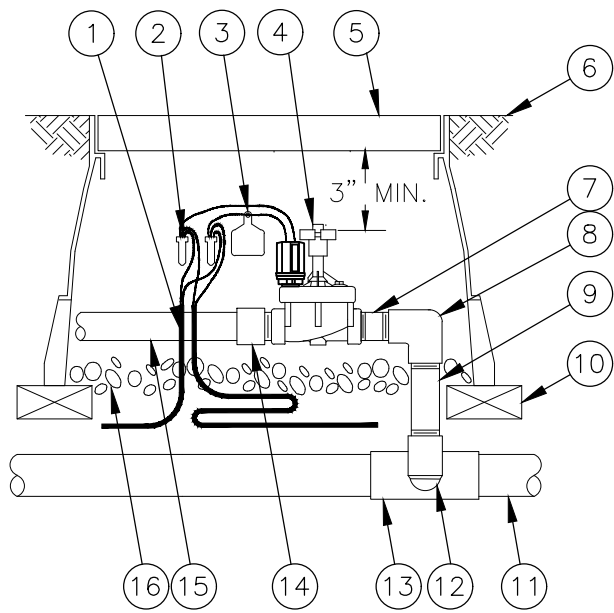


NOTE
MOUNT CONTROLLER WITH LCD SCREEN AT EYE LEVEL (WHERE POSSIBLE). CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 VAC SOURCE. POWER SOURCE BY FLORIDA CERTIFIED & LICENSED ELECTRICIAN. IRRIGATION CONTRACTOR TO COORDINATE LOCATION & POWER SUPPLY WITH CLIENT.

5 HUNTER PRO-C CONTROLLER

N.T.S. -OR APPROVED EQUAL

P-CO-ORL-25

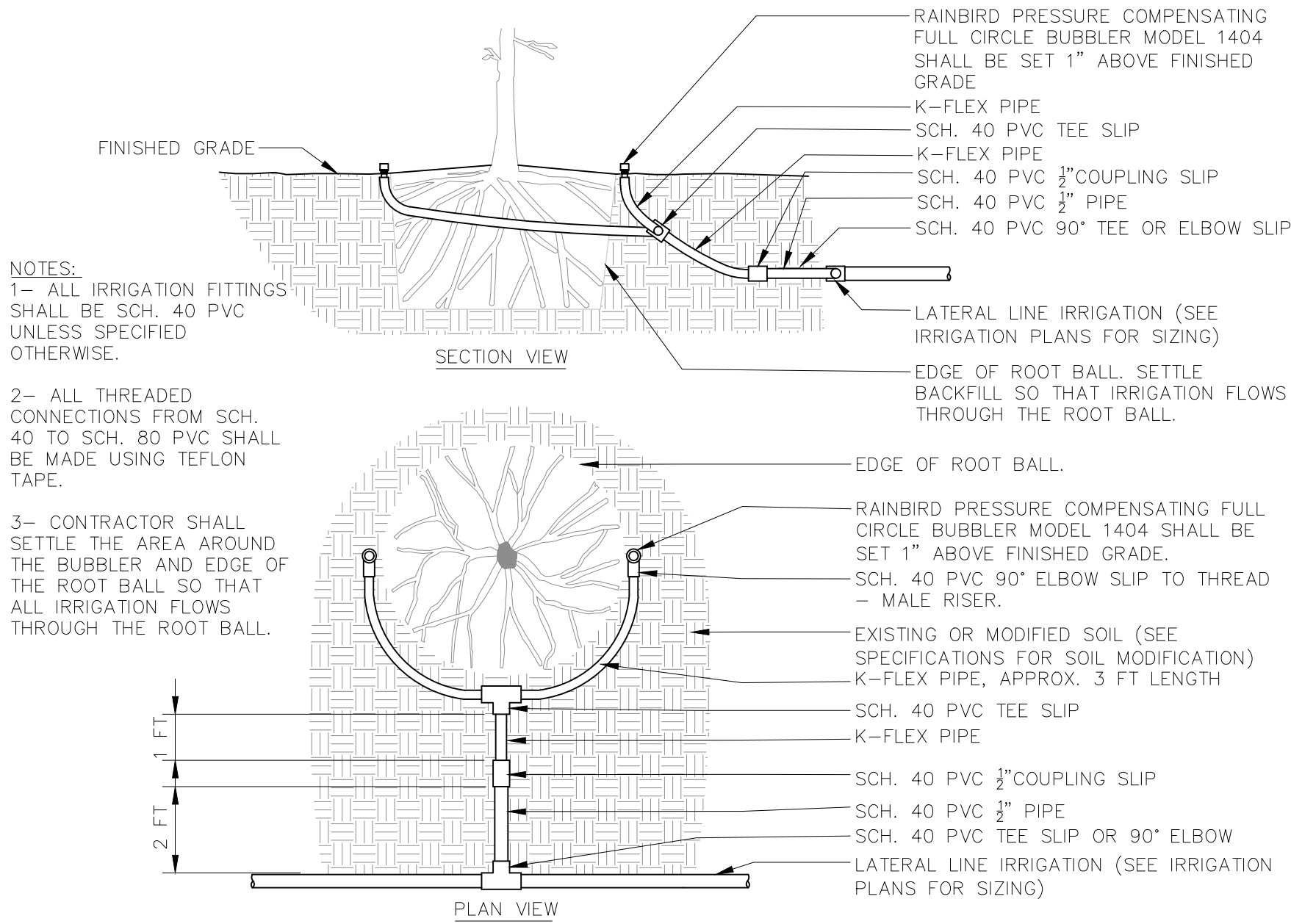


- 1 30-INCH LENGTH OF 2-WIRE CABLE
- 2 WATERPROOF CONNECTION RAIN BIRD WC20 (TWO REQUIRED)
- 3 ID TAG: RAIN BIRD VID SERIES
- 4 REMOTE CONTROL VALVE: RAIN BIRD PEB/PESB/PESB-R WITH IVM
- 5 VALVE BOX WITH COVER: RAIN BIRD VB-STD
- 6 FINISH GRADE/TOP OF MULCH
- 7 PVC SCH 80 NIPPLE (CLOSE)
- 8 PVC SCH 40 ELL
- 9 PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- 10 BRICK (1 OF 4)
- 11 PVC MAINLINE PIPE
- 12 SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
- 13 PVC SCH 40 TEE OR ELL
- 14 PVC SCH 40 MALE ADAPTER
- 15 PVC LATERAL PIPE
- 16 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

6 ELECTRIC REMOTE-CONTROL VALVE - PEB/PESB/PESB-R WITH IVM

NTS-OR APPROVED EQUAL

P-PU2-03



NOTES:
1- ALL IRRIGATION FITTINGS SHALL BE SCH. 40 PVC UNLESS SPECIFIED OTHERWISE.
2- ALL THREADED CONNECTIONS FROM SCH. 40 TO SCH. 80 PVC SHALL BE MADE USING TEFLON TAPE.
3- CONTRACTOR SHALL SETTLE THE AREA AROUND THE BUBBLER AND EDGE OF THE ROOT BALL SO THAT ALL IRRIGATION FLOWS THROUGH THE ROOT BALL.

7 IRRIGATION BUBBLER (2) W/ LAYOUT

NTS-OR APPROVED EQUAL

P-PL-TRE-08

				DESIGNED	MR		PROJECT: RESTORE ACT WASTEWATER COLLECTION SYSTEM IMPROVEMENTS – BOCA CIEGA	DESCRIPTION: IRRIGATION DETAILS	PREPARED BY: WRIGHT-PIERCE  407.906.1776 www.wright-pierce.com 601 S LAKE DESTINY ROAD, SUITE 290, MAITLAND, FL 32751	ADMINISTERED BY:  5001 N Nebraska Ave., Ste. A, Tampa, FL 33603 Phone: 813.361.2644 www.MadridCPWG.com MATTI RUKHOLM, P.L.A., FL LIC NO. LA6667261, CPWG LC NO. 2600439	DATE:	MARCH 2023
				DRAWN	MR/JR						PROJECT NO.	5015A
				CHECKED	GH						SHEET:	IR-2
REV. NO.	DATE	DESCRIPTION	REV. BY									



Attachment 1: Geotechnical Report

Geotechnical Engineering Report

Gulf Beach Booster Station, St Pete Beach, Florida



Prepared for:

Wright-Pierce

Prepared by:

MADRID ENGINEERING GROUP, INC., dba MADRID CPWG

2030 State Road 60 East

Bartow, FL 33830

863-533-9007

Project No. 14989

August 2022

August 01, 2022

Wright Pierce
601 South Lake Destiny Rd, Suite 290
Maitland, FL 32751
Attn: Christopher Baggett

**Re: Madrid Project No. 14989
Geotechnical Engineering Report
Gulf Beach Booster Station
St Pete Beach, Florida**

Dear Mr. Baggett:

Madrid Engineering Group, Inc., dba Madrid CPWG, (Madrid) is pleased to submit this Geotechnical Engineering Report summarizing the results of our geotechnical subsurface exploration and engineering evaluation services completed for the above referenced project. The work was completed in general accordance with the authorized scope of work in our cost estimate proposal dated October 28, 2021 and provides general geotechnical recommendations regarding the proposed design and construction.

We appreciate the opportunity to be of service to you on this project and look forward to working with you on future projects. If you have any questions, please do not hesitate to contact us.

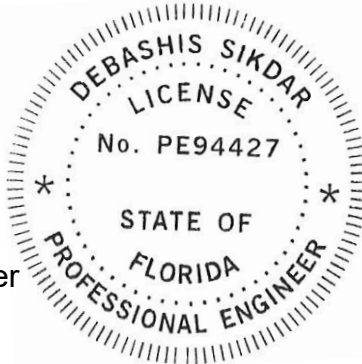
Sincerely,

Madrid Engineering Group, Inc. (EB 6509)



08/01/2022

Debashis Sikdar, P.E.
Senior Geotechnical Engineer
Florida P.E. No. 94427



Attachment: Geotechnical Engineering Report

EXECUTIVE SUMMARY

Project Description

Project Features Relative to This Report	
Primary Structures	The existing booster station building is proposed to be expanded at the south end
Pipelines	On-site vaults and pipeline leading to the booster station are to be replaced
Stormwater	A swale system for stormwater control is proposed to the northeast of the building

Field Activities

- Two (2) Standard Penetration Test (SPT) borings (B-1 and B-2) to a depth of 55 feet below ground surface (bgs) within the proposed building expansion footprint
- One (1) SPT borings (B-4) to a depth of 30 feet bgs within the proposed generator pad
- Two (2) SPT borings (B-3 and B-5) to a depth of 10 feet bgs within the proposed vaults and pipeline replacement areas
- One (1) shallow test pit (TP-1) with supplemental hand auger in proposed stormwater swale location

Findings and Recommendations

Based on the results of the exploration completed at the site and our professional opinion, the existing site is suitable for the support of the proposed structures on a shallow foundation provided our recommendations are implemented. Shallow soils are mostly loose to medium dense sands with clayey sand and soft silt and clay. Proof-rolling and foundation preparation/compaction will be a critical site preparation activity in order to provide uniform foundation performance. Foundation sizing is also critical to bearing capacity and settlement, as discussed subsequently. Settlement is anticipated to be less than 1 inch with less than ½ inch differential provided our recommendations are implemented and nearly all settlement should be immediate (occurring during construction). Some minor long-term settlement is anticipated due to clayey soils at the deeper depth and specific foundation recommendations are provided below. Organic soils do not appear to be a problem for the proposed construction, assuming any topsoil and roots are removed.

The water table is shallow at this site (as shallow as 48 inches during the soil borings) and additional fill would be beneficial for improved bearing capacity of foundations and/or improved performance of pavement sections. A confining layer of highly plastic clay / silt, clayey sand was encountered at approximately 37 feet depth below ground surface. The

water table depth was 4 feet bgs and we estimate the SHWT generally to be approximately about 2 feet bgs.

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FIGURES

- Figure 1 Site Location Map
- Figure 2 USGS Topographic Map
- Figure 3 NRCS/USDA Soil Map
- Figure 4 Boring Location Plan

APPENDICES

- Appendix A Soil Boring Logs
- Appendix B Laboratory Test Results
- Appendix C Bearing Capacity vs Settlement Graph
Precast Piles Charts (Depth vs. Capacity)

1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 General

Madrid Engineering Group, Inc., dba Madrid CPWG, (Madrid) is pleased to submit this report summarizing the results from our subsurface soil exploration, consistent with the instructions provided by Wright-Pierce (Designer), and geotechnical engineering evaluation for the proposed improvements including expansion of the existing building, replacement of vaults and pipelines, and a swale system for stormwater control at the Gulf Beach Booster Station in St Pete Beach, Florida. Our conclusions and recommendations are based on the results of our field exploration, laboratory testing, and appropriate engineering analyses.

Madrid understands the following regarding the specific features:

Table 1.1

Project Features Relative to This Report	
Primary Structures	The existing booster station building is proposed to be expanded at the south end
Pipelines	On-site vaults and pipeline leading to the booster station are to be replaced
Stormwater	A swale system for stormwater control is proposed to the northeast of the building

The purpose of this exploration was to collect subsurface soil and groundwater information to provide an evaluation of the existing subsurface conditions at the boring locations (within the footprint for the proposed expansion, pipelines, and stormwater system) and to identify constraints or limitations (to the extent possible) that the subsurface conditions may impose on the planned construction. Loading information for the proposed structures was not provided to Madrid for this investigation; however, a preliminary site plan was provided, and this plan was used to locate the soil borings.

The scope of work for this investigation included review of existing geological data, a field exploration and laboratory testing program, evaluation of soil testing results, evaluating site suitability and providing general geotechnical recommendations for construction, including providing shallow foundation recommendations.

1.2 Site Location and Description

The subject site is located at the northeast corner of the intersection between 45th Ave and Gulf Blvd in St Pete Beach, Florida as shown on **Figure 1, Site Location Map**. Specifically, the property is located in Section 6 and 7, Township 32 South, Range 16

East in Pinellas County, Florida. The proposed site consists of the green areas surrounding the active booster station.

The site is generally flat and level with elevation obtained from Google Earth at the boring locations at approximately 4 feet. GIS topographic information is provided on **Figure 2, USGS Topographic Map**. Boring/test elevations provided in this report were estimated based on Google Earth data; no surveying was completed by Madrid.

1.3 Soil Survey Review

The Natural Resources Conservation Services (NRCS) Soil Survey reports provide a general description of the typical shallow soil strata (about 6 feet) encountered within each particular soil mapping unit and reports typical depth to seasonal high water levels. The NRCS defines seasonal high water as “a zone of saturation at the highest average depth during the wettest season that is at least six inches thick, persists for more than a few weeks, and is within six feet of the soil surface.” The Soil Survey for Polk County indicates shallow soils at the site are comprised of **Palm Beach fine sand, 0 to 8 percent slopes** (map unit 19), as shown on **Figure 3, NRCS/USDA Soil Map** and summarized below.

According to the NRCS, Palm Beach fine sand consists of excessively drained fine sand formed on ridges on marine terraces. Typically, it consists of dark grayish brown fine sand at the surface to 4 inches below ground surface, followed by light gray fine sand to 80 inches mixed with 15 to 35 percent shell fragments by volume. Permeability is very rapid and the available water capacity is very low. The seasonal high water table is not encountered within six feet of the ground surface.

2.0 FIELD EXPLORATION

2.1 Test Pits and Undisturbed Sample Collection

Madrid completed one test pit (TP-1) within the footprint of the proposed stormwater swale site to a depth of approximately 2 feet below ground surface (bgs). The test pit was performed in order to look for historical indicators of seasonal high groundwater levels at the proposed pond and to collect relatively undisturbed samples (Shelby tubes), one vertical and one horizontal at the base of the test pit, for laboratory permeability testing. The test pit was supplemented with a hand auger boring at the base of the test pit to a depth of 7 feet bgs. In addition to classifying the encountered soils using the Unified Soil Classification System (USCS), the soil colors using the Munsell Color Chart were also described. The test pit logs are combined with the hand auger logs, which are provided with the boring logs in **Appendix A**.

2.2 Standard Penetration Test Borings

On July 11, 2022, Madrid explored subsurface conditions at the site by drilling five (5) Standard Penetration Test (SPT) borings (B-1 through B-5) with track mounted drilling equipment to depths ranging from 10 to 55 feet below ground surface (bgs). A GPS hand unit (typical accuracy of +/- 10 feet) was utilized in the field for location purposes. Boring locations are shown at the bottom of the boring logs in **Appendix A**. The boring locations are plotted on **Figure 4, Boring Location Plan** and should be considered approximate. The following borings were completed:

Table 2.2

SPT Borings	
Primary Structures	Two SPT borings to 55' bgs designated B-1 and B-2 at proposed building expansion footprint. Includes B-4 to 30' bgs at the proposed generator pad.
Pipeline	Two SPT borings to 10' bgs designated B-3 and B-5 at proposed vaults and pipeline replacement areas.
Stormwater	One Test Pit and supplemental Hand Auger to 7' bgs, designated TP-1 at the swale site.

Disturbed samples from the SPT borings were obtained using a split-spoon sampler in general accordance with ASTM Specification D 1586, using a 1.4-inch I.D. split-spoon sampler driven with a 140-pound auto hammer falling a distance of 30 inches. An engineering technician familiar with soil classification and field evaluations logged the borings in the field and placed samples in sealed containers and returned them to Madrid's laboratory for further classification. Upon completion, the boreholes were backfilled in general accordance with industry standards. The soil boring logs have been included with this report in **Appendix A**. Soil samples will be retained for a period of 3 months unless otherwise notified.

3.0 SUBSURFACE CONDITIONS AND LABORATORY TESTING

3.1 Subsurface Soil Conditions

In general, the SPT borings for the main structure and generator (B-1, B-2, and B-4) encountered variable conditions that included a thick layer of loose to very dense sand (SP) down to approximately 37 feet bgs, followed by interbedded layers of silty sand (SM), clayey sand (SC), clay (CL), and high plasticity silt (MH) to 52 feet bgs. Borings B-1 and B-2 also encountered layers of highly organic material from about 47 feet bgs to end of boring at 55 feet bgs.

At the vaults and pipes replacement areas, borings B-3 and B-5 encountered very loose to dense sand (SP) down to end of borings at 10 feet bgs.

At the stormwater swale area (TP-1), the borings generally found interbedded layers of sand (SP) and slightly silty sand (SP-SM) to 6 feet bgs.

Table 3.1: Soil Types Encountered

Stratum Number	Typical Soil Description	USCS Classification
1	Fine Sand to Fine Sand with trace Silt and/or Clay	SP
2	Fine Slightly Silty Sand or Fine Slightly Clayey Sand	SP-SM, SP-SC
3	Silty Sand or Clayey Sand	SM, SC
4	Highly Plastic Silt	MH
5	Clay	CL
6	Organic Silt	OL

No losses of drilling fluid circulation were reported in any of the SPT borings. The general soil profiles described above and as presented on the boring logs are based on our interpretation of subsurface conditions encountered at the boring locations only. Boundaries between soil layers are approximate and for illustration purposes only. Variations in soil conditions in both horizontal and vertical directions different from those presented are likely to exist between boring locations.

3.2 Groundwater Conditions and Seasonal High Ground Water

The project site is relatively flat and level. We note that the water table was encountered in the SPT borings at depths ranging from 4 to 4.5 feet bgs. Seasonal fluctuations in the groundwater level should be anticipated due to variations in rainfall.

The Soil Survey for Pinellas County, Florida describes the seasonal high water table (SHWT) for the map unit to be greater than 72 inches from the surface. However, due to the low site elevation and its immediate proximity to the beach, we find the encountered water table to be consistent with expectations for the site. Based upon the published survey information and our findings during the exploration, Madrid recommends a design high water table level at 2 feet bgs.

3.3 Laboratory Testing

Laboratory tests for natural water content (ASTM D2216), percent passing the No. 200 sieve (ASTM D1140), organic content (ASTM D2974), and Atterberg Limits Determination (ASTM D4318), as well as constant head permeability testing (AASHTO T215), were performed on selected samples retrieved during the field exploration from the SPT borings, Test Pit, and Hand Auger to verify the visual and tactile soil classifications. Laboratory test reports are included in **Appendix B**.

Table 3.3a

Lab Summary	
<#200 Sieve	1.7% - 81.1%
% Moisture	4.6% - 99.8%
Atterberg Limits	LL=59, PI=15
% Organic	4.3% - 19.9%

- During the field visit, Madrid obtained a set of undisturbed soil samples for laboratory permeability analysis. These samples were collected from within the excavated test pit (at TP-1), at the location shown on **Figure 4**. Vertical samples were obtained from a depth of about 24 to 30 inches bgs, and horizontal samples were obtained at a depth of about 24 inches bgs. The results of the laboratory permeability testing and percent passing the No. 200 sieve are summarized in the **Table 4.6**. These are ultimate values, and the appropriate factor of safety should be applied. Detailed **Constant Head Permeability Reports** have been included with this report in **Appendix B**.

4.0 EVALUATION AND GENERAL RECOMMENDATIONS

4.1 General Considerations

The following conclusions and recommendations are based on our understanding of the proposed project, the data obtained from the field exploration, experience with similar conditions, and generally accepted principles and practices of geotechnical engineering. Based on the results of the exploration completed at the site and our professional opinion, the existing site is suitable for the support of the proposed structures on a shallow foundation provided our recommendations are implemented. Soil conditions include very loose to medium dense sand to clayey sand. Loose soils were present near the ground surface. Proof-rolling and foundation preparation/compaction will be a critical

site preparation activity in order to provide uniform foundation performance. Foundation sizing is also critical to bearing capacity and settlement, as discussed subsequently. Some minor long-term settlement is anticipated due to clayey soils in the deeper depth and specific foundation recommendations are provided below. Organic soils do not appear to be a problem for the proposed construction, assuming any topsoil and roots/stumps are removed.

The water table is shallow at this site (as shallow as 48 inches during the soil borings) and additional fill would be beneficial for improved bearing capacity of foundations and/or improved performance of pavement sections. The water table depth is at about 4 feet bgs and we estimate the SHWT ranges between about 2 feet bgs. Permeability in the sandy soil at TP-1 was about 6.7 in/hr (Vert.) and 9.3 in/hr (Hor.). A confining layer was encountered at depths ranging from about 37 to 55 feet bgs. Our analysis and evaluation assume all recommendations are implemented during construction.

4.2 Foundation Analysis and Evaluation

The soils at this site consist primarily of loose to medium dense sand (SP) and clayey sand (SC). Soil compaction effort will be very important for improved long-term foundation performance. Compaction of the existing soil should be completed before any filling activities, in accordance with procedures described subsequently. Some over-excavation and replacement with the same material in a compacted effort is likely required.

Bearing Capacity

Structure loading information was not provided to Madrid for the main building. Settlement analysis was performed for shallow, continuous (strip) footings and square spread footings. Shallow foundations for the building should be embedded at least 18 inches below final grade and should be sized according to the charts provided in Appendix C, which includes embedment options at 1.5-, and 2.0-foot depth below final grade with footing widths from 1.5 feet to 3 feet for strip footings; and 3 feet to 6 feet for spread footing. Any foundation size and loading conditions that are at or below the corresponding solid color line are acceptable from a bearing capacity standpoint. (safety factor of 3 against bearing capacity failure).

Settlement

Provided the soil below structure foundations is prepared as per our recommendations in **Section 4.5** and loading does not exceed those provided herein, total settlement should be less than 1 inch with less than 1/2-inch differential settlement. Most of the settlement should occur immediately (during construction) as the soils at this site are very sandy and the clayey soils are relatively deep. Settlement estimates should

be considered very approximate and will vary across the site. As previously stated, we suggest that the structural engineer (foundation designer) consider additional reinforcement to minimize future cracking associated with differential foundation movement.

It should be noted that given the high variability of subsurface conditions, limited field and laboratory data, and limitations of the numerical model, settlement predictions developed by Madrid are approximate. Actual settlements observed during loading will depend on variations in subsurface conditions. When the stress zones for individual isolated footings overlap, the bearing pressure from the two footings is increased greater than the individual pressures. This should be considered by the design engineer.

4.3 Modulus of Subgrade Reaction

Reinforced concrete ground floor slabs are typically designed utilizing the modulus of subgrade reaction (k). For the design of slabs subject to sustained loads of up to 150 psf, a long-term modulus of subgrade reaction of 100 pounds per cubic inch (pci) is recommended. For short-term transient loads such as traffic or wheel loads, slabs, or pavements may be designed considering a subgrade reaction modulus of 150 pci. These values are based on estimated storage loadings, current grade levels, flexible floor slabs, and implementation of the site preparation recommendations provided herein. If higher modulus values are required, Madrid should be contacted for further evaluations.

4.4 Deep Foundation Assessment

Building will likely be supported on deep foundation. Based on our experience with foundation support of these structures constructed in the vicinity of the current building location, we have performed analysis for 12-in and 14-in precast, prestressed concrete pile (PPCP). If additional pile sizes or types are to be considered or greater foundation loads are anticipated, Madrid should be contacted for additional analyses and recommendations.

4.4.1 Axial Capacity

Our analytical approach to pile capacity computations uses a static pile capacity equation to determine the ultimate pile capacity at a given penetration depth. The pile's ultimate compression capacity is the sum of the pile shaft (skin friction) bearing and pile end (point) bearing. Coefficients of soil-pile interaction and end bearing (shallow local shear) were developed based on a soil model created from the field and laboratory test programs and experience with local soil materials. Other factors considered during pile capacity analyses include method of pile placement, type of pile, and pile installation equipment (when known).

Pile capacity analyses are in general accordance with guidelines from the Department of the Navy, Naval Facilities Engineering Command (NAVFAC) Design Manual 7.02. Pile capacity analyses considered 12-inch and 14-inch precast concrete piles.

The pile capacity curves for each pile size are included in **Appendix C**. The recommended ultimate pile design capacities do not include a factor of safety. If static pile load testing is performed, a factor of safety of 2.0 should be applied to come up with allowable pile capacity at respective depths; 2.5 can be used for dynamic load testing. If pile load testing is not performed, a factor of safety of 3.0 should be applied to estimate the allowable pile capacity at respective depths. Pile size and design tip elevation selection should be determined by the project structural engineer based on available geotechnical capacity and structural design requirements.

4.4.2 Pile Group Effect

Group effects were not considered during capacity computations or the development of the lateral design parameters above. **Table 4.4.2** presents recommended efficiency reductions for various pile spacings.

Table 4.4.2 – Typical Pile Group Reduction Factors

Pile Spacing	Axial Group Reduction Factor	Lateral Group Reduction Factor
2.5 pile diameters	0.75	0.6
3 pile diameters	1.0	0.7
4 pile diameters	1.0	0.8
5 pile diameters	1.0	0.9
+5 to 8 pile diameters	1.0	0.95

It should be noted that long-term pile settlement is dependent upon pile spacing and pile dead loads. Pile group settlement should be evaluated once pile spacing and loads have been determined.

4.4.3 Precast Prestressed Concrete Pile Installation and Monitoring

1. Selection of the foundation subcontractor should be based on qualifications, experience, past project production and documented schedule satisfactions, in addition to cost of services.
2. A dynamic pile load testing program should be implemented for driven piles with compression capacity requirements in lieu of static pile load tests. Dynamic testing should be performed in accordance with ASTM D-4945 procedures. Field data collection should use the Pile Driving Analyzer (PDA). CAPWAP analyses should be used to estimate total pile compression capacity. Driven pile drivability analyses

should use the GRLWEAP method. The results of the PDA and CAPWAP analyses should be used to estimate tension capacities of the tested piles. Since the majority of the soil profile consists of sandy soils, pile setup is expected after initial pile driving; therefore, re-strike PDA tests should be planned for each test pile after a minimum setup time of 48 hours. Static lateral pile load tests, if deemed necessary by the project structural engineer, should be performed in accordance with ASTM D-3966.

3. All production piles should be installed in the same manner, to the same depth and with the same equipment utilized for the indicator and PDA testing program.
4. All piles shall be installed within three inches of the specified plan location, and shall be installed within 1% of vertical or batter alignment as determined at the leads.
5. The Madrid geotechnical engineer should be involved with the preparation of the driven piling specifications, indicator pile program, pile load test program, and all production pile installation activities. Madrid shall also be involved in the review/acceptance process of the pile contractor submittals.

Experienced Madrid technical personnel should be involved with the field inspections of all test and production piles to result in full documentation for this phase of project construction.

4.5 Site Preparation and Earthwork

4.5.1 Clearing and Stripping

All construction areas should be cleared of any trees, scrub vegetation, existing debris and topsoil stripped as necessary to remove roots and other deleterious material. Complete removal of stumps and roots is important to help reduce future settlement as any remnants decay in the future. Clearing and grubbing should be closely monitored by the Engineer. Topsoil is anticipated to be on the order of 6 inches or less and should be discarded or may be stockpiled for future reuse in landscape areas if desired. In addition, any abandoned utilities should be removed as open conduits can lead to soil erosion and a loss of support beneath foundations.

4.5.2 Proof-Rolling

After clearing and grubbing, the building pad, pavement areas and other foundation subgrade areas, including out to 10 feet horizontally from the plan limits, should be evaluated and methodically proof-rolled, as directed by representatives of Madrid, with compaction equipment or with heavy construction equipment (i.e. large vibratory smooth roller or loaded front-end loader) capable of achieving the required compaction. Rolling should continue until a density of at least 98 percent of Modified

Proctor maximum dry density (MPMDD) (ASTM D-1557) is achieved over the building pad, pavement areas and other foundation areas. Any soft, rolling or otherwise suspect areas should be investigated, and any unsuitable soils and/or unstable soil conditions should be removed and replaced with structural fill as described in **Section 4.5.3**.

4.5.3 Earthwork and Compaction

All structural soils (existing or placed) within 2 feet beneath the bottom of shallow foundations, pavement areas and floor slabs should meet gradation (no more than 12 percent fines or 4 percent organics) requirements and compacted to achieve the minimum density requirement of 98% of MPMDD. This may require excavation and compaction below footing subgrade level. Clayey sand soils at this site may not be suitable for re-use, depending on clay content. Organic content is not anticipated to be an issue provided topsoil is removed. Foundation subgrade soils should be inspected to verify that they meet the gradation and organic content requirements, compacted, and tested to verify in-place density to a depth of 24 inches below footing bottoms. The base of all excavations should be compacted to 98% of MPMDD prior to placement of fill.

Fill placement in large areas should be completed in lifts no greater than 12 inches in thickness and compacted to at least 98 percent of the MPMDD. If compaction cannot be achieved at 12-inch lifts, thinner lifts may be required. It is noted that heavy vibratory compaction near other structures has the potential to cause damage. Foundation soils in smaller footing excavations or utility trenches where compaction must be achieved with smaller hand operated equipment should be compacted in lifts no greater than 6 inches in thickness and compacted to at least 98 percent of the MPMDD.

Similar earthwork and compaction operations should be employed for utility installations. Generally, all utilities should be installed in accordance with the current addition of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction. Prior to construction, bulk samples representative of anticipated subgrade and fill soils should be collected and subjected to Modified Proctor testing. Existing clean sandy soils excavated from footings intended for reuse as backfill may require moisture conditioning to permit adequate compaction.

4.5.4 Excavation and Shoring

In general, the anticipated depth of trench excavations typically ranges from about 2 to 6 feet, but locally as deep as about 10 feet or more below existing grade at road crossings may be required. Trenches should be sufficiently wide to permit proper compaction along all sides of pipes and structures. The bases of trench excavations will expose loose sandy soil conditions at most locations along the pipeline route. Very soft or yielding subgrade soils should be excavated and replaced.

Braced or shored excavations may be required for space limitations using trench boxes or other stabilization methods. Excavation stability is the responsibility of the contractor. All excavations should conform to the Occupational Safety and Health Act (OSHA) requirements for Type C soils as described Federal Register 29 CFR Part 1926. Excavated materials should not be stockpiled at the top of the slope within a horizontal distance equal to the excavation depth, unless specific provisions for surcharge loading have been included in the design of the shoring system.

Design of a shoring system is the responsibility of the selected contractor. A number of variable factors, such as nature and strength of excavated soils, depth of excavation and groundwater, proximity of adjacent structures, and economics of construction method, etc., will affect the choice of support method. All vertical shoring or prefabricated trench lining systems should be continuous and maintained in place to assure adequate temporary stability during backfilling of the pipe trench as recommended subsequently.

For design of below grade structures or shoring, the following general design parameters are recommended:

Table 4.5.4 – Lateral Earth Pressure Design Parameters

Depth, ft.	Soil Type	Unit Weight (sat./buoy, psf)	Phi Angle	Cohesion (psf)	Lateral Earth Pressure Parameters		
					Ko	Kp	Ka
0 to 4	Loose Sand	110 / 50	28	---	0.53	2.77	0.36
4 to 10	Medium Dense Sand	120 / 60	30	---	0.50	3.00	0.30

The earth pressure parameters in **Table 4.5.4** do not include hydrostatic pressure. We recommend that below grade retaining structures should consider water levels at potential flooded conditions and hydrostatic pressure be added for the soil layers located below the water table in addition to the lateral pressures mentioned in Table 4.5.4.

4.5.5 Dewatering

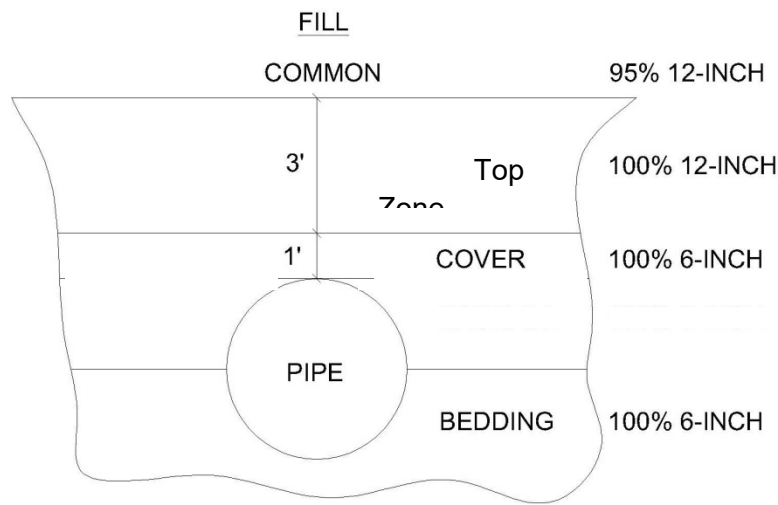
Groundwater was encountered in the boring locations at 4 feet during the time of drilling. Depending upon the depth of excavation and time of year when construction is scheduled, groundwater control may need to be taken into account by the contractors.

We recommend that, where necessary, a dewatering system be designed and installed to draw the groundwater table down to a minimum depth of two feet below the final excavated grade for pipelines. If needed, for excavations up to 10 feet depth, depending on the local soil profile present, a shallow well-point system may be adequate for trenches and small excavations up to approximately 50 feet in plan dimension. Excavations in excess of 15 feet depth may require a multi-stage well-point system, deep

wells or a single stage well-point installed from a reduced grade elevation to accomplish the recommended drawdown. Sump pumps may be effective, but only to locally dewater the soils; they may only be useful at very localized installations. The contractor should employ a registered professional engineer to design all shoring and dewatering systems.

4.5.6 Pipe Bedding and Backfilling

The following diagram indicates the typical pipe backfill limits and compaction requirements (6 or 12-inch lifts) that we recommend:



Clean fine sands (SP) containing less than five percent passing the U.S. standard No. 200 sieve and less than four percent organic matter (as determined by ASTM D2974) may be used as select sand pipe bedding material. Most of the soils encountered along the pipeline route should meet this criterion. Import of fill should not be necessary for the pipeline backfill. Suitable pipe bedding should be free of stones, gravel, organics, vegetation and other deleterious material, placed in uniform loose lifts not exceeding six inches thick and compacted to at least 100 percent of its maximum dry density as determined by ASTM D698 (Standard Proctor-SPMDD). Bedding material within the middle 1/3 of the pipe diameter should be loosened for better seating of the pipe in the bedding soil and shaped to allow for bell joints if applicable. Pipe bedding material should be placed from one foot below to at least half-way up the pipe. Particular care needs to be exercised during pipe bedding placement and compaction around pipe haunches, elbows, and curves. Loose bedding materials may subsequently compact in-service, if subjected to dynamic or vibrational loading due to surge pressures, resulting in excessive pipe deflections and possibly failure. Soils in the cover zone (from half-way up the pipe to 1-foot over the pipe, as shown on the graphic above) should consist of clean to relatively clean sand (SP) or slightly silty sand (SP-SM) with no more than 12% silty fines passing the No. 200 sieve and less than 4% organic content, and also compacted to 100% of the SPMDD in lifts no greater than 6-inch compacted thickness. Compaction to

100% of the SPMDD should be performed at the base of all excavations prior to placing the first layer of backfill.

Excavation backfill material more than 1 foot above the pipe top zone should consist of granular soils with less than 15 percent fines content passing the No. 200 sieve and an organic content of not more than 4 percent generally conforming to USCS soil types SP to SP-SM/SP-SC and SM; use of Clayey Sand (SC) may present moisture conditioning problems and is not recommended. It appears that nearly all of the excavated soils will meet these requirements. Organic soils, if encountered, are not suitable backfill soils in any location and should be replaced with suitable fill. Excavation backfill typically should be placed in lifts no greater than 12 inches in compacted thickness and compacted to 100 percent of SPMDD. Common fill used more than 3 feet above the top of pipe and outside of structure or pavement areas can have up to 20% fines and be compacted to 90 percent of SPMDD unless under structures or roadways which must maintain a minimum compaction of 95% of SPMDD or as otherwise required for structure or roadway backfill requirements. Excavated spoil material intended for reuse as backfill will likely require moisture conditioning to permit adequate compaction.

4.5.7 Unsuitable Materials

In general, highly organic soils or clayey sand should not be re-used as backfill as it is generally difficult to compact and subject to long term settlement/decay. Classification of soils as suitable for use as backfill should be monitored continuously during construction because the limited exploration performed for this study will not have identified all areas with unsuitable soils. We anticipate very few problems with unsuitable materials for this project, except for clayey sand encountered in the borings.

4.6 Stormwater Ponds

The following recommendations are provided for the design engineer to assist them with stormwater pond design. The borings within potential pond sites found sandy soil conditions found elsewhere at this site. A confining layer of clayey sand, silt and clay was encountered at depths of about 37 feet bgs. The following data was obtained for the pond locations:

Table 4.6: Pond Parameters

Pond Boring #	Orientation	Percent Passing # 200 Sieve	Average Permeability (in/hr)	Water Table Depth (in)	Estimated SHWT Depth (in)	Pond Bottom Elev. (ft)	Existing Ground Elev. (ft)
TP-1	Horizontal	2.5	9.3	54	24	-1	4
	Vertical	3.0	6.7				

Note: these values are ultimate values (no safety factor) and the designer should select conservative design values based on this information and their experience with similar conditions.

The shallow water table (design depth of 2 feet bgs) may be the most limiting factor for design purposes. Permeability rates were fast (6.7 in/hr vertical) and (about 9.3 in/hr horizontal), the designer should choose a conservative rate at pond for design purposes. It was noted that horizontal permeability rates were slightly higher than vertical rates, which is typical for sandy soils in this part of Florida. The water table was encountered at a depth of 54 inches at the pond.

It is recommended that the pond designer select a conservative depth for the design SHWT. The designer should also note that the water table at this site appears to be relatively level and differences in groundwater depth are likely to be due to minor differences in ground surface elevation. Elevations reported on boring logs were estimated based on data from Google Earth and should be considered approximate only.

4.7 Shallow Excavations and Dewatering

Open-cut methods appear suitable for shallow excavations, but very loose sand may slough at shallow slopes. Temporary side slopes for the open-cut excavations should be stable in the short term at slopes of one and one-half feet horizontal to one foot vertical (1.5:1 H:V). All excavations should conform to the Occupational Safety and Health Act (OSHA) requirements for Type C soils as described Federal Register 29 CFR Part 1926. Design of a shoring system is the responsibility of the selected contractor. A number of variable factors, such as nature and strength of excavated soils, depth of excavation and groundwater, proximity of adjacent structures, and economics of construction method, etc., will affect the choice of support method.

All vertical shoring or prefabricated trench lining systems should be continuous and maintained in place to assure adequate temporary stability during backfilling of the trench as recommended subsequently. Excavated soils should not be stockpiled within 15 feet (horizontally) of the shored excavations, unless specific provisions for surcharge loading have been included in the design of the shoring system. The final decision on appropriate excavation methods and design of shoring systems is the responsibility of the contractor.

Based upon our recommended design water table (2 feet bgs) and depending upon the time of year, it appears that groundwater should be anticipated for excavations. We recommend that a dewatering system be designed and installed to draw the groundwater table down to a depth sufficient to achieve compaction for the foundation; this typically requires lowering the water to 2 to 3 feet below the foundation subgrade level. The contractor should employ a registered professional engineer to design all shoring and dewatering systems.

4.8 On-Site Soil Suitability

The soils encountered along the roadway alignment and within the proposed pond/potential borrow pit areas are generally suitable for use as embankment fill per FDOT Standard Plan Indices 120-1 and 120-2. These indices should be used to determine the specific usability of the soil types encountered during our exploration program. Select soils having an average organic content of more than 2.5 percent, or having an individual test value which exceeds 4 percent, shall not be used in the subgrade portion of the roadbed. Select soils having an average organic content of more than 5 percent, or an organic content individual test result which exceeds 7 percent, shall not be used in the portion of embankment inside a 1V:2H extending downward from the edge of the roadway shoulder. It is recommended that materials be compacted in place according to requirements detailed in this report.

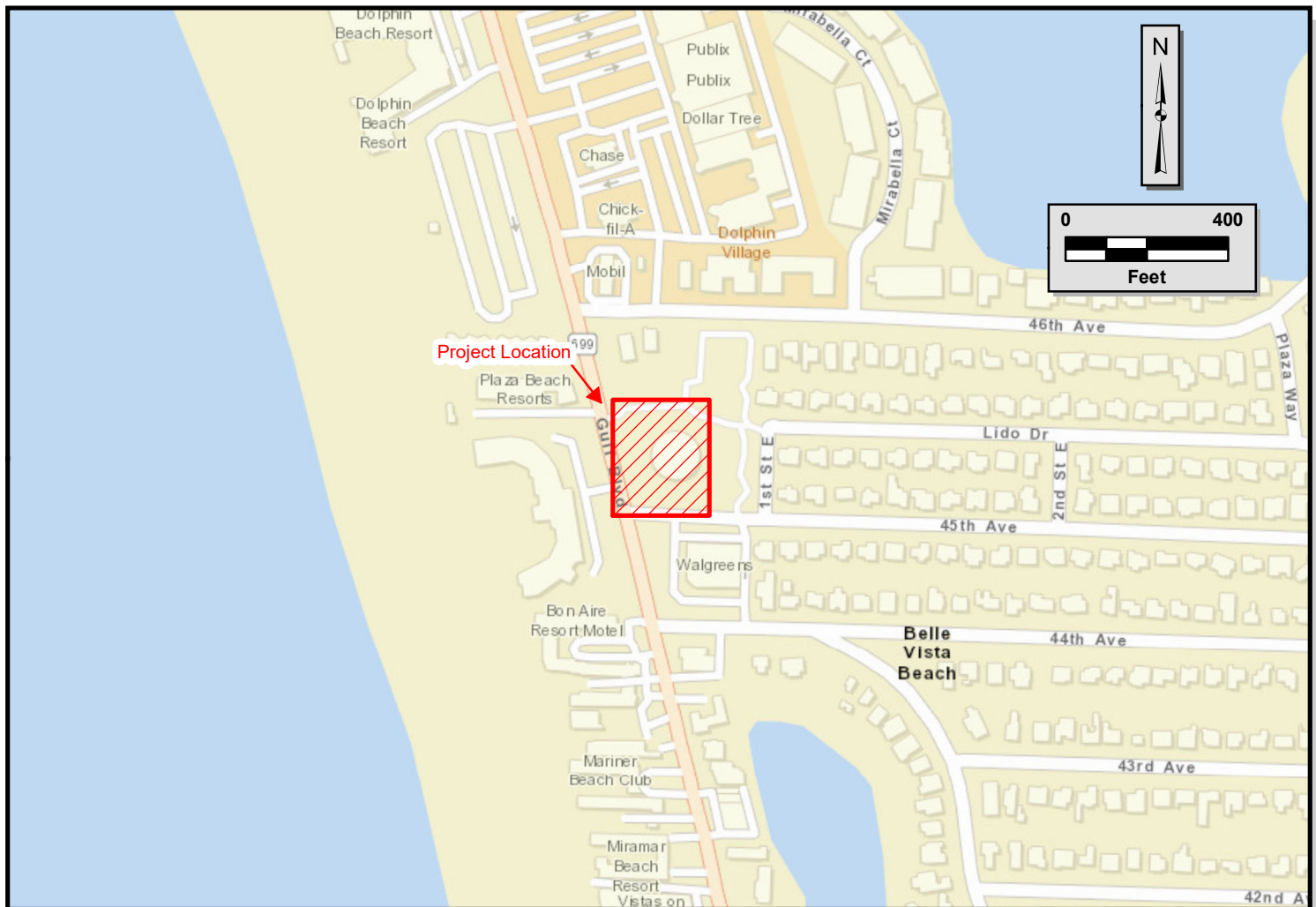
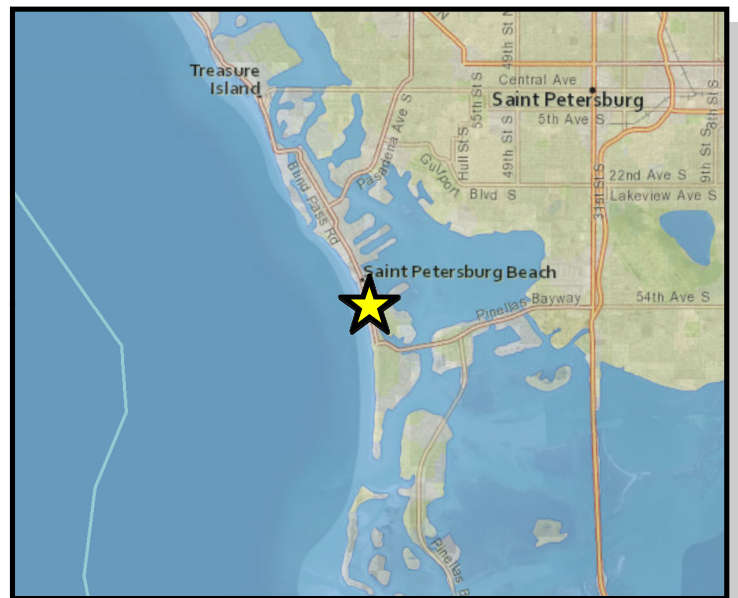
4.9 Quality Assurance

We recommend implementing a comprehensive quality assurance program to verify that all site preparation and foundation construction is conducted in accordance with the recommendations herein and the appropriate plans and specifications. It is strongly recommended that Madrid be retained to perform materials testing and inspection services to observe that the subsurface conditions are as we have discussed herein and that foundation construction, ground densification and fill placement is in accordance with our recommendations. Madrid cannot accept responsibility for any conditions which deviate from those described in this report if not engaged to provide construction observation and testing for this project. An on-site engineering technician should monitor all site preparation to verify that all deleterious materials have been removed and should observe earthwork activities to verify that the foundation and pavement subgrade soils conform to the recommendations herein. In-situ density tests should be conducted during filling activities and below all footings, pavement areas and structure bottoms to verify that the required densities have been achieved. In-situ density values should be compared to laboratory Proctor moisture-density results for in-situ and fill soils to confirm they meet minimum compaction requirements.

5.0 LIMITATIONS

This report has been prepared for Wright-Pierce for the proposed improvements at the Gulf Beach Booster Station in St Pete Beach, Florida. The information in this report is intended for the sole use of the addressees and their assigns/agents and may not be relied upon or used by any third party without expressed written consent. The evaluations and recommendations presented herein are based on Madrid's interpretation and understanding of site conditions and information provided by the Client. This report is not a specification document and is not intended for use as a part of the specifications.

Varying degrees of non-uniformity of the horizontal and vertical soil conditions may exist at the site. This study is not intended to be an evaluation of sinkhole risk. This study does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface. The study reported herein has been conducted in accordance with the generally accepted standards, principles and practices in the geotechnical engineering profession. No other warranty, expressed or implied, is made. Madrid is not responsible for the independent conclusions, opinions, and/or recommendations made by others based on the field investigation and laboratory testing data presented in this report. Soil samples will be stored at our Bartow Office for a period of 3 months from the date of this report unless other arrangements are made.



Sources: GIS Information (ESRI)



MADRID CPWG

2030 State Road 60 East
Bartow, Florida 33830
863 533-9007 Fax: 863 533-8997
EB-0006509

Wright-Pierce

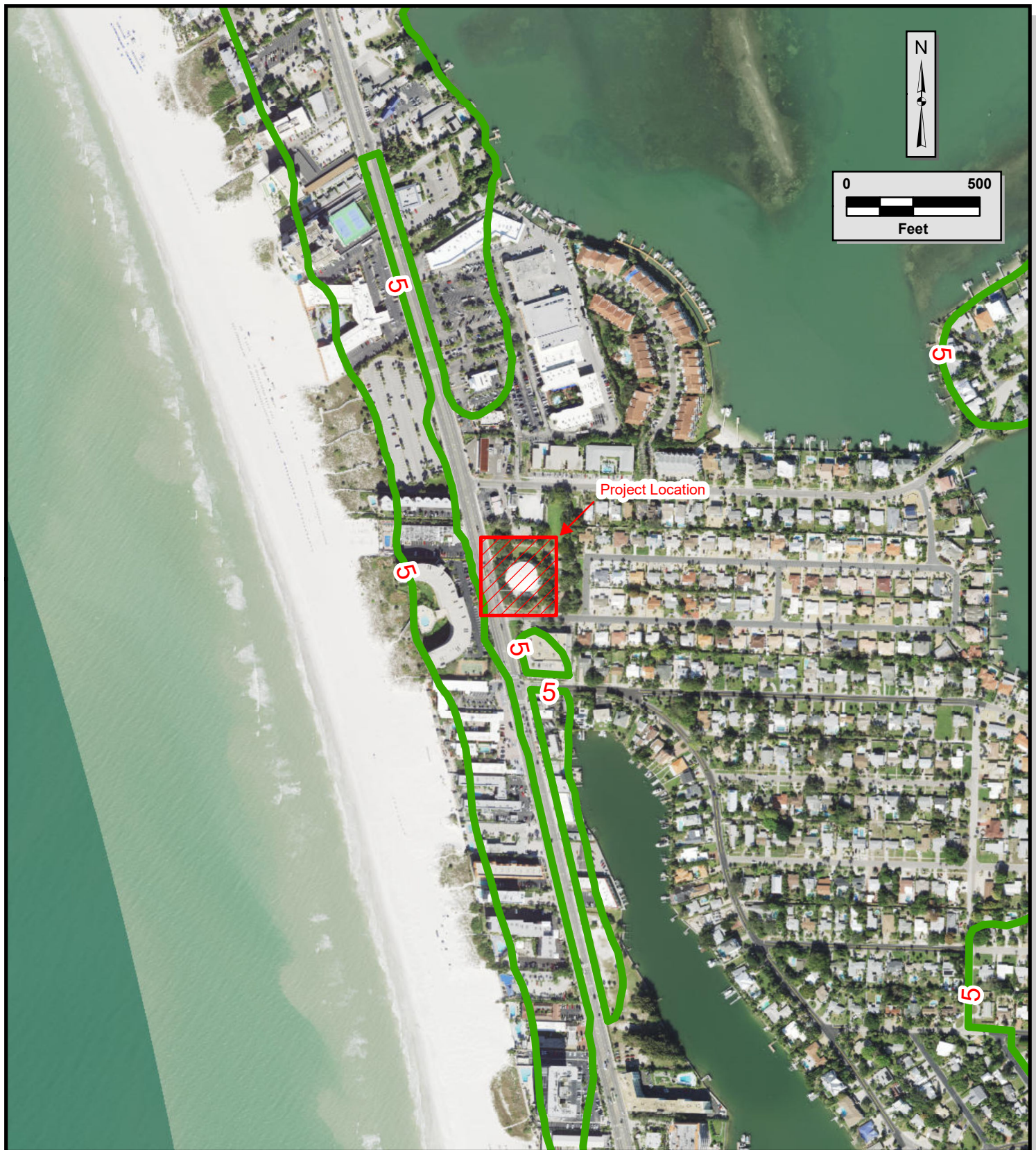
FIGURE 1
Site Location Map
Gulf Beach Booster Station
St Pete Beach, Florida

Project Number:
14989

Notes:

Drawn By: CJ

Checked By: DeS



Source: GIS Information (ESRI), Topographic Information (USGS)



MADRID CPWG

2030 State Road 60 East
Bartow, Florida 33830
863 533-9007 Fax: 863 533-8997
EB-0006509

Wright-Pierce

FIGURE 2
USGS Topographic Map
Gulf Beach Booster Station
St Pete Beach, Florida

Project Number:
14989

Drawn By: CJ

Checked By: DeS



Legend

- 100, WATERS OF THE GULF OF MEXICO
- 16, MATLACHA
- 19, PALM BEACH
- 8, BEACHES

Source: GIS Information (ESRI), Topographic Information (USGS)



MADRID CPWG

2030 State Road 60 East
Bartow, Florida 33830
863 533-9007 Fax: 863 533-8997
EB-0006509

Wright-Pierce

FIGURE 3
NRCS/USDA Soils Map
Gulf Beach Booster Station
St Pete Beach, Florida

Project Number:
14989

Drawn By: CJ

Checked By: DeS



Aerial Data Source – 2021 Microsoft Corporation, 2021 CNES Distribution Airbus DS.



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FIGURE 4
Boring Location Plan
Gulf Beach Booster Station
St Pete Beach, Florida

Project Number:
14989

Notes: Base map provided by Client.

Drawn By: CJ

Checked By: DeS

APPENDIX A

BORING NO. B-01**DATE DRILLED** 7/11/2022**PROJECT NUMBER** 14989**PROJECT** Gulf Beach Booster Station**TEST BORING RECORD**
Madrid CPWG**REMARKS:** Water table encountered at 48" bgs. No loss of circulation. Auto hammer used.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST										
						0	10	20	30	40	60	80	100			
	Loose pale brown sand (SP)	0		3-4-4-5	8											
	With shells <#200 = 1.9%			3-2-3-4	5											
	Medium dense gray	5		5-10-12-15	22											
	Light gray			2-4-7-11	11											
		10		1-11-12-17	23											
	Dense															
		15		2-16-18	34											
		20		14-16-21	37											
	Medium dense gray															
		25		10-10-12	22											
		30		6-6-7	13											
		35		2-3-9	12											
37	Soft gray highly plastic silt (MH) <#200 = 81.1% LL = 59 PL = 44 PI = 15															
		40		WOR-WOR-3	3											
42	Very soft clay (CL)															
		45		WOH-WOH-1	1											
	Loose dark gray with shells <#200 = 55.1% organic content = 4.3%	50		1-2-4	6											
52	Loose light gray sand with shells (SP)															
		55		4-4-3	7											

Depth (ft)

DESCRIPTION

Depth (ft)

Elev. (ft)

Blows

N-Value

0

10

20

30

40

60

80

100

Loose pale brown sand (SP)

With shells
<#200 = 1.9%

Medium dense gray

Light gray

Dense

Medium dense gray

Soft gray highly plastic silt (MH)
<#200 = 81.1%
LL = 59 PL = 44 PI = 15

Very soft clay (CL)

Loose dark gray with shells
<#200 = 55.1%
organic content = 4.3%

Loose light gray sand with shells (SP)

0

5

10

15

20

25

30

35

37

40

42

45

50

52

55

3-4-4-5

3-2-3-4

5-10-12-15

2-4-7-11

1-11-12-17

2-16-18

14-16-21

10-10-12

6-6-7

2-3-9

WOR-WOR-3

WOH-WOH-1

1-2-4

4-4-3

8

5

22

11

23

34

37

22

13

12

3

1

6

7

0

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MEG WITH BLOW COUNTS TOP 14989 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 7/25/22

BORING LOCATION: 27.71961°N, 82.73902°W

PAGE 1 OF 1

BORING NO. B-02**DATE DRILLED** 7/11/2022**PROJECT NUMBER** 14989**PROJECT** Gulf Beach Booster Station**TEST BORING RECORD**
Madrid CPWG**REMARKS:** Water table encountered at 48" bgs. No loss of circulation. Auto hammer used.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST									
						0	10	20	30	40	60	80	100		
	Loose gray sand (SP)	0		2-2-4-6	6		●								
	Medium dense light gray with shells			6-6-6-7	12			●							
	<#200 = 2.2%	5		8-8-4-3	12			●							
				5-5-6-10	11			●							
		10		2-5-13-17	18				●						
				3-7-7	14			●							
	Very dense	15		15-19-23	42					●					
	Medium dense	20		8-6-6	12			●							
		25		6-6-7	13			●							
	Gray	30		3-5-4	9			●							
37	Soft gray clayey sand (SC)	35		WOH-WOH-2	2			●							
	<#200 = 34.7%	40		WOH-WOH-WOH	WOH										
	Very loose gray	45		WOH-1-2	3			●							
47	Loose dark gray silty sand with shells (SM)	50		4-5-8	13			●							
52	Very stiff very dark gray organic silt (OL)	55													
	<#200 = 21.9% organic content = 19.9%														

MEG WITH BLOW COUNTS TOP 14989 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 7/25/22

BORING LOCATION: 27.71961°N, 82.73925°W

PAGE 1 OF 1

PROJECT Gulf Beach Booster Station

REMARKS: Water table encountered at 48" bgs. No loss of circulation. Auto hammer used.

[illegible]

PROJECT Gulf Beach Booster Station

REMARKS: Water table encountered at 48" bgs. No loss of circulation. Auto hammer used.



Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	STANDARD PENETRATION TEST															
						0	10	20	30	40	60	80	100								
	Medium dense light gray sand (SP)	0		3-5-7-8	12																
	<#200 = 3.4%			7-5-6-10	11																
	Loose pale brown	5		4-4-3-6	7																
				2-2-2-4	4																
	Medium dense very pale brown	10		4-6-8-10	14																
	Dense light gray	15		1-12-17	29																
				6-14-20	34																
		20																			
				4-8-20	28																
		25																			
	Very pale brown	30		13-15-11	26																

PROJECT Gulf Beach Booster Station

REMARKS: Water table encountered at 48" bgs. No loss of circulation. Auto hammer used.

[illegible]

PROJECT Gulf Beach Booster Station

REMARKS: Water table encountered at 54" bgs. No loss of circulation. Auto hammer used.

[illegible]

APPENDIX B

ASTM D1140 MOISTURE / PERCENT < No. 200 SIEVE**Project Number:** 14989

Project Name: Gulf Beach Booster Station

Project Location: Maitland, FL

Client: Wright-Pierce

Date Tested: 7/18/2022

Tested By: BJN

[illegible]

W_C = Weight of Container
 S_W = Weight of Wet Sample
 S_D = Weight of Dry Sample
 S_R = Weight of Sample Retained

$$\text{Solids Content (\%)} = \frac{S_D}{S_W} * 100$$

$$\text{Moisture Content (\%)} = \frac{W_{H_2O}}{S_D} * 100$$

$$< \# 200 \text{ Sieve (\%)} = \frac{(S_D - S_R)}{S_D} * 100$$

AASHTO T267 ORGANIC CONTENT

Project Number: 14989

Project Name: Gulf Beach Booster Station

Project Location: Maitland, FL

Client: Wright-Pierce

Date Tested: 7/15/2022

Technician: BJN

[illegible]

Average Organic Content (%): 12.1%

W_C = Weight of Container

S_w = Weight of Wet Sample

S_D = Weight of Dry Sample

W_{fC} = Weight of Furnace Container

$$S_{FD} = \text{Weight of Furnace Dried Sample}$$

$$\text{Solids Content (\%)} = \frac{S_D}{S_W} * 100$$

$$\text{Moisture Content (\%)} = \frac{(S_w - S_d)}{S_d} * 100$$

$$\text{Organic Content (\%)} = \frac{(S_D - S_{FD})}{S_D} * 100$$

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ATTERBERG LIMITS DETERMINATION AASHTO T89/90

Project Number: 14989

Project Name: Gulf Beach Booster Station

Project Location: Maitland, FL

Client: Wright-Pierce

Date Tested: 7/19/2022

Technician: BJN

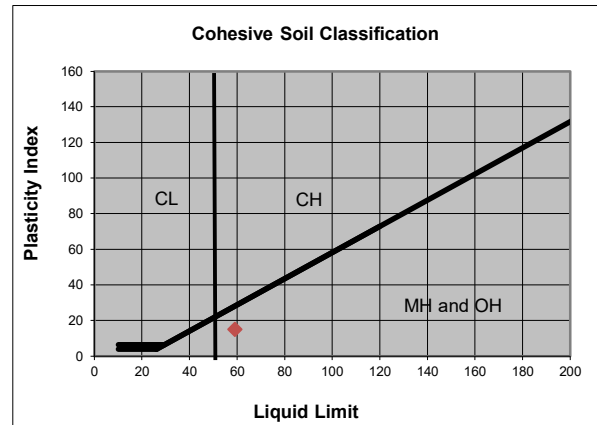
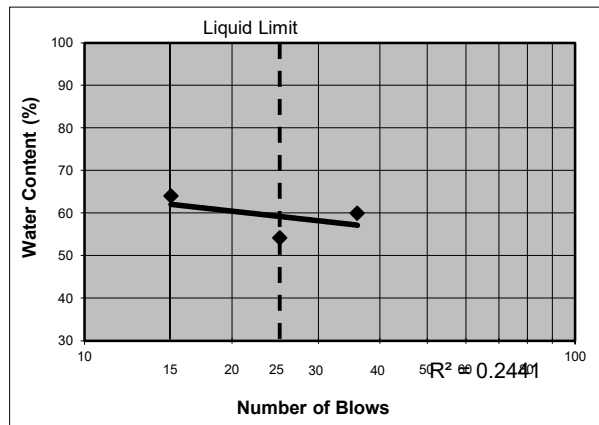
Sample Number: B-1

Sample Location: 38.5 TO 40'

Soil Description: highly plastic sandy silt

USCS Code: MH

Liquid Limit					
Sample Number	8	11	12		
$W_C + S_W$ (g)	20.67	21.82	22.47		
$W_C + S_D$ (g)	17.98	18.94	18.99		
W_C (g)	13.50	13.63	13.56		
S_D (g)	4.48	5.31	5.43		
W_{H_2O} (g)	2.69	2.88	3.48		
Number of Blows	36	25	15		
Moisture Content (%)	60.04	54.24	64.09		



Plastic Limit				Summary
Sample Number	2	3		% < #200 = 81.1
$W_C + S_W$ (g)	17.41	17.31		Liquid Limit = 59
$W_C + S_D$ (g)	16.23	16.17		Plastic Limit = 44
W_C (g)	13.58	13.56		Plasticity Index = 15
S_D (g)	2.65	2.61		
W_{H_2O} (g)	1.18	1.14		
Moisture Content (%)	44.53	43.68		

$$\text{Moisture Content (\%)} = \frac{W_{H_2O}}{S_D} * 100$$

$$\sigma = 0.43$$



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ASTM D2434-68 CONSTANT HEAD PERMEABILITY

Project Number: 14989
Project Name: Gulf Beach Booster Station
Project Location: Maitland, FL
Client: Wright-Pierce

Date Tested: 7/15/2022
Tested By: BJN

Boring Number: TP-1 Vert
Soil Description: sand

Sample Interval:
USCS Code: SP
< #200 sieve: 3.0 %
Post-Test Moisture: 23.4 %
Natural Moisture: 9.6 %

Unit weight determination (input in yellow)

Weight in-situ soil + Shelby tube: 1434.08 g
Weight post-test soil + Shelby: 1602.29 g
Weight of Shelby tube: 422.78 g
Weight of in-situ soil: 1011.30 g
Weight of post-test (sat.) soil: 1179.51 g
Weight of soil dry: 922.72 g
Diameter of Permeameter: 7.31 cm
Height of soil in Permeameter: 14.98 cm
Area of soil in Permeameter: 41.97 cm²
Post-Test Unit Weight of soil: 1.88 g/cm³

Sample Density

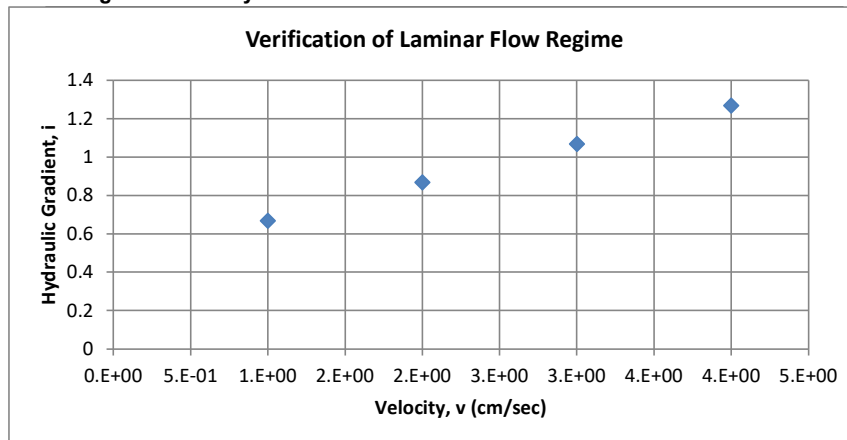
117.1 pcf (post-test)
100.4 pcf (in-situ)
91.6 pcf (dry)

Permeability determination

Length of soil in Permeameter, l : 14.98 cm
Cross sectional Area, A : 41.97 cm²

Trial No.	Head, h (cm)	Flow, Q_{out} (cm ³)	Time, t (s)	Temp, T (°C)	Permeability at T , k_T (cm/s)	Ratio of Viscosity, η $\eta_T/\eta_{20^\circ C}$	Hydraulic Gradient, i	Velocity, v (cm/sec)	Permeability at 20°C, $k_{20^\circ C}$ (cm/s)
1	10	45.04	300	29	5.36E-03	0.8139	0.66755674	3.58E-03	4.36E-03
2	13	65.01	300	29	5.95E-03	0.8139	0.86782377	5.16E-03	4.84E-03
3	16	81.41	300	29	6.05E-03	0.8139	1.06809079	6.47E-03	4.93E-03
4	19	94.94	300	29	5.95E-03	0.8139	1.26835781	7.54E-03	4.84E-03
5									

Average Permeability: 4.74E-03 cm/s **6.7 in/hr**





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ASTM D2434-68 CONSTANT HEAD PERMEABILITY

Project Number: 14989
Project Name: Gulf Beach Booster Station
Project Location: Maitland, FL
Client: Wright-Pierce

Date Tested: 7/15/2022
Tested By: BJN

Boring Number: TP-1 Horiz
Soil Description: sand

Sample Interval:
USCS Code: SP
< #200 sieve: 2.5 %
Post-Test Moisture: 22.8 %
Natural Moisture: 4.6 %

Unit weight determination (input in yellow)

Weight in-situ soil + Shelby tube: 1410.25 g
Weight post-test soil + Shelby: 1588.8 g
Weight of Shelby tube: 141.39 g
Weight of in-situ soil: 1268.86 g
Weight of post-test (sat.) soil: 1447.41 g
Weight of soil dry: 1213.06 g
Diameter of Permeameter: 7.22 cm
Height of soil in Permeameter: 14.58 cm
Area of soil in Permeameter: 40.94 cm²
Post-Test Unit Weight of soil: 2.42 g/cm³

Sample Density

151.4 pcf (post-test)
132.7 pcf (in-situ)
126.9 pcf (dry)

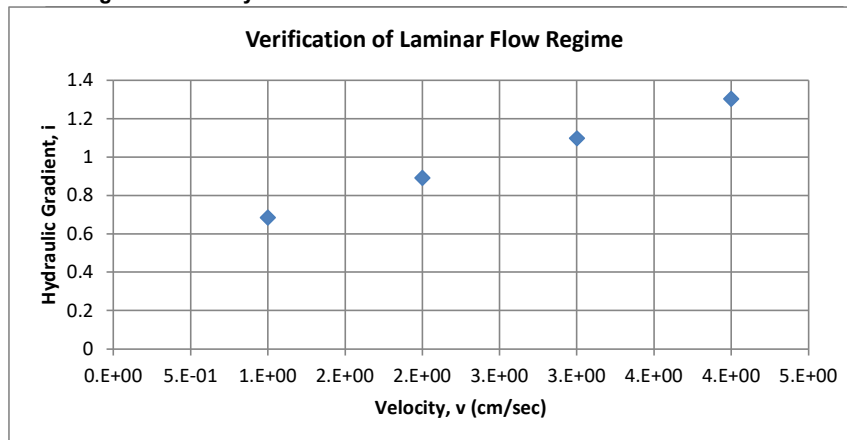
Permeability determination

Length of soil in Permeameter, l : 14.58 cm
Cross sectional Area, A : 40.94 cm²

Trial No.	Head, h (cm)	Flow, Q_{out} (cm ³)	Time, t (s)	Temp, T (°C)	Permeability at T , k_T (cm/s)	Ratio of Viscosity, η $\eta_T / \eta_{20^\circ C}$	Hydraulic Gradient, i	Velocity, v (cm/sec)	Permeability at 20°C, $k_{20^\circ C}$ (cm/s)
1	10	65.91	300	28	7.82E-03	0.8318	0.68587106	5.37E-03	6.51E-03
2	13	85.86	300	28	7.84E-03	0.8318	0.89163237	6.99E-03	6.52E-03
3	16	107.22	300	28	7.95E-03	0.8318	1.09739369	8.73E-03	6.62E-03
4	19	125.57	300	28	7.85E-03	0.8318	1.30315501	1.02E-02	6.53E-03
5									

Average Permeability: 6.54E-03 cm/s

9.3 in/hr



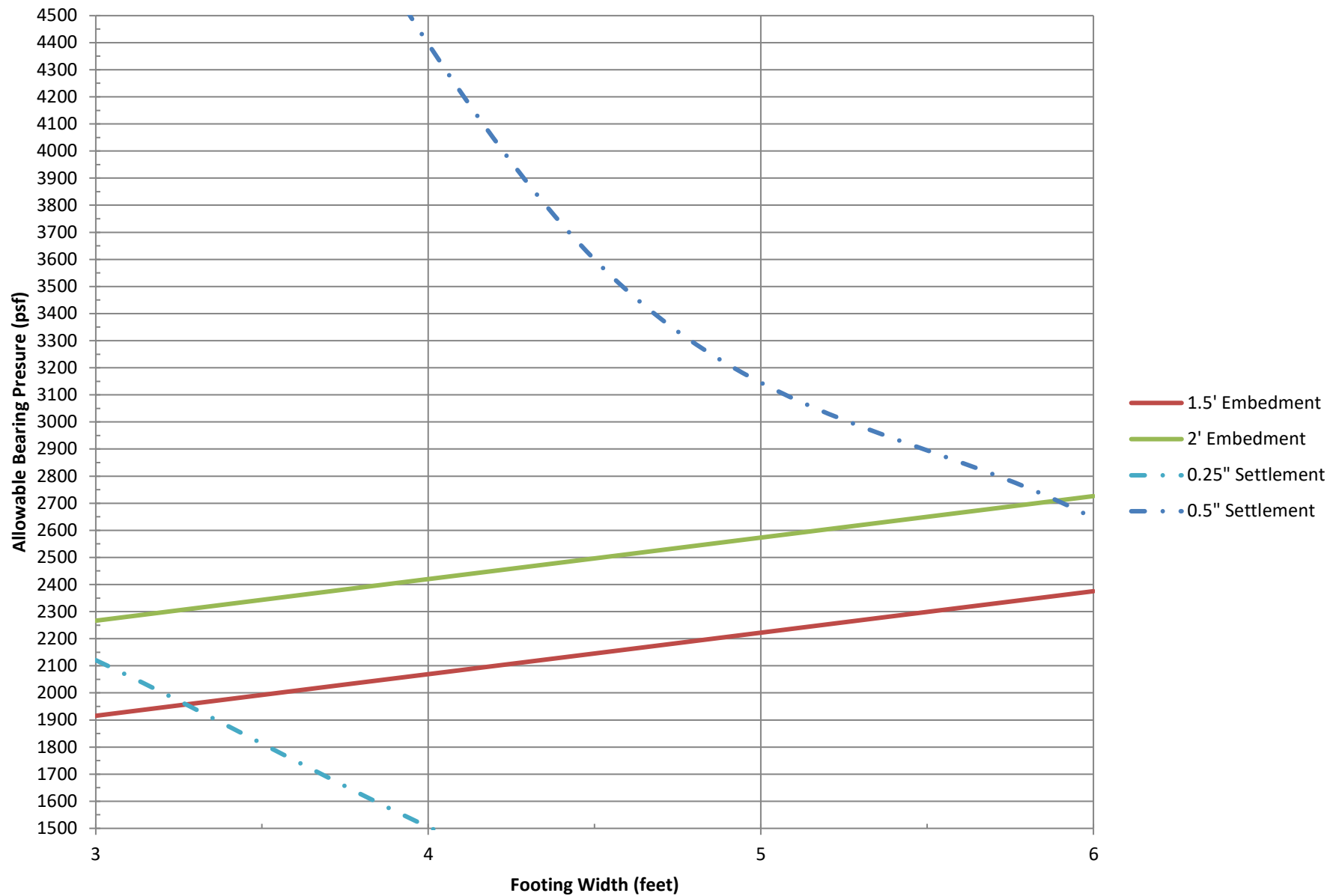
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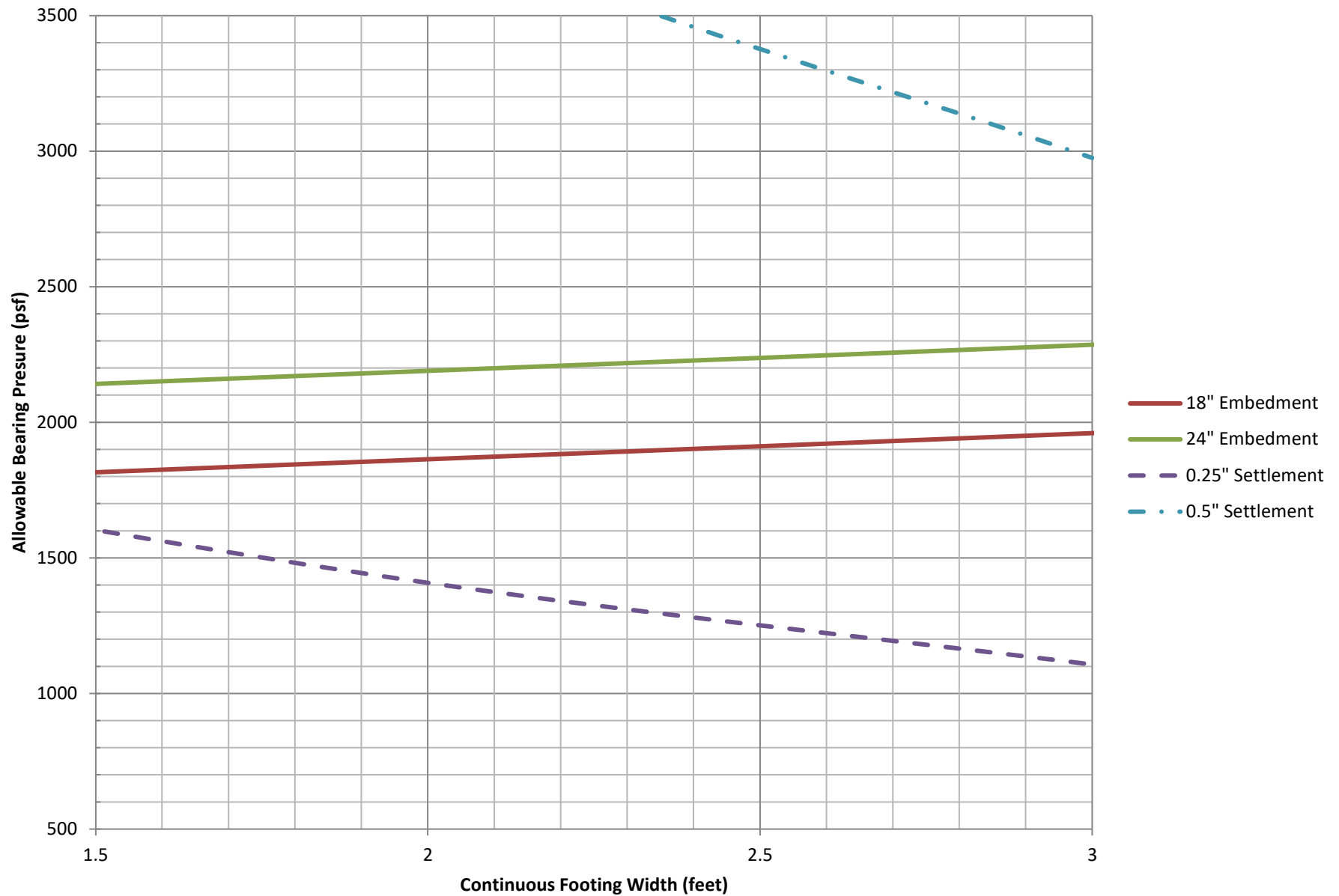
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APPENDIX C

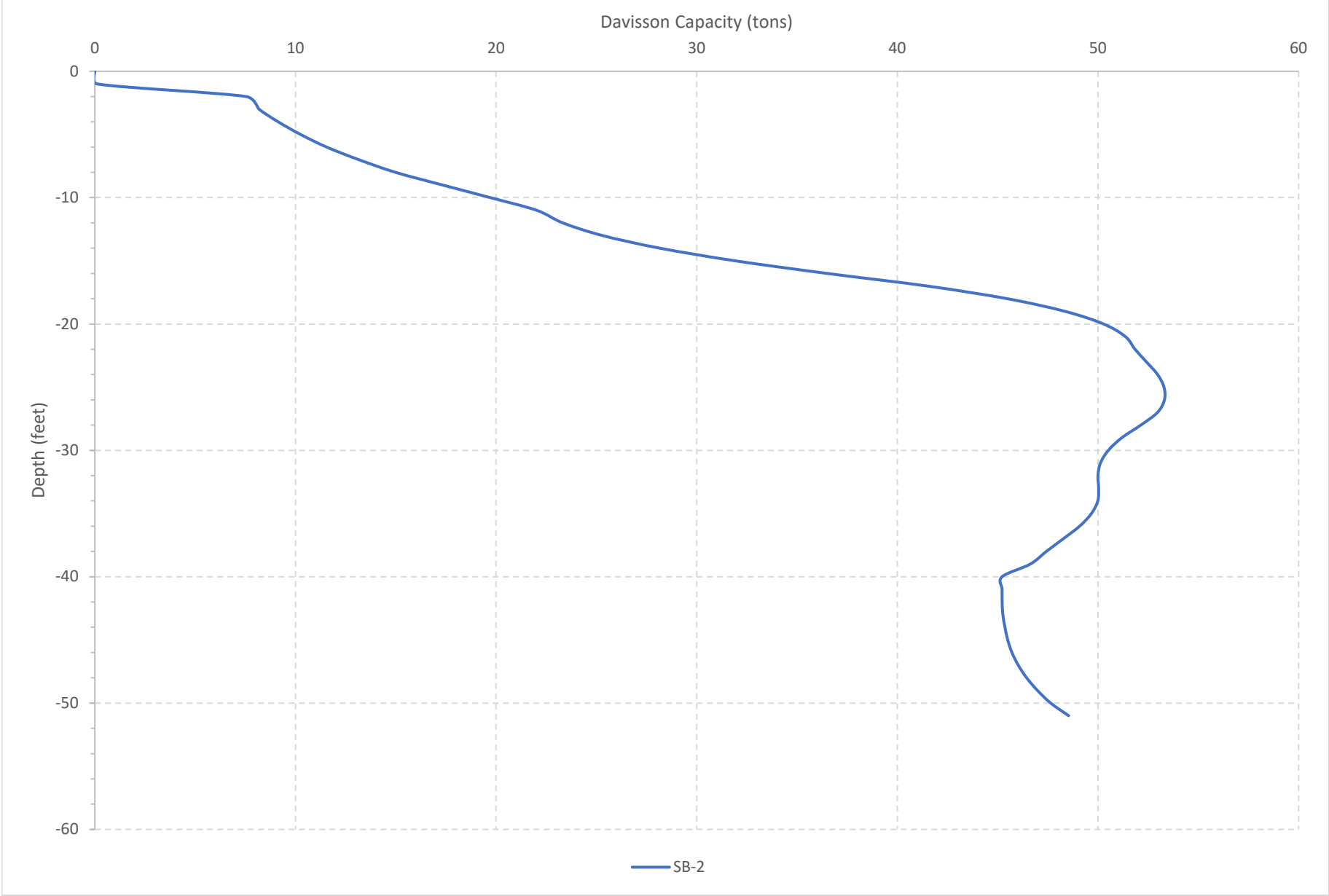
Foundation Analysis Isolated Square/Spread Footings



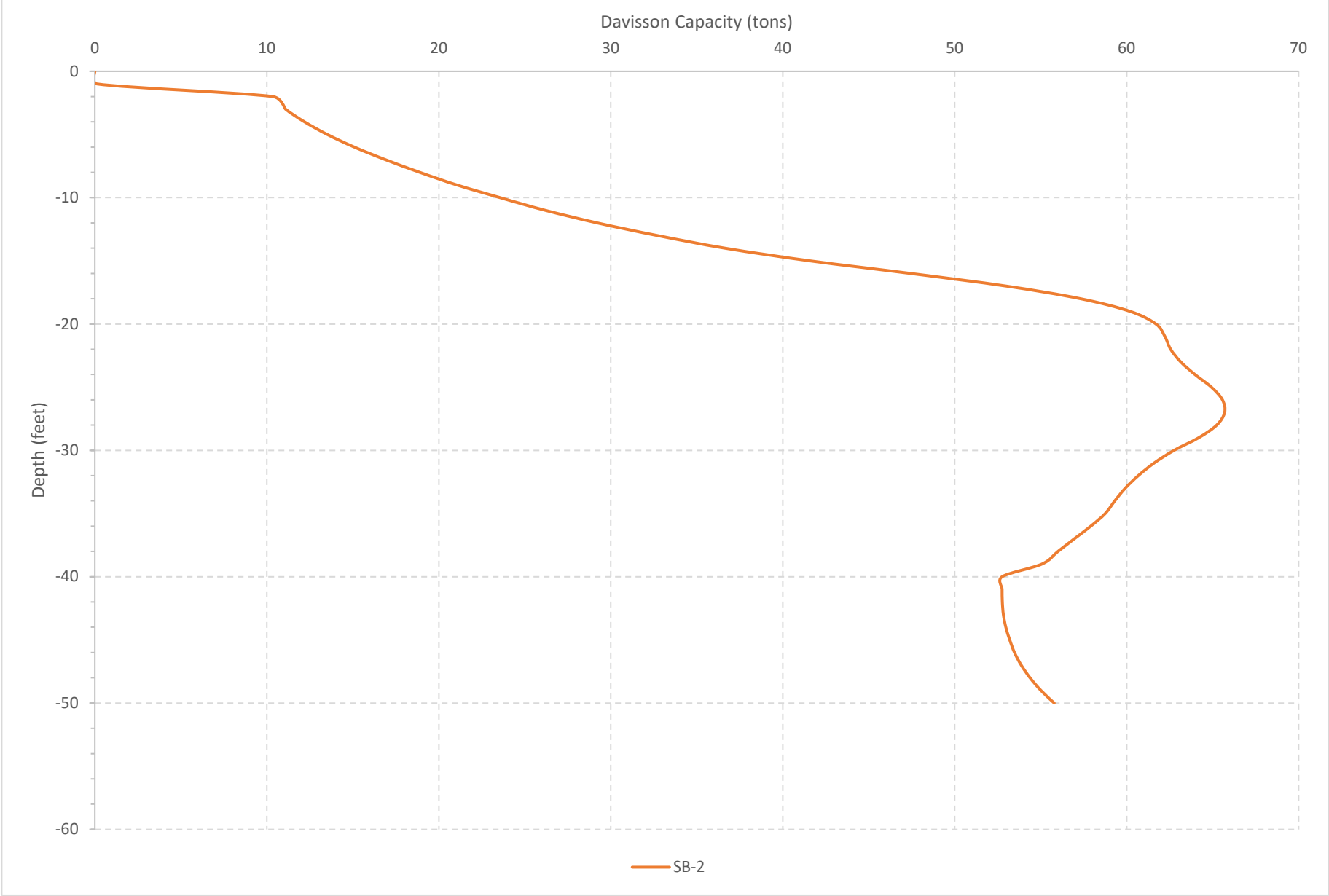
Foundation Analysis Continuous Footings



12 Inch - PCP Pile -Gulf Beach Booster Station



14 Inch - PCP Pile -Gulf Beach Booster Station





PINELLAS COUNTY, FLORIDA

Stormwater Report

DEC 2023

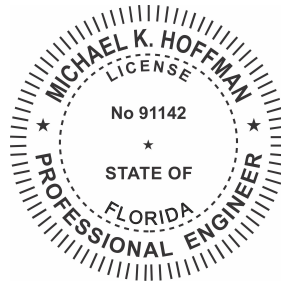
Gulf Beach Water Booster Station



Gulf Beach Water Booster Station

Pinellas County, Florida

December 2023



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Prepared By:

Wright-Pierce

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Tampa, FL 33624
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Section 1 Stormwater

1.1 Introduction

The Gulf Beach Water Booster Station (GBWBS) is located at 4501 Gulf Boulevard, St. Pete Beach, FL 33706, (Parcel ID: 07-32-16-51660-000-0011) at the intersection of Gulf Boulevard (SR 699) and 45th Avenue. The existing GBWBS consists of a ground storage tank, a pump building, a parking lot, sidewalk, a driveway connection to 45th Avenue, and miscellaneous utilities. The proposed improvements consist of removal and replacement of a pump building; removal and replacement of sidewalks; removal and replacement of the parking lot; removal and replacement of the driveway connection to 45th Avenue; stormwater management facilities; and various utility improvements.

1.2 Site Information

1.2.1 Waterbody and Hydrologic Basin

The project is located within the Boca Ciega Bay (Central South), Waterbody ID 1694A2, a class III waterbody and open basin. This waterbody is identified by FDEP as a verified list waterbody and a water not attaining standards (WNAS) due to nutrients and mercury. This waterbody is located within the Tampa Bay Estuary Reasonable Assurance Plan. The project is also located within the Upper Coastal Drainage Basin per SWFWMD Applicant's Handbook Volume II, Figure 2.5.

1.2.2 Rainfall

Rainfall values used for modeling the design storms were obtained from FDOT District 7 for FDOT rainfall zone 6 for the durations 24-hours and less. The value for the durations greater than 24-hours was obtained from NOAA Atlas 14. The values for the design storms are listed in Table 1-1 below. FDOT rainfall distribution curves were used for all storms.

Table 1-1 Design Storm Rainfall (inches)

Storm Duration		
	25-year	100-year
1-hour	N/A	4.5
2-hour	N/A	6.0
4-hour	N/A	7.3
8-hour	N/A	9.2
24-hour	10.5	13.0
3-day	N/A	17.6

1.2.3 Seasonal High Water Table

The seasonal high water table (SHWT) elevation of the site was estimated to be 2.0 NAVD88 based on the Geotechnical Report supplied by Madrid CPWG which is provided as Attachment 1.

1.2.4 Tailwater

The tailwater elevations for the discharge to 45th Ave was estimated to be the top of curb within the right-of-way at the outlet because the project does not directly discharge to a waterbody such as a wetland, pond, or channel. This tailwater elevation is recommended by FDOT Drainage Handbook Drainage Connection Permits, Table 7-1. The elevations were sourced from the topographical survey.

1.3 Design Criteria

1.3.1 Water Quantity

Due to the project containing real property with a shared boundary with FDOT right-of-way and being located within an open basin, proposed improvements were designed to meet the following water quantity criteria:

- For projects that do not discharge directly or indirectly to the FDOT right of way, pond freeboard rather than peak discharge is the concern for the site. (*FDOT District 7, Drainage Pre-Application Meeting*)
 - During subsequent email correspondence, it was agreed upon that a freeboard value of 0.5 feet would be accepted if the grading design prevented the stormwater management system from overtopping into the FDOT right-of-way.
- The allowable off-site discharge is the peak rate at which runoff leaves a parcel of land by gravity under existing site conditions for 24-hour, 25-year storm event. (*SWFWMD AH Vol II, 3.1, a&b*)
- Post-developed stormwater discharge rate cannot exceed pre-developed, unimproved natural discharge rate for the 24-hour, 25-year storm event. (*City of St. Pete Beach, Drainage Plan Review Checklist*)

1.3.2 Water Quality

Due to the project containing real property being located within an impaired waterbody and the SWFWMD, proposed improvements were designed to meet the following water quality criteria:

- On-line retention treatment system shall treat the runoff from the first one inch of rainfall; or as an option for projects or project sub-units with drainage areas less than 100 acres, the first one-half inch of run-off. (*SWFWMD AH Vol II, 4.1, c, 1*)
- In instances where an applicant is unable to meet water quality standards because existing ambient water quality does not meet standards and the system will contribute to this existing condition, the applicant must implement measure that will result in net improvement of the water quality in the receiving waters for those contributed parameters that do not meet standards (*SWFWMD AH Vol II, 4.1,g*)

Total treatment volume shall be available within 72 hours, however, on that volume which can again be available within 36 hours may be counted as part of the volume required for water quantity storage.

(*SWFWMD AH Vol II, 4.1, c, 2*)

1.4 Pre-Development Conditions Model

The pre-development conditions model was created using Interconnected Pond Routing (ICPR) 4.07.08 and ArcMap 10.8.2. The pre-development condition was assumed to be good, open space based on the City of St. Pete Beach's requirement that the pre-development condition be considered unimproved and natural. The pre-development drainage pattern was determined to flow to the southeast into 45th Avenue on based FDOT drainage maps from 1958. The full pre-development condition calculations, model inputs, and results can be found in Appendix A.

1.4.1 Hydrology

Drainage basins were created based on the limits of proposed site improvements.

To calculate the volume of runoff of each drainage basin, it was assumed the pre-development condition was good, open space. Soil mapping data from the SSURGO (Soil Survey Geographic Database) indicates the hydrologic soil group to be "A".

The time of concentration for the basin was calculated using the velocity method described in USDA NRCS National Engineering Handbook, Part 630, Chapter 15, Time of Concentration, 630.1502, (b). Flow paths were determined by reviewing the FDOT drainage maps previously mentioned. Manning's roughness coefficients were determined by assuming the area was grassed. Slope of the land surface was determined by using the FDOT drainage maps previously mentioned. The 2-year/24-hour rainfall was sourced from USDA NRCS TR-55, Figure B-3. A standard unit hydrograph and peak factor of 256 was used.

1.4.2 Hydraulics

A Time/stage node, N0001, was created to represent the boundary condition of the model and the 45th Avenue Right-of-Way.

1.5 Post-Development Conditions Model

To meet the previously mentioned design criteria, four stormwater management facilities are proposed. Three of these facilities are dry retention ponds and one of the facilities is a permeable pavement system. All facilities will be connected by equalizer pipes, so the system functions as one combined dry retention facility. See Attachment 2 for the project drawings. The full pre-development condition calculations, model inputs, and results can be found in Appendix B.

1.5.1 Hydrology

To calculate the volume of runoff of each drainage basin, land cover data was created using the project drawings to represent the proposed conditions. Soil mapping data was sourced from the SSURGO (Soil Survey Geographic Database) provided by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS).

The curve number (CN) of each basin was calculated through the distributed approach which is when runoff volume is based on summation of runoff volumes for each unique land cover/HSG combination. In GIS, the land cover data and soils data were intersected and dissolved to create the unique land cover/HSG combinations previously mentioned. Each unique land cover/HSG combination is assigned a CN based on SJRWMD Technical Publication SJ85-5. See Table 3-1 for the CNs assigned to each land cover/HSG combination. For each basin, the acreage of the unique land cover/HSG combinations were tabulated and entered into the Manual Basin Table within the ICPR model.

Time of concentration was assumed to be 10 minutes; and a standard unit hydrograph and peak factor of 484 was used due to the developed condition.

1.5.2 Hydraulics

NA2000's stage/volume data was created by summing the stage/volume data for all the stormwater management facilities. Porosity values used in the stage/volume data for the permeable pavement system were sourced from the FDOT sponsored document *Pervious Pavements – Installation, Operations and Strength, Part 3: Permeable Paver Systems, 2011*.

RA2000-DS-1 represents the control structure discharging to 45th Avenue right-of-way. RA2000-W-1 represents the flow discharging over select areas where the pond berm is lowered to preclude discharge to the FDOT Right-of-Way.

RA2000-PERC-1 represents the percolation to the groundwater table. The horizontal conductivity and vertical conductivity were sourced from the geotechnical report provided in Attachment 1. The fillable porosity was selected based on common values for sandy soils. The base of aquifer elevation was based on the effective width of the combined dry retention facility and the facility's bottom elevation. This elevation was used because studies have shown that the maximum depth of the active aquifer region is about equal to the width of the recharge area for isotropic aquifers (*Bouwer, 1962, Analyzing ground-water mounds by resistance network*). A base of aquifer elevation was not recommended by the geotechnical report; however, the borings reveal sandy soils to significant depth indicating that the base of aquifer elevation used in the model is reasonable. See Appendix C for calculation of the effective width and the base of aquifer elevation. The percolation link uses standard offsets of 50 feet and 450 feet which are within typical values. The rings are wholly within uplands and have minimal interaction with other waterbodies.

1.6 Water Quantity Results

The models predict that the peak discharge criteria listed in section 1.3.1 for SWFWMD and City of St. Pete Beach have also been met as seen in Table 1-2.

Table 1-2 SWFWMD/City of St. Pete Beach Design Storm Discharge

Design Storm	N0002	
	Pre (cfs)	Post (cfs)
25YR24HR	0.2	0.2

The proposed grading plans and the peak stage results show that the project will not overtop into the FDOT right-of-way during for the 100-year critical storm event as seen in Table 1-3.

Table 1-3 Peak Stage

Design Storm	Peak Stage (ft)	Freeboard upstream of FDOT ROW(ft)
25YR24HR	5.5	0.6
100YR1HR	5.6	0.5
100YR2HR	5.6	0.5
100YR4HR	5.6	0.5
100YR8HR	5.6	0.5
100YR24HR	5.6	0.5
100YR72HR	5.5	0.6

1.7 Water Quality Results

1.7.1 Treatment Volume

An excel spreadsheet and a nutrient loading model developed in BMP Trains Version 4.3.5 was used to calculate the required treatment volume and to confirm that net improvement is achieved. For the purposes of the water quality analysis, the pre-development condition was determined to be the current existing condition as the site is roughly equivalent to its condition in the year 1980 which was before the original statewide stormwater rule was effective in February 1982.

The calculations display that the water quality criteria listed in section 1.3.2 has been met as seen in Table 1-4 and Table 1-5. The full water quality calculations can be found in Appendix C.

Table 1-4 SWFWMD Water Quality Treatment Volume

Parameter	Value
0.5 inches of runoff (Ac-ft)	0.031
Treatment Volume Provided (Ac-ft)	0.036

Table 1-5 Nutrient Loading

Parameter	Pre-Development	Post Development (After Treatment)
TN (kg/yr)	0.33	0.33
TP (kg/yr)	0.07	0.07

1.7.2 Recovery and Radius of Influence

A recovery model developed in ICPR 4.07.08 was used to calculate the recovery time of the dry retention facility's treatment volume. The same percolation link used in the water quantity model was used in this model. The recovery model predicts that the treatment volume would be recovered in less than 36 hours.

The ground water mounding chart of the water quality treatment volume was reviewed to estimate the radius of influence of the dry retention facility. For this estimation, the radius of influence is when the water table is raised 0.1 feet or more. The model predicts that the radius of influence is approximately 40 feet. The radius of influence of the pond does not intersect the areas of groundwater contamination plumes at FDEP Facility ID 8515150 or FDEP Facility ID 8515438. The recovery time and radius of influence calculations; and a depiction of the radius of influence can be found in Appendix D.

Section 2 Environmental

2.1 Jurisdictional Wetlands

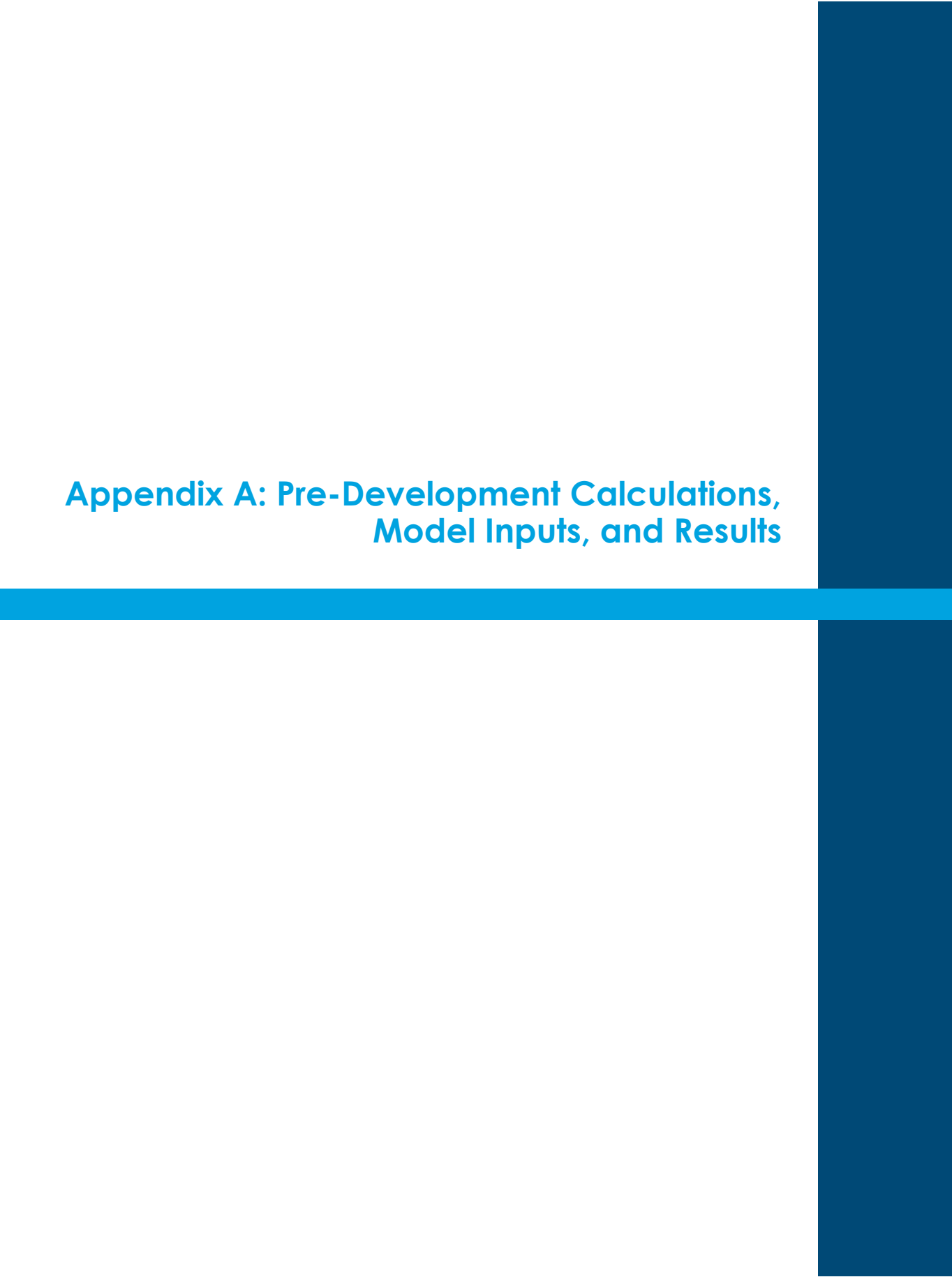
No jurisdictional wetlands are present on site based on a review of national wetland inventory and the current developed condition.

2.2 Contamination

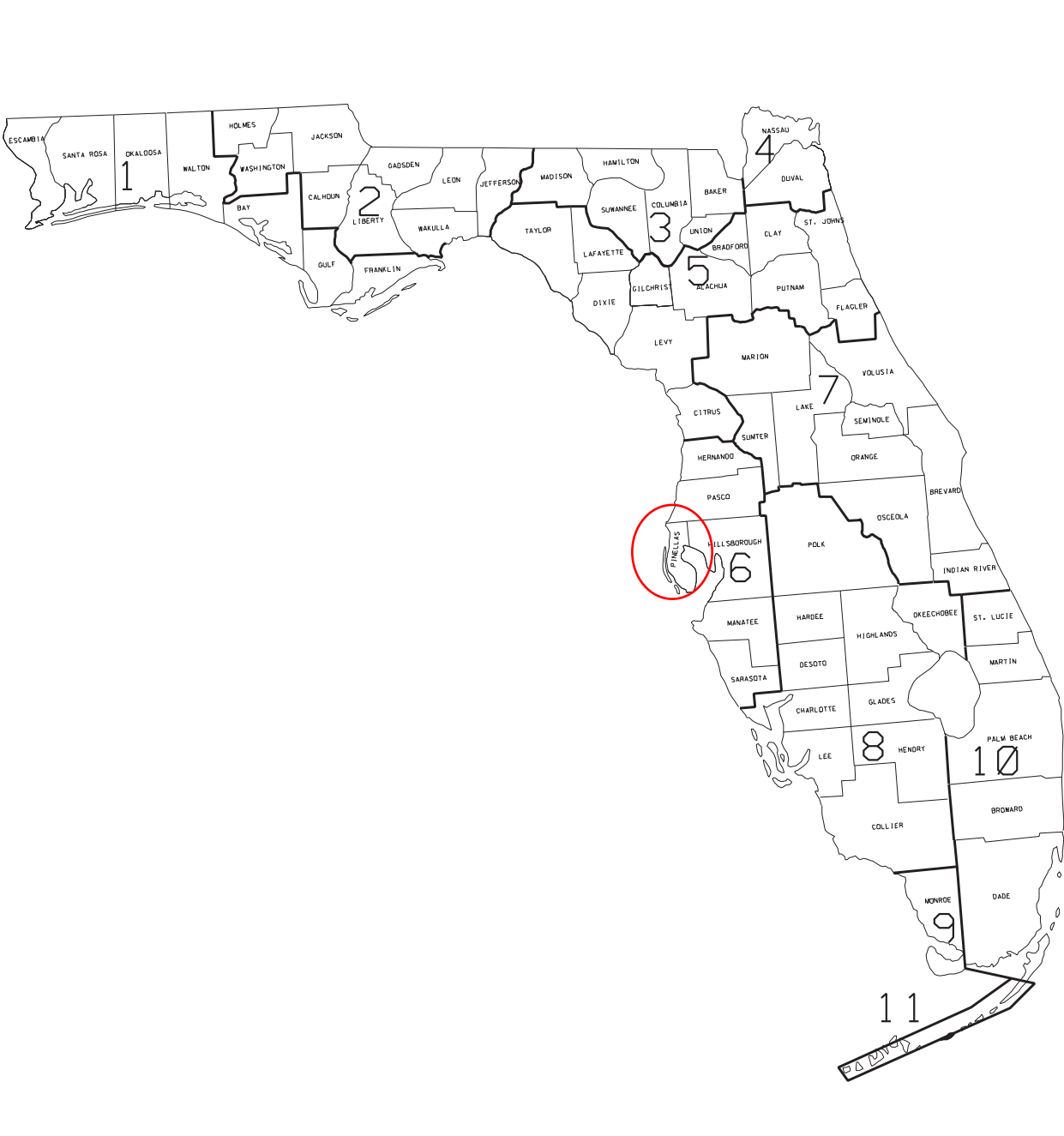
There are three Florida Department of Environmental Protection (FDEP) cleanup sites (including the project site itself, the GBWBS) within the vicinity of the project site, as described below:

- The GBWBS (Facility ID 9201041) – Based on a cursory review of the Low Core Site Initiative Supplemental Site Assessment Report, dated February 29, 2016, a background study was completed for comparison to the elevated Benzo(a)pyrene (BaP) concentration, the results which indicated that the detected BaP equivalent value is likely related to a petroleum discharge. The soil contamination appears to be limited to the immediate area around the former underground storage tank site.
- St. Pete Beach Mobil (Facility ID 8515438) – The quarterly natural attenuation report dated February 28, 2023 states that the groundwater contamination plume appears to be limited to the western portion of the subject property. It is contaminated for Benzene.
- Suncoast #105 (Facility ID 8515150) – The natural attenuation quarterly monitoring report dated June 10, 2022 recommends placing the site back into priority order due to the Isopropyl benzene concentrations being above NADCs (Natural Attenuation Default Concentration Contour Line) for two consecutive quarters in TW-2R and possibly migrating offsite.

Concerns related to the dry retention pond affecting the off-site contamination plumes were addressed in section 1.7.2. Soil contamination on-site will be excavated and disposed of at an appropriate landfill prior to construction of the stormwater management system via an interim source removal. Monitoring wells on-site have been abandoned by FDEP on 10/31/2023.



Appendix A: Pre-Development Calculations, Model Inputs, and Results



13. ☐ Rainfall data acceptable to the Department consists of statistical rainfall depth data from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Rainfall Data and FDOT Intensity-Duration-Frequency (IDF) curves. Links to this data are available in the Drainage Connection Permit Handbook Section 5.0. The following tables can also be used as acceptable FDOT rainfall depths up through the 24-hour storm event.

FDOT ZONE 5 FREQUENCY AND DURATION FOR RULE CHAPTER 14.86

Durations	2 Year	3 Year	5 Year	10 Year	25 Year	50 Year	100 Year
1 Hour	2.5	2.6	2.9	3.2	3.6	4.0	4.3
2 Hours	2.7	3.1	3.4	3.9	4.8	4.9	5.4
4 Hours	3.2	3.7	4.1	4.7	5.3	5.9	6.5
8 Hours	3.8	4.4	4.9	5.8	6.4	7.0	8.0
24 Hours	5.0	5.8	6.5	7.7	8.6	9.0	11.0

FDOT ZONE 6 FREQUENCY AND DURATION FOR RULE CHAPTER 14.86

Durations	2 Year	3 Year	5 Year	10 Year	25 Year	50 Year	100 Year
1 Hour	2.3	2.5	2.8	3.1	3.6	4.1	4.5
2 Hours	2.8	3.2	3.5	4.2	4.7	5.3	6.0
4 Hours	3.4	3.8	4.3	5.0	5.8	6.4	7.3
8 Hours	4.2	4.8	5.3	6.2	7.3	8.0	9.2
24 Hours	5.8	6.5	7.6	8.8	10.5	11.5	13.0

14. ☐ Regional stormwater models will be accepted if the models reflect accurate and site-specific CN, TC and historic basin storage data and comply with FDOT requirements. A revised existing condition model (RECM) may be required to update the site-specific existing conditions. Any changes to an approved model must be highlighted and summarized in a table. Applicants are encouraged to submit regional models simultaneously with other agencies reviews to avoid having to revise models already approved by another agency. With the approval of the District Drainage Engineer, only the SWFWMD 25-yr & 100-yr storm events will be required. Also include a visual aid with the modes overlaid on the site plan, summary table for existing, revised existing condition and proposed condition nodes, link, stages, rates and volumes if necessary, for ONLY THE NODES THAT AFFECT FDOT R/W.
15. ☐ Include the basin node/link diagram, input and output parameters, and summary sheets for the model(s). Please provide the following summary tables:
- Peak pond stage for each required storm event.
 - Pre vs. Post discharge Rates.
 - Pre vs Post Volumes for closed basins



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

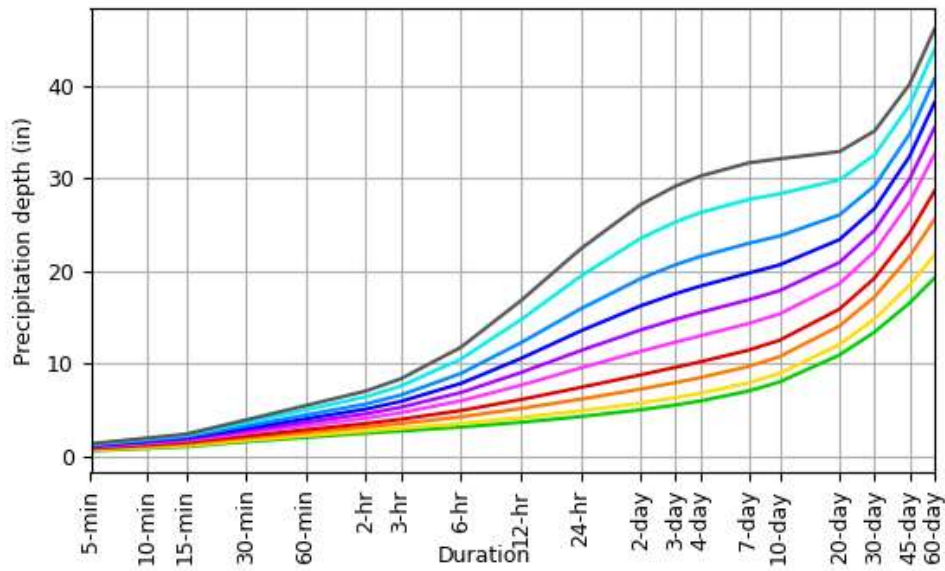
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.562 (0.468-0.689)	0.633 (0.526-0.776)	0.744 (0.615-0.914)	0.831 (0.683-1.03)	0.944 (0.743-1.20)	1.02 (0.789-1.32)	1.10 (0.817-1.46)	1.18 (0.831-1.61)	1.26 (0.857-1.79)	1.33 (0.877-1.92)
10-min	0.824 (0.685-1.01)	0.927 (0.770-1.14)	1.09 (0.901-1.34)	1.22 (1.00-1.50)	1.38 (1.09-1.75)	1.50 (1.16-1.94)	1.61 (1.20-2.14)	1.72 (1.22-2.36)	1.85 (1.26-2.62)	1.94 (1.28-2.82)
15-min	1.00 (0.835-1.23)	1.13 (0.939-1.39)	1.33 (1.10-1.63)	1.48 (1.22-1.83)	1.68 (1.33-2.13)	1.83 (1.41-2.36)	1.97 (1.46-2.61)	2.10 (1.48-2.87)	2.26 (1.53-3.19)	2.37 (1.57-3.44)
30-min	1.54 (1.28-1.89)	1.69 (1.40-2.07)	1.94 (1.61-2.39)	2.16 (1.78-2.67)	2.47 (1.96-3.16)	2.72 (2.10-3.54)	2.97 (2.22-3.98)	3.24 (2.31-4.48)	3.61 (2.46-5.15)	3.90 (2.58-5.65)
60-min	2.01 (1.67-2.46)	2.20 (1.83-2.70)	2.54 (2.10-3.12)	2.84 (2.33-3.51)	3.28 (2.61-4.22)	3.64 (2.82-4.76)	4.02 (3.00-5.41)	4.43 (3.16-6.14)	5.00 (3.42-7.16)	5.46 (3.61-7.92)
2-hr	2.47 (2.07-3.01)	2.71 (2.26-3.30)	3.13 (2.61-3.83)	3.52 (2.91-4.32)	4.09 (3.28-5.24)	4.56 (3.56-5.94)	5.07 (3.81-6.79)	5.62 (4.03-7.76)	6.40 (4.40-9.10)	7.02 (4.67-10.1)
3-hr	2.70 (2.26-3.27)	2.99 (2.50-3.62)	3.50 (2.92-4.26)	3.97 (3.29-4.85)	4.68 (3.77-5.98)	5.27 (4.13-6.84)	5.90 (4.45-7.88)	6.59 (4.74-9.07)	7.56 (5.22-10.7)	8.35 (5.58-12.0)
6-hr	3.12 (2.63-3.76)	3.51 (2.96-4.23)	4.23 (3.55-5.11)	4.91 (4.09-5.96)	5.96 (4.85-7.63)	6.86 (5.42-8.89)	7.84 (5.96-10.4)	8.92 (6.48-12.2)	10.5 (7.28-14.8)	11.7 (7.89-16.8)
12-hr	3.64 (3.09-4.35)	4.15 (3.51-4.96)	5.13 (4.33-6.16)	6.10 (5.11-7.35)	7.64 (6.29-9.82)	9.01 (7.18-11.7)	10.5 (8.08-14.0)	12.2 (8.96-16.8)	14.7 (10.3-20.8)	16.8 (11.4-23.8)
24-hr	4.26 (3.63-5.05)	4.88 (4.15-5.80)	6.14 (5.21-7.32)	7.42 (6.25-8.88)	9.51 (7.91-12.2)	11.4 (9.16-14.8)	13.5 (10.4-18.0)	15.9 (11.7-21.7)	19.4 (13.7-27.3)	22.4 (15.2-31.5)
2-day	4.99 (4.28-5.88)	5.72 (4.90-6.75)	7.23 (6.16-8.55)	8.77 (7.43-10.4)	11.3 (9.47-14.5)	13.6 (11.0-17.6)	16.2 (12.6-21.4)	19.2 (14.2-26.1)	23.5 (16.7-32.9)	27.2 (18.6-38.0)
3-day	5.52 (4.74-6.47)	6.31 (5.42-7.42)	7.94 (6.79-9.35)	9.59 (8.15-11.4)	12.3 (10.3-15.7)	14.8 (12.0-18.9)	17.6 (13.7-23.1)	20.7 (15.4-28.0)	25.3 (18.1-35.2)	29.2 (20.1-40.7)
4-day	5.95 (5.12-6.96)	6.78 (5.83-7.95)	8.48 (7.26-9.96)	10.2 (8.68-12.0)	13.0 (10.9-16.5)	15.5 (12.6-19.8)	18.4 (14.4-24.1)	21.6 (16.1-29.1)	26.3 (18.8-36.5)	30.3 (20.9-42.1)
7-day	7.03 (6.08-8.18)	7.92 (6.84-9.22)	9.69 (8.34-11.3)	11.5 (9.80-13.5)	14.3 (12.1-18.0)	16.9 (13.8-21.4)	19.8 (15.5-25.7)	23.0 (17.3-30.8)	27.8 (20.0-38.2)	31.7 (22.0-43.8)
10-day	8.01 (6.95-9.29)	8.94 (7.74-10.4)	10.7 (9.27-12.5)	12.5 (10.7-14.6)	15.4 (12.9-19.1)	17.9 (14.6-22.5)	20.7 (16.3-26.7)	23.8 (17.9-31.6)	28.4 (20.4-38.8)	32.1 (22.4-44.3)
20-day	10.9 (9.53-12.6)	12.1 (10.5-13.9)	14.1 (12.2-16.3)	15.9 (13.7-18.5)	18.6 (15.6-22.7)	20.9 (17.1-25.8)	23.4 (18.4-29.7)	26.1 (19.7-34.2)	29.9 (21.6-40.3)	32.9 (23.1-45.0)
30-day	13.4 (11.7-15.4)	14.8 (13.0-17.0)	17.2 (15.0-19.8)	19.2 (16.7-22.3)	22.1 (18.5-26.6)	24.4 (20.0-29.8)	26.8 (21.1-33.6)	29.2 (22.0-37.9)	32.6 (23.6-43.6)	35.2 (24.7-47.9)
45-day	16.6 (14.5-18.9)	18.5 (16.2-21.1)	21.6 (18.9-24.7)	24.1 (20.9-27.8)	27.4 (22.9-32.6)	30.0 (24.5-36.2)	32.4 (25.6-40.3)	34.8 (26.3-44.7)	37.9 (27.5-50.3)	40.2 (28.4-54.5)
60-day	19.2 (16.9-21.9)	21.7 (19.1-24.7)	25.6 (22.4-29.2)	28.6 (24.9-32.9)	32.6 (27.3-38.4)	35.5 (29.0-42.6)	38.2 (30.1-47.2)	40.8 (30.8-52.0)	44.0 (31.9-58.0)	46.2 (32.7-62.4)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.
Please refer to NOAA Atlas 14 document for more information.

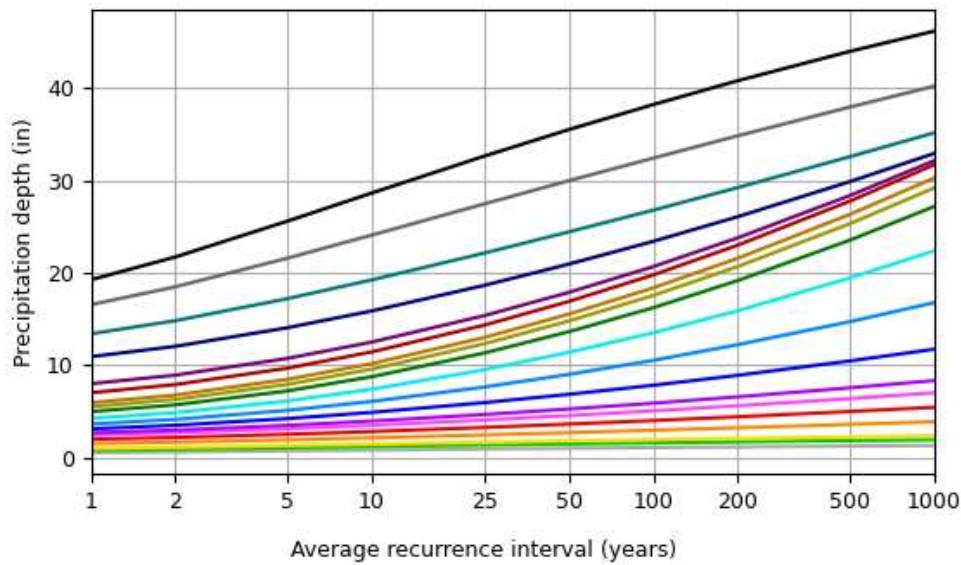
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PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 27.7198°, Longitude: -82.7391°



Average recurrence interval (years)	
1	2
5	10
25	50
100	200
500	1000

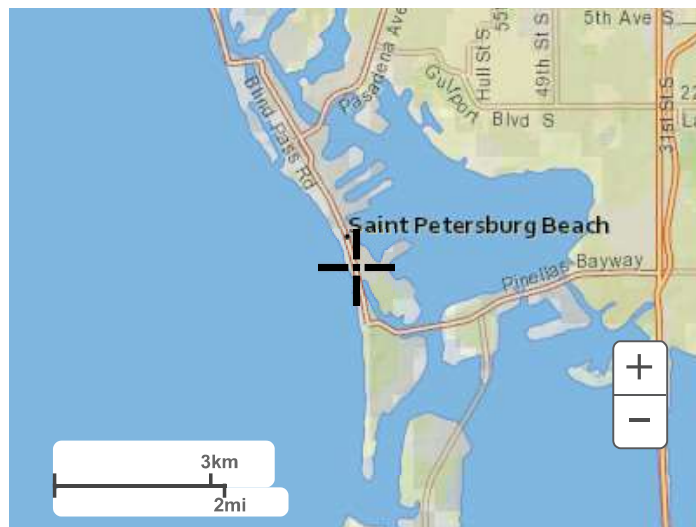


Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

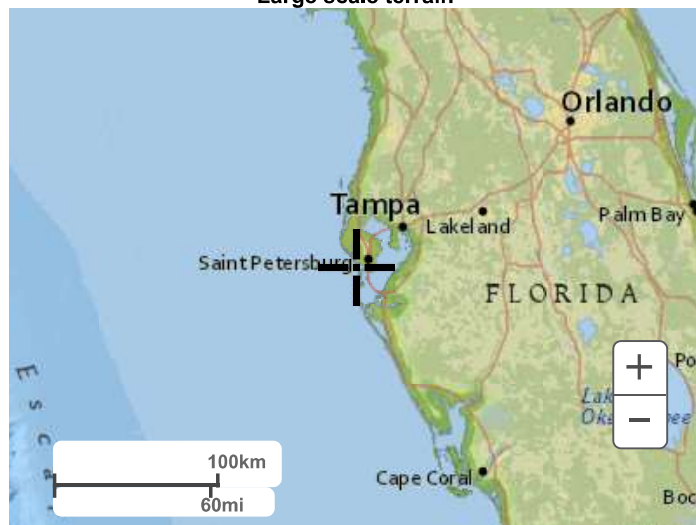
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Maps & aerials

Small scale terrain



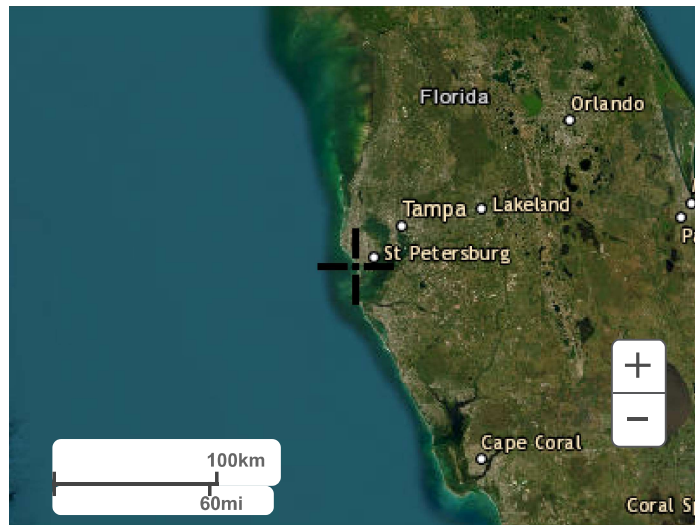
Large scale terrain



Large scale map



Large scale aerial

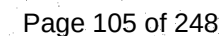


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1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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Dist.	State	County	Route	Proj.	Sheet
3	Fla.	PINELLAS		15100-3503	3



State: Florida

Client: Pinellas County

Project Number: 21464

Completed by: M. Hoffman

8/16/2023

Reviewed by: S. Chak

9/26/2023

=input required

Time of Concentration - A2000 - Pre

Travel Time - Sheet Flow					
Surface	n	S (ft/ft)	L (ft)	P ₂ (in)	SCS T _t (min)
Short Grass Prairie	0.15	0.005	50	5.30	8

See equation below for sheet flow length reference

Travel Time - Shallow Concentrated Flow					
Surface	B	S (ft/ft)	V (ft/s)	L (ft)	T _t (min)
Short Grass Pasture	6.962	0.005	0.49	230	8

T _c (min)	16
----------------------	----

Variables	Definition
n	Manning's Roughness Coefficient, NRCS NEH Part630, CH15, Table 15-1
S	Slope of Hydraulic Grade Line or Land Slope
L	Flow path length
P ₂	2-year, 24-hour rainfall
SCS T _t	Sheet flow travel time, NRCS NEH Part630, CH15, eq. 3-3
B	Coefficient for velocity equation per NRCS NEH Part630, CH15, Table 15-3
V	Flow Velocity, NRCS NEH Part630, CH15, Table 15-1
T _t	Travel time
T _c	Time of concentration

Kibler and Aron (1982) and others indicated the maximum sheet flow length is less than 100 feet. To support the sheet flow limit of 100 feet, Merkel (2001) reviewed a number of technical papers on sheet flow. McCuen and Spiess (1995) indicated that use of flow length as the limiting variable in the equation 15-8 could lead to less accurate designs, and proposed that the limitation should instead be based on:

$$\ell = \frac{100\sqrt{S}}{n} \quad (\text{eq. 15-9})$$

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} s^{0.4}} \quad [\text{eq. 3-3}]$$

where:

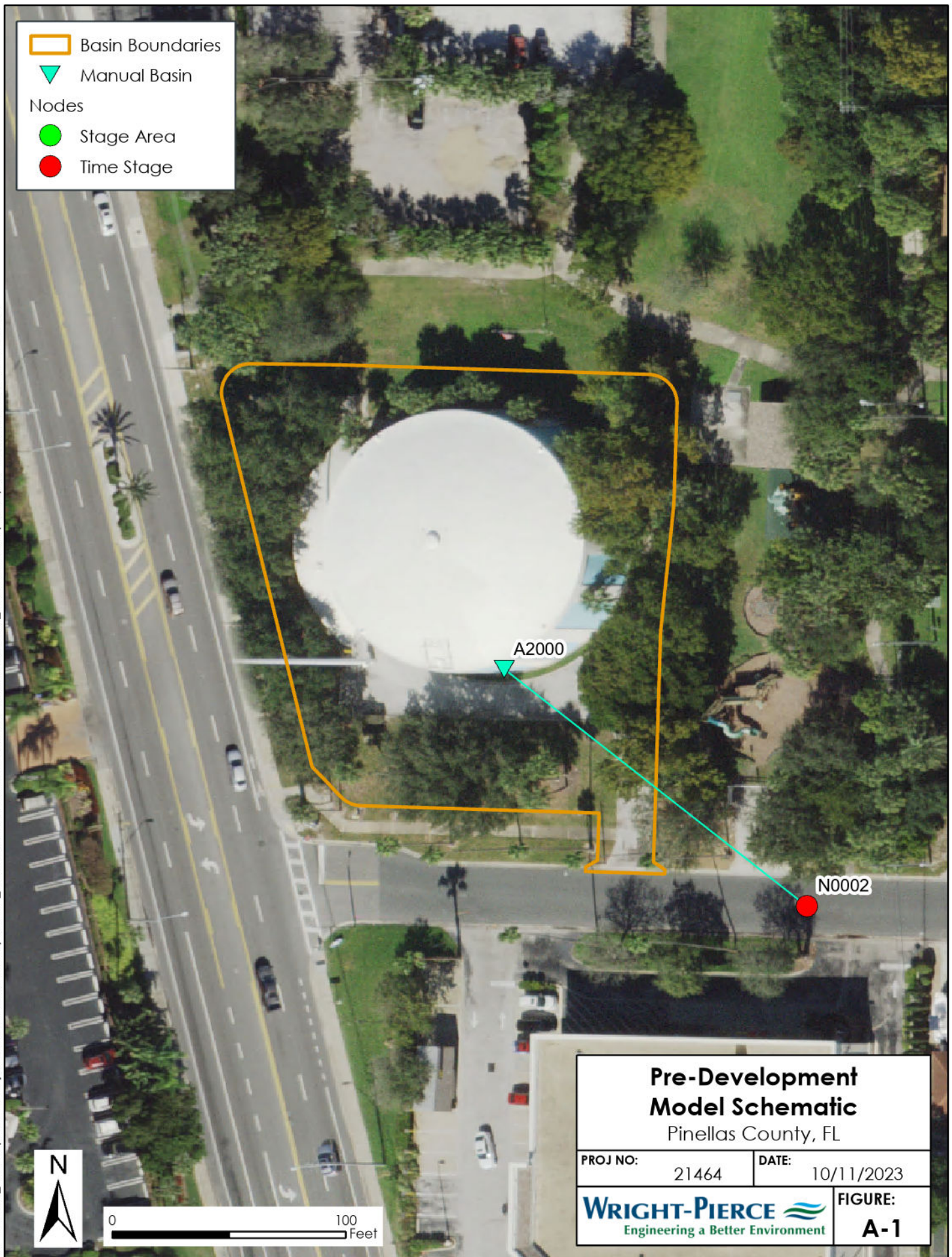
- T_t = travel time (hr),
 n = Manning's roughness coefficient (table 3-1)
 L = flow length (ft)
 P₂ = 2-year, 24-hour rainfall (in)
 s = slope of hydraulic grade line (land slope, ft/ft)

Table 15-3 Equations and assumptions developed from figure 15-4

Flow type	Depth (ft)	Manning's n	Velocity equation (ft/s)
Pavement and small upland gullies	0.2	0.025	$V = 20.328(n)^{0.5}$
Grassed waterways	0.4	0.050	$V = 16.135(n)^{0.5}$
Nearly bare and untilled (overland flow); and alluvial fans in western mountain regions	0.2	0.051	$V = 9.965(n)^{0.5}$
Cultivated straight row crops	0.2	0.058	$V = 8.762(n)^{0.5}$
Short-grass pasture	0.2	0.073	$V = 6.962(n)^{0.5}$
Minimum tillage cultivation, contour or strip-cropped, and woodlands	0.2	0.101	$V = 5.032(n)^{0.5}$
Forest with heavy ground litter and hay meadows	0.2	0.202	$V = 2.516(n)^{0.5}$

15-8

(210-VI-NEH, May 2010)



Simulation: 25YR24HR

Scenario: 20230816_Pre
Run Date/Time: 9/21/2023 10:27:27 AM
Program Version: ICPR4 4.07.08

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]
Min Calculation Time:	60.0000	0.0500
Max Calculation Time:		10.0000

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

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

Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMP

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight 0.5 dec
Fact:
dZ Tolerance: 0.0001 ft

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain Global

Max dZ: 1.0000 ft
 Link Optimizer Tol: 0.0000 ft
 Edge Length Option: Automatic

Opt:

Rainfall Name: ~FDOT-24
 Rainfall Amount: 10.50 in
 Storm Duration: 24.0000 hr

Dflt Damping (1D): 0.0100 ft
 Min Node Srf Area 100 ft2
 (1D):
 Energy Switch (1D): Energy

Comment:

Impervious: IMP [Set]

Land Cover Zone	% Impervious	% DCIA	% Direct	Ia Impervious [in]	Ia Pervious [in]
Impervious	0.00	0.00	0.00	0.000	0.000
Open Space-Good	0.00	0.00	0.00	0.000	0.000
Permeable Pavers/Asphalt with Reservoir	0.00	0.00	100.00	0.000	0.000
Pond	0.00	0.00	100.00	0.000	0.000

Curve Number: CN [Set]

Land Cover Zone	Soil Zone	Curve Number [dec]
Impervious	A	98.0
Open Space-Good	A	39.0
Permeable Pavers/Asphalt with Reservoir	A	98.0
Pond	A	39.0

Manual Basin: A2000

Scenario: 20230816_Pre
 Node: N0002
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 16.0000 min
 Max Allowable Q: 99999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.7500 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.7500	Open Space-Good	A	

Comment:

Node: N0002

Scenario: 20230816_Pre

Type: Time/Stage

Base Flow: 0.00 cfs

Initial Stage: 3.40 ft

Warning Stage: 100.00 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	3.40
0	0	0	800.0000	3.40

Comment:

Manual Basin Runoff Summary [20230816_Pre]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
A2000	25YR24HR	0.18	15.0500	10.50	2.34	0.7500	39.0	0.00	0.00

Node Max Conditions [20230816_Pre]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
N0002	25YR24HR	100.00	3.40	0.0000	0.18	0.00	0

Appendix B: Post-Development Calculations, Model Inputs, and Results



Michael Hoffman

From: Michael Hoffman
Sent: Tuesday, September 5, 2023 8:15 AM
To: Edinger, Steven; Serra, Amanda; Celani, Anthony L.; Porter, Brian; Amanda Serra (Amanda.Serra@atkinsglobal.com)
Cc: Christopher Baggett; Cook, Margaret R; Walter Nickel; Edinger II, Steven
Subject: RE: Drainage Discussion Gulf Beach Booster Station

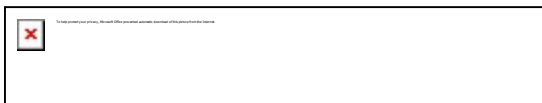
Good morning Steve,

We greatly appreciate you considering and granting this freeboard value. We look forward to submitting when the time for permitting arrives.

Sincerely,

Mike Hoffman, PE

Wright-Pierce | Lead Project Engineer
direct 407.720.5712 | office 407.906.1776



From: Edinger, Steven <Steven.Edinger@dot.state.fl.us>
Sent: Friday, September 1, 2023 3:11 PM
To: Michael Hoffman <michael.hoffman@wright-pierce.com>; Serra, Amanda <Amanda.Serra@dot.state.fl.us>; Celani, Anthony L. <Anthony.Celani@dot.state.fl.us>; Porter, Brian <Brian.Porter@dot.state.fl.us>; Amanda Serra (Amanda.Serra@atkinsglobal.com) <Amanda.Serra@atkinsglobal.com>
Cc: Christopher Baggett <christopher.baggett@wright-pierce.com>; Cook, Margaret R <mcook@pinellas.gov>; Walter Nickel <walter.nickel@wright-pierce.com>; Edinger II, Steven <Steven.Edinger@arcadis.com>
Subject: RE: Drainage Discussion Gulf Beach Booster Station

Afternoon Mike,

We can allow 6" of freeboard for this project as long as you're meeting the rest of the DCP/DCP exception requirements outlined in the handbook and checklist.

Just an fyi, if this meets the exception criteria we will still want to see pre/post drainage maps and other pond/storm drain calculations to verify the pond stages and 6" of freeboard.

Let me know if you have any other questions.

Thanks,

Steve Edinger, PE, ENV SP
Drainage Engineer, Arcadis GEC
FDOT District 7 Drainage Design
Phone: (813) 353 – 5709
Steven.Edinger@dot.state.fl.us



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From: Michael Hoffman <michael.hoffman@wright-pierce.com>
Sent: Friday, August 25, 2023 8:18 AM
To: Serra, Amanda <Amanda.Serra@dot.state.fl.us>; Celani, Anthony L. <Anthony.Celani@dot.state.fl.us>; Porter, Brian <Brian.Porter@dot.state.fl.us>; Edinger, Steven <Steven.Edinger@dot.state.fl.us>; Amanda Serra <Amanda.Serra@atkinsglobal.com> <Amanda.Serra@atkinsglobal.com>
Cc: Christopher Baggett <christopher.baggett@wright-pierce.com>; Cook, Margaret R <mcook@pinellas.gov>; Walter Nickel <walter.nickel@wright-pierce.com>; Edinger II, Steven <Steven.Edinger@arcadis.com>
Subject: RE: Drainage Discussion Gulf Beach Booster Station

EXTERNAL SENDER: Use caution with links and attachments.

Good morning,

One of the action items of our previous meeting was for us to put in a formal request for a lower freeboard requirement after determining what we could do to increase the available freeboard and preclude inadvertent discharge to FDOT right of way. We have revised our draft design (see attached for grading plan and sections) which has the following components:

- Top of bank elevation of 6.0 NAVD88 along the FDOT right-of-way and areas upstream of FDOT right-of-way.
 - This elevation achieves a freeboard of 0.5 feet along these areas when compared with the 100-year/24-hour design storm.
 - This can be seen in Sections 2, 3, 4, 5, 6 on Sheet 6; and Section 1 on Sheet 7.
- Top of bank elevation in all other areas remain lower than 6.0 NAVD88 so if overtopping were to occur during larger or more intense storm events, it would discharge away from FDOT right of way.
 - This can be seen in Section 1 on Sheet 6; and Sections 2 and 5 on Sheet 7.
- Stormwater system outfall discharges to 45th avenue which flows away from FDOT right-of-way.

Due to the spatial constraints of the site, the requirements of other regulatory bodies that are at odds with increasing freeboard further, and the revised design that precludes discharge to the FDOT right-of-way, we would like to request that a freeboard of 0.5 foot is accepted when we formally submit to FDOT. Will this lower freeboard value be accepted?

Please let me know if you require any additional information.

Sincerely,

Mike Hoffman, PE

Wright-Pierce | Lead Project Engineer
direct 407.720.5712 | office 407.906.1776



-----Original Appointment-----

From: Serra, Amanda <Amanda.Serra@dot.state.fl.us>

Sent: Thursday, July 27, 2023 6:37 PM

To: Serra, Amanda; Celani, Anthony L.; Porter, Brian; Edinger, Steven; Michael Hoffman; Amanda Serra (Amanda.Serra@atkinsglobal.com)

Cc: Christopher Baggett; Cook, Margaret R; Walter Nickel; Edinger II, Steven

Subject: Drainage Discussion Gulf Beach Booster Sta

When: Thursday, August 3, 2023 4:00 PM-4:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: Microsoft Teams Meeting

ur current main concern is the 1-foot freeboard requirement listed in the drainage review checklist. The critical 100-year storm only has 2 inches of freeboard. Achieving this may not be possible due to the site constraints and we would like to discuss if this requirement could be relaxed. Your assistance would be greatly appreciated.

Microsoft Teams meeting

Join on your computer, mobile app or room device

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Meeting ID: 285 746 038 420

Passcode: TEb8sp

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Join with a video conferencing device

[11384774@t.plcm.vc](tel:11384774@t.plcm.vc)

Video Conference ID: 112 645 823 9

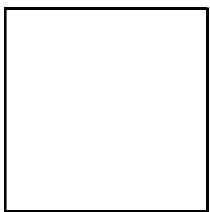
[Alternate VTC instructions](#)

Or call in (audio only)

[+1 850-739-5589,,773474898#](tel:+18507395589773474898) United States, Tallahassee

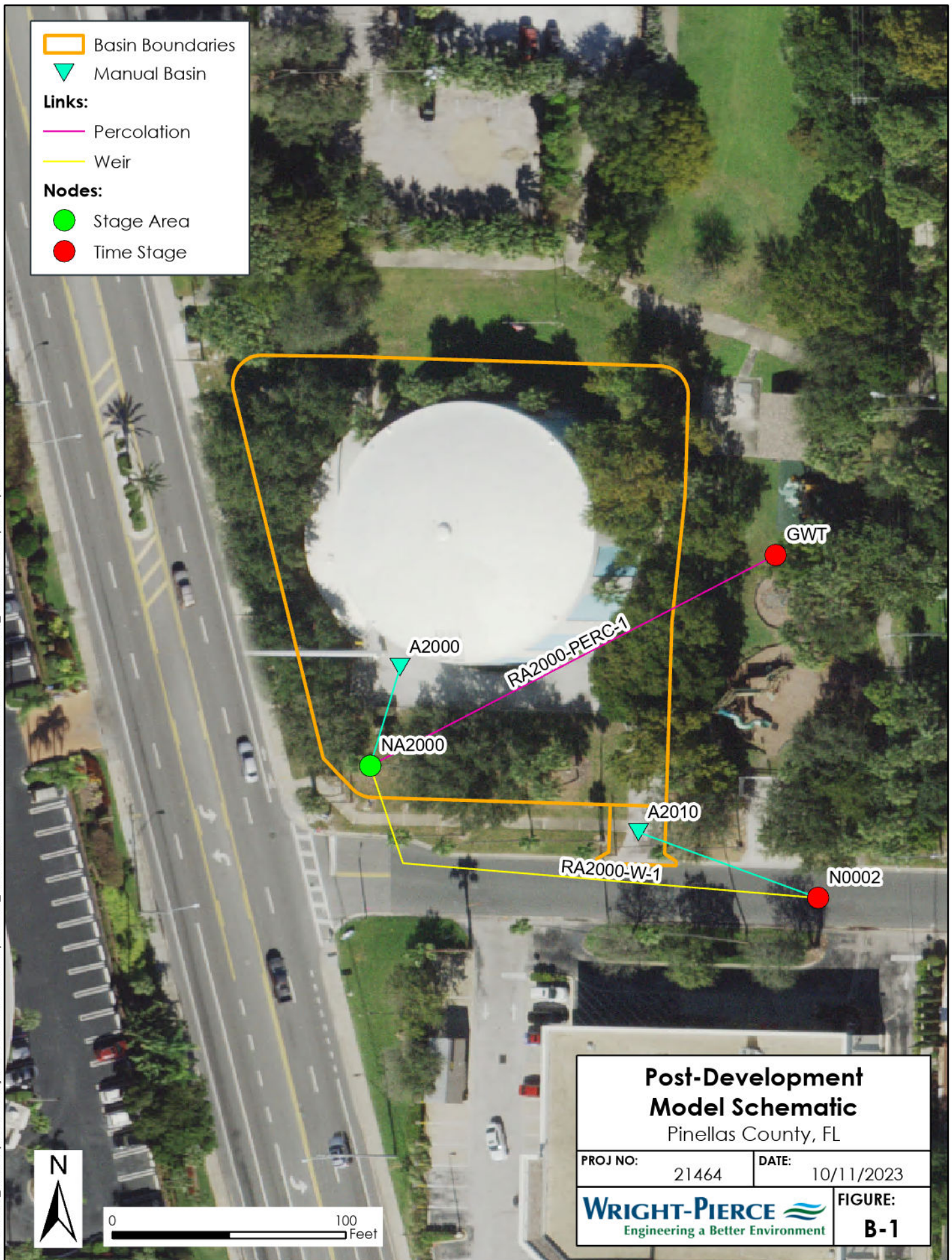
Phone Conference ID: 773 474 898#

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State: Florida
Client: Pinellas County
Project Number: 21464
Completed by: M. Hoffman
Reviewed by: S. Chak

8/16/2023

9/26/2023

Post Development Hydrology

Post Development Site Basins					
Basins	Cover	Area (AC)	HSG	CN Value	CN*A
A2000	Open Space-Good	0.140	A	39	5.5
A2000	Pond	0.094	A	39	3.7
A2000	Permeable Paver/Asphalt with Reservoir	0.087	A	98	8.5
A2000	Impervious	0.414	A	98	40.6
A2010	Impervious	0.015	A	98	1.5
			Composite CN Value	80	

Composite CN Value for use in BMP Trains Model Only

Dry Retention - Water Quality Treatment Volume (WQTV)

Calc No.	Description	Value	Reference
N/A	Drainage Area [DA] (Ac)	0.750	
N/A	Impervious Area [IA] (Ac)	0.41	
[1]	0.5"xDA (Ac-ft)	0.03	SWFWMD ERP AH VOL II, 4.1, c, 1
SUM([1])	WQTV Required (Ac-ft)	0.031	See Above References

Post Development NA2000 Dimensional Data

Permeable Paver Stage / Volume Data				
Description	Elevation (FT)	Area (AC)	Porosity*	Volume (AC-FT)
Bottom	4.00	0.087	0.40	0.000
	4.25	0.087	0.40	0.009
Treatment Elevation	4.50	0.087	0.40	0.017
	4.80	0.087	0.40	0.028
	4.83	0.087	0.40	0.029
	5.00	0.087	0.40	0.035
Bottom of Bedding	5.16	0.087	0.00	0.040
Bottom of Paver	5.33	0.087	0.00	0.040
Top of Paver	5.60	0.087		0.040

Pond 1: Stage / Area Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.009	0.000
	4.25	0.011	0.002
Treatment Elevation	4.50	0.014	0.006
	4.80	0.016	0.010
	5.00	0.02	0.014
Top of Bank	5.60	0.027	0.028

Pond 2 Stage / Area Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.013	0.000
	4.25	0.015	0.003
Treatment Elevation	4.50	0.018	0.008
	4.80	0.021	0.013
	5.00	0.025	0.018
Top of Bank	5.60	0.032	0.035

Pond 3 Stage / Area Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.007	0.000
	4.25	0.010	0.002
Treatment Elevation	4.50	0.013	0.005
	4.80	0.021	0.010
	5.00	0.026	0.015
Top of Bank	5.60	0.035	0.033

Combined Stage / Volume Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.115	0.000
	4.25	0.123	0.017
Treatment Elevation	4.50	0.132	0.036
	4.80	0.146	0.062
	5.00	0.157	0.081
Top of Bank	5.60	0.182	0.136

Parameter	Value
Effective Perimeter (ft)	655
Equiv. Length (ft)	316
Equiv. Width (ft)	12
Base of Aquifer Elev	-8.00

WQTV	Volume (AC-FT)
Required	0.031
Provided	0.036

Sufficient WQTV provided. ✓
See attached BMPTrains Report for more information.

Simulation: 100YR1HR

Scenario: 20230816_Pst
Run Date/Time: 9/21/2023 9:23:58 AM
Program Version: ICPR4 4.07.08

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]
Min Calculation Time:	60.0000	0.0500
Max Calculation Time:		10.0000

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: CN

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: IMP

Tolerances & Options

Time Marching: SAOR
Max Iterations: 8
Over-Relax Weight 0.5 dec
Fact:
dZ Tolerance: 0.0001 ft

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain Global

Max dZ: 1.0000 ft
 Link Optimizer Tol: 0.0000 ft
 Edge Length Option: Automatic

Opt:

Rainfall Name: ~FDOT-1
 Rainfall Amount: 4.50 in
 Storm Duration: 1.0000 hr
 Dflt Damping (1D): 0.0100 ft
 Min Node Srf Area 100 ft2
 (1D):
 Energy Switch (1D): Energy

Comment:

Simulation: 100YR24HR

Scenario: 20230816_Pst
 Run Date/Time: 9/21/2023 9:24:07 AM
 Program Version: ICPR4 4.07.08

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]		
Min Calculation Time:	60.0000	0.0500		
Max Calculation Time:		10.0000		

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources	Lookup Tables
Rainfall Folder:	Boundary Stage Set:
Unit Hydrograph Folder:	Extern Hydrograph Set:
	Curve Number Set: CN
	Green-Ampt Set:
	Vertical Layers Set:
	Impervious Set: IMP

Tolerances & Options	
Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	
Over-Relax Weight: 0.5 dec	
Fact:	
dZ Tolerance: 0.0001 ft	Smp/Man Basin Rain Opt: Global
Max dZ: 1.0000 ft	
Link Optimizer Tol: 0.0000 ft	Rainfall Name: ~FDOT-24
Edge Length Option: Automatic	Rainfall Amount: 13.00 in
	Storm Duration: 24.0000 hr
	Dflt Damping (1D): 0.0100 ft
	Min Node Srf Area (1D): 100 ft2
	Energy Switch (1D): Energy

Comment:

Simulation: 100YR2HR

Scenario: 20230816_Pst
 Run Date/Time: 9/21/2023 9:24:14 AM
 Program Version: ICPR4 4.07.08

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]		
Min Calculation Time:	60.0000	0.0500		
Max Calculation Time:		10.0000		

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: CN

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: IMP

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.5 dec

Fact:

dZ Tolerance: 0.0001 ft

Max dZ: 1.0000 ft

Link Optimizer Tol: 0.0000 ft

Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~FDOT-2

Rainfall Amount: 6.00 in

Storm Duration: 2.0000 hr

Dflt Damping (1D): 0.0100 ft

Min Node Srf Area 100 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: 100YR4HR

Scenario: 20230816_Pst

Run Date/Time: 9/21/2023 9:24:22 AM
Program Version: ICPR4 4.07.08

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]
Min Calculation Time:	60.0000	0.0500
Max Calculation Time:		10.0000

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: CN

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: IMP

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight 0.5 dec
Fact:
dZ Tolerance: 0.0001 ft
Max dZ: 1.0000 ft

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain Global
Opt:

Link Optimizer Tol: 0.0000 ft

Rainfall Name: ~FDOT-4

Edge Length Option: Automatic

Rainfall Amount: 7.30 in

Storm Duration: 4.0000 hr

Dflt Damping (1D): 0.0100 ft

Min Node Srf Area 100 ft2

(1D):

Energy Switch (1D): Momentum

Comment:

Simulation: 100YR72HR

Scenario: 20230816_Pst

Run Date/Time: 9/21/2023 9:24:32 AM

Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	72.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.0500
Max Calculation Time:		10.0000

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Lookup Tables

Boundary Stage Set:

Unit Hydrograph
Folder:

Extern Hydrograph Set:

Curve Number Set: CN

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: IMP

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	
Over-Relax Weight 0.5 dec	
Fact:	
dZ Tolerance: 0.0001 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.0000 ft	Rainfall Name: ~FDOT-72
Link Optimizer Tol: 0.0000 ft	Rainfall Amount: 17.60 in
	Storm Duration: 72.0000 hr
Edge Length Option: Automatic	
	Dflt Damping (1D): 0.0100 ft
	Min Node Srf Area 100 ft2
	(1D):
	Energy Switch (1D): Energy

Comment:

Simulation: 100YR8HR

Scenario: 20230816_Pst
Run Date/Time: 9/21/2023 9:24:48 AM
Program Version: ICPR4 4.07.08

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]
Min Calculation Time:	60.0000	0.0500
Max Calculation Time:		10.0000

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: CN

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: IMP

Tolerances & Options

Time Marching: SAOR

Max Iterations: 6

Over-Relax Weight 0.5 dec

Fact:

dZ Tolerance: 0.0001 ft

Max dZ: 1.0000 ft

Link Optimizer Tol: 0.0000 ft

Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: ~FDOT-8

Rainfall Amount: 9.20 in

Storm Duration: 8.0000 hr

Dflt Damping (1D): 0.0100 ft

Min Node Srf Area 100 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Simulation: 25YR24HR

Scenario: 20230816_Pst

Run Date/Time: 9/21/2023 9:24:57 AM

Program Version: ICPR4 4.07.08

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]
Min Calculation Time:	60.0000	0.0500
Max Calculation Time:		10.0000

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

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph
Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set:

Curve Number Set: CN

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: IMP

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight: 0.5 dec
Fact:
dZ Tolerance: 0.0001 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0000 ft

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain: Global
Opt:
Rainfall Name: ~FDOT-24
Rainfall Amount: 10.50 in

Edge Length Option: Automatic

Storm Duration: 24.0000 hr

Dflt Damping (1D): 0.0100 ft

Min Node Srf Area 100 ft2

(1D):

Energy Switch (1D): Energy

Comment:

Impervious: IMP [Set]

Land Cover Zone	% Impervious	% DCIA	% Direct	Ia Impervious [in]	Ia Pervious [in]
Impervious	0.00	0.00	0.00	0.000	0.000
Open Space-Good	0.00	0.00	0.00	0.000	0.000
Permeable Pavers/Asphalt with Reservoir	0.00	0.00	100.00	0.000	0.000
Pond	0.00	0.00	100.00	0.000	0.000

Curve Number: CN [Set]

Land Cover Zone	Soil Zone	Curve Number [dec]
Impervious	A	98.0
Open Space-Good	A	39.0
Permeable Pavers/Asphalt with Reservoir	A	98.0
Pond	A	39.0

Manual Basin: A2000

Scenario: 20230816_Pst

Node: NA2000

Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number

Time of Concentration: 10.0000 min

Max Allowable Q: 99999.00 cfs

Time Shift: 0.0000 hr

Unit Hydrograph: UH484

Peaking Factor: 484.0

Area: 0.7350 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.4140	Impervious	A	
0.1400	Open Space-Good	A	
0.0940	Pond	A	

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.0870	Permeable Pavers/Asphalt with Reservoir	A	

Comment:

Manual Basin: A2010

Scenario: 20230816_Pst
Node: N0002
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH484
Peaking Factor: 484.0
Area: 0.0150 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
0.0150	Impervious	A	

Comment:

Node: GWT

Scenario: 20230816_Pst
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 0.00 ft
Warning Stage: 2.00 ft
Boundary Stage:

Comment:

Node: N0002

Scenario: 20230816_Pst
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 3.40 ft
Warning Stage: 100.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	3.40
0	0	0	800.0000	3.40

Comment:

Node: NA2000

Scenario: 20230816_Pst
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 4.00 ft
 Warning Stage: 5.50 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.00	0.00	0
4.25	0.02	741
4.50	0.04	1568
4.80	0.06	2701
5.00	0.08	3528
5.60	0.14	5924

Comment:

Drop Structure Link: RA2000-DS-1		Upstream Pipe	Downstream Pipe
Scenario:	20230816_Pst	Invert: 4.00 ft	Invert: 3.60 ft
From Node:	NA2000	Manning's N: 0.0110	Manning's N: 0.0110
To Node:	N0002	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 0.33 ft	Max Depth: 0.33 ft
Flow Direction:	Both	Bottom Clip	
Solution:	Split	Default: 0.00 ft	Default: 0.00 ft
Pipe Count:	2	Op Table:	Op Table:
Damping:	0.0000 ft	Ref Node:	Ref Node:
Length:	15.00 ft	Manning's N: 0.0000	Manning's N: 0.0000
FHWA Code:	1	Top Clip	
Entr Loss Coef:	0.50	Default: 0.00 ft	Default: 0.00 ft
Exit Loss Coef:	1.00	Op Table:	Op Table:
Bend Loss Coef:	0.00	Ref Node:	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0000	Manning's N: 0.0000
Energy Switch:	Energy		

Pipe Comment:

Weir Component	
Weir: 1	Bottom Clip
Weir Count: 1	Default: 0.00 ft
Weir Flow Direction: Both	Op Table:

Damping: 0.0000 ft
 Weir Type: Sharp Crested Vertical
 Geometry Type: Circular
 Invert: 4.50 ft
 Control Elevation: 4.50 ft
 Max Depth: 0.23 ft

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 3.300

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: Horizontal
 Geometry Type: Rectangular
 Invert: 5.50 ft
 Control Elevation: 5.50 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:

Drop Structure Comment:

Percolation Link: RA2000-PERC-1

Scenario: 20230816_Pst
 From Node: NA2000
 To Node: GWT
 Link Count: 1
 Flow Direction: Both
 Aquifer Base Elevation: -8.00 ft
 Water Table Elevation: 2.00 ft
 Annual Recharge Rate: 0 ipy
 Horizontal Conductivity: 9.300 fpd
 Vertical Conductivity: 6.700 fpd
 Fillable Porosity: 0.200
 Layer Thickness: 2.00 ft

Surface Area Option: User Specified
 Bottom Elevation: 4.00 ft
 Surface Area: 0.1150 ac
 Vertical Flow Termination: Horizontal Flow Algorithm
 Perimeter 1: 676.00 ft
 Perimeter 2: 982.00 ft
 Perimeter 3: 3807.00 ft
 Distance P1 to P2: 50.00 ft
 Distance P2 to P3: 450.00 ft
 # of Cells P1 to P2: 10
 # of Cells P2 to P3: 45

Comment:

Weir Link: RA2000-W-1	
Scenario: 20230816_Pst	Bottom Clip
From Node: NA2000	Default: 0.00 ft
To Node: N0002	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Irregular	Ref Node:
Invert: 5.60 ft	Discharge Coefficients
Control Elevation: 5.60 ft	Weir Default: 2.600
Cross Section: XA2000-W-1	Weir Table:
	Orifice Default: 0.600
	Orifice Table:
Comment:	

Post Development Inputs and Results

1

Manual Basin Runoff Summary [20230816_Pst]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
A2000	100YR1HR	5.31	0.5000	4.50	3.54	0.7350	91.3	0.00	0.00
A2000	100YR24HR	0.84	12.0000	13.00	11.12	0.7350	85.1	0.00	0.00
A2000	100YR2HR	4.26	0.7500	6.00	4.82	0.7350	89.7	0.00	0.00
A2000	100YR4HR	2.32	2.0000	7.30	5.95	0.7350	88.5	0.00	0.00
A2000	100YR72HR	0.61	59.9167	17.60	15.46	0.7350	83.5	0.00	0.00
A2000	100YR8HR	2.47	4.0000	9.20	7.65	0.7350	87.1	0.00	0.00
A2000	25YR24HR	0.67	12.0000	10.50	8.82	0.7350	86.3	0.00	0.00

Manual Basin Runoff Summary [20230816_Pst]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
A2010	100YR1HR	0.14	0.5667	4.50	4.27	0.0150	98.0	0.00	0.00
A2010	100YR24HR	0.02	12.0000	13.00	12.77	0.0150	98.0	0.00	0.00
A2010	100YR2HR	0.11	0.7833	6.00	5.78	0.0150	98.0	0.00	0.00
A2010	100YR4HR	0.06	2.0000	7.30	7.08	0.0150	98.0	0.00	0.00
A2010	100YR72HR	0.01	59.9167	17.60	17.39	0.0150	98.0	0.00	0.00
A2010	100YR8HR	0.06	4.0000	9.20	8.98	0.0150	98.0	0.00	0.00
A2010	25YR24HR	0.02	12.0000	10.50	10.27	0.0150	98.0	0.00	0.00

Node Max Conditions [20230816_Pst]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
GWT	100YR1HR	2.00	0.00	0.0000	0.81	0.00	0
GWT	100YR24HR	2.00	0.00	0.0000	0.39	0.00	0
GWT	100YR2HR	2.00	0.00	0.0000	0.73	0.00	0
GWT	100YR4HR	2.00	0.00	0.0000	0.69	0.00	0
GWT	100YR72HR	2.00	0.00	0.0000	0.39	0.00	0
GWT	100YR8HR	2.00	0.00	0.0000	0.51	0.00	0
GWT	25YR24HR	2.00	0.00	0.0000	0.39	0.00	0

Node Max Conditions [20230816_Pst]

Node Name	Sim Name	Warning	Max Stage	Min/Max	Max Total	Max Total	Max Surface
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Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
N0002	100YR1HR	100.00	3.40	0.0000	1.79	0.00	0
N0002	100YR24HR	100.00	3.40	0.0000	0.52	0.00	0
N0002	100YR2HR	100.00	3.40	0.0000	2.14	0.00	0
N0002	100YR4HR	100.00	3.40	0.0000	1.43	0.00	0
N0002	100YR72HR	100.00	3.40	0.0000	0.51	0.00	0
N0002	100YR8HR	100.00	3.40	0.0000	2.10	0.00	0
N0002	25YR24HR	100.00	3.40	0.0000	0.19	0.00	0

Node Max Conditions [20230816_Pst]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA2000	100YR1HR	5.50	5.62	0.0001	5.31	2.77	4066
NA2000	100YR24HR	5.50	5.55	0.0001	0.84	0.74	4066
NA2000	100YR2HR	5.50	5.63	0.0001	4.26	2.90	4066
NA2000	100YR4HR	5.50	5.62	0.0001	2.32	1.92	4066
NA2000	100YR72HR	5.50	5.54	0.0001	0.61	0.60	4066
NA2000	100YR8HR	5.50	5.63	0.0001	2.47	2.47	4066
NA2000	25YR24HR	5.50	5.45	0.0001	0.67	0.39	4066

Link Min/Max Conditions [20230816_Pst]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
RA2000-DS-1 - Pipe	100YR1HR	1.00	0.00	0.01	5.87	6.01	5.94
RA2000-DS-1 - Weir: 1	100YR1HR	0.20	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Weir: 2	100YR1HR	1.34	0.00	0.00	1.11	1.11	1.11
RA2000-DS-1 - Pipe	100YR24HR	0.50	0.00	-0.01	2.95	4.53	3.74
RA2000-DS-1 - Weir: 1	100YR24HR	0.19	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Weir: 2	100YR24HR	0.32	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Pipe	100YR2HR	1.01	0.00	0.01	5.89	6.03	5.96
RA2000-DS-1 - Weir: 1	100YR2HR	0.20	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Weir: 2	100YR2HR	1.39	0.00	0.00	1.12	1.12	1.12

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
RA2000-DS-1 - Pipe	100YR4HR	1.00	0.00	0.01	5.84	5.99	5.92
RA2000-DS-1 - Weir: 1	100YR4HR	0.19	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Weir: 2	100YR4HR	1.06	0.00	0.00	1.03	1.03	1.03
RA2000-DS-1 - Pipe	100YR72HR	0.49	0.00	-0.02	2.88	4.51	3.69
RA2000-DS-1 - Weir: 1	100YR72HR	0.19	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Weir: 2	100YR72HR	0.30	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Pipe	100YR8HR	1.01	0.00	0.01	5.89	6.03	5.96
RA2000-DS-1 - Weir: 1	100YR8HR	0.19	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Weir: 2	100YR8HR	1.27	0.00	0.00	1.09	1.09	1.09
RA2000-DS-1 - Pipe	25YR24HR	0.18	0.00	-0.01	1.41	0.00	0.70
RA2000-DS-1 - Weir: 1	25YR24HR	0.18	0.00	0.00	0.00	0.00	0.00
RA2000-DS-1 - Weir: 2	25YR24HR	0.00	0.00	0.00	0.00	0.00	0.00

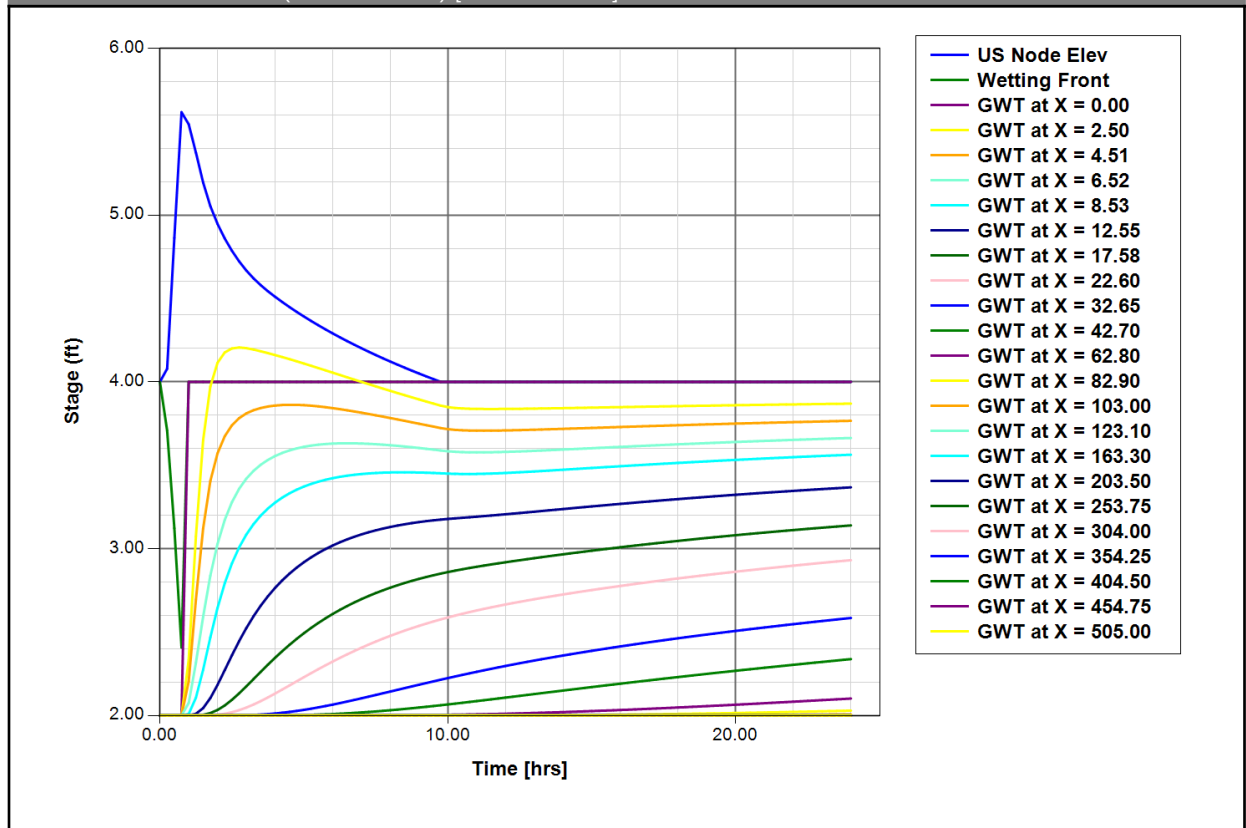
Link Min/Max Conditions [20230816_Pst]

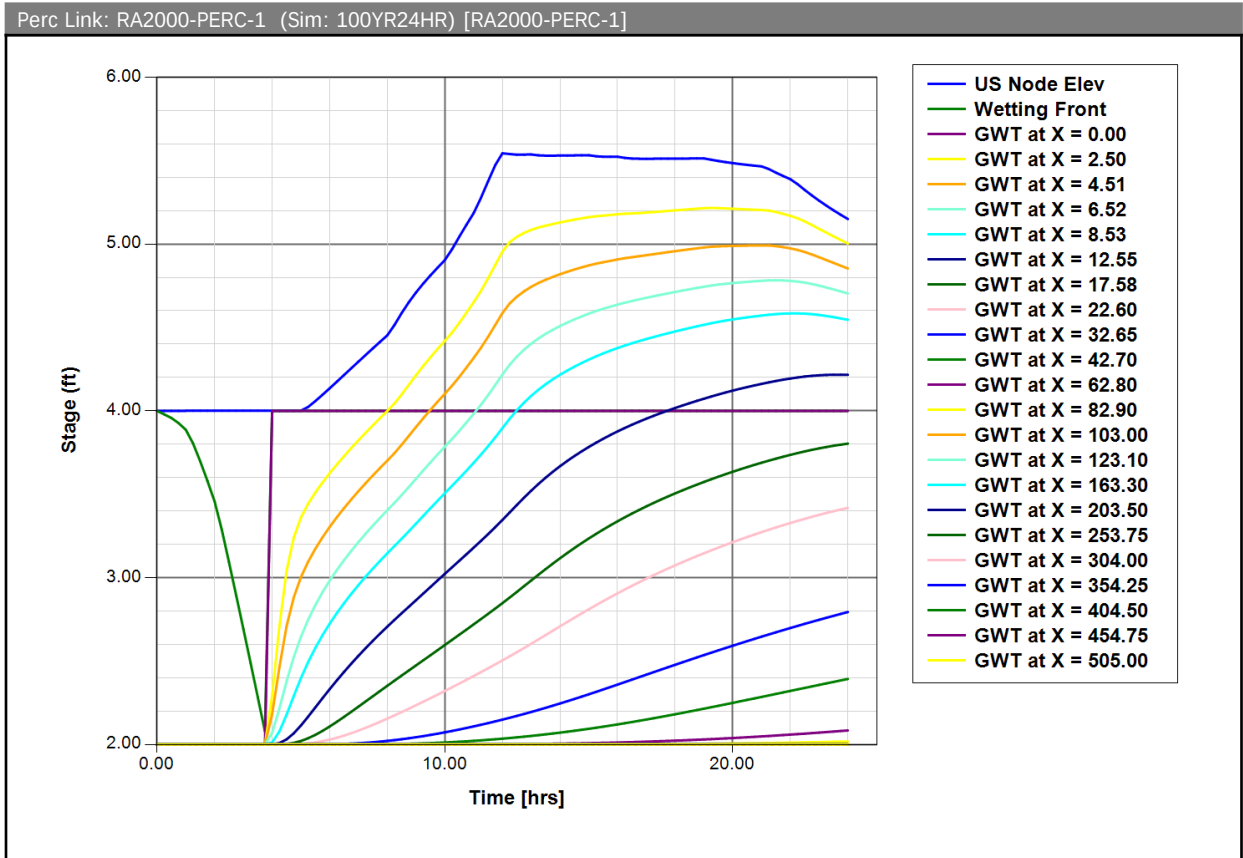
Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
RA2000-PERC -1	100YR1HR	0.81	0.00	-0.03	0.00	0.00	0.00
RA2000-PERC -1	100YR24HR	0.39	0.00	0.21	0.00	0.00	0.00
RA2000-PERC -1	100YR2HR	0.73	0.00	0.25	0.00	0.00	0.00
RA2000-PERC -1	100YR4HR	0.69	0.00	0.13	0.00	0.00	0.00
RA2000-PERC -1	100YR72HR	0.39	0.00	0.15	0.00	0.00	0.00
RA2000-PERC -1	100YR8HR	0.51	0.00	0.31	0.00	0.00	0.00
RA2000-PERC -1	25YR24HR	0.39	0.00	0.30	0.00	0.00	0.00

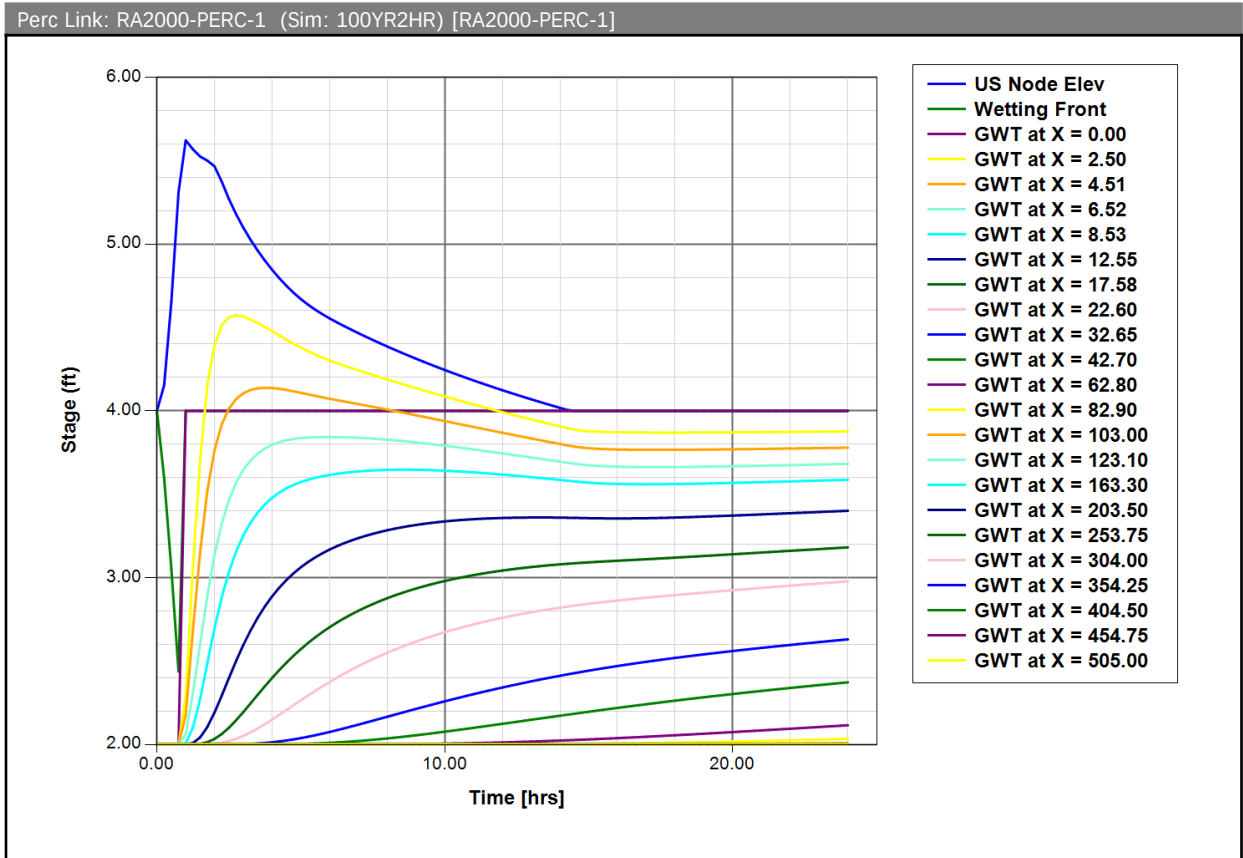
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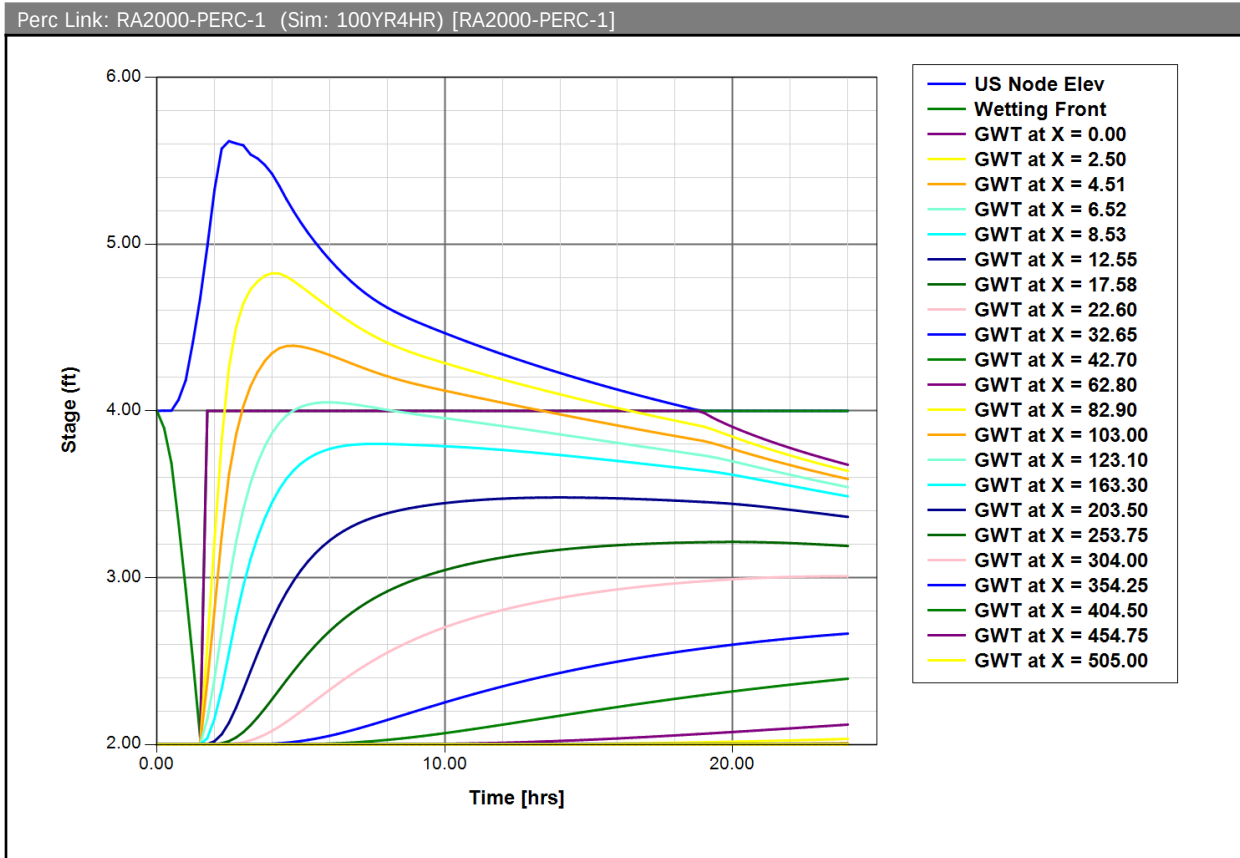
Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
RA2000-W-1	100YR1HR	0.71	0.00	0.00	0.00	0.00	0.00
RA2000-W-1	100YR24HR	0.00	0.00	0.00	0.00	0.00	0.00
RA2000-W-1	100YR2HR	1.05	0.00	0.00	0.00	0.00	0.00
RA2000-W-1	100YR4HR	0.39	0.00	0.00	0.00	0.00	0.00
RA2000-W-1	100YR72HR	0.00	0.00	0.00	0.00	0.00	0.00
RA2000-W-1	100YR8HR	1.04	0.00	-0.01	0.00	0.00	0.00
RA2000-W-1	25YR24HR	0.00	0.00	0.00	0.00	0.00	0.00

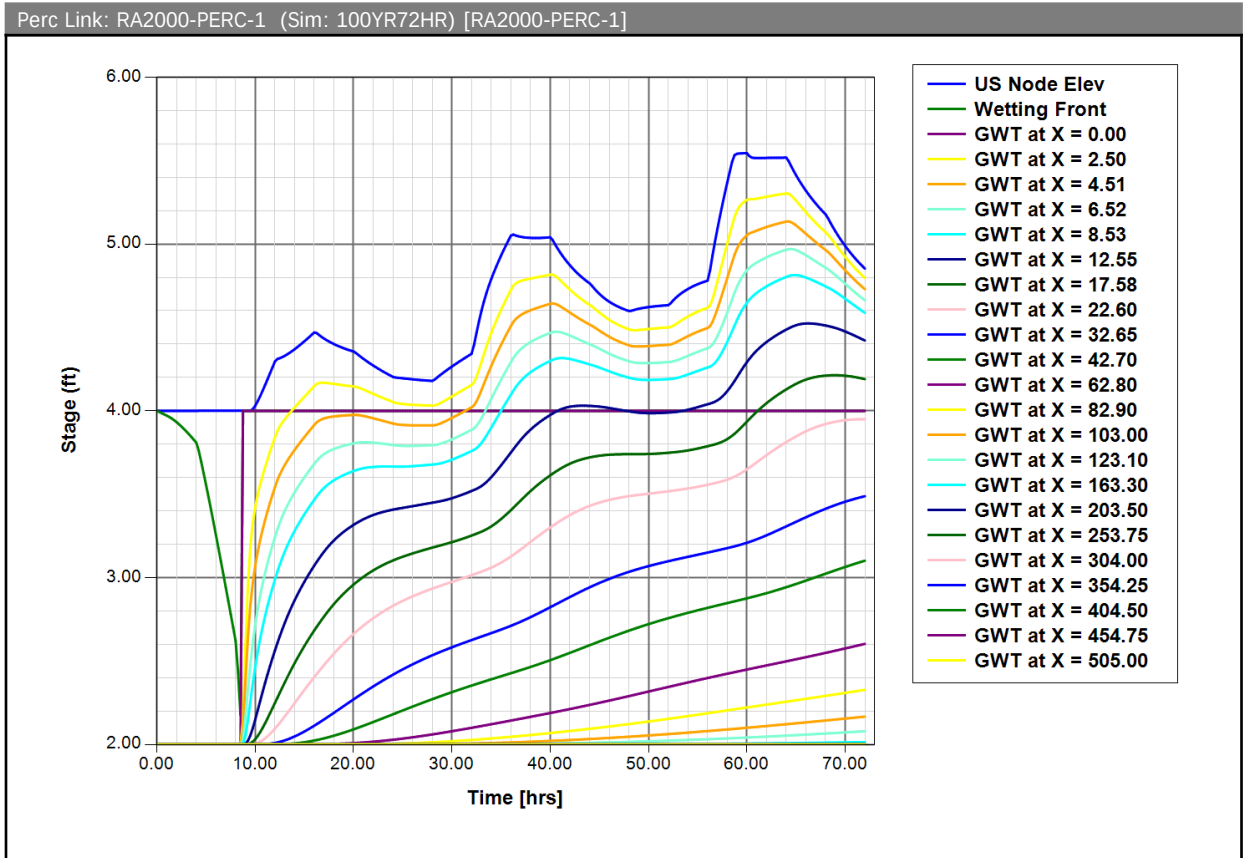
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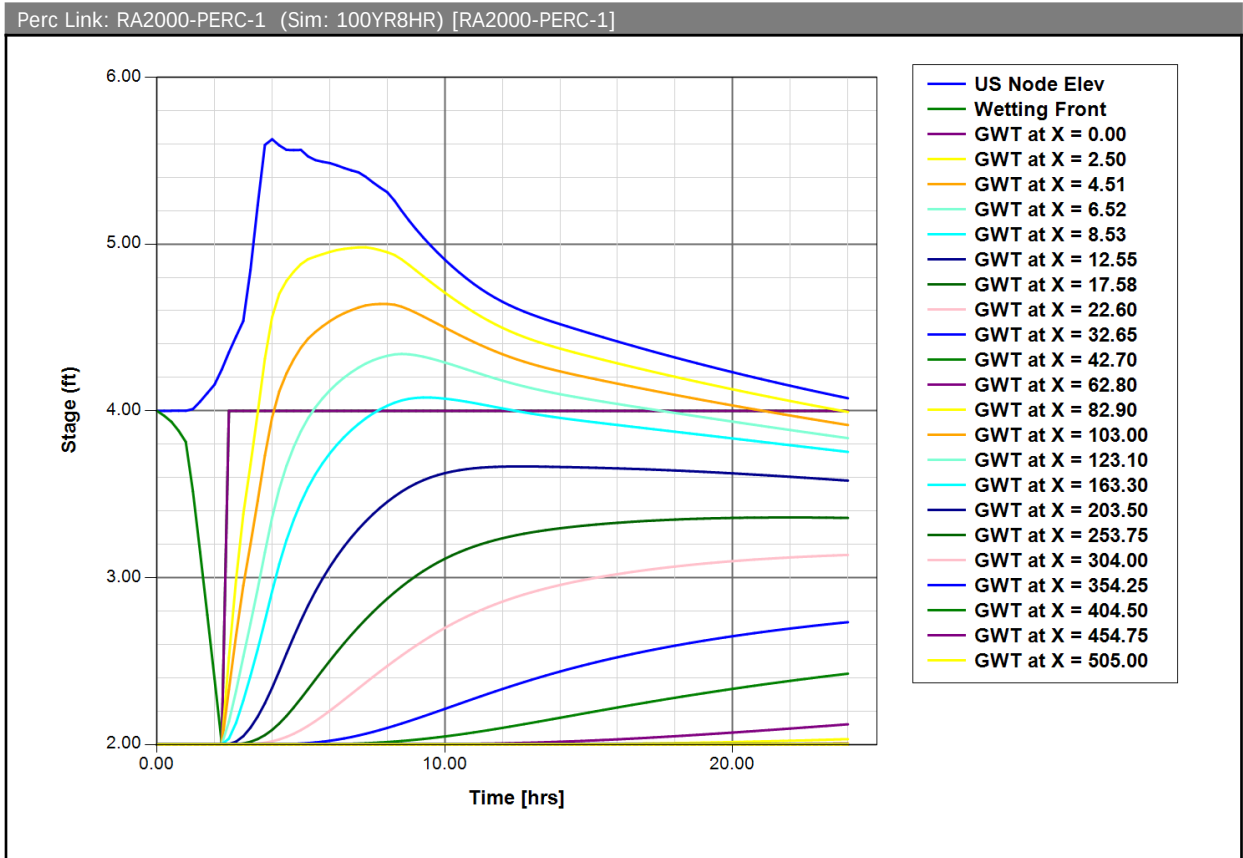


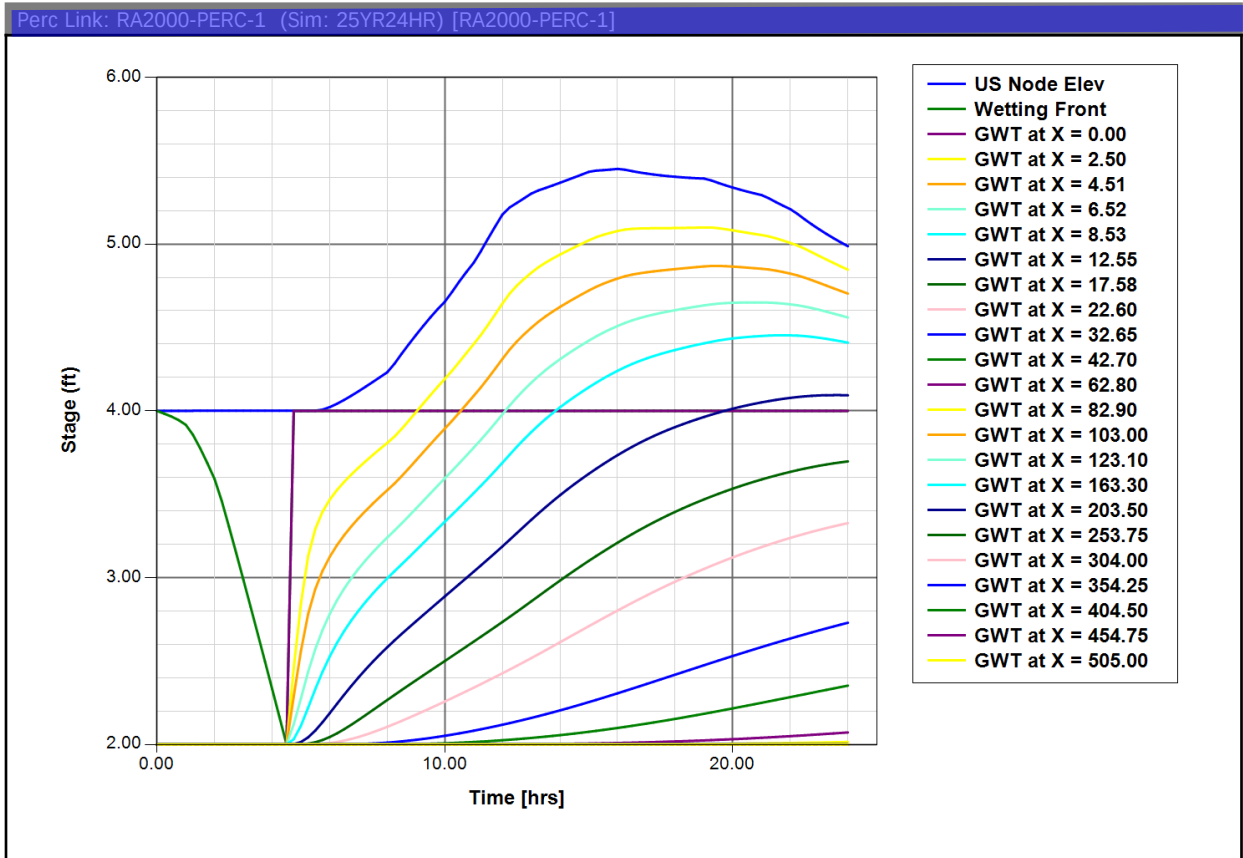














Appendix C: Water Quality Calculations



State: Florida	
Client: Pinellas County	
Project Number: 21464	
Completed by: M. Hoffman	5/27/2023
Reviewed by: NAME	xx/xx/xxxx

Pre-Development Hydrology

Pre-Development Site Basins					
Basin	Cover	Area (AC)	HSG	CN Value	CN*A
A2000	Impervious	0.400	A	98	39.2
A2000	Open Space-Good	0.350	A	39	13.7
	Total Area (Ac)	0.750	Composite CN Value	70	

Composite CN Value for use in BMP Trains Model Only

State: Florida
Client: Pinellas County
Project Number: 21464
Completed by: M. Hoffman
Reviewed by: S. Chak

8/16/2023

9/26/2023

Post Development Hydrology

Post Development Site Basins					
Basins	Cover	Area (AC)	HSG	CN Value	CN*A
A2000	Open Space-Good	0.140	A	39	5.5
A2000	Pond	0.094	A	39	3.7
A2000	Permeable Paver/Asphalt with Reservoir	0.087	A	98	8.5
A2000	Impervious	0.414	A	98	40.6
A2010	Impervious	0.015	A	98	1.5
			Composite CN Value	80	

Composite CN Value for use in BMP Trains Model Only

Dry Retention - Water Quality Treatment Volume (WQTV)

Calc No.	Description	Value	Reference
N/A	Drainage Area [DA] (Ac)	0.750	
N/A	Impervious Area [IA] (Ac)	0.41	
[1]	0.5"xDA (Ac-ft)	0.03	SWFWMD ERP AH VOL II, 4.1, c, 1
SUM([1])	WQTV Required (Ac-ft)	0.031	See Above References

Post Development NA2000 Dimensional Data

Permeable Paver Stage / Volume Data				
Description	Elevation (FT)	Area (AC)	Porosity*	Volume (AC-FT)
Bottom	4.00	0.087	0.40	0.000
	4.25	0.087	0.40	0.009
Treatment Elevation	4.50	0.087	0.40	0.017
	4.80	0.087	0.40	0.028
	4.83	0.087	0.40	0.029
	5.00	0.087	0.40	0.035
Bottom of Bedding	5.16	0.087	0.00	0.040
Bottom of Paver	5.33	0.087	0.00	0.040
Top of Paver	5.60	0.087		0.040

Pond 1: Stage / Area Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.009	0.000
	4.25	0.011	0.002
Treatment Elevation	4.50	0.014	0.006
	4.80	0.016	0.010
	5.00	0.02	0.014
Top of Bank	5.60	0.027	0.028

Pond 2 Stage / Area Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.013	0.000
	4.25	0.015	0.003
Treatment Elevation	4.50	0.018	0.008
	4.80	0.021	0.013
	5.00	0.025	0.018
Top of Bank	5.60	0.032	0.035

Pond 3 Stage / Area Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.007	0.000
	4.25	0.010	0.002
Treatment Elevation	4.50	0.013	0.005
	4.80	0.021	0.010
	5.00	0.026	0.015
Top of Bank	5.60	0.035	0.033

Combined Stage / Volume Data			
Description	Elevation (FT)	Area (AC)	Volume (AC-FT)
Bottom	4.00	0.115	0.000
	4.25	0.123	0.017
Treatment Elevation	4.50	0.132	0.036
	4.80	0.146	0.062
	5.00	0.157	0.081
Top of Bank	5.60	0.182	0.136

Parameter	Value
Effective Perimeter (ft)	655
Equiv. Length (ft)	316
Equiv. Width (ft)	12
Base of Aquifer Elev	-8.00

WQTV	Volume (AC-FT)
Required	0.031
Provided	0.036

Sufficient WQTV provided. ✓
See attached BMPTrains Report for more information.

Complete Report (not including cost) Ver 4.3.5

Project: Pinellas-GBWBS

Date: 10/18/2023 8:44:32 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	A2000	A2010
Rainfall Zone	Florida Zone 4	Florida Zone 4
Annual Mean Rainfall	51.00	51.00

Pre-Condition Landuse Information

Landuse	Light Industrial: TN=1.200 TP=0.260	
Area (acres)	0.75	0.00
Rational Coefficient (0-1)	0.07	0.00
Non DCIA Curve Number	70.00	98.00
DCIA Percent (0-100)	0.00	0.00
Nitrogen EMC (mg/l)	1.200	0.000
Phosphorus EMC (mg/l)	0.260	0.000
Runoff Volume (ac-ft/yr)	0.226	0.000
Groundwater N (kg/yr)	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000
Nitrogen Loading (kg/yr)	0.335	0.000
Phosphorus Loading (kg/yr)	0.073	0.000

Post-Condition Landuse Information

Landuse	Light Industrial: TN=1.200 TP=0.260	
Area (acres)	0.74	0.02
Rational Coefficient (0-1)	0.13	0.62
Non DCIA Curve Number	80.00	98.00
DCIA Percent (0-100)	0.00	0.00
Wet Pond Area (ac)	0.00	0.00
Nitrogen EMC (mg/l)	1.200	1.200
Phosphorus EMC (mg/l)	0.260	0.260
Runoff Volume (ac-ft/yr)	0.409	0.052
Groundwater N (kg/yr)	0.000	0.000

Groundwater P (kg/yr)	0.000	0.000
Nitrogen Loading (kg/yr)	0.605	0.077
Phosphorus Loading (kg/yr)	0.131	0.017

Catchment Number: 1 Name: A2000

Project: Pinellas-GBWBS

Date: 10/18/2023

Retention Design

Retention Depth (in) 0.580

Retention Volume (ac-ft) 0.036

Watershed Characteristics

Catchment Area (acres) 0.74

Contributing Area (acres) 0.740

Non-DCIA Curve Number 80.00

DCIA Percent 0.00

Rainfall Zone Florida Zone 4

Rainfall (in) 51.00

Surface Water Discharge

Required TN Treatment Efficiency (%) 45

Provided TN Treatment Efficiency (%) 59

Required TP Treatment Efficiency (%) 45

Provided TP Treatment Efficiency (%) 59

Media Mix Information

Type of Media Mix Not Specified

Media N Reduction (%)

Media P Reduction (%)

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000

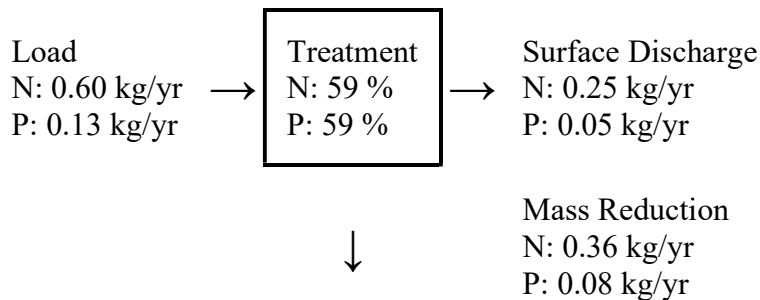
TN Mass Load (kg/yr) 0.357

TN Concentration (mg/L) 0.000

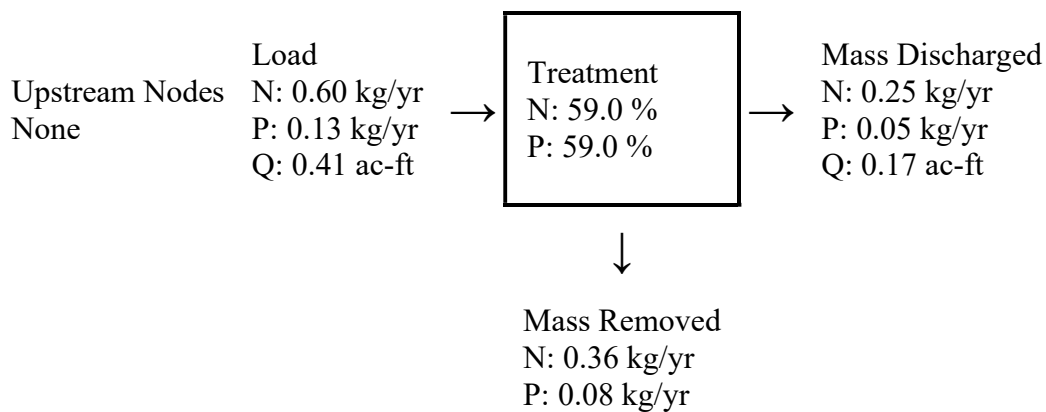
TP Mass Load (kg/yr) 0.077

TP Concentration (mg/L) 0.000

Load Diagram for Retention (stand-alone)



Load Diagram for Retention (As Used In Routing)



Catchment Number: 2 Name: A2010

Project: Pinellas-GBWBS

Date: 10/18/2023

None Design

Watershed Characteristics

Catchment Area (acres) 0.02

Contributing Area (acres) 0.020

Non-DCIA Curve Number 98.00

DCIA Percent 0.00

Rainfall Zone Florida Zone 4

Rainfall (in) 51.00

Surface Water Discharge

Required TN Treatment Efficiency (%) 100

Provided TN Treatment Efficiency (%)

Required TP Treatment Efficiency (%) 100

Provided TP Treatment Efficiency (%)

Media Mix Information

Type of Media Mix Not Specified

Media N Reduction (%) 0.000

Media P Reduction (%) 0.000

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000

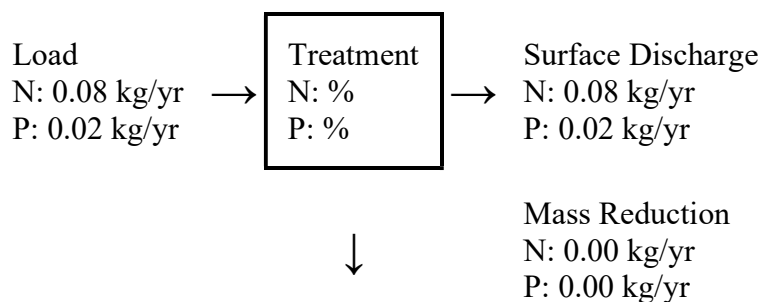
TN Mass Load (kg/yr) 0.000

TN Concentration (mg/L) 0.000

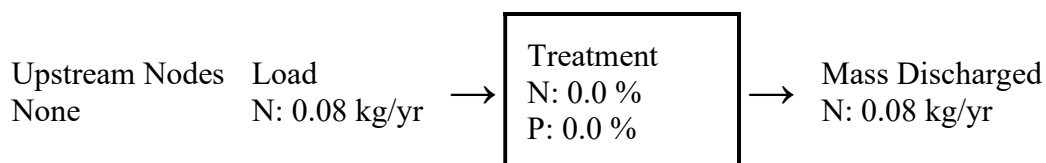
TP Mass Load (kg/yr) 0.000

TP Concentration (mg/L) 0.000

Load Diagram for None (stand-alone)



Load Diagram for None (As Used In Routing)



P: 0.02 kg/yr
Q: 0.05 ac-ft



P: 0.02 kg/yr
Q: 0.05 ac-ft



Mass Removed
N: 0.00 kg/yr
P: 0.00 kg/yr

Summary Treatment Report Version: 4.3.5

Project: Pinellas-GBWBS

Analysis Type: Net Improvement

Date: 10/18/2023

BMP Types:

Catchment 1 - (A2000)

Retention

Catchment 2 - (A2010) None

Based on % removal values to the nearest percent

Total nitrogen target removal met? **Yes**

Total phosphorus target removal met? **Yes**

Routing Summary

Catchment 1 Routed to Outlet

Catchment 2 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge

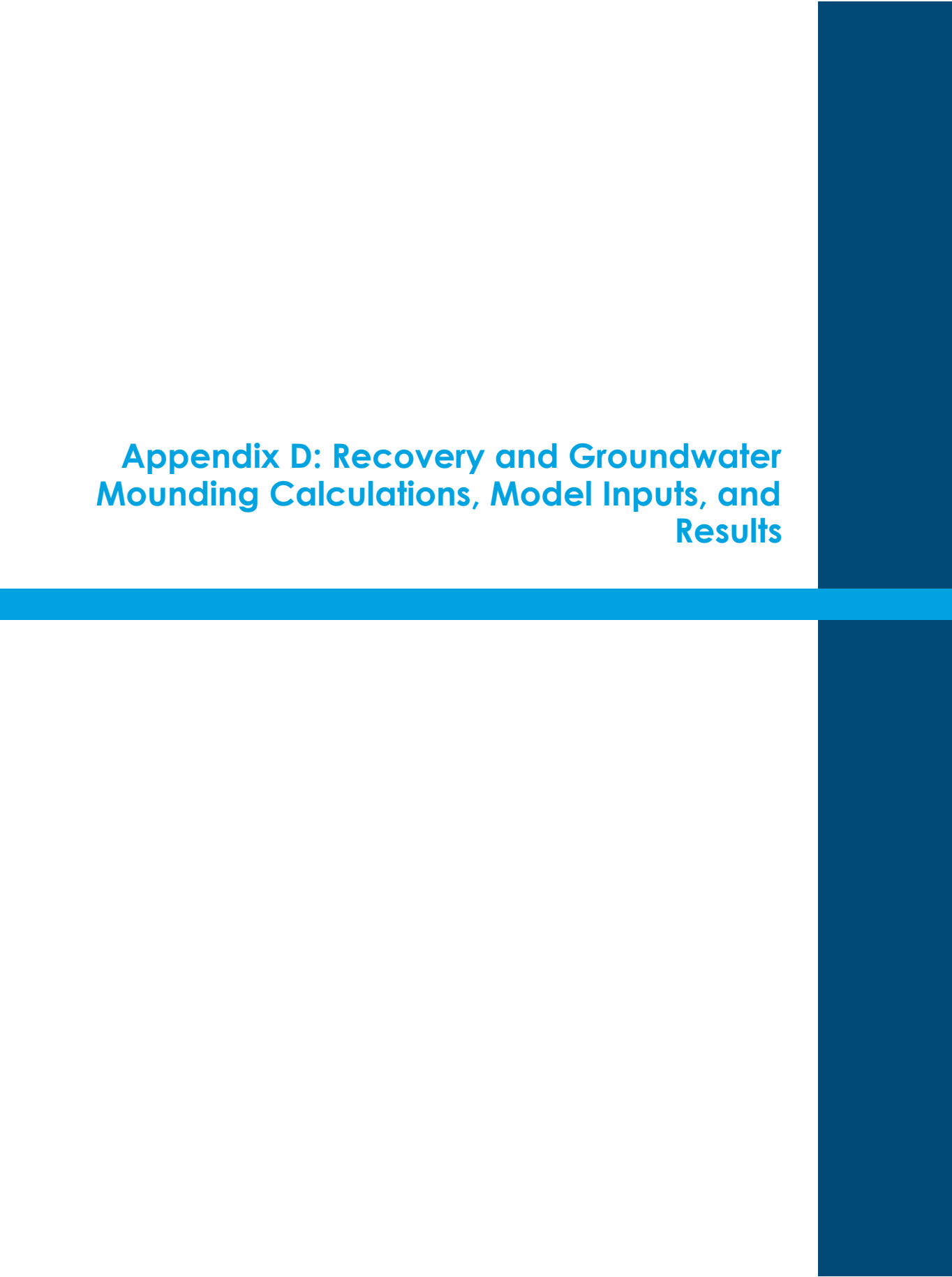
Total N pre load	.33 kg/yr	
Total N post load	.68 kg/yr	
Target N load reduction	51 %	
Target N discharge load	.33 kg/yr	
Percent N load reduction	52 %	
Provided N discharge load	.33 kg/yr	.72 lb/yr
Provided N load removed	.36 kg/yr	.79 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	.073 kg/yr
Total P post load	.148 kg/yr

Target P load reduction	51 %	
Target P discharge load	.073 kg/yr	
Percent P load reduction	52 %	
Provided P discharge load	.07 kg/yr	.16 lb/yr
Provided P load removed	.077 kg/yr	.171 lb/yr



Appendix D: Recovery and Groundwater Mounding Calculations, Model Inputs, and Results

Node: GWT

Scenario: 20230816_Pst-WQTV
 Type: Time/Stage
 Base Flow: 0.00 cfs
 Initial Stage: 0.00 ft
 Warning Stage: 2.00 ft
 Boundary Stage:

Comment:

Node Max Conditions [20230816_Pst-WQTV]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
GWT	SLUG	2.00	0.00	0.0000	25.73	0.00	0

Node: NA2000

Scenario: 20230816_Pst-WQTV
 Type: Stage/Volume
 Base Flow: 0.00 cfs
 Initial Stage: 4.50 ft
 Warning Stage: 5.50 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
4.00	0.00	0
4.25	0.02	741
4.50	0.04	1568
4.80	0.06	2701
5.00	0.08	3528
5.60	0.14	5924

Comment:

Node Max Conditions [20230816_Pst-WQTV]

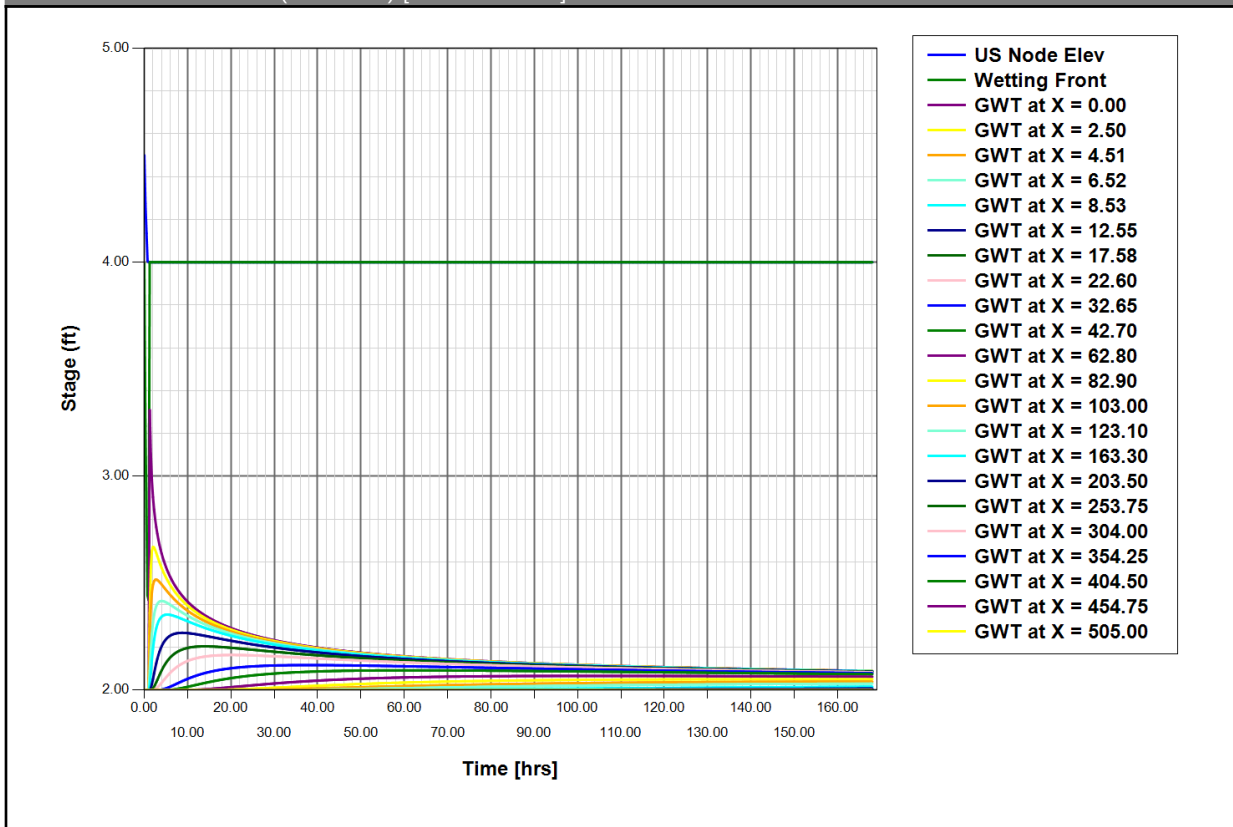
Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA2000	SLUG	5.50	4.50	-0.0006	0.00	25.73	3542

Percolation Link: RA2000-PERC-1

Scenario:	20230816_Pst-WQTV	Surface Area Option:	User Specified
From Node:	NA2000	Bottom Elevation:	4.00 ft
To Node:	GWT	Surface Area:	0.1150 ac
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm
Flow Direction:	Both	Perimeter 1:	676.00 ft
Aquifer Base Elevation:	-8.00 ft	Perimeter 2:	982.00 ft
Water Table Elevation:	2.00 ft	Perimeter 3:	3807.00 ft
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft
Horizontal Conductivity:	9.300 fpd	Distance P2 to P3:	450.00 ft
Vertical Conductivity:	6.700 fpd	# of Cells P1 to P2:	10
Fillable Porosity:	0.200	# of Cells P2 to P3:	45
Layer Thickness:	2.00 ft		

Comment:

Perc Link: RA2000-PERC-1 (Sim: SLUG) [RA2000-PERC-1]



RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
0	4.5	3.993778	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0.25	4.273411	3.234178	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0.5	4.135283	2.810496	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0.75	4.007654	2.442667	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1	4	2.421367	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.25	4	3.309505	2.361964	2.226754	2.091544	2.020583	2.001157	2.000039	2.000001	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.5	4	3.101932	2.576129	2.38385	2.19157	2.079856	2.010516	2.000845	2.000054	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1.75	4	2.98163	2.650637	2.457694	2.26475	2.141515	2.028855	2.003645	2.000369	2.000002	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	4	2.902495	2.670002	2.493181	2.316359	2.193636	2.05247	2.008985	2.001234	2.000014	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2.25	4	2.844906	2.667454	2.509743	2.352033	2.234622	2.077842	2.016698	2.002883	2.000052	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2.5	4	2.79985	2.656363	2.51637	2.376376	2.265952	2.102648	2.026248	2.00543	2.000142	2.000002	2	2	2	2	2	2	2	2	2	2	2	2	2
2.75	4	2.762817	2.642207	2.517493	2.392778	2.289651	2.125642	2.037007	2.008873	2.000314	2.000007	2	2	2	2	2	2	2	2	2	2	2	2	2
3	4	2.731361	2.627269	2.515437	2.403606	2.307508	2.146286	2.048398	2.013126	2.0006	2.000016	2	2	2	2	2	2	2	2	2	2	2	2	2
3.25	4	2.704026	2.612496	2.511497	2.410497	2.320932	2.164468	2.059959	2.018056	2.001029	2.000036	2	2	2	2	2	2	2	2	2	2	2	2	2
3.5	4	2.679876	2.598273	2.506427	2.414581	2.330988	2.180297	2.071354	2.02351	2.001624	2.000069	2	2	2	2	2	2	2	2	2	2	2	2	2
3.75	4	2.658274	2.584737	2.500689	2.41664	2.338466	2.19398	2.082351	2.029336	2.0024	2.000122	2	2	2	2	2	2	2	2	2	2	2	2	2
4	4	2.638759	2.571918	2.494572	2.417225	2.343954	2.205759	2.092806	2.035399	2.003364	2.000201	2.000001	2	2	2	2	2	2	2	2	2	2	2	2
4.25	4	2.620989	2.559799	2.488263	2.416728	2.347892	2.215871	2.102637	2.04158	2.004517	2.000311	2.000002	2	2	2	2	2	2	2	2	2	2	2	2
4.5	4	2.604697	2.548342	2.481886	2.41543	2.350612	2.224538	2.111809	2.047782	2.005854	2.00046	2.000004	2	2	2	2	2	2	2	2	2	2	2	2
4.75	4	2.589675	2.537504	2.475522	2.41354	2.352369	2.231956	2.120314	2.053927	2.007363	2.000652	2.000006	2	2	2	2	2	2	2	2	2	2	2	2
5	4	2.575756	2.527239	2.469224	2.41121	2.353358	2.238296	2.128168	2.059956	2.009032	2.000892	2.00001	2	2	2	2	2	2	2	2	2	2	2	2
5.25	4	2.562801	2.517504	2.463029	2.408554	2.35373	2.243708	2.135398	2.065825	2.010845	2.001184	2.000015	2	2	2	2	2	2	2	2	2	2	2	2
5.5	4	2.5507	2.508259	2.456959	2.40566	2.353606	2.248316	2.142037	2.071502	2.012784	2.001531	2.000023	2	2	2	2	2	2	2	2	2	2	2	2
5.75	4	2.539356	2.499465	2.451029	2.402593	2.353082	2.252229	2.148122	2.076964	2.014831	2.001935	2.000033	2.000001	2	2	2	2	2	2	2	2	2	2	2
6	4	2.52869	2.491089	2.445247	2.399405	2.352232	2.25554	2.153693	2.082198	2.01697	2.002397	2.000046	2.000001	2	2	2	2	2	2	2	2	2	2	2
6.25	4	2.518633	2.483099	2.439617	2.396135	2.351119	2.258327	2.158787	2.087197	2.019184	2.002917	2.000063	2.000002	2	2	2	2	2	2	2	2	2	2	2
6.5	4	2.509126	2.475468	2.434141	2.392813	2.349791	2.260658	2.163442	2.091959	2.021456	2.003495	2.000084	2.000003	2	2	2	2	2	2	2	2	2	2	2
6.75	4	2.50012	2.468168	2.428816	2.389464	2.348289	2.262591	2.167692	2.096484	2.023773	2.004129	2.00011	2.000004	2	2	2	2	2	2	2	2	2	2	2
7	4	2.491569	2.461178	2.423642	2.386106	2.346648	2.264175	2.171571	2.100777	2.02612	2.004817	2.000142	2.000005	2	2	2	2	2	2	2	2	2	2	2
7.25	4	2.483434	2.454475	2.418614	2.382753	2.344893	2.265454	2.175107	2.104844	2.028487	2.005558	2.00018	2.000007	2	2	2	2	2	2	2	2	2	2	2
7.5	4	2.475682	2.448041	2.413729	2.379417	2.343047	2.266464	2.178331	2.108691	2.030862	2.006348	2.000224	2.000009	2	2	2	2	2	2	2	2	2	2	2
7.75	4	2.468283	2.441858	2.408983	2.376107	2.34113	2.267238	2.181267	2.112326	2.033235	2.007185	2.000277	2.000012	2	2	2	2	2	2	2	2	2	2	2
8	4	2.461209	2.43591	2.40437	2.37283	2.339157	2.267804	2.183939	2.115759	2.035599	2.008065	2.000337	2.000016	2	2	2	2	2	2	2	2	2	2	2
8.25	4	2.454436	2.430183	2.399887	2.369591	2.337142	2.268186	2.186368	2.118998	2.037946	2.008984	2.000406	2.000021	2.000001	2	2	2	2	2	2	2	2	2	2
8.5	4	2.447943	2.424662	2.395528	2.366394	2.335094	2.268406	2.188576	2.122052	2.040269	2.009941	2.000484	2.000027	2.000001	2	2	2	2	2	2	2	2	2	2
8.75	4	2.44171	2.419337	2.391289	2.363242	2.333023	2.268481	2.190578	2.124931	2.042564	2.01093	2.000571	2.000034	2.000001	2	2	2	2	2	2	2	2	2	2
9	4	2.43572	2.414194	2.387166	2.360137	2.330938	2.268429	2.192393	2.127643	2.044826	2.011949	2.000669	2.000042	2.000002	2	2	2	2	2	2	2	2	2	2
9.25	4	2.429958	2.409225	2.383153	2.357081	2.328844	2.268264	2.194034	2.130197	2.047052	2.012994	2.000777	2.000051	2.000002	2	2	2	2	2	2	2	2	2	2
9.5	4	2.424408	2.404419	2.379247	2.354074	2.326747	2.267998	2.195517	2.132601	2.049237	2.014062	2.000896	2.000063	2.000003	2	2	2	2	2	2	2	2	2	2
9.75	4	2.419057	2.399768	2.375443	2.351119	2.324651	2.267644	2.196852	2.134862	2.051381	2.01515	2.001025	2.000076	2.000004	2	2	2	2	2	2	2	2	2	2
10	4	2.413894	2.395263	2.371738	2.348213	2.322562	2.26721	2.198053	2.13699	2.05348	2.016256	2.001166	2.000091	2.000005	2	2	2	2	2	2	2	2	2	2
10.25	4	2.408908	2.390897	2.368128	2.345359	2.320481	2.266706	2.199128	2.138991	2.055533	2.017375	2.001319	2.000108	2.000006	2	2	2	2	2	2	2	2	2	2
10.5	4	2.404088	2.386663	2.364609	2.342555	2.318411	2.26614	2.200089	2.140872	2.057539	2.018507	2.001482	2.000127	2.000008	2	2	2	2	2	2	2	2	2	2
10.75	4	2.399425	2.382554	2.361177	2.3398	2.316355	2.265518	2.200943	2.14264	2.059497	2.019647	2.001658	2.000148	2.00001	2	2	2	2	2	2	2	2	2	2
11	4	2.39491	2.378563	2.357829	2.337095	2.314315	2.264848	2.201699	2.1443	2.061407	2.020794	2.001845	2.000173	2.000012	2.000001	2	2	2	2	2	2	2	2	2
11.25	4	2.390536	2.374687	2.354563	2.334439	2.312292	2.264133	2.202364	2.14586	2.063269	2.021946	2.002043	2.000199	2.000015	2.000001	2	2	2	2	2	2	2	2	2
11.5	4	2.386296	2.370918	2.351374	2.331831	2.310288	2.263381	2.202945	2.147324	2.065082	2.0231	2.002254	2.000229	2.000017	2.000001	2	2	2	2	2	2	2	2	2
11.75	4	2.382182	2.367252	2.348261	2.329269	2.308304	2.262594	2.203449	2.148697	2.066846	2.024255	2.002475	2.000262	2.000021	2.000001	2	2	2	2	2	2	2	2	2
12	4	2.378188	2.363685	2.34522	2.326754	2.30634	2.261778	2.20388	2.149985	2.068563	2.025409	2.002708	2.000298	2.000025	2.000002	2	2	2	2	2	2	2	2	2
12.25	4	2.374309	2.360211	2.342248	2.324284	2.304397	2.260935	2.204244	2.151192	2.070231	2.02656	2.002952	2.000337	2.000029	2.000002	2	2	2	2	2	2	2	2	2
12.5	4	2.370538	2.356828	2.339344	2.321859	2.302475	2.260069	2.204545	2.152323	2.071853	2.027707	2.003207	2.000379	2.000034	2.000002	2	2	2	2	2	2	2	2	2
12.75	4	2.366872	2.353531	2.336504	2.319477	2.300576	2.259183	2.20479	2.153382	2.073428	2.028849	2.003474	2.000425	2.000039	2.000003	2	2							

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
15.75	4	4	2.3295	2.319542	2.306739	2.293937	2.27955	2.247728	2.204469	2.161678	2.089023	2.041793	2.007406	2.001281	2.000172	2.000018	2	2	2	2	2	2	2	2
16	4	4	2.32684	2.317098	2.304566	2.292035	2.277942	2.246748	2.204249	2.162083	2.090076	2.042791	2.007785	2.001379	2.00019	2.000021	2	2	2	2	2	2	2	2
16.25	4	4	2.324238	2.314704	2.302434	2.290164	2.276354	2.245769	2.204008	2.162455	2.091096	2.043774	2.008172	2.001482	2.000209	2.000024	2	2	2	2	2	2	2	2
16.5	4	4	2.321692	2.312358	2.300341	2.288324	2.274788	2.24479	2.203748	2.162795	2.092083	2.044744	2.008564	2.001588	2.00023	2.000027	2	2	2	2	2	2	2	2
16.75	4	4	2.3192	2.310059	2.298286	2.286513	2.273242	2.243814	2.203469	2.163104	2.093038	2.045698	2.008962	2.001699	2.000252	2.00003	2	2	2	2	2	2	2	2
17	4	4	2.316759	2.307806	2.296268	2.284731	2.271716	2.24284	2.203174	2.163384	2.093963	2.046639	2.009365	2.001814	2.000276	2.000034	2	2	2	2	2	2	2	2
17.25	4	4	2.314368	2.305596	2.294286	2.282977	2.27021	2.241869	2.202864	2.163636	2.094858	2.047565	2.009774	2.001933	2.000301	2.000037	2	2	2	2	2	2	2	2
17.5	4	4	2.312027	2.303428	2.292339	2.28125	2.268724	2.240902	2.202539	2.163863	2.095724	2.048476	2.010187	2.002057	2.000327	2.000042	2	2	2	2	2	2	2	2
17.75	4	4	2.309731	2.301301	2.290426	2.27955	2.267257	2.239938	2.202201	2.164064	2.096562	2.049373	2.010605	2.002184	2.000355	2.000046	2	2	2	2	2	2	2	2
18	4	4	2.307481	2.299215	2.288546	2.277876	2.265809	2.238978	2.201851	2.164243	2.097373	2.050255	2.011027	2.002316	2.000385	2.000051	2	2	2	2	2	2	2	2
18.25	4	4	2.305275	2.297167	2.286697	2.276228	2.26438	2.238022	2.201489	2.164398	2.098158	2.051123	2.011453	2.002451	2.000416	2.000057	2.000001	2	2	2	2	2	2	2
18.5	4	4	2.303111	2.295156	2.28488	2.274605	2.262699	2.237071	2.201116	2.164532	2.098916	2.051976	2.011882	2.002591	2.000449	2.000063	2.000001	2	2	2	2	2	2	2
18.75	4	4	2.300988	2.293181	2.283094	2.273006	2.261576	2.236125	2.200733	2.164646	2.09965	2.052815	2.012314	2.002734	2.000483	2.000069	2.000001	2	2	2	2	2	2	2
19	4	4	2.298905	2.291242	2.281337	2.271431	2.260201	2.235184	2.200342	2.16474	2.10036	2.05364	2.01275	2.002882	2.000519	2.000076	2.000001	2	2	2	2	2	2	2
19.25	4	4	2.296861	2.289336	2.279608	2.26988	2.258844	2.234248	2.199941	2.164816	2.101046	2.054451	2.013188	2.003032	2.000557	2.000083	2.000001	2	2	2	2	2	2	2
19.5	4	4	2.294853	2.287464	2.277907	2.26835	2.257503	2.233318	2.199534	2.164875	2.10171	2.055248	2.013629	2.003187	2.000597	2.000091	2.000001	2	2	2	2	2	2	2
19.75	4	4	2.292882	2.285624	2.276234	2.266844	2.25618	2.232394	2.199118	2.164917	2.102352	2.056031	2.014071	2.003346	2.000638	2.000099	2.000001	2	2	2	2	2	2	2
20	4	4	2.290946	2.283816	2.274587	2.265358	2.254873	2.231475	2.198697	2.164943	2.102972	2.0568	2.014516	2.003508	2.000681	2.000108	2.000001	2	2	2	2	2	2	2
20.25	4	4	2.289045	2.282037	2.272966	2.263895	2.253582	2.230562	2.198269	2.164954	2.103572	2.057556	2.014963	2.003673	2.000726	2.000117	2.000002	2	2	2	2	2	2	2
20.5	4	4	2.287176	2.280288	2.271137	2.262451	2.252308	2.229655	2.197836	2.164951	2.104151	2.058298	2.01541	2.003842	2.000772	2.000127	2.000002	2	2	2	2	2	2	2
20.75	4	4	2.285339	2.278569	2.269799	2.261029	2.251049	2.228755	2.197397	2.164934	2.104711	2.059027	2.015859	2.004014	2.000821	2.000138	2.000002	2	2	2	2	2	2	2
21	4	4	2.283534	2.276877	2.268251	2.259625	2.249806	2.22786	2.196954	2.164905	2.105252	2.059742	2.016309	2.004189	2.000871	2.000149	2.000003	2	2	2	2	2	2	2
21.25	4	4	2.281759	2.275212	2.266727	2.258242	2.248578	2.226972	2.196507	2.164863	2.105775	2.060445	2.01676	2.004368	2.000923	2.00016	2.000003	2	2	2	2	2	2	2
21.5	4	4	2.280014	2.273574	2.265225	2.256877	2.247365	2.22609	2.196056	2.164809	2.106281	2.061135	2.017211	2.00455	2.000977	2.000172	2.000003	2	2	2	2	2	2	2
21.75	4	4	2.278297	2.271961	2.263746	2.255531	2.246166	2.225214	2.195601	2.164744	2.106768	2.061813	2.017663	2.004734	2.001032	2.000185	2.000004	2	2	2	2	2	2	2
22	4	4	2.276608	2.270374	2.262289	2.254203	2.244982	2.224345	2.195143	2.164668	2.10724	2.062478	2.018115	2.004922	2.00109	2.000199	2.000004	2	2	2	2	2	2	2
22.25	4	4	2.274947	2.268812	2.260852	2.252893	2.243812	2.223482	2.194683	2.164583	2.107695	2.063131	2.018567	2.005112	2.001149	2.000213	2.000004	2	2	2	2	2	2	2
22.5	4	4	2.273312	2.267273	2.259437	2.251601	2.242656	2.222626	2.19422	2.164487	2.108134	2.063771	2.019019	2.005305	2.00121	2.000228	2.000005	2	2	2	2	2	2	2
22.75	4	4	2.271702	2.265758	2.258041	2.250325	2.241514	2.221776	2.193754	2.164383	2.108558	2.0644	2.01947	2.005501	2.001273	2.000244	2.000005	2	2	2	2	2	2	2
23	4	4	2.270118	2.264265	2.256665	2.249066	2.240385	2.220932	2.193287	2.16427	2.108968	2.065018	2.019921	2.0057	2.001338	2.00026	2.000006	2	2	2	2	2	2	2
23.25	4	4	2.268559	2.262794	2.255309	2.247823	2.239269	2.220096	2.192818	2.164148	2.109363	2.065624	2.020371	2.0059	2.001404	2.000278	2.000006	2	2	2	2	2	2	2
23.5	4	4	2.267023	2.261345	2.253971	2.246597	2.238167	2.219265	2.192348	2.164019	2.109744	2.066218	2.02082	2.006104	2.001472	2.000295	2.000007	2	2	2	2	2	2	2
23.75	4	4	2.26551	2.259917	2.252652	2.245386	2.237077	2.218441	2.191877	2.163882	2.110112	2.066801	2.021269	2.006309	2.001542	2.000314	2.000008	2	2	2	2	2	2	2
24	4	4	2.26402	2.25851	2.25135	2.24419	2.236	2.217623	2.191404	2.163738	2.110467	2.067374	2.021716	2.006517	2.001614	2.000334	2.000009	2	2	2	2	2	2	2
24.25	4	4	2.262552	2.257123	2.250067	2.24301	2.234935	2.216812	2.190931	2.163587	2.110809	2.067935	2.022162	2.006727	2.001688	2.000354	2.000009	2	2	2	2	2	2	2
24.5	4	4	2.261106	2.255756	2.2488	2.241844	2.233882	2.216008	2.190457	2.16343	2.111139	2.068486	2.022607	2.006939	2.001763	2.000375	2.00001	2	2	2	2	2	2	2
24.75	4	4	2.259681	2.254408	2.24755	2.240693	2.232841	2.215209	2.189983	2.163267	2.111456	2.069027	2.023051	2.007153	2.00184	2.000396	2.000011	2	2	2	2	2	2	2
25	4	4	2.258277	2.253078	2.246317	2.239557	2.231812	2.214417	2.189508	2.163098	2.111763	2.069557	2.023493	2.007369	2.001919	2.000419	2.000012	2	2	2	2	2	2	2
25.25	4	4	2.256892	2.251767	2.2451	2.238433	2.230794	2.213632	2.189034	2.162923	2.112058	2.070078	2.023933	2.007587	2.002	2.000442	2.000013	2	2	2	2	2	2	2
25.5	4	4	2.255528	2.250474	2.243899	2.237324	2.229787	2.212852	2.188559	2.162743	2.112342	2.070588	2.024371	2.007806	2.002082	2.000467	2.000014	2	2	2	2	2	2	2
25.75	4	4	2.254182	2.249198	2.242713	2.236228	2.228792	2.212079	2.188085	2.162559	2.112615	2.071089	2.024808	2.008027	2.002166	2.000492	2.000015	2	2	2	2	2	2	2
26	4	4	2.252855	2.24794	2.241543	2.235145	2.227808	2.211312	2.187611	2.162369	2.112879	2.07158	2.025243	2.00825	2.002251	2.000517	2.000017	2	2	2	2	2	2	2
26.25	4	4	2.251547	2.246698	2.240387	2.234075	2.226834	2.210552	2.187137	2.162175	2.113132	2.072062	2.025675	2.008474	2.002338	2.000544	2.000018	2	2	2	2	2	2	2
26.5	4	4	2.250256	2.245473	2.239245	2.233018	2.225871	2.209797	2.186664	2.161977	2.113375	2.072535	2.026106	2.008699	2.002427	2.000572	2.00002	2	2	2	2	2	2	2
26.75	4	4	2.248983	2.244264	2.238118	2.231973	2.224919	2.209048	2.186192	2.161775	2.11361	2.072998	2.026534	2.008926	2.002517	2.0006	2.000021	2	2	2	2	2	2	2
27	4	4	2.247726	2.24307	2.237005	2.230941	2.223976	2.208306	2.18572	2.161568	2.113835	2.073453	2.02696	2.009155	2.002609	2.000629	2.000023	2	2	2	2	2	2	2
27.25	4	4	2.246487	2.241892	2.235906																			

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
31.5	4	4	2.227665	2.223938	2.219072	2.214206	2.208593	2.195923	2.177453	2.157402	2.116594	2.080287	2.034186	2.013402	2.004504	2.001305	2.000072	2.000002	2	2	2	2	2	2
31.75	4	4	2.226674	2.22299	2.218179	2.213368	2.207818	2.195287	2.177009	2.157154	2.116688	2.0806	2.034561	2.013642	2.004621	2.001351	2.000076	2.000003	2	2	2	2	2	2
32	4	4	2.225695	2.222053	2.217295	2.212538	2.20705	2.194655	2.176567	2.156905	2.116777	2.080907	2.034932	2.013882	2.004739	2.001398	2.00008	2.000003	2	2	2	2	2	2
32.25	4	4	2.224727	2.221125	2.216421	2.211717	2.206289	2.194029	2.176127	2.156655	2.116861	2.081208	2.035301	2.014122	2.004858	2.001445	2.000084	2.000003	2	2	2	2	2	2
32.5	4	4	2.223769	2.220208	2.215557	2.210905	2.205536	2.193407	2.175689	2.156404	2.11694	2.081502	2.035666	2.014362	2.004978	2.001493	2.000089	2.000003	2	2	2	2	2	2
32.75	4	4	2.222823	2.219302	2.214701	2.2101	2.20479	2.192791	2.175253	2.156152	2.117014	2.081791	2.036029	2.014602	2.005099	2.001542	2.000093	2.000003	2	2	2	2	2	2
33	4	4	2.221887	2.218405	2.213854	2.209304	2.204051	2.192179	2.174819	2.155899	2.117084	2.082075	2.036388	2.014842	2.005221	2.001592	2.000098	2.000004	2	2	2	2	2	2
33.25	4	4	2.220961	2.217517	2.213017	2.208516	2.203318	2.191572	2.174387	2.155646	2.117149	2.082353	2.036745	2.015081	2.005344	2.001643	2.000103	2.000004	2	2	2	2	2	2
33.5	4	4	2.220046	2.21664	2.212188	2.207735	2.202593	2.19097	2.173957	2.155392	2.11721	2.082625	2.037098	2.015321	2.005468	2.001695	2.000109	2.000004	2	2	2	2	2	2
33.75	4	4	2.219141	2.215771	2.211367	2.206963	2.201874	2.190372	2.173529	2.155137	2.117266	2.082891	2.037448	2.01556	2.005593	2.001747	2.000114	2.000005	2	2	2	2	2	2
34	4	4	2.218245	2.214912	2.210555	2.206198	2.201163	2.18978	2.173104	2.154882	2.117319	2.083153	2.037796	2.015799	2.005718	2.0018	2.00012	2.000005	2	2	2	2	2	2
34.25	4	4	2.21736	2.214062	2.209751	2.20544	2.200458	2.189192	2.17268	2.154627	2.117368	2.083409	2.03814	2.016037	2.005844	2.001854	2.000125	2.000005	2	2	2	2	2	2
34.5	4	4	2.216484	2.213221	2.208955	2.204689	2.199759	2.188608	2.172258	2.154372	2.117412	2.08366	2.038481	2.016276	2.005971	2.001909	2.000131	2.000005	2	2	2	2	2	2
34.75	4	4	2.215617	2.212389	2.208167	2.203946	2.199066	2.18803	2.171838	2.154115	2.117453	2.083906	2.038819	2.016514	2.006099	2.001964	2.000138	2.000006	2	2	2	2	2	2
35	4	4	2.214759	2.211565	2.207387	2.20321	2.19838	2.187455	2.17142	2.153859	2.11749	2.084147	2.039155	2.016751	2.006228	2.002021	2.000144	2.000006	2	2	2	2	2	2
35.25	4	4	2.21391	2.210749	2.206615	2.202481	2.197701	2.186885	2.171005	2.153603	2.117524	2.084383	2.039487	2.016988	2.006357	2.002078	2.00015	2.000007	2	2	2	2	2	2
35.5	4	4	2.213071	2.209943	2.205851	2.201759	2.197027	2.186319	2.170591	2.153347	2.117554	2.084614	2.039816	2.017225	2.006487	2.002136	2.000157	2.000007	2	2	2	2	2	2
35.75	4	4	2.21224	2.209144	2.205094	2.201044	2.196359	2.185758	2.17018	2.15309	2.117581	2.084841	2.040142	2.017461	2.006618	2.002194	2.000164	2.000008	2	2	2	2	2	2
36	4	4	2.211417	2.208353	2.204344	2.200336	2.195698	2.185201	2.16977	2.152833	2.117604	2.085063	2.040465	2.017697	2.006749	2.002254	2.000171	2.000008	2	2	2	2	2	2
36.25	4	4	2.210603	2.20757	2.203602	2.199634	2.195042	2.184649	2.169363	2.152577	2.117624	2.08528	2.040785	2.017932	2.006881	2.002313	2.000179	2.000009	2	2	2	2	2	2
36.5	4	4	2.209798	2.206795	2.202867	2.198939	2.194392	2.1841	2.168958	2.15232	2.117641	2.085493	2.041103	2.018166	2.007013	2.002374	2.000186	2.000009	2	2	2	2	2	2
36.75	4	4	2.209	2.206028	2.202139	2.19825	2.193748	2.183556	2.168555	2.152064	2.117655	2.085702	2.041417	2.0184	2.007146	2.002436	2.000194	2.00001	2	2	2	2	2	2
37	4	4	2.208211	2.205269	2.201418	2.197567	2.193109	2.183016	2.168154	2.151807	2.117666	2.085906	2.041728	2.018633	2.00728	2.002498	2.000202	2.00001	2	2	2	2	2	2
37.25	4	4	2.20743	2.204517	2.200704	2.196891	2.192476	2.18248	2.167755	2.151551	2.117674	2.086106	2.042036	2.018866	2.007414	2.002561	2.000211	2.000011	2	2	2	2	2	2
37.5	4	4	2.206656	2.203772	2.199996	2.196221	2.191849	2.181948	2.167358	2.151295	2.11768	2.086302	2.042342	2.019098	2.007549	2.002624	2.000219	2.000011	2	2	2	2	2	2
37.75	4	4	2.20589	2.203034	2.199296	2.195557	2.191227	2.18142	2.166963	2.151039	2.117682	2.086493	2.042644	2.019329	2.007684	2.002688	2.000228	2.000012	2	2	2	2	2	2
38	4	4	2.205132	2.202304	2.198601	2.194899	2.19061	2.180896	2.16657	2.150783	2.117682	2.086681	2.042944	2.019559	2.007819	2.002753	2.000237	2.000013	2	2	2	2	2	2
38.25	4	4	2.204381	2.20158	2.197913	2.194247	2.189999	2.180376	2.16618	2.150528	2.11768	2.086865	2.043241	2.019789	2.007955	2.002819	2.000246	2.000014	2	2	2	2	2	2
38.5	4	4	2.203637	2.200864	2.197232	2.1936	2.189393	2.179859	2.165791	2.150273	2.117674	2.087045	2.043534	2.020018	2.008091	2.002885	2.000255	2.000014	2	2	2	2	2	2
38.75	4	4	2.202901	2.200154	2.196557	2.19296	2.188792	2.179347	2.165405	2.150018	2.117667	2.087221	2.043825	2.020246	2.008228	2.002952	2.000265	2.000015	2	2	2	2	2	2
39	4	4	2.202172	2.199451	2.195888	2.192325	2.188196	2.178838	2.16502	2.149764	2.117657	2.087394	2.044113	2.020473	2.008365	2.003019	2.000275	2.000016	2	2	2	2	2	2
39.25	4	4	2.201449	2.198755	2.195225	2.191696	2.187605	2.178334	2.164638	2.149509	2.117644	2.087562	2.044399	2.0207	2.008503	2.003087	2.000285	2.000017	2	2	2	2	2	2
39.5	4	4	2.200734	2.198065	2.194568	2.191072	2.187019	2.177833	2.164258	2.149256	2.11763	2.087727	2.044681	2.020925	2.008641	2.003156	2.000295	2.000018	2	2	2	2	2	2
39.75	4	4	2.200026	2.197381	2.193918	2.190454	2.186438	2.177335	2.163879	2.149003	2.117613	2.087889	2.044961	2.02115	2.008779	2.003225	2.000306	2.000019	2	2	2	2	2	2
40	4	4	2.199324	2.196704	2.193273	2.189841	2.185862	2.176841	2.163503	2.14875	2.117594	2.088047	2.045238	2.021374	2.008917	2.003295	2.000316	2.00002	2	2	2	2	2	2
40.25	4	4	2.198628	2.196033	2.192633	2.189234	2.185291	2.176352	2.163129	2.148498	2.117573	2.088201	2.045512	2.021597	2.009056	2.003365	2.000328	2.000021	2	2	2	2	2	2
40.5	4	4	2.19794	2.195369	2.192	2.188631	2.184724	2.175865	2.162757	2.148246	2.117549	2.088353	2.045783	2.021819	2.009195	2.003436	2.000339	2.000021	2	2	2	2	2	2
40.75	4	4	2.197257	2.19471	2.191372	2.188034	2.184162	2.175382	2.162386	2.147994	2.117524	2.0885	2.046052	2.02204	2.009334	2.003508	2.00035	2.000022	2	2	2	2	2	2
41	4	4	2.196581	2.194057	2.190749	2.187442	2.183604	2.174902	2.162018	2.147743	2.117497	2.088645	2.046318	2.02226	2.009473	2.00358	2.000362	2.000024	2	2	2	2	2	2
41.25	4	4	2.195911	2.19341	2.190132	2.186855	2.183052	2.174427	2.161652	2.147493	2.117468	2.088787	2.046581	2.02248	2.009613	2.003652	2.000374	2.000025	2	2	2	2	2	2
41.5	4	4	2.195247	2.192769	2.189521	2.186273	2.182503	2.173954	2.161288	2.147243	2.117437	2.088925	2.046841	2.022698	2.009753	2.003726	2.000386	2.000026	2	2	2	2	2	2
41.75	4	4	2.19459	2.192134	2.188915	2.185695	2.181959	2.173485	2.160926	2.146994	2.117404	2.08906	2.047099	2.022915	2.009892	2.003799	2.000399	2.000027	2	2	2	2	2	2
42	4	4	2.193938	2.191504	2.188313	2.185123	2.18142	2.173019	2.160565	2.146746	2.11737	2.089192	2.047354	2.023132	2.010032	2.003873	2.000412	2.000028	2	2	2	2	2	2
42.25	4	4	2.193292	2.19088	2.187717	2.184555	2.180885	2.172556	2.160207	2.146498	2.117334	2.089321	2.047607	2.023347	2.010173	2.003948	2.000425	2.00003	2.000001	2	2	2	2	2
42.5	4	4	2.192652	2.190261	2.187127	2.183992	2.180354	2.172097	2.159851	2.14625	2.117296	2.089447	2.047857	2.023562	2.010313	2.004023	2.000438							

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
47.25	4	4	2.181492	2.179458	2.176788	2.174118	2.171013	2.163956	2.153437	2.141678	2.116313	2.091347	2.052139	2.027435	2.012979	2.00553	2.00074	2.000067	2.000002	2	2	2	2	2
47.5	4	4	2.180953	2.178935	2.176286	2.173638	2.170557	2.163556	2.153118	2.141445	2.11625	2.091424	2.052341	2.027628	2.013118	2.005613	2.000758	2.000069	2.000002	2	2	2	2	2
47.75	4	4	2.180418	2.178416	2.175789	2.173162	2.170105	2.163159	2.1528	2.141212	2.116185	2.091499	2.052541	2.02782	2.013257	2.005696	2.000777	2.000072	2.000002	2	2	2	2	2
48	4	4	2.179887	2.177902	2.175295	2.172689	2.169657	2.162765	2.152484	2.14098	2.11612	2.091571	2.052738	2.028011	2.013396	2.005779	2.000796	2.000074	2.000002	2	2	2	2	2
48.25	4	4	2.179361	2.177391	2.174805	2.17222	2.169211	2.162373	2.15217	2.140749	2.116054	2.091642	2.052934	2.028201	2.013535	2.005863	2.000815	2.000077	2.000002	2	2	2	2	2
48.5	4	4	2.178838	2.176884	2.174319	2.171754	2.168769	2.161983	2.151857	2.140519	2.115987	2.091711	2.053128	2.028389	2.013674	2.005947	2.000834	2.00008	2.000003	2	2	2	2	2
48.75	4	4	2.178321	2.176382	2.173837	2.171292	2.16833	2.161597	2.151546	2.14029	2.115919	2.091777	2.053319	2.028577	2.013812	2.006031	2.000854	2.000082	2.000003	2	2	2	2	2
49	4	4	2.177807	2.175883	2.173358	2.170833	2.167894	2.161212	2.151237	2.140061	2.11585	2.091842	2.053508	2.028763	2.013951	2.006115	2.000874	2.000085	2.000003	2	2	2	2	2
49.25	4	4	2.177297	2.175389	2.172883	2.170377	2.167461	2.160831	2.150929	2.139833	2.115781	2.091905	2.053695	2.028948	2.014089	2.0062	2.000894	2.000088	2.000003	2	2	2	2	2
49.5	4	4	2.176791	2.174898	2.172411	2.169925	2.167032	2.160452	2.150623	2.139606	2.115711	2.091966	2.05388	2.029132	2.014226	2.006285	2.000915	2.000091	2.000003	2	2	2	2	2
49.75	4	4	2.176289	2.174411	2.171944	2.169477	2.166605	2.160075	2.150319	2.139379	2.115639	2.092025	2.054063	2.029315	2.014364	2.00637	2.000935	2.000094	2.000003	2	2	2	2	2
50	4	4	2.175791	2.173927	2.171479	2.169031	2.166181	2.159701	2.150016	2.139153	2.115568	2.092083	2.054244	2.029497	2.014501	2.006455	2.000956	2.000097	2.000003	2	2	2	2	2
50.25	4	4	2.175297	2.173447	2.171018	2.168589	2.165761	2.159329	2.149715	2.138929	2.115495	2.092138	2.054423	2.029678	2.014638	2.006541	2.000978	2.000101	2.000004	2	2	2	2	2
50.5	4	4	2.174807	2.172971	2.170561	2.16815	2.165343	2.158959	2.149415	2.138705	2.115422	2.092192	2.0546	2.029858	2.014775	2.006626	2.000999	2.000104	2.000004	2	2	2	2	2
50.75	4	4	2.17432	2.172499	2.170107	2.167714	2.164928	2.158592	2.149117	2.138481	2.115348	2.092244	2.054775	2.030036	2.014912	2.006712	2.001021	2.000107	2.000004	2	2	2	2	2
51	4	4	2.173838	2.172003	2.169656	2.167282	2.164516	2.158227	2.148821	2.138259	2.115273	2.092295	2.054949	2.030214	2.015048	2.006798	2.001043	2.000111	2.000004	2	2	2	2	2
51.25	4	4	2.173359	2.171565	2.169208	2.166852	2.164108	2.157865	2.148526	2.138037	2.115198	2.092344	2.05512	2.03039	2.015184	2.006885	2.001065	2.000114	2.000004	2	2	2	2	2
51.5	4	4	2.172883	2.171103	2.168764	2.166425	2.163701	2.157505	2.148233	2.137816	2.115122	2.092391	2.055289	2.030565	2.01532	2.006971	2.001087	2.000118	2.000005	2	2	2	2	2
51.75	4	4	2.172412	2.170645	2.168323	2.166002	2.163298	2.157147	2.147941	2.137596	2.115045	2.092437	2.055456	2.030739	2.015455	2.007058	2.00111	2.000121	2.000005	2	2	2	2	2
52	4	4	2.171943	2.170189	2.167886	2.165582	2.162898	2.156791	2.147651	2.137376	2.114968	2.092481	2.055622	2.030912	2.01559	2.007144	2.001133	2.000125	2.000005	2	2	2	2	2
52.25	4	4	2.171479	2.169738	2.167451	2.165164	2.1625	2.156438	2.147362	2.137158	2.11489	2.092523	2.055786	2.031084	2.015724	2.007231	2.001156	2.000129	2.000005	2	2	2	2	2
52.5	4	4	2.171017	2.16929	2.16702	2.16475	2.162105	2.156087	2.147075	2.13694	2.114812	2.092564	2.055948	2.031255	2.015859	2.007318	2.001179	2.000133	2.000005	2	2	2	2	2
52.75	4	4	2.17056	2.168844	2.166591	2.164338	2.161712	2.155738	2.146789	2.136723	2.114733	2.092604	2.056108	2.031425	2.015993	2.007405	2.001203	2.000137	2.000005	2	2	2	2	2
53	4	4	2.170105	2.168403	2.166166	2.163929	2.161323	2.155391	2.146505	2.136507	2.114654	2.092642	2.056266	2.031593	2.016127	2.007493	2.001227	2.000141	2.000006	2	2	2	2	2
53.25	4	4	2.169654	2.167964	2.165744	2.163523	2.160935	2.155046	2.146223	2.136291	2.114574	2.092679	2.056422	2.031761	2.01626	2.00758	2.001251	2.000145	2.000006	2	2	2	2	2
53.5	4	4	2.169207	2.167529	2.165324	2.16312	2.160551	2.154704	2.145941	2.136076	2.114493	2.092714	2.056577	2.031927	2.016393	2.007668	2.001276	2.000149	2.000006	2	2	2	2	2
53.75	4	4	2.168762	2.167097	2.164908	2.16272	2.160169	2.154364	2.145662	2.135862	2.114412	2.092747	2.05673	2.032092	2.016526	2.007755	2.0013	2.000153	2.000007	2	2	2	2	2
54	4	4	2.168321	2.166668	2.164495	2.162322	2.15979	2.154026	2.145383	2.135649	2.114331	2.09278	2.056881	2.032257	2.016658	2.007843	2.001325	2.000157	2.000007	2	2	2	2	2
54.25	4	4	2.167883	2.166242	2.164084	2.161927	2.159413	2.153689	2.145107	2.135437	2.114249	2.092811	2.05703	2.03242	2.01679	2.007931	2.00135	2.000162	2.000007	2	2	2	2	2
54.5	4	4	2.167448	2.165819	2.163677	2.161536	2.159039	2.153355	2.144831	2.135225	2.114167	2.092841	2.057178	2.032582	2.016921	2.008018	2.001375	2.000166	2.000007	2	2	2	2	2
54.75	4	4	2.167017	2.165399	2.163272	2.161146	2.158667	2.153023	2.144557	2.135014	2.114084	2.092869	2.057324	2.032743	2.017052	2.008106	2.001401	2.000171	2.000008	2	2	2	2	2
55	4	4	2.166588	2.164982	2.16287	2.160759	2.158297	2.152693	2.144285	2.134804	2.114001	2.092896	2.057468	2.032903	2.017183	2.008194	2.001427	2.000176	2.000008	2	2	2	2	2
55.25	4	4	2.166162	2.164568	2.162471	2.160375	2.15793	2.152365	2.144014	2.134595	2.113917	2.092922	2.057611	2.033062	2.017313	2.008282	2.001453	2.00018	2.000008	2	2	2	2	2
55.5	4	4	2.16574	2.164156	2.162075	2.159993	2.157566	2.152039	2.143744	2.134387	2.113833	2.092947	2.057752	2.033219	2.017443	2.00837	2.001479	2.000185	2.000009	2	2	2	2	2
55.75	4	4	2.165321	2.163748	2.161681	2.159614	2.157204	2.151715	2.143475	2.134179	2.113749	2.09297	2.057892	2.033376	2.017573	2.008459	2.001505	2.00019	2.000009	2	2	2	2	2
56	4	4	2.164904	2.163343	2.16129	2.159238	2.156844	2.151393	2.143208	2.133972	2.113664	2.092992	2.058029	2.033532	2.017702	2.008547	2.001532	2.000195	2.000009	2	2	2	2	2
56.25	4	4	2.164491	2.16294	2.160902	2.158864	2.156486	2.151073	2.142943	2.133765	2.113579	2.093013	2.058166	2.033686	2.017831	2.008635	2.001559	2.0002	2.00001	2	2	2	2	2
56.5	4	4	2.16408	2.16254	2.160516	2.158492	2.156131	2.150754	2.142678	2.13356	2.113493	2.093033	2.0583	2.03384	2.017959	2.008723	2.001586	2.000206	2.00001	2	2	2	2	2
56.75	4	4	2.163672	2.162143	2.160133	2.158123	2.155778	2.150438	2.142416	2.133355	2.113407	2.093051	2.058434	2.033993	2.018087	2.008812	2.001613	2.000211	2.00001	2	2	2	2	2
57	4	4	2.163267	2.161749	2.159753	2.157756	2.155427	2.150123	2.142154	2.133151	2.113321	2.093069	2.058565	2.034144	2.018215	2.0089	2.001641	2.000216	2.000011	2	2	2	2	2
57.25	4	4	2.162865	2.161357	2.159375	2.157392	2.155079	2.149811	2.141893	2.132948	2.113234	2.093085	2.058695	2.034295	2.018342	2.008988	2.001668	2.000221	2.000011	2	2	2	2	2
57.5	4	4	2.162466	2.160969	2.158999	2.15703	2.154733	2.1495	2.141634	2.132746	2.113147	2.0931	2.058824	2.034444	2.018469	2.009077	2.001696	2.000227	2.000012	2	2	2	2	2
57.75	4	4	2.16207	2.160582	2.158627	2.156671	2.154389	2.149191	2.141377	2.132544	2.11306	2.093114	2.058951	2.034592	2.018595	2.009165	2.001724	2.000233	2.000012	2	2	2	2	2
58	4	4	2.161676	2.160198	2.158256	2.156314	2.154047	2.148884	2.14112	2.132343	2.112973	2.093127	2.059076	2.03474	2.									

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
63	4	4	2.15433	2.153035	2.15133	2.149626	2.147636	2.143096	2.13625	2.128476	2.111176	2.093185	2.061296	2.037478	2.021144	2.011014	2.002361	2.000372	2.000024	2.000001	2	2	2	2
63.25	4	4	2.153987	2.1527	2.151007	2.149313	2.147335	2.142823	2.136018	2.12829	2.111084	2.093179	2.061394	2.037606	2.02126	2.011101	2.002393	2.000387	2.000025	2.000001	2	2	2	2
63.5	4	4	2.153646	2.152368	2.150685	2.149002	2.147036	2.142552	2.135788	2.128105	2.110992	2.093173	2.06149	2.037731	2.021376	2.011189	2.002425	2.000387	2.000026	2.000001	2	2	2	2
63.75	4	4	2.153308	2.152037	2.150365	2.148693	2.146739	2.142283	2.135559	2.12792	2.1109	2.093165	2.061585	2.037856	2.021492	2.011276	2.002458	2.000395	2.000026	2.000001	2	2	2	2
64	4	4	2.152972	2.151709	2.150047	2.148385	2.146443	2.142015	2.135331	2.127736	2.110808	2.093157	2.061679	2.037981	2.021607	2.011363	2.002491	2.000403	2.000027	2.000001	2	2	2	2
64.25	4	4	2.152637	2.151383	2.149731	2.14808	2.146149	2.141748	2.135104	2.127553	2.110716	2.093148	2.061772	2.038104	2.021721	2.01145	2.002524	2.000411	2.000028	2.000001	2	2	2	2
64.5	4	4	2.152305	2.151058	2.149417	2.147776	2.145857	2.141482	2.134878	2.127371	2.110624	2.093138	2.061863	2.038226	2.021835	2.011536	2.002557	2.000419	2.000029	2.000001	2	2	2	2
64.75	4	4	2.151975	2.150736	2.149105	2.147474	2.145567	2.141218	2.134653	2.127189	2.110532	2.093127	2.061954	2.038347	2.021948	2.011623	2.00259	2.000427	2.000029	2.000001	2	2	2	2
65	4	4	2.151648	2.150416	2.148794	2.147173	2.145278	2.140956	2.134429	2.127007	2.110439	2.093116	2.062043	2.038468	2.022061	2.01171	2.002624	2.000436	2.000031	2.000001	2	2	2	2
65.25	4	4	2.151322	2.150097	2.148486	2.146875	2.144991	2.140695	2.134207	2.126827	2.110347	2.093104	2.062131	2.038588	2.022174	2.011796	2.002657	2.000444	2.000032	2.000001	2	2	2	2
65.5	4	4	2.150998	2.149781	2.14818	2.146578	2.144706	2.140435	2.133985	2.126647	2.110254	2.093092	2.062219	2.038707	2.022286	2.011883	2.002691	2.000453	2.000032	2.000001	2	2	2	2
65.75	4	4	2.150676	2.149467	2.147875	2.146283	2.144422	2.140177	2.133764	2.126468	2.110162	2.093079	2.062305	2.038824	2.022398	2.011969	2.002725	2.000461	2.000033	2.000002	2	2	2	2
66	4	4	2.150356	2.149154	2.147572	2.145989	2.14414	2.13992	2.133545	2.126289	2.110069	2.093065	2.06239	2.038941	2.022509	2.012055	2.002759	2.00047	2.000034	2.000002	2	2	2	2
66.25	4	4	2.150038	2.148843	2.14727	2.145698	2.143859	2.133326	2.126112	2.109976	2.09305	2.062474	2.039057	2.022619	2.012141	2.002793	2.000479	2.000035	2.000002	2.000001	2	2	2	2
66.5	4	4	2.149722	2.148534	2.146971	2.145408	2.14358	2.13941	2.133108	2.125934	2.109883	2.093035	2.062557	2.039173	2.022729	2.012227	2.002827	2.000488	2.000036	2.000002	2	2	2	2
66.75	4	4	2.149408	2.148227	2.146673	2.14512	2.133303	2.139157	2.132892	2.125758	2.10979	2.093019	2.062638	2.039287	2.022839	2.012312	2.002862	2.000497	2.000037	2.000002	2	2	2	2
67	4	4	2.149095	2.147922	2.146378	2.144833	2.143027	2.138906	2.132676	2.125582	2.109698	2.093003	2.062719	2.039401	2.022948	2.012398	2.002896	2.000506	2.000038	2.000002	2	2	2	2
67.25	4	4	2.148785	2.147619	2.146083	2.144548	2.142752	2.138656	2.132462	2.125406	2.109604	2.092986	2.062799	2.039514	2.023057	2.012483	2.002931	2.000515	2.000039	2.000002	2	2	2	2
67.5	4	4	2.148476	2.147317	2.145791	2.144264	2.142479	2.138407	2.132248	2.125232	2.109511	2.092969	2.062877	2.039625	2.023165	2.012568	2.002966	2.000524	2.000041	2.000002	2	2	2	2
67.75	4	4	2.14817	2.147017	2.1455	2.143983	2.142208	2.138159	2.132035	2.125058	2.109418	2.092951	2.062955	2.039737	2.023273	2.012654	2.003001	2.000533	2.000041	2.000002	2	2	2	2
68	4	4	2.147865	2.146719	2.145211	2.143703	2.141938	2.137913	2.131824	2.124884	2.109325	2.092932	2.063032	2.039847	2.02338	2.012738	2.003036	2.000543	2.000043	2.000002	2	2	2	2
68.25	4	4	2.147562	2.146423	2.144923	2.143424	2.14167	2.137667	2.131613	2.124712	2.109232	2.092912	2.063107	2.039956	2.023487	2.012823	2.003071	2.000552	2.000044	2.000002	2	2	2	2
68.5	4	4	2.147261	2.146128	2.144638	2.143147	2.141403	2.137424	2.131403	2.124539	2.109139	2.092893	2.063182	2.040065	2.023593	2.012908	2.003107	2.000562	2.000045	2.000002	2	2	2	2
68.75	4	4	2.146961	2.145836	2.144354	2.142871	2.141138	2.137181	2.131194	2.124368	2.109046	2.092872	2.063256	2.040173	2.023699	2.012993	2.003142	2.000572	2.000046	2.000002	2	2	2	2
69	4	4	2.146663	2.145545	2.144071	2.142597	2.140874	2.13694	2.130986	2.124197	2.108953	2.092851	2.063329	2.040279	2.023804	2.013077	2.003178	2.000582	2.000047	2.000003	2	2	2	2
69.25	4	4	2.146367	2.145255	2.14379	2.142325	2.140611	2.1367	2.130779	2.124027	2.108859	2.09283	2.063401	2.040385	2.023909	2.013161	2.003214	2.000592	2.000048	2.000003	2	2	2	2
69.5	4	4	2.146073	2.144967	2.143511	2.142054	2.14035	2.136461	2.130573	2.123857	2.108766	2.092808	2.063472	2.040491	2.024014	2.013245	2.00325	2.000602	2.00005	2.000003	2	2	2	2
69.75	4	4	2.145781	2.144681	2.143233	2.141785	2.14009	2.136223	2.130368	2.123688	2.108673	2.092785	2.063542	2.040596	2.024117	2.013329	2.003286	2.000612	2.000051	2.000003	2	2	2	2
70	4	4	2.14549	2.144397	2.142957	2.141517	2.139832	2.135987	2.130164	2.123519	2.10858	2.092762	2.063611	2.040699	2.024221	2.013412	2.003322	2.000622	2.000052	2.000003	2	2	2	2
70.25	4	4	2.145201	2.144114	2.142682	2.14125	2.139575	2.135751	2.129961	2.123351	2.108486	2.092739	2.063679	2.040802	2.024324	2.013496	2.003358	2.000632	2.000053	2.000003	2	2	2	2
70.5	4	4	2.144913	2.143832	2.142409	2.140985	2.13932	2.135517	2.129758	2.123184	2.108393	2.092715	2.063746	2.040904	2.024426	2.013579	2.003395	2.000643	2.000055	2.000003	2	2	2	2
70.75	4	4	2.144627	2.143553	2.142137	2.140722	2.139066	2.135284	2.129557	2.123018	2.1083	2.09269	2.063812	2.041006	2.024528	2.013663	2.003431	2.000653	2.000056	2.000003	2	2	2	2
71	4	4	2.144343	2.143275	2.141867	2.14046	2.138813	2.135052	2.129356	2.122851	2.108207	2.092665	2.063878	2.041106	2.02463	2.013746	2.003468	2.000664	2.000057	2.000003	2	2	2	2
71.25	4	4	2.14406	2.142998	2.141598	2.140199	2.138561	2.134822	2.129157	2.122686	2.108113	2.09264	2.063942	2.041206	2.024731	2.013828	2.003505	2.000674	2.000059	2.000003	2	2	2	2
71.5	4	4	2.14378	2.142723	2.141331	2.13994	2.138311	2.134592	2.128958	2.122521	2.10802	2.092614	2.064006	2.041305	2.024831	2.013911	2.003541	2.000685	2.00006	2.000004	2	2	2	2
71.75	4	4	2.1435	2.14245	2.141066	2.139682	2.138062	2.134364	2.12876	2.122357	2.107927	2.092588	2.064069	2.041404	2.024931	2.013994	2.003578	2.000696	2.000062	2.000004	2	2	2	2
72	4	4	2.143222	2.142178	2.140802	2.139426	2.137815	2.134137	2.128563	2.122193	2.107834	2.092561	2.064131	2.041501	2.025031	2.014076	2.003615	2.000707	2.000063	2.000004	2	2	2	2
72.25	4	4	2.142946	2.141907	2.140539	2.13917	2.137568	2.133911	2.128366	2.12203	2.107741	2.092534	2.064192	2.041598	2.025513	2.014158	2.003652	2.000718	2.000065	2.000004	2	2	2	2
72.5	4	4	2.142671	2.141638	2.140277	2.138916	2.137323	2.133686	2.128171	2.121867	2.107648	2.092506	2.064253	2.041694	2.025229	2.01424	2.00369	2.000729	2.000066	2.000004	2	2	2	2
72.75	4	4	2.142398	2.141371	2.140018	2.138664	2.13708	2.133462	2.127976	2.121705	2.107554	2.092478	2.064312	2.04179	2.025327	2.014321	2.003727	2.00074	2.000068	2.000004	2	2	2	2
73	4	4	2.142127	2.141105	2.139759	2.138413	2.136837	2.133239	2.127783	2.121544	2.107461	2.092449	2.064371	2.041884	2.025425	2.014403	2.003764	2.000751	2.000069	2.000004	2	2	2	2
73.25	4	4	2.141856	2.14084	2.139502	2.138163	2.136596	2.133017	2.12759	2.121383	2.107368	2.092421	2.064429	2.041978	2.025522	2.014484	2.003802	2.000763	2.000071	2.000005	2	2	2	2
73.5	4	4	2.141588	2.140577	2.139246	2.137915	2.136356	2.132797	2.127398	2.121223	2.107275	2.092391	2											

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
78.75	4	4	2.136269	2.135366	2.134175	2.132983	2.131588	2.128397	2.123548	2.117983	2.105335	2.091691	2.065512	2.043868	2.027545	2.016222	2.004649	2.001036	2.000112	2.000008	2	2	2	2
79	4	4	2.13603	2.135131	2.133946	2.132761	2.131372	2.128198	2.123372	2.117834	2.105244	2.091654	2.065554	2.043946	2.027632	2.016298	2.004688	2.00105	2.000114	2.000009	2	2	2	2
79.25	4	4	2.135793	2.134898	2.133719	2.13254	2.131159	2.128	2.123198	2.117686	2.105152	2.091617	2.065594	2.044024	2.027718	2.016375	2.004728	2.001063	2.000117	2.000009	2	2	2	2
79.5	4	4	2.135556	2.134667	2.133493	2.13232	2.130945	2.127803	2.123024	2.117539	2.105061	2.09158	2.065634	2.044101	2.027804	2.016451	2.004767	2.001077	2.000119	2.000009	2	2	2	2
79.75	4	4	2.135321	2.134436	2.133269	2.132102	2.130733	2.127607	2.122851	2.117392	2.10497	2.091542	2.065674	2.044178	2.027889	2.016527	2.004806	2.001091	2.000121	2.000009	2	2	2	2
80	4	4	2.135087	2.134206	2.133045	2.131884	2.130523	2.127411	2.122679	2.117245	2.104878	2.091504	2.065712	2.044253	2.027974	2.016602	2.004846	2.001104	2.000124	2.000001	2	2	2	2
80.25	4	4	2.134854	2.133978	2.132823	2.131667	2.130313	2.127217	2.122507	2.117099	2.104787	2.091466	2.065751	2.044329	2.028059	2.016678	2.004885	2.001118	2.000126	2.000001	2	2	2	2
80.5	4	4	2.134623	2.133751	2.132601	2.131451	2.130104	2.127023	2.122336	2.116954	2.104696	2.091427	2.065788	2.044403	2.028143	2.016753	2.004925	2.001132	2.000128	2.000001	2	2	2	2
80.75	4	4	2.134392	2.133525	2.132381	2.131237	2.129896	2.12683	2.122166	2.116809	2.104605	2.091389	2.065825	2.044477	2.028227	2.016828	2.004965	2.001146	2.000131	2.000001	2	2	2	2
81	4	4	2.134163	2.1333	2.132161	2.131023	2.129689	2.126638	2.121997	2.116664	2.104514	2.09135	2.065861	2.044551	2.02831	2.016903	2.005004	2.00116	2.000133	2.000001	2	2	2	2
81.25	4	4	2.133935	2.133076	2.131943	2.130811	2.129483	2.126447	2.121828	2.11652	2.104423	2.091311	2.065897	2.044624	2.028393	2.016977	2.005044	2.001174	2.000136	2.000011	2.000001	2	2	2
81.5	4	4	2.133708	2.132853	2.131726	2.130599	2.129278	2.126257	2.12166	2.116376	2.104332	2.091271	2.065932	2.044696	2.028476	2.017052	2.005084	2.001189	2.000138	2.000011	2.000001	2	2	2
81.75	4	4	2.133482	2.132632	2.13151	2.130388	2.129074	2.126068	2.121492	2.116233	2.104242	2.091231	2.065967	2.044768	2.028557	2.017126	2.005124	2.001203	2.000141	2.000011	2.000001	2	2	2
82	4	4	2.133257	2.132411	2.131295	2.130179	2.12887	2.125879	2.121325	2.116091	2.104151	2.091191	2.066001	2.044839	2.028639	2.0172	2.005164	2.001217	2.000143	2.000012	2.000001	2	2	2
82.25	4	4	2.133034	2.132191	2.131081	2.129971	2.128668	2.125691	2.121159	2.115948	2.104061	2.091151	2.066035	2.044909	2.02872	2.017273	2.005204	2.001232	2.000146	2.000012	2.000001	2	2	2
82.5	4	4	2.132811	2.131973	2.130868	2.129763	2.128467	2.125504	2.120993	2.115807	2.10397	2.091111	2.066067	2.04498	2.028801	2.017347	2.005244	2.001246	2.000149	2.000012	2.000001	2	2	2
82.75	4	4	2.13259	2.131756	2.130656	2.129556	2.128267	2.125318	2.120828	2.115665	2.10388	2.09107	2.0661	2.045049	2.028881	2.01742	2.005284	2.001261	2.000151	2.000013	2.000001	2	2	2
83	4	4	2.132369	2.131539	2.130445	2.129351	2.128067	2.125133	2.120664	2.115525	2.10379	2.091029	2.066132	2.045118	2.028961	2.017493	2.005324	2.001276	2.000154	2.000013	2.000001	2	2	2
83.25	4	4	2.13215	2.131324	2.130235	2.129146	2.127869	2.124949	2.1205	2.115384	2.1037	2.090988	2.066163	2.045186	2.02904	2.017566	2.005364	2.001291	2.000156	2.000013	2.000001	2	2	2
83.5	4	4	2.131932	2.13111	2.130026	2.128942	2.127671	2.124765	2.120337	2.115245	2.10361	2.090947	2.066193	2.045254	2.029119	2.017638	2.005404	2.001306	2.000159	2.000014	2.000001	2	2	2
83.75	4	4	2.131714	2.130897	2.129818	2.128739	2.127474	2.124582	2.120175	2.115105	2.10352	2.090906	2.066224	2.045321	2.029198	2.01771	2.005444	2.00132	2.000162	2.000014	2.000001	2	2	2
84	4	4	2.131498	2.130684	2.129611	2.128538	2.127279	2.1244	2.120013	2.114966	2.103431	2.090864	2.066253	2.045388	2.029276	2.017783	2.005484	2.001335	2.000165	2.000014	2.000001	2	2	2
84.25	4	4	2.131283	2.130473	2.129405	2.128337	2.127084	2.124218	2.119852	2.114828	2.103341	2.090822	2.066282	2.045454	2.029354	2.017854	2.005525	2.001351	2.000168	2.000015	2.000001	2	2	2
84.5	4	4	2.131069	2.130263	2.1292	2.128137	2.12689	2.124038	2.119692	2.11469	2.103251	2.09078	2.066311	2.045519	2.029432	2.017926	2.005565	2.001366	2.00017	2.000015	2.000001	2	2	2
84.75	4	4	2.130856	2.130054	2.128996	2.127938	2.126696	2.123858	2.119532	2.114552	2.103162	2.090738	2.066339	2.045584	2.029509	2.017997	2.005605	2.001381	2.000173	2.000015	2.000001	2	2	2
85	4	4	2.130644	2.129846	2.128793	2.127739	2.126504	2.123679	2.119372	2.114415	2.103073	2.090695	2.066367	2.045649	2.029585	2.018069	2.005645	2.001396	2.000176	2.000016	2.000001	2	2	2
85.25	4	4	2.130433	2.129639	2.12859	2.127542	2.126313	2.1235	2.119214	2.114278	2.102983	2.090652	2.066394	2.045713	2.029661	2.018139	2.005686	2.001412	2.000179	2.000016	2.000001	2	2	2
85.5	4	4	2.130223	2.129432	2.128389	2.127346	2.126122	2.123323	2.119056	2.114142	2.102894	2.09061	2.06642	2.045776	2.029737	2.01821	2.005726	2.001427	2.000182	2.000016	2.000001	2	2	2
85.75	4	4	2.130014	2.129227	2.128189	2.127151	2.125932	2.123146	2.118898	2.114006	2.102805	2.090567	2.066446	2.045839	2.029812	2.018281	2.005766	2.001443	2.000185	2.000017	2.000001	2	2	2
86	4	4	2.129806	2.129023	2.127989	2.126956	2.125743	2.12297	2.118741	2.113871	2.102716	2.090523	2.066472	2.045902	2.029887	2.018351	2.005807	2.001458	2.000188	2.000017	2.000001	2	2	2
86.25	4	4	2.129599	2.128819	2.127791	2.126762	2.125555	2.122795	2.118585	2.113736	2.102628	2.09048	2.066497	2.045964	2.029962	2.018421	2.005847	2.001474	2.000191	2.000018	2.000001	2	2	2
86.5	4	4	2.129393	2.128617	2.127593	2.126569	2.125368	2.12262	2.118429	2.113601	2.102539	2.090437	2.066521	2.046025	2.030036	2.018491	2.005888	2.00149	2.000195	2.000018	2.000001	2	2	2
86.75	4	4	2.129188	2.128416	2.127397	2.126377	2.125181	2.122446	2.118274	2.113467	2.102451	2.090393	2.066546	2.046086	2.03011	2.01856	2.005928	2.001506	2.000198	2.000018	2.000001	2	2	2
87	4	4	2.128984	2.128215	2.127201	2.126186	2.124996	2.122273	2.11812	2.113334	2.102362	2.090349	2.066569	2.046146	2.030183	2.018629	2.005969	2.001522	2.000201	2.000019	2.000001	2	2	2
87.25	4	4	2.128781	2.128016	2.127006	2.125996	2.124811	2.122101	2.117966	2.113201	2.102274	2.090305	2.066592	2.046206	2.030256	2.018698	2.006009	2.001538	2.000204	2.000019	2.000001	2	2	2
87.5	4	4	2.128579	2.127817	2.126812	2.125807	2.124627	2.121929	2.117812	2.113068	2.102186	2.090261	2.066615	2.046265	2.030329	2.018767	2.006049	2.001554	2.000207	2.00002	2.000001	2	2	2
87.75	4	4	2.128377	2.127619	2.126619	2.125618	2.124444	2.121758	2.11766	2.112936	2.102098	2.090217	2.066638	2.046324	2.030401	2.018836	2.00609	2.00157	2.000211	2.00002	2.000001	2	2	2
88	4	4	2.128177	2.127422	2.126426	2.12543	2.124261	2.121588	2.117507	2.112804	2.10201	2.090172	2.066659	2.046382	2.030473	2.018904	2.00613	2.001586	2.000214	2.000021	2.000001	2	2	2
88.25	4	4	2.127978	2.127226	2.126235	2.125243	2.12408	2.121418	2.117356	2.112672	2.101922	2.090127	2.066681	2.04644	2.030544	2.018972	2.006171	2.001602	2.000217	2.000021	2.000001	2	2	2
88.5	4	4	2.127779	2.127031	2.126044	2.125057	2.123899	2.121249	2.117205	2.112541	2.101834	2.090083	2.066702	2.046498	2.030615	2.01904	2.006212	2.001618	2.000221	2.000021	2.000001	2	2	2
88.75	4	4	2.127581	2.126837	2.125854	2.124872	2.123719	2.121081	2.117054	2.112421	2.101747	2.090038	2.066722	2.046555	2.030686	2.019108	2.006252	2.001635	2.000224	2.000022	2.000001	2	2	2
89	4	4	2.127385	2.126643	2.125665	2.124687	2.123539	2.120913	2.116904	2.11228	2.101659	2.089993	2.066742	2.046611	2.030756	2.019176	2.006293	2.001651						

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
94.5	4	4	2.123272	2.122599	2.121711	2.120822	2.119779	2.117739	2.113738	2.109514	2.099766	2.08897	2.067081	2.047739	2.032208	2.020601	2.007185	2.002029	2.000312	2.000035	2.000003	2	2	2
94.75	4	4	2.123094	2.122424	2.12154	2.120655	2.119616	2.117237	2.1136	2.109393	2.099682	2.088922	2.067092	2.047785	2.03227	2.020663	2.007226	2.002047	2.000316	2.000035	2.000003	2	2	2
95	4	4	2.122917	2.12225	2.121369	2.120488	2.119454	2.117085	2.113462	2.109272	2.099597	2.088874	2.067103	2.047831	2.032332	2.020725	2.007266	2.002065	2.00032	2.000036	2.000003	2	2	2
95.25	4	4	2.122741	2.122077	2.121199	2.120322	2.119292	2.116933	2.113325	2.109151	2.099513	2.088827	2.067113	2.047876	2.032393	2.020787	2.007306	2.002083	2.000324	2.000037	2.000003	2	2	2
95.5	4	4	2.122566	2.121904	2.12103	2.120157	2.119131	2.116781	2.113188	2.109031	2.099429	2.088779	2.067123	2.047921	2.032454	2.020849	2.007347	2.002101	2.000329	2.000037	2.000003	2	2	2
95.75	4	4	2.122391	2.121732	2.120862	2.119992	2.11897	2.116631	2.113052	2.108911	2.099345	2.088731	2.067133	2.047966	2.032514	2.02091	2.007387	2.002119	2.000333	2.000038	2.000003	2	2	2
96	4	4	2.122217	2.121561	2.120694	2.119828	2.11881	2.116481	2.112916	2.108792	2.099261	2.088682	2.067142	2.048011	2.032575	2.020971	2.007428	2.002137	2.000337	2.000039	2.000003	2	2	2
96.25	4	4	2.122043	2.12139	2.120528	2.119665	2.118651	2.116331	2.112781	2.108673	2.099177	2.088634	2.067151	2.048054	2.032634	2.021032	2.007468	2.002155	2.000342	2.00004	2.000003	2	2	2
96.5	4	4	2.121871	2.12122	2.120361	2.119502	2.118493	2.116182	2.112646	2.108554	2.099094	2.088586	2.06716	2.048098	2.032694	2.021092	2.007509	2.002173	2.000346	2.00004	2.000003	2	2	2
96.75	4	4	2.121699	2.121051	2.120196	2.11934	2.118335	2.116033	2.112511	2.108435	2.09901	2.088538	2.067168	2.048141	2.032753	2.021152	2.007549	2.002192	2.000351	2.000041	2.000004	2	2	2
97	4	4	2.121528	2.120883	2.120031	2.119179	2.118178	2.115885	2.112377	2.108317	2.098927	2.088489	2.067177	2.048184	2.032812	2.021213	2.007589	2.00221	2.000355	2.000042	2.000004	2	2	2
97.25	4	4	2.121357	2.120715	2.119866	2.119018	2.118021	2.115738	2.112244	2.108199	2.098843	2.088441	2.067184	2.048226	2.032871	2.021273	2.007629	2.002228	2.00036	2.000042	2.000004	2	2	2
97.5	4	4	2.121188	2.120548	2.119703	2.118858	2.117865	2.115591	2.112111	2.108082	2.09876	2.088392	2.067192	2.048269	2.032929	2.021332	2.00767	2.002247	2.000364	2.000043	2.000004	2	2	2
97.75	4	4	2.121019	2.120381	2.11954	2.118698	2.117709	2.115445	2.111978	2.107965	2.098677	2.088344	2.067199	2.04831	2.032987	2.021392	2.00771	2.002265	2.000369	2.000044	2.000004	2	2	2
98	4	4	2.12085	2.120216	2.119377	2.118539	2.117554	2.115299	2.111846	2.107848	2.098594	2.088295	2.067206	2.048352	2.033044	2.021451	2.00775	2.002284	2.000373	2.000045	2.000004	2	2	2
98.25	4	4	2.120683	2.120051	2.119216	2.118381	2.1174	2.115154	2.111715	2.107732	2.098512	2.088246	2.067212	2.048392	2.033102	2.02151	2.00779	2.002302	2.000378	2.000046	2.000004	2	2	2
98.5	4	4	2.120516	2.119886	2.119055	2.118223	2.117246	2.115009	2.111583	2.107616	2.098429	2.088197	2.067219	2.048433	2.033158	2.021569	2.00783	2.002321	2.000383	2.000046	2.000004	2	2	2
98.75	4	4	2.12035	2.119723	2.118895	2.118067	2.117093	2.114865	2.111453	2.1075	2.098346	2.088149	2.067225	2.048473	2.033215	2.021627	2.007871	2.00234	2.000388	2.000047	2.000004	2	2	2
99	4	4	2.120184	2.11956	2.118735	2.117791	2.116941	2.114721	2.111322	2.107385	2.098264	2.0881	2.06723	2.048513	2.033271	2.021686	2.007911	2.002358	2.000392	2.000048	2.000004	2	2	2
99.25	4	4	2.120019	2.119397	2.118576	2.117754	2.116789	2.114578	2.111192	2.10727	2.098182	2.088051	2.067235	2.048552	2.033327	2.021744	2.007951	2.002377	2.000397	2.000049	2.000005	2	2	2
99.5	4	4	2.119855	2.119235	2.118417	2.117599	2.116637	2.114435	2.111063	2.107155	2.0981	2.088002	2.06724	2.048592	2.033383	2.021802	2.007991	2.002396	2.000402	2.00005	2.000005	2	2	2
99.75	4	4	2.119691	2.119074	2.118259	2.117445	2.116487	2.114293	2.110934	2.107041	2.098018	2.087953	2.067245	2.04863	2.033438	2.02186	2.008031	2.002415	2.000407	2.000051	2.000005	2	2	2
100	4	4	2.119528	2.118914	2.118102	2.11729	2.116337	2.114152	2.110805	2.106927	2.097936	2.087903	2.06725	2.048669	2.033493	2.021917	2.008071	2.002434	2.000412	2.000051	2.000005	2	2	2
100.25	4	4	2.119366	2.118754	2.117945	2.117137	2.116187	2.114011	2.110677	2.106813	2.097854	2.087854	2.067254	2.048707	2.033548	2.021974	2.008111	2.002453	2.000417	2.000052	2.000005	2	2	2
100.5	4	4	2.119204	2.118595	2.11779	2.116984	2.116038	2.11387	2.110549	2.106699	2.097773	2.087805	2.067258	2.048744	2.033602	2.022031	2.008151	2.002471	2.000422	2.000053	2.000005	2	2	2
100.75	4	4	2.119043	2.118436	2.117634	2.116832	2.115889	2.11373	2.110421	2.106586	2.097691	2.087756	2.067261	2.048782	2.033656	2.022088	2.008191	2.002491	2.000427	2.000054	2.000005	2	2	2
101	4	4	2.118883	2.118278	2.117479	2.11668	2.115741	2.11359	2.110295	2.106474	2.09761	2.087706	2.067265	2.048819	2.03371	2.022145	2.008231	2.00251	2.000432	2.000055	2.000005	2	2	2
101.25	4	4	2.118723	2.118121	2.117325	2.116529	2.115594	2.113451	2.110168	2.106361	2.097529	2.087657	2.067268	2.048856	2.033763	2.022201	2.008271	2.002529	2.000437	2.000056	2.000005	2	2	2
101.5	4	4	2.118564	2.117964	2.117172	2.116379	2.115447	2.113313	2.110042	2.106249	2.097448	2.087608	2.067271	2.048892	2.033817	2.022257	2.00831	2.002548	2.000442	2.000057	2.000005	2	2	2
101.75	4	4	2.118406	2.117808	2.117018	2.116229	2.115301	2.113175	2.109916	2.106138	2.097367	2.087558	2.067273	2.048928	2.03387	2.022313	2.00835	2.002567	2.000447	2.000058	2.000005	2	2	2
102	4	4	2.118248	2.117652	2.116866	2.11608	2.115155	2.113037	2.109791	2.106026	2.097286	2.087508	2.067276	2.048964	2.033922	2.022369	2.00839	2.002586	2.000452	2.000059	2.000006	2	2	2
102.25	4	4	2.118091	2.117497	2.116714	2.115931	2.11501	2.1129	2.109666	2.105915	2.097205	2.087459	2.067277	2.048999	2.033974	2.022425	2.00843	2.002606	2.000458	2.00006	2.000006	2	2	2
102.5	4	4	2.117934	2.117343	2.116563	2.115782	2.114865	2.112763	2.109541	2.105804	2.097125	2.087409	2.067279	2.049034	2.034026	2.022448	2.008469	2.002625	2.000463	2.000061	2.000006	2	2	2
102.75	4	4	2.117778	2.117189	2.116412	2.115635	2.114721	2.112627	2.109417	2.105694	2.097045	2.08736	2.067281	2.049069	2.034078	2.022535	2.008509	2.002644	2.000468	2.000062	2.000006	2	2	2
103	4	4	2.117623	2.117036	2.116262	2.115488	2.114577	2.112491	2.109293	2.105584	2.096694	2.08731	2.067282	2.049103	2.034129	2.02259	2.008548	2.002664	2.000473	2.000062	2.000006	2	2	2
103.25	4	4	2.117468	2.116884	2.116112	2.115341	2.114434	2.112356	2.10917	2.105474	2.096884	2.08726	2.067283	2.049137	2.03418	2.022645	2.008588	2.002683	2.000479	2.000064	2.000006	2	2	2
103.5	4	4	2.117314	2.116732	2.115963	2.115195	2.114291	2.112221	2.109047	2.105364	2.096804	2.087211	2.067284	2.049171	2.034231	2.022699	2.008628	2.002703	2.000484	2.000065	2.000006	2	2	2
103.75	4	4	2.11716	2.11658	2.115815	2.11505	2.114149	2.112087	2.108925	2.105255	2.096725	2.087161	2.067284	2.049204	2.034281	2.022753	2.008667	2.002722	2.000489	2.000066	2.000007	2	2	2
104	4	4	2.117007	2.11643	2.115667	2.114905	2.114008	2.111953	2.108803	2.105146	2.096645	2.087111	2.067285	2.049237	2.034332	2.022807	2.008707	2.002742	2.000495	2.000067	2.000007	2	2	2
104.25	4	4	2.116855	2.11628	2.11552	2.11476	2.113867	2.11182	2.108681	2.105037	2.096565	2.087061	2.067285	2.04927	2.034381	2.022861	2.008746	2.002762	2.0005	2.000068	2.000007	2	2	2
104.5	4	4	2.116703	2.11613	2.115373	2.114616	2.113726	2.111687	2.108559	2.104929	2.096486	2.087011	2.067284	2.049303	2.034431	2.022915	2.008785	2.002781	2.000506	2.000069	2.000007	2	2	2
104.75	4	4	2.116552	2.115981	2.115227	2.114473	2.113586	2.111555	2.108438	2.104821	2.096406	2.												

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
110.25	4	4	2.113363	2.112837	2.112141	2.111445	2.110627	2.108751	2.10587	2.102519	2.094694	2.085858	2.067218	2.049969	2.035495	2.024091	2.009679	2.003242	2.000641	2.000096	2.000011	2.000001	2	2
110.5	4	4	2.113224	2.1127	2.112006	2.111313	2.110498	2.108629	2.105757	2.102417	2.094618	2.085808	2.067213	2.049994	2.035538	2.02414	2.009717	2.003263	2.000648	2.000098	2.000011	2.000001	2	2
110.75	4	4	2.113086	2.112563	2.111872	2.111182	2.110369	2.108506	2.105645	2.102316	2.094542	2.085758	2.067207	2.050002	2.035581	2.024188	2.009755	2.003283	2.000654	2.000099	2.000011	2.000001	2	2
111	4	4	2.112947	2.112427	2.111739	2.11105	2.110241	2.108384	2.105533	2.102215	2.094466	2.085707	2.067201	2.050045	2.035624	2.024236	2.009793	2.003304	2.00066	2.0001	2.000011	2.000001	2	2
111.25	4	4	2.11281	2.112291	2.111605	2.11092	2.110113	2.108263	2.105421	2.102114	2.09439	2.085657	2.067195	2.05007	2.035666	2.024285	2.009831	2.003324	2.000667	2.000102	2.000012	2.000001	2	2
111.5	4	4	2.112673	2.112156	2.111473	2.110789	2.109985	2.108142	2.105309	2.102014	2.094314	2.085607	2.067189	2.050094	2.035708	2.024333	2.00987	2.003345	2.000673	2.000103	2.000012	2.000001	2	2
111.75	4	4	2.112537	2.112021	2.111341	2.11066	2.109858	2.108021	2.105198	2.101914	2.094239	2.085557	2.067183	2.050119	2.03575	2.02438	2.009907	2.003365	2.000679	2.000104	2.000012	2.000001	2	2
112	4	4	2.112401	2.111887	2.111209	2.11053	2.109731	2.107901	2.105088	2.101814	2.094163	2.085506	2.067176	2.050143	2.035792	2.024428	2.009945	2.003386	2.000686	2.000106	2.000012	2.000001	2	2
112.25	4	4	2.112265	2.111753	2.111077	2.110401	2.109605	2.107781	2.104977	2.101715	2.094088	2.085456	2.06717	2.050167	2.035833	2.024475	2.009983	2.003406	2.000692	2.000107	2.000013	2.000001	2	2
112.5	4	4	2.11213	2.11162	2.110946	2.110273	2.109479	2.107661	2.104867	2.101615	2.094012	2.085406	2.067163	2.05019	2.035874	2.024522	2.010021	2.003427	2.000699	2.000108	2.000013	2.000001	2	2
112.75	4	4	2.111995	2.111487	2.110816	2.110144	2.109354	2.107542	2.104758	2.101516	2.093937	2.085355	2.067156	2.050214	2.035915	2.024569	2.010059	2.003448	2.000705	2.00011	2.000013	2.000001	2	2
113	4	4	2.111861	2.111355	2.110686	2.110017	2.109229	2.107424	2.104648	2.101418	2.093862	2.085305	2.067149	2.050237	2.035956	2.024616	2.010097	2.003468	2.000712	2.000111	2.000013	2.000001	2	2
113.25	4	4	2.111728	2.111223	2.110556	2.10989	2.109105	2.107305	2.104539	2.101319	2.093787	2.085255	2.067142	2.050259	2.035996	2.024662	2.010134	2.003489	2.000719	2.000113	2.000014	2.000001	2	2
113.5	4	4	2.111595	2.111092	2.110427	2.109763	2.10898	2.107187	2.10443	2.101221	2.093713	2.085204	2.067134	2.050282	2.036036	2.024709	2.010172	2.00351	2.000725	2.000114	2.000014	2.000001	2	2
113.75	4	4	2.111462	2.110961	2.110298	2.109636	2.108857	2.107069	2.104322	2.101123	2.093638	2.085154	2.067126	2.050304	2.036076	2.024755	2.01021	2.003531	2.000732	2.000116	2.000014	2.000001	2	2
114	4	4	2.11133	2.11083	2.11017	2.10951	2.108733	2.106952	2.104214	2.101025	2.093563	2.085104	2.067118	2.050327	2.036116	2.024801	2.010247	2.003551	2.000739	2.000117	2.000014	2.000001	2	2
114.25	4	4	2.111198	2.1107	2.110042	2.109385	2.10861	2.106835	2.104106	2.100928	2.093489	2.085054	2.06711	2.050349	2.036155	2.024847	2.010285	2.003572	2.000746	2.000119	2.000015	2.000001	2	2
114.5	4	4	2.111067	2.110571	2.109915	2.10926	2.108488	2.106719	2.103998	2.10083	2.093415	2.085003	2.067102	2.05037	2.036194	2.024893	2.010322	2.003593	2.000752	2.00012	2.000015	2.000001	2	2
114.75	4	4	2.110936	2.110441	2.109788	2.109135	2.108366	2.106602	2.103891	2.100733	2.093341	2.084953	2.067094	2.050392	2.036233	2.024938	2.010359	2.003613	2.000759	2.000122	2.000015	2.000001	2	2
115	4	4	2.110805	2.110313	2.109662	2.10901	2.108244	2.106487	2.103784	2.100637	2.093266	2.084903	2.067085	2.050413	2.036272	2.024983	2.010397	2.003634	2.000766	2.000124	2.000015	2.000001	2	2
115.25	4	4	2.110675	2.110184	2.109535	2.108886	2.108123	2.106371	2.103678	2.10054	2.093193	2.084852	2.067077	2.050434	2.03631	2.025028	2.010434	2.003655	2.000773	2.000125	2.000015	2.000001	2	2
115.5	4	4	2.110546	2.110056	2.10941	2.108763	2.108002	2.106256	2.103571	2.100444	2.093119	2.084802	2.067068	2.050455	2.036349	2.025073	2.010471	2.003676	2.00078	2.000127	2.000016	2.000001	2	2
115.75	4	4	2.110416	2.109929	2.109284	2.10864	2.107881	2.106141	2.103465	2.100348	2.093045	2.084752	2.067059	2.050475	2.036386	2.025118	2.010508	2.003697	2.000787	2.000128	2.000016	2.000002	2	2
116	4	4	2.110288	2.109802	2.109159	2.108517	2.107761	2.106027	2.10336	2.100252	2.092972	2.084702	2.06705	2.050495	2.036424	2.025162	2.010545	2.003718	2.000793	2.00013	2.000016	2.000002	2	2
116.25	4	4	2.11016	2.109675	2.109035	2.108395	2.107641	2.105913	2.103254	2.100157	2.092898	2.084652	2.06704	2.050515	2.036462	2.025207	2.010582	2.003739	2.0008	2.000132	2.000017	2.000002	2	2
116.5	4	4	2.110032	2.109549	2.108911	2.108273	2.107522	2.105799	2.103149	2.100061	2.092825	2.084601	2.067031	2.050535	2.036499	2.025251	2.010619	2.00376	2.000808	2.000133	2.000017	2.000002	2	2
116.75	4	4	2.109904	2.109423	2.108787	2.108151	2.107403	2.105686	2.103044	2.099967	2.092752	2.084551	2.067021	2.050555	2.036536	2.025295	2.010656	2.003781	2.000814	2.000135	2.000017	2.000002	2	2
117	4	4	2.109777	2.109298	2.108664	2.10803	2.107284	2.105573	2.10294	2.099872	2.092679	2.084501	2.067012	2.050574	2.036573	2.025339	2.010693	2.003802	2.000822	2.000136	2.000017	2.000002	2	2
117.25	4	4	2.109651	2.109173	2.108541	2.107909	2.107166	2.10546	2.102836	2.099777	2.092606	2.084451	2.067002	2.050593	2.03661	2.025382	2.01073	2.003823	2.000829	2.000138	2.000018	2.000002	2	2
117.5	4	4	2.109525	2.109049	2.108419	2.107789	2.107048	2.105348	2.102732	2.099683	2.092533	2.084401	2.066992	2.050612	2.036646	2.025426	2.010767	2.003844	2.000836	2.00014	2.000018	2.000002	2	2
117.75	4	4	2.109399	2.108924	2.108297	2.107669	2.10693	2.105236	2.102628	2.099589	2.092461	2.084351	2.066982	2.050631	2.036682	2.025469	2.010803	2.003865	2.000843	2.000142	2.000018	2.000002	2	2
118	4	4	2.109274	2.108801	2.108175	2.10755	2.106813	2.105124	2.102525	2.099495	2.092388	2.084301	2.066971	2.05065	2.036718	2.025512	2.01084	2.003886	2.00085	2.000143	2.000019	2.000002	2	2
118.25	4	4	2.109149	2.108677	2.108054	2.10743	2.106696	2.105013	2.102422	2.099401	2.092316	2.08425	2.066961	2.050668	2.036754	2.025555	2.010876	2.003907	2.000857	2.000145	2.000019	2.000002	2	2
118.5	4	4	2.109025	2.108554	2.107933	2.107312	2.10658	2.104902	2.102319	2.099308	2.092244	2.0842	2.06695	2.050686	2.03679	2.025597	2.010913	2.003928	2.000865	2.000147	2.000019	2.000002	2	2
118.75	4	4	2.108901	2.108432	2.107813	2.107193	2.106464	2.104791	2.102217	2.099215	2.092172	2.08415	2.06694	2.050704	2.036825	2.02564	2.010949	2.003949	2.000872	2.000149	2.00002	2.000002	2	2
119	4	4	2.108777	2.10831	2.107692	2.107075	2.106348	2.104681	2.102114	2.099122	2.0921	2.0841	2.066929	2.050722	2.03686	2.025682	2.010985	2.00397	2.000879	2.00015	2.00002	2.000002	2	2
119.25	4	4	2.108654	2.108188	2.107573	2.106957	2.106233	2.104571	2.102013	2.09903	2.092028	2.08405	2.066918	2.050739	2.036895	2.025724	2.011022	2.003991	2.000886	2.000152	2.00002	2.000002	2	2
119.5	4	4	2.108531	2.108067	2.107454	2.10684	2.106118	2.104461	2.101911	2.098937	2.091956	2.084	2.066906	2.050756	2.03693	2.025766	2.011058	2.004013	2.000894	2.000154	2.000021	2.000002	2	2
119.75	4	4	2.108408	2.107946	2.107335	2.106723	2.106003	2.104352	2.10181	2.098845	2.091884	2.08395	2.066895	2.050773	2.036964	2.025808	2.011094	2.004034	2.000901	2.000156	2.000021	2.000002	2	2
120	4	4	2.108286	2.107826	2.107216	2.106606	2.105889	2.104243	2.101709	2.098753	2.091813	2.0839	2.066884	2.05079	2.036999	2.02585	2.01113	2.004055	2.000909	2.000157	2.000021	2.000002	2	2
120.25	4	4	2.108165	2.107705	2.107098	2.10649	2.105775	2.104134	2.101608	2.098661	2.091741	2.08385												

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
126	4	4	2.105472	2.105044	2.104479	2.103914	2.103248	2.10172	2.099364	2.096613	2.090133	2.082706	2.066573	2.051138	2.03776	2.026798	2.011978	2.004566	2.001094	2.000205	2.00003	2.000004	2	2
126.25	4	4	2.105359	2.104933	2.104369	2.103806	2.103142	2.101618	2.09927	2.096526	2.090064	2.082657	2.066559	2.05115	2.03779	2.026835	2.012012	2.004587	2.001102	2.000207	2.000031	2.000004	2	2
126.5	4	4	2.105247	2.104822	2.10426	2.103698	2.103036	2.101517	2.099176	2.09644	2.089996	2.082608	2.066544	2.051162	2.037819	2.026872	2.012047	2.004609	2.001111	2.00021	2.000031	2.000004	2	2
126.75	4	4	2.105134	2.104711	2.104151	2.10359	2.102931	2.101416	2.099082	2.096354	2.089927	2.082558	2.06653	2.051174	2.037848	2.02691	2.012081	2.00463	2.001119	2.000212	2.000031	2.000004	2	2
127	4	4	2.105023	2.1046	2.104042	2.103483	2.102825	2.101315	2.098988	2.096268	2.089859	2.082509	2.066515	2.051186	2.037877	2.026947	2.012115	2.004651	2.001127	2.000214	2.000032	2.000004	2	2
127.25	4	4	2.104911	2.10449	2.103934	2.103377	2.102721	2.101215	2.098894	2.096182	2.089791	2.08246	2.0665	2.051197	2.037905	2.026983	2.01215	2.004673	2.001135	2.000216	2.000032	2.000004	2	2
127.5	4	4	2.1048	2.10438	2.103825	2.10327	2.102616	2.101115	2.098801	2.096097	2.089723	2.082411	2.066486	2.051209	2.037934	2.02702	2.012184	2.004694	2.001143	2.000218	2.000033	2.000004	2	2
127.75	4	4	2.104689	2.104271	2.103718	2.103164	2.102512	2.101016	2.098708	2.096012	2.089655	2.082361	2.066471	2.05122	2.037962	2.027056	2.012218	2.004716	2.001152	2.000221	2.000033	2.000004	2	2
128	4	4	2.104579	2.104162	2.10361	2.103058	2.102408	2.100916	2.098615	2.095927	2.089588	2.082312	2.066456	2.051231	2.03799	2.027093	2.012252	2.004737	2.00116	2.000223	2.000034	2.000004	2	2
128.25	4	4	2.104469	2.104053	2.103503	2.102953	2.102304	2.100817	2.098523	2.095842	2.08952	2.082263	2.06644	2.051242	2.038018	2.027129	2.012286	2.004758	2.001168	2.000225	2.000034	2.000004	2	2
128.5	4	4	2.104359	2.103945	2.103396	2.102848	2.102201	2.100718	2.098431	2.095757	2.089453	2.082214	2.066425	2.051253	2.038045	2.027165	2.01232	2.00478	2.001176	2.000227	2.000035	2.000004	2	2
128.75	4	4	2.10425	2.103836	2.10329	2.102743	2.102098	2.100619	2.098339	2.095673	2.089385	2.082165	2.06641	2.051263	2.038073	2.027201	2.012354	2.004801	2.001184	2.00023	2.000035	2.000004	2	2
129	4	4	2.104141	2.103729	2.103183	2.102638	2.101995	2.100521	2.098247	2.095588	2.089318	2.082116	2.066395	2.051274	2.0381	2.027236	2.012387	2.004823	2.001193	2.000232	2.000036	2.000004	2	2
129.25	4	4	2.104032	2.103621	2.103077	2.102534	2.101893	2.100423	2.098155	2.095504	2.089251	2.082067	2.066379	2.051284	2.038127	2.027272	2.012421	2.004844	2.001201	2.000234	2.000036	2.000004	2	2
129.5	4	4	2.103924	2.103514	2.102972	2.10243	2.101791	2.100325	2.098064	2.09542	2.089184	2.082018	2.066363	2.051294	2.038154	2.027307	2.012455	2.004866	2.00121	2.000237	2.000036	2.000005	2	2
129.75	4	4	2.103816	2.103407	2.102866	2.102326	2.101689	2.100227	2.097973	2.095337	2.089117	2.081969	2.066348	2.051304	2.038181	2.027343	2.012488	2.004887	2.001218	2.000239	2.000037	2.000005	2	2
130	4	4	2.103708	2.1033	2.102762	2.102222	2.101588	2.10013	2.097882	2.095253	2.08905	2.08192	2.066332	2.051314	2.038208	2.027378	2.012522	2.004908	2.001226	2.000242	2.000038	2.000005	2	2
130.25	4	4	2.1036	2.103194	2.102657	2.102119	2.101486	2.100033	2.097791	2.09517	2.088984	2.081871	2.066316	2.051323	2.038234	2.027413	2.012555	2.00493	2.001235	2.000244	2.000038	2.000005	2	2
130.5	4	4	2.103493	2.103088	2.102552	2.102017	2.101385	2.099936	2.097701	2.095087	2.088917	2.081822	2.0663	2.051333	2.038261	2.027447	2.012589	2.004951	2.001243	2.000246	2.000039	2.000005	2	2
130.75	4	4	2.103386	2.102983	2.102448	2.101914	2.101285	2.09984	2.097611	2.095004	2.08885	2.081773	2.066284	2.051342	2.038287	2.027482	2.012622	2.004973	2.001252	2.000249	2.000039	2.000005	2	2
131	4	4	2.10328	2.102877	2.102345	2.101812	2.101184	2.099743	2.097521	2.094921	2.088784	2.081724	2.066268	2.051351	2.038313	2.027517	2.012655	2.004994	2.001261	2.000251	2.00004	2.000005	2	2
131.25	4	4	2.103173	2.102772	2.102241	2.10171	2.101084	2.099647	2.097431	2.094839	2.088718	2.081676	2.066252	2.05136	2.038339	2.027551	2.012688	2.005016	2.001269	2.000253	2.00004	2.000005	2	2
131.5	4	4	2.103068	2.102667	2.102138	2.101608	2.100984	2.099551	2.097341	2.094756	2.088652	2.081627	2.066235	2.051369	2.038364	2.027585	2.012722	2.005037	2.001278	2.000256	2.000041	2.000005	2	2
131.75	4	4	2.102962	2.102563	2.102035	2.101507	2.100884	2.099456	2.097252	2.094674	2.088586	2.081578	2.066219	2.051378	2.03839	2.027619	2.012754	2.005059	2.001286	2.000258	2.000041	2.000005	2	2
132	4	4	2.102857	2.102459	2.101932	2.101406	2.100785	2.099361	2.097163	2.094592	2.08852	2.081529	2.066202	2.051387	2.038415	2.027653	2.012787	2.00508	2.001295	2.000261	2.000042	2.000005	2	2
132.25	4	4	2.102752	2.102355	2.10183	2.101305	2.100686	2.099266	2.097074	2.09451	2.088454	2.081481	2.066186	2.051395	2.03846	2.027687	2.01282	2.005101	2.001303	2.000263	2.000042	2.000005	2	2
132.5	4	4	2.102647	2.102251	2.101728	2.101204	2.100587	2.099172	2.096986	2.094429	2.088388	2.081432	2.066169	2.051403	2.038445	2.02772	2.012853	2.005123	2.001312	2.000266	2.000043	2.000005	2	2
132.75	4	4	2.102543	2.102148	2.101626	2.101104	2.100489	2.099077	2.096897	2.094347	2.088323	2.081384	2.066153	2.051411	2.03849	2.027754	2.012886	2.005144	2.001321	2.000268	2.000043	2.000005	2	2
133	4	4	2.102439	2.102045	2.101525	2.101004	2.100391	2.098982	2.096809	2.094266	2.088258	2.081335	2.066136	2.051419	2.038515	2.027787	2.012919	2.005166	2.00133	2.000271	2.000044	2.000006	2	2
133.25	4	4	2.102335	2.101943	2.101424	2.100904	2.100293	2.098888	2.096721	2.094185	2.088192	2.081287	2.066119	2.051427	2.038539	2.02782	2.012951	2.005187	2.001338	2.000273	2.000044	2.000006	2	2
133.5	4	4	2.102231	2.10184	2.101323	2.100805	2.100195	2.098795	2.096633	2.094104	2.088127	2.081238	2.066102	2.051435	2.038563	2.027853	2.012984	2.005208	2.001347	2.000276	2.000045	2.000006	2.000001	2
133.75	4	4	2.102128	2.101738	2.101222	2.100706	2.100098	2.098701	2.096546	2.094023	2.088062	2.08119	2.066085	2.051443	2.038588	2.027886	2.013016	2.00523	2.001356	2.000279	2.000046	2.000006	2.000001	2
134	4	4	2.102025	2.101636	2.101122	2.100607	2.1	2.098608	2.096458	2.093943	2.087997	2.081141	2.066068	2.05145	2.038612	2.027919	2.013049	2.005251	2.001365	2.000281	2.000046	2.000006	2.000001	2
134.25	4	4	2.101923	2.101535	2.101022	2.100508	2.099904	2.098515	2.096371	2.093863	2.087932	2.081093	2.066051	2.051457	2.038635	2.027951	2.013081	2.005273	2.001374	2.000284	2.000047	2.000006	2.000001	2
134.5	4	4	2.10182	2.101434	2.100922	2.10041	2.099807	2.098422	2.096285	2.093783	2.087867	2.081045	2.066033	2.051465	2.038659	2.027984	2.013113	2.005294	2.001382	2.000287	2.000047	2.000006	2.000001	2
134.75	4	4	2.101718	2.101333	2.100822	2.100312	2.09971	2.09833	2.096198	2.093703	2.087802	2.080997	2.066016	2.051471	2.038683	2.028016	2.013146	2.005316	2.001391	2.000289	2.000048	2.000006	2.000001	2
135	4	4	2.101617	2.101232	2.100723	2.100214	2.099614	2.098237	2.096111	2.093623	2.087738	2.080948	2.065999	2.051478	2.038706	2.028048	2.013178	2.005337	2.0014	2.000292	2.000048	2.000006	2.000001	2
135.25	4	4	2.101515	2.101132	2.100624	2.100117	2.099519	2.098145	2.096025	2.093543	2.087673	2.0809	2.065981	2.051485	2.038729	2.02808	2.01321	2.005358	2.001409	2.000294	2.000049	2.000006	2.000001	2
135.5	4	4	2.101414	2.101032	2.100526	2.100019	2.099423	2.098053	2.095939	2.093464	2.087609	2.080852	2.065964	2.051492	2.038752	2.028112	2.013242	2.00538	2.001418	2.000297	2.00005	2.000007	2.000001	2
135.75	4	4	2.101313	2.100932	2.100427	2.099922	2.099328	2.097962	2.095853	2.093385	2.087545	2.080804	2.065946	2.051498	2.038775	2.028144	2.013274	2.005401	2.001427	2.0003	2.00005	2.000007	2.000001	2
136	4	4	2.101213	2.100832	2.100329	2.099826	2.09																	

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
141.75	4	4	2.098974	2.098616	2.098144	2.097671	2.097113	2.095833	2.093854	2.091534	2.086035	2.079661	2.065504	2.051617	2.039281	2.028864	2.014021	2.005913	2.001647	2.000369	2.000066	2.00001	2.000001	2
142	4	4	2.09888	2.098523	2.098052	2.09758	2.097024	2.095747	2.093773	2.091446	2.085973	2.079614	2.065484	2.05162	2.039301	2.028893	2.014051	2.005934	2.001657	2.000372	2.000067	2.00001	2.000001	2
142.25	4	4	2.098786	2.09843	2.09796	2.09749	2.096935	2.095661	2.093692	2.091385	2.085911	2.079567	2.065465	2.051624	2.03932	2.028921	2.014081	2.005955	2.001667	2.000375	2.000068	2.00001	2.000001	2
142.5	4	4	2.098692	2.098337	2.097868	2.097399	2.096846	2.095575	2.093612	2.09131	2.08585	2.07952	2.065446	2.051627	2.039339	2.028949	2.014111	2.005976	2.001676	2.000378	2.000069	2.00001	2.000001	2
142.75	4	4	2.098598	2.098245	2.097777	2.097309	2.096757	2.09549	2.093532	2.091235	2.085789	2.079473	2.065426	2.05163	2.039358	2.028977	2.014141	2.005997	2.001685	2.000381	2.000069	2.00001	2.000001	2
143	4	4	2.098505	2.098152	2.097686	2.097219	2.096669	2.095405	2.093451	2.091161	2.085727	2.079426	2.065407	2.051633	2.039377	2.029005	2.014171	2.006019	2.001695	2.000384	2.00007	2.00001	2.000001	2
143.25	4	4	2.098412	2.09806	2.097595	2.09713	2.096581	2.09532	2.093371	2.091087	2.085666	2.079379	2.065388	2.051636	2.039396	2.029032	2.014201	2.00604	2.001704	2.000387	2.000071	2.00001	2.000001	2
143.5	4	4	2.098319	2.097969	2.097504	2.09704	2.096493	2.095235	2.093292	2.091013	2.085605	2.079332	2.065368	2.051639	2.039414	2.02906	2.014231	2.006061	2.001714	2.00039	2.000072	2.000011	2.000001	2
143.75	4	4	2.098227	2.097877	2.097414	2.096951	2.096405	2.095151	2.093212	2.090939	2.085544	2.079286	2.065349	2.051641	2.039433	2.029088	2.014261	2.006082	2.001724	2.000393	2.000072	2.000011	2.000001	2
144	4	4	2.098135	2.097786	2.097324	2.096862	2.096317	2.095067	2.093133	2.090865	2.085484	2.079239	2.065329	2.051644	2.039451	2.029115	2.014291	2.006103	2.001733	2.000396	2.000073	2.000011	2.000001	2
144.25	4	4	2.098043	2.097695	2.097234	2.096773	2.09623	2.094982	2.093054	2.090791	2.085423	2.079192	2.065309	2.051646	2.039469	2.029142	2.01432	2.006124	2.001743	2.0004	2.000074	2.000011	2.000001	2
144.5	4	4	2.097951	2.097604	2.097144	2.096685	2.096143	2.094898	2.092974	2.090718	2.085362	2.079145	2.06529	2.051649	2.039487	2.029169	2.01435	2.006145	2.001752	2.000403	2.000075	2.000011	2.000001	2
144.75	4	4	2.097859	2.097513	2.097055	2.096597	2.096056	2.094815	2.092896	2.090645	2.085302	2.079099	2.06527	2.051651	2.039505	2.029196	2.014379	2.006167	2.001762	2.000406	2.000076	2.000011	2.000001	2
145	4	4	2.097768	2.097423	2.096966	2.096509	2.095969	2.094731	2.092817	2.090572	2.085241	2.079052	2.06525	2.051653	2.039523	2.029223	2.014409	2.006188	2.001772	2.000409	2.000076	2.000011	2.000001	2
145.25	4	4	2.097677	2.097332	2.096877	2.096421	2.095883	2.094648	2.092738	2.090499	2.085181	2.079006	2.06523	2.051655	2.03954	2.02925	2.014438	2.006209	2.001781	2.000412	2.000077	2.000012	2.000001	2
145.5	4	4	2.097586	2.097243	2.096788	2.096333	2.095797	2.094565	2.092656	2.090426	2.085121	2.078959	2.06521	2.051657	2.039558	2.029276	2.014467	2.00623	2.001791	2.000416	2.000078	2.000012	2.000001	2
145.75	4	4	2.097496	2.097153	2.096699	2.096246	2.095711	2.094482	2.092582	2.090353	2.085061	2.078913	2.065191	2.051659	2.039575	2.029303	2.014497	2.006251	2.001801	2.000419	2.000079	2.000012	2.000001	2
146	4	4	2.097405	2.097063	2.096611	2.096159	2.095625	2.094399	2.092504	2.090281	2.085001	2.078866	2.065171	2.051661	2.039593	2.029329	2.014526	2.006272	2.00181	2.000422	2.00008	2.000012	2.000001	2
146.25	4	4	2.097315	2.096974	2.096523	2.096072	2.095539	2.094317	2.092426	2.090208	2.08494	2.07882	2.06515	2.051662	2.03961	2.029356	2.014555	2.006293	2.00182	2.000425	2.000081	2.000012	2.000001	2
146.5	4	4	2.097225	2.096885	2.096435	2.095985	2.095454	2.094234	2.092349	2.090136	2.084881	2.078773	2.06513	2.051664	2.039627	2.029382	2.014584	2.006314	2.00183	2.000429	2.000081	2.000013	2.000002	2
146.75	4	4	2.097136	2.096796	2.096347	2.095898	2.095369	2.094152	2.092271	2.090064	2.084821	2.078727	2.06511	2.051665	2.039644	2.029408	2.014613	2.006335	2.001839	2.000432	2.000082	2.000013	2.000002	2
147	4	4	2.097046	2.096708	2.09626	2.095812	2.095284	2.09407	2.092194	2.089992	2.084761	2.078681	2.06509	2.051667	2.03966	2.029434	2.014642	2.006356	2.001849	2.000435	2.000083	2.000013	2.000002	2
147.25	4	4	2.096957	2.096619	2.096173	2.095726	2.095199	2.093989	2.092117	2.08992	2.084702	2.078635	2.06507	2.051668	2.039677	2.029459	2.014671	2.006377	2.001859	2.000439	2.000084	2.000013	2.000002	2
147.5	4	4	2.096868	2.096531	2.096086	2.09564	2.095114	2.093907	2.09204	2.089849	2.084642	2.078589	2.06505	2.051669	2.039693	2.029485	2.014699	2.006398	2.001869	2.000442	2.000085	2.000013	2.000002	2
147.75	4	4	2.096779	2.096443	2.095999	2.095554	2.09503	2.093826	2.091963	2.089777	2.084583	2.078542	2.065029	2.05167	2.03971	2.029511	2.014728	2.006419	2.001879	2.000445	2.000086	2.000013	2.000002	2
148	4	4	2.096691	2.096356	2.095912	2.095469	2.094946	2.093745	2.091887	2.089706	2.084524	2.078496	2.065009	2.051671	2.039726	2.029536	2.014757	2.00644	2.001889	2.000449	2.000087	2.000014	2.000002	2
148.25	4	4	2.096602	2.096268	2.095826	2.095384	2.094862	2.093664	2.09181	2.089635	2.084465	2.07845	2.064989	2.051672	2.039742	2.029562	2.014786	2.006461	2.001898	2.000452	2.000087	2.000014	2.000002	2
148.5	4	4	2.096514	2.096181	2.09574	2.095299	2.094778	2.093583	2.091734	2.089564	2.084405	2.078404	2.064968	2.051673	2.039758	2.029587	2.014814	2.006482	2.001908	2.000455	2.000088	2.000014	2.000002	2
148.75	4	4	2.096426	2.096094	2.095654	2.095214	2.094695	2.093502	2.091658	2.089493	2.084347	2.078358	2.064948	2.051673	2.039774	2.029612	2.014843	2.006503	2.001918	2.000459	2.000089	2.000014	2.000002	2
149	4	4	2.096339	2.096007	2.095568	2.095129	2.094611	2.093422	2.091582	2.089422	2.084288	2.078313	2.064927	2.051674	2.03979	2.029637	2.014871	2.006523	2.001928	2.000462	2.00009	2.000014	2.000002	2
149.25	4	4	2.096251	2.095921	2.095483	2.095045	2.094528	2.093342	2.091506	2.089351	2.084229	2.078267	2.064907	2.051675	2.039806	2.029662	2.014899	2.006544	2.001938	2.000466	2.000091	2.000015	2.000002	2
149.5	4	4	2.096164	2.095834	2.095397	2.094961	2.094445	2.093262	2.09143	2.089281	2.08417	2.078221	2.064886	2.051675	2.039821	2.029686	2.014927	2.006565	2.001948	2.000469	2.000092	2.000015	2.000002	2
149.75	4	4	2.096077	2.095748	2.095312	2.094877	2.094362	2.093187	2.091355	2.089211	2.084112	2.078175	2.064866	2.051675	2.039837	2.029711	2.014956	2.006586	2.001958	2.000473	2.000093	2.000015	2.000002	2
150	4	4	2.09599	2.095662	2.095227	2.094793	2.09428	2.093102	2.09128	2.08914	2.084053	2.07813	2.064845	2.051676	2.039852	2.029736	2.014984	2.006607	2.001968	2.000476	2.000094	2.000015	2.000002	2
150.25	4	4	2.095904	2.095576	2.095143	2.094709	2.094198	2.093023	2.091205	2.089071	2.083995	2.078084	2.064824	2.051676	2.039868	2.02976	2.015012	2.006628	2.001978	2.00048	2.000095	2.000015	2.000002	2
150.5	4	4	2.095817	2.095491	2.095058	2.094626	2.094115	2.092943	2.09113	2.089	2.083936	2.078038	2.064804	2.051676	2.039883	2.029784	2.01504	2.006649	2.001988	2.000483	2.000096	2.000015	2.000002	2
150.75	4	4	2.095731	2.095405	2.094974	2.094543	2.094033	2.092864	2.091055	2.088931	2.083878	2.077993	2.064783	2.051676	2.039898	2.029809	2.015068	2.006669	2.001998	2.000487	2.000097	2.000015	2.000002	2
151	4	4	2.095645	2.09532	2.09489	2.09446	2.093952	2.092785	2.09098	2.088861	2.08382	2.077947	2.064762	2.051676	2.039913	2.029833	2.015095	2.00669	2.002008	2.00049	2.000098	2.000016	2.000002	2
151.25	4	4	2.09556	2.095235	2.094806	2.094377	2.09387	2.092706	2.090906	2.088792	2.083762	2.077902	2.064741	2.051675	2.039927	2.029857	2.015123	2.006711	2.002018	2.000494	2.000098	2.000016	2.000002	2
151.5	4	4	2.095474	2.09515	2.094722	2.094294	2.093789	2.092628	2.090832	2.088722	2.083704	2.077856	2.06472	2.051										

RA2000-PERC-1 TABULAR MOUNDING RESULTS

Time	NodeElev	Wet	x: 0.00	x: 2.50	x: 4.51	x: 6.52	x: 8.53	x: 12.55	x: 17.58	x: 22.60	x: 32.65	x: 42.70	x: 62.80	x: 82.90	x: 103.00	x: 123.10	x: 163.30	x: 203.50	x: 253.75	x: 304.00	x: 354.25	x: 404.50	x: 454.75	x: 505.00
157.5	4	4	2.093483	2.093178	2.092773	2.092369	2.091891	2.090795	2.089096	2.0871	2.082341	2.076779	2.06421	2.051643	2.040263	2.030421	2.015797	2.007225	2.002272	2.000586	2.000124	2.000022	2.000003	2
157.75	4	4	2.093402	2.093098	2.092694	2.092291	2.091815	2.09072	2.089025	2.087034	2.082285	2.076735	2.064188	2.05164	2.040275	2.030442	2.015823	2.007245	2.002283	2.00059	2.000125	2.000022	2.000003	2
158	4	4	2.093322	2.093018	2.092616	2.092213	2.091738	2.090646	2.088955	2.086968	2.08223	2.076691	2.064166	2.051638	2.040287	2.030463	2.015849	2.007265	2.002293	2.000594	2.000126	2.000022	2.000003	2
158.25	4	4	2.093242	2.092939	2.092537	2.092135	2.091661	2.090572	2.088885	2.086902	2.082175	2.076646	2.064145	2.051635	2.040298	2.030485	2.015875	2.007285	2.002303	2.000598	2.000128	2.000022	2.000003	2
158.5	4	4	2.093162	2.092859	2.092459	2.092058	2.091585	2.090498	2.088815	2.086837	2.082119	2.076602	2.064123	2.051633	2.04031	2.030505	2.015901	2.007306	2.002314	2.000602	2.000129	2.000023	2.000003	2
158.75	4	4	2.093082	2.09278	2.092381	2.091981	2.091509	2.090425	2.088745	2.086771	2.082064	2.076558	2.064101	2.05163	2.040322	2.030526	2.015926	2.007326	2.002324	2.000606	2.00013	2.000023	2.000003	2
159	4	4	2.093003	2.092701	2.092303	2.091904	2.091433	2.090351	2.088675	2.086706	2.082008	2.076514	2.064079	2.051627	2.040334	2.030547	2.015952	2.007346	2.002335	2.00061	2.000131	2.000023	2.000003	2
159.25	4	4	2.092923	2.092623	2.092225	2.091827	2.091357	2.090278	2.088606	2.086641	2.081953	2.07647	2.064058	2.051625	2.040345	2.030568	2.015978	2.007366	2.002345	2.000614	2.000132	2.000023	2.000003	2
159.5	4	4	2.092844	2.092544	2.092147	2.09175	2.091281	2.090204	2.088537	2.086576	2.081898	2.076426	2.064036	2.051622	2.040357	2.030588	2.016004	2.007387	2.002355	2.000618	2.000133	2.000024	2.000003	2
159.75	4	4	2.092765	2.092466	2.092067	2.091674	2.091206	2.090132	2.088467	2.08651	2.081843	2.076382	2.064014	2.051619	2.040368	2.030609	2.016029	2.007407	2.002366	2.000622	2.000134	2.000024	2.000004	2
160	4	4	2.092686	2.092388	2.091992	2.091597	2.091131	2.090059	2.088398	2.086446	2.081788	2.076338	2.063992	2.051616	2.040379	2.030629	2.016055	2.007427	2.002376	2.000626	2.000136	2.000024	2.000004	2
160.25	4	4	2.092607	2.09231	2.091915	2.091521	2.091056	2.089986	2.088329	2.086381	2.081733	2.076294	2.06397	2.051613	2.04039	2.030649	2.01608	2.007447	2.002387	2.000629	2.000137	2.000025	2.000004	2
160.5	4	4	2.092529	2.092232	2.091838	2.091445	2.090981	2.089913	2.08826	2.086316	2.08179	2.076251	2.063948	2.05161	2.040401	2.030669	2.016105	2.007467	2.002397	2.000633	2.000138	2.000025	2.000004	2
160.75	4	4	2.092451	2.092154	2.091762	2.091369	2.090906	2.089841	2.088192	2.086252	2.081624	2.076207	2.063926	2.051607	2.040412	2.030689	2.016131	2.007487	2.002408	2.000638	2.000139	2.000025	2.000004	2
161	4	4	2.092372	2.092077	2.091685	2.091294	2.090831	2.089769	2.088123	2.086188	2.08157	2.076163	2.063904	2.051603	2.040423	2.03071	2.016156	2.007507	2.002418	2.000642	2.00014	2.000025	2.000004	2
161.25	4	4	2.092294	2.092	2.091609	2.091218	2.090757	2.089697	2.088054	2.086123	2.081515	2.076119	2.063882	2.0516	2.040434	2.030729	2.016181	2.007527	2.002429	2.000646	2.000142	2.000026	2.000004	2
161.5	4	4	2.092217	2.091922	2.091532	2.091143	2.090682	2.089625	2.087986	2.086059	2.081461	2.076076	2.06386	2.051597	2.040444	2.030749	2.016207	2.007547	2.002439	2.00065	2.000143	2.000026	2.000004	2
161.75	4	4	2.092139	2.091845	2.091456	2.091067	2.090608	2.089553	2.087918	2.085995	2.081407	2.076032	2.063838	2.051593	2.040455	2.030769	2.016232	2.007567	2.00245	2.000654	2.000144	2.000026	2.000004	2
162	4	4	2.092062	2.091769	2.091381	2.090992	2.090534	2.089481	2.08785	2.085931	2.081352	2.075989	2.063816	2.05159	2.040466	2.030788	2.016257	2.007587	2.00246	2.000658	2.000145	2.000026	2.000004	2
162.25	4	4	2.091985	2.091692	2.091305	2.090918	2.09046	2.08941	2.087782	2.085868	2.081298	2.075945	2.063794	2.051586	2.040476	2.030808	2.016282	2.007607	2.002471	2.000662	2.000146	2.000027	2.000004	2
162.5	4	4	2.091908	2.091616	2.091229	2.090843	2.090387	2.089339	2.087714	2.085804	2.081244	2.075902	2.063772	2.051583	2.040486	2.030827	2.016306	2.007627	2.002481	2.000666	2.000148	2.000027	2.000004	2
162.75	4	4	2.09183	2.091539	2.091154	2.090768	2.090313	2.089267	2.087647	2.085741	2.08119	2.075858	2.06375	2.051579	2.040496	2.030847	2.016331	2.007647	2.002492	2.00067	2.000149	2.000027	2.000004	2
163	4	4	2.091754	2.091463	2.091079	2.090694	2.09024	2.089196	2.087579	2.085677	2.081136	2.075815	2.063728	2.051575	2.040507	2.030866	2.016356	2.007667	2.002502	2.000674	2.00015	2.000028	2.000004	2
163.25	4	4	2.091677	2.091387	2.091004	2.09062	2.090167	2.089125	2.087512	2.085614	2.081083	2.075772	2.063706	2.051571	2.040517	2.030885	2.016381	2.007687	2.002513	2.000678	2.000151	2.000028	2.000004	2
163.5	4	4	2.091601	2.091312	2.090929	2.090546	2.090094	2.089055	2.087445	2.085551	2.081029	2.075728	2.063684	2.051567	2.040526	2.030904	2.016405	2.007707	2.002523	2.000683	2.000153	2.000028	2.000004	2
163.75	4	4	2.091525	2.091236	2.090854	2.090472	2.090021	2.088984	2.087378	2.085488	2.080975	2.075685	2.063662	2.051563	2.040536	2.030923	2.01643	2.007727	2.002534	2.000687	2.000154	2.000029	2.000004	2
164	4	4	2.091449	2.091161	2.090779	2.090398	2.089948	2.088914	2.087311	2.085425	2.080922	2.075642	2.063639	2.051559	2.040546	2.030942	2.016454	2.007747	2.002545	2.000691	2.000155	2.000029	2.000004	2
164.25	4	4	2.091373	2.091085	2.090705	2.090325	2.089875	2.088843	2.087244	2.085362	2.080868	2.075599	2.063617	2.051555	2.040556	2.030961	2.016479	2.007766	2.002555	2.000695	2.000156	2.000029	2.000005	2
164.5	4	4	2.091297	2.09101	2.090631	2.090251	2.089803	2.088773	2.087177	2.085299	2.080815	2.075556	2.063595	2.051551	2.040565	2.030979	2.016503	2.007787	2.002566	2.000699	2.000158	2.00003	2.000005	2
164.75	4	4	2.091221	2.090935	2.090557	2.090178	2.089731	2.088703	2.087111	2.085237	2.080761	2.075513	2.063573	2.051547	2.040575	2.030998	2.016528	2.007806	2.002576	2.000704	2.000159	2.00003	2.000005	2
165	4	4	2.091146	2.090861	2.090483	2.090105	2.089659	2.088634	2.087044	2.085175	2.080708	2.07547	2.06355	2.051543	2.040584	2.031016	2.016552	2.007826	2.002587	2.000708	2.00016	2.00003	2.000005	2
165.25	4	4	2.091071	2.090786	2.090409	2.090032	2.089587	2.088564	2.086978	2.085112	2.080655	2.075427	2.063528	2.051538	2.040594	2.031035	2.016576	2.007846	2.002598	2.000712	2.000162	2.000031	2.000005	2
165.5	4	4	2.090996	2.090712	2.090335	2.089959	2.089515	2.088494	2.086912	2.08505	2.080602	2.075384	2.063506	2.051534	2.040603	2.031053	2.0166	2.007865	2.002608	2.000716	2.000163	2.000031	2.000005	2
165.75	4	4	2.090921	2.090637	2.090262	2.089887	2.089443	2.088425	2.086846	2.084988	2.080549	2.075341	2.063483	2.051529	2.040612	2.031071	2.016624	2.007885	2.002619	2.000721	2.000164	2.000031	2.000005	2
166	4	4	2.090846	2.090563	2.090189	2.089814	2.089372	2.088356	2.08678	2.084926	2.080496	2.075298	2.063461	2.051525	2.040621	2.031089	2.016649	2.007905	2.00263	2.000725	2.000166	2.000031	2.000005	2
166.25	4	4	2.090772	2.090489	2.090116	2.089742	2.089301	2.088286	2.086714	2.084864	2.080443	2.075256	2.063439	2.05152	2.04063	2.031107	2.016672	2.007924	2.00264	2.000729	2.000167	2.000032	2.000005	2
166.5	4	4	2.090697	2.090416	2.090043	2.08967	2.089229	2.088217	2.086648	2.084802	2.080391	2.075213	2.063416	2.051515	2.040639	2.031125	2.016696	2.007944	2.002651	2.000733	2.000168	2.000032	2.000005	2
166.75	4	4	2.090623	2.090342	2.08997	2.089598	2.089158	2.088149	2.086583	2.084741	2.080338	2.07517	2.063394	2.051511	2.040648	2.031143	2.01672	2.007964	2.002661	2.000738	2.00017	2.000032	2.000005	2
167	4	4	2.090549	2.090269	2.089897	2.089526	2.089087	2.08808	2.086518	2.084679	2.080286	2.075128	2.063372	2.051506	2.040657	2.031161	2.016744	2.007983	2.002672	2.000742	2.000171	2.000033	2.000005	2
167.25	4	4	2.090475	2.090195	2.089825	2.089454	2.089017	2.088011	2.086452	2.084618	2.080233	2.075												





3820 Northdale Blvd, Suite 202
Tampa, FL 33624
800.422.1095 | wright-pierce.com

TITLE SEARCH REPORT

American Government Services Corporation
3812 W. Linebaugh Avenue
Tampa, Florida 33618
(813) 933-3322

AGSC Search Number: 32697
Site Address: Gulf Blvd. St. Pete
Beach

Contractor's Tax I.D. No.: 59-2346160

THE UNDERSIGNED does hereby certify that a search has been made of the Public Records of Pinellas County, State of Florida for ECHO UES, INC., as to the following:

Legal Description: Tract A, LESS the North 120 feet, LESS the East 113.62 feet, LIDO BEACH SUBDIVISION, Section 7, Township 32 South, Range 16 East, as recorded in Plat Book 34, Page 7, Public Records of Pinellas County, Florida.

Owner(s): Pinellas County, a political subdivision of the State of Florida

By: Order of Taking

From: Clerk of the Circuit Court

Dated: September 14, 1967

Filed and Recorded: September 14, 1967

In Official Records:

Book No.: 2675 Page: 444

Note: Notice of Lis Pendens recorded in Official Records Book 2522, Page 364; Final Judgment recorded in Official Records Book 2675, Page 444.

Probated Estates: None

Guardianships: None

Contiguous Lands: None

Five Year History: None

Corporate Status: None

Right of Way Instruments: None

TIITF Reservations and Releases: None

Encumbrances:

1. Easement for Right to use for walking access with reservation to revoke, as set forth in Deed from Lido Beach Incorporated of St. Petersburg, Florida, also known as Lido Beach Corporation of St. Petersburg, Florida, a Florida corporation, to Milton Sierad, dated November 1, 1954 and recorded November 12, 1954 in Deed Book 1504, Page 407.
2. Easement between Pinellas County, a political subdivision of the State of Florida and Florida Power Corporation, a Florida corporation, dated January 16, 1969 and recorded March 11, 1969 in Official Records Book 3032, Page 385.

3. Matters as set forth on the Plat of Lido Beach recorded in Plat Book 34, Page 7.

Chain of Title:

1. Warranty Deed from Richard Langford Locke, Attorney for the heirs of E. J. Locke, deceased, to Georgina J. L. Locke and Ethel B. Locke, dated November 15, 1904 and recorded December 9, 1904 in Deed Book 23, Page 180, of the Public Records of Hillsborough County, Florida. (contains additional property)
2. Quit Claim Deed from Langford J. Locke and Violet A. Locke, husband and wife, to Thomas Courtenay Locke, dated March 14, 1924 and recorded June 2, 1924 in Deed Book 202, Page 473. Note: We did not find of record a deed into Langford J. Locke or Violet A. Locke. (contains additional property)
3. Quit Claim Deed from Ethel Beatrice Locke, unmarried, to Thomas Courtenay Locke, dated March 14, 1924 and recorded June 2, 1924 in Deed Book 205, Page 47. (contains additional property)
4. Warranty Deed from Thomas Courtenay Locke, unmarried, to James R. Bussey, dated May 20, 1924 and recorded June 2, 1924 in Deed Book 199, Page 119. (contains additional property)
5. Warranty Deed from Georgina Jane Locke Atkinson, (Nee Georgina Jane Locke) joined by her husband, James Lindahl Atkinson, to James R. Bussey, dated May 31, 1924 and recorded November 22, 1924 in Deed Book 221, Page 170. (contains additional property)
6. Warranty Deed from James R. Bussey and Frances M. Bussey, his wife, to S. H. McGhee, dated February 2, 1925 and recorded April 9, 1925 in Deed Book 276, Page 72. (contains additional property)
7. Masters Deed from Harry R. Hewitt, as Special Master in Chancery, to James R. Bussey Company, dated June 7, 1928 and recorded in Deed Book 575, Page 125. (contains additional property)
8. Fee Simple Deed from James R. Bussey, Frances M. Bussey and Sam H. Mahn, Jr., as Directors and Trustees of James R. Bussey Company, a dissolved Florida corporation, to P. J. Sergi, dated April 21, 1937 and recorded April 24, 1937 in Deed Book 770, Page 109. (contains additional property)
9. Warranty Deed from Pasquale J. Sergi, also known as P. J. Sergi, an unmarried man, to Lido Beach Corporation of St. Petersburg, Florida, a Florida Corporation, dated July 5, 1951 and recorded July 5, 1951 in Deed Book 1329, Page 409. (contains additional property)
10. Plat of Lido Beach recorded April 27, 1954 in Plat Book 34, Page 7. Note: Copy provided with encumbrances.

11. Order of Taking in favor of Pinellas County, a political subdivision of the State of Florida, against Lido Beach Corporation of St. Petersburg, Inc., a Florida corporation, dated February 28, 1967 and recorded February 28, 1967 in Official Records Book 2556, Page 55. Note: Notice of Lis Pendens recorded in Official Records Book 2522, Page 364; Final Judgment recorded in Official Records Book 2675, Page 444. (vesting instrument)

Note: All of the above instruments were recorded in the Public Records of Pinellas County Florida, unless otherwise noted.

Taxes:

Account No. / Parcel No.: R82358 / 07-32-16-51660-000-0011
Assessed Value: \$1,249,849.00 Taxes are Exempt.
For Year of: 2022 Homestead: No
Delinquent: None

Name and Mailing Address as listed on Tax Roll:
Pinellas County
Attn: Water Dept
315 Court ST RM 300
Clearwater, FL 33756

Name Search:

A twenty-year search has been performed for outstanding judgments (certified) and liens on every record owner for the last 20 years, including judgments and liens against said owners which predate them taking title.

Certification:**AS TO THE ORIGINAL TITLE REPORT:**

The undersigned hereby certifies that the foregoing Title Search Report reflects a comprehensive search of the Public Records of Pinellas County, Florida, showing the apparent ownership of the lands described above, together with outstanding encumbrances affecting the lands.

American Government Services Corporation assumes no responsibility for any defects or omissions in or from the instruments appearing in the chain of title to the property described herein, which defects or omissions would render such instruments void.

This report is furnished at your request for information only and is not to be construed as a title opinion or a guarantee of title. It is not a title insurance policy.

The liability of American Government Services Corporation is limited to \$1000.00 per report and shall not in any event exceed the maximum liability as set forth under F.S. 627.7843 (3).

Searched from 1912 through October 10, 2023 at 8:00 a.m.:



Wendi McAleese
American Government Services Corporation



Parcel Summary (as of 13-Oct-2023)				Parcel Map		
Parcel Number 07-32-16-51660-000-0011						
Owner Name PINELLAS COUNTY						
Property Use 9164 Water & Sewer Plants						
Site Address GULF BLVD ST PETE BEACH, FL 33706						
Mailing Address ATTN: WATER DEPT 315 COURT ST RM 300 CLEARWATER, FL 33756-5165						
Legal Description LIDO BEACH SUB THAT PART OF TRACT A DESC AS COM AT SE COR OF TRACT A TH N88DW 113.63FT TO POB TH N02DE 191.5FT TH N88DW 203FT(S) TO E R/W LN OF GULF BLVD TH S14DE 199FT (S) TO SW COR OF TRACT A TH S88DE 149.99FT TO POB						
Current Tax District ST PETE BEACH (SPB)						
Year Built						
Heated SF	Gross SF	Living Units	Buildings			
			0			
Exemptions						
Year	Homestead	Use %	Status	Property Exemptions & Classifications		
2025	No	0%		Government		
2024	No	0%				
2023	No	0%				
Miscellaneous Parcel Info						
Last Recorded Deed	Sales Comparison	Census Tract	Evacuation Zone	Flood Zone	Elevation Certificate	Plat Bk/Pg
00000/0000		121030280021	A	Current FEMA Maps	Check for EC	34/7
2023 Final Values						
Year	Just/Market Value	Assessed Value/SOH Cap	County Taxable Value	School Taxable Value	Municipal Taxable Value	
2023	\$1,270,124	\$1,270,124	\$0	\$0	\$0	
Value History (yellow indicates corrected value)						
Year	Homestead Exemption	Just/Market Value	Assessed Value/SOH Cap	County Taxable Value	School Taxable Value	Municipal Taxable Value
2022	N	\$1,259,499	\$1,249,849	\$0	\$0	\$0
2021	N	\$1,191,428	\$1,136,226	\$0	\$0	\$0
2020	N	\$1,133,982	\$1,032,933	\$0	\$0	\$0
2019	N	\$1,050,185	\$939,030	\$0	\$0	\$0
2018	N	\$1,021,462	\$853,664	\$0	\$0	\$0

2022 Tax Information



Do not rely on current taxes as an estimate following a change in ownership. A significant change in taxable value may occur after a transfer due to a loss of exemptions, reset of the Save Our Homes or 10% Cap, and/or market conditions. Please use our **Tax Estimator** to estimate taxes under new ownership.

Tax Bill	2022 Millage Rate	Tax District
View 2022 Tax Bill	15.7325	(SPB)

Sales History

Sale Date	Price	Qualified / Unqualified	Vacant / Improved	Grantor	Grantee	Book / Page
01-Jan-1899						00000/0000

2023 Land Information

Land Area: 0.7761 acres 33,807 sf			Frontage and/or View: None			Seawall: No
Property Use	Land Dimensions	Unit Value	Units	Method	Total Adjustments	Adjusted Value
Utilities	192x176	\$42	33,792	SF	1.0000	\$1,419,264

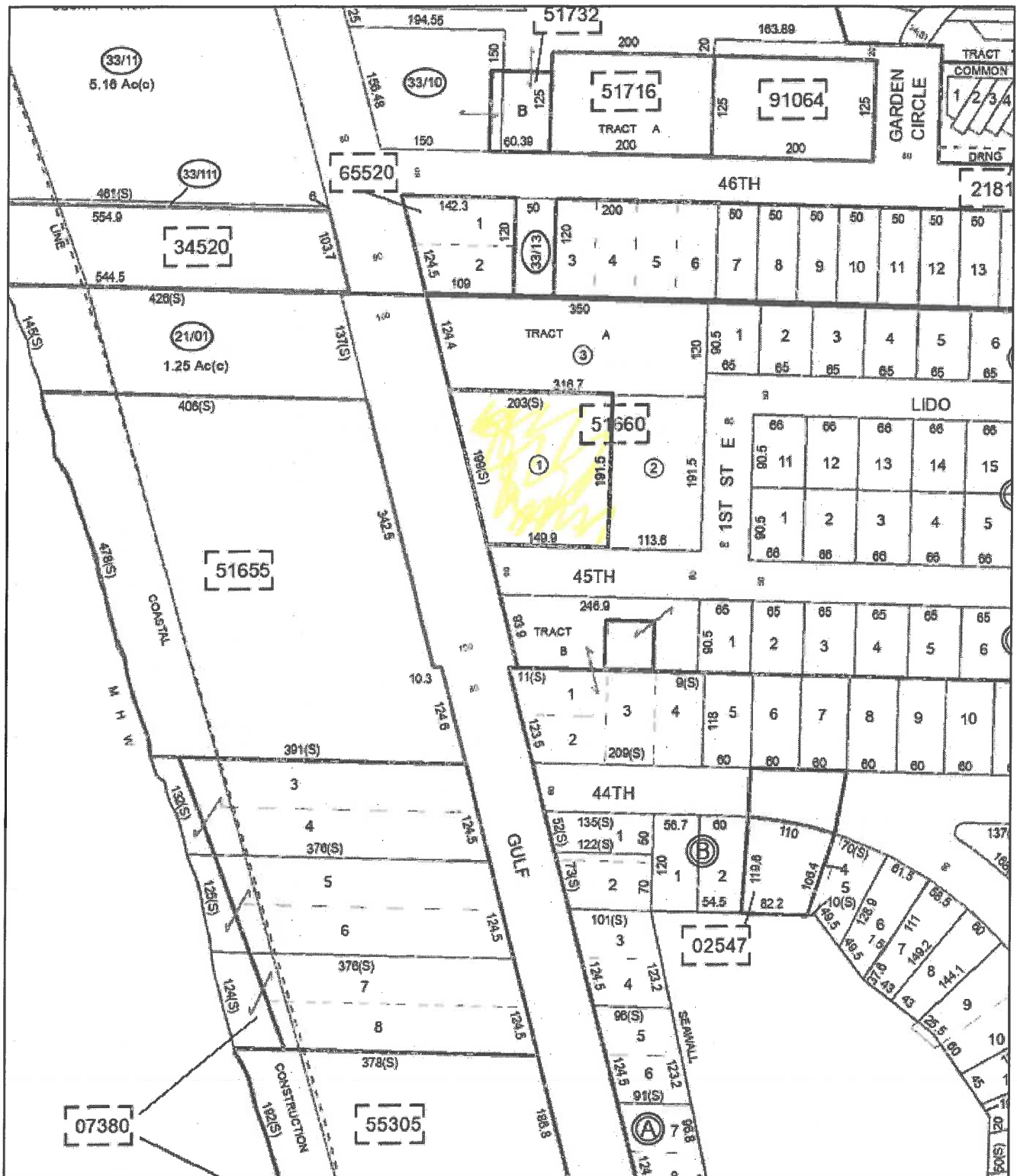
2023 Extra Features

Description	Value/Unit	Units	Total Value as New	Depreciated Value	Year
SWR/WTRPLT	\$150,000.00	1	\$150,000	\$75,000	1950

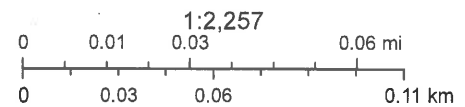
Permit Data

Permit information is received from the County and Cities. This data may be incomplete and may exclude permits that do not result in field reviews (for example for water heater replacement permits). We are required to list all improvements, which may include unpermitted construction. Any questions regarding permits, or the status of non-permitted improvements, should be directed to the permitting jurisdiction in which the structure is located.

Permit Number	Description	Issue Date	Estimated Value
20160044		01/25/2016	\$50,114
PER-H-CB15-02770	MISCELLANEOUS	07/20/2015	\$100,000
20130329	SHED	03/14/2013	\$3,750
20090352	ROOF	04/21/2009	\$25,000



10/13/2023



67 16979

IN THE CIRCUIT COURT OF THE SIXTH JUDICIAL CIRCUIT
OF THE STATE OF FLORIDA IN AND FOR PINELLAS COUNTY

LAW NO. 19,620

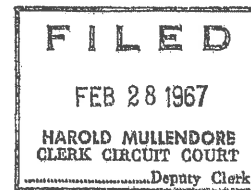
PINELLAS COUNTY, a political sub-
division of the State of Florida,

Petitioner,

vs.

LIDO BEACH CORPORATION OF ST. PETERSBURG,
INC., a Florida corporation,

Defendant.



RECORDED
PINELLAS CO. FLORIDA
HAROLD MULLENDORE, CLERK
FEB 28 9 12 PM '67

ORDER OF TAKING

This cause coming on to be heard by the Court, and it appearing that proper notice was first given to the Defendant, and all persons having or claiming any equity, lien or title in or to the real property described in the Petition, that the Petitioner would apply to this Court on the 27th day of February, A.D. 1967, for an Order of Taking, and the Court being fully advised in the premises, upon consideration, it is, therefore,

ORDERED AND ADJUDGED:

1. That the Court has jurisdiction of the subject matter of this cause;
2. That the pleadings in this cause are sufficient;
3. That the Estimate of Value filed in this cause by the Petitioner was made in good faith, and based upon a valid appraisal;
4. That the Petitioner is entitled to possession of the following described property prior to the entry of a final judgment, upon payment into the Registry of this Court, the deposit hereafter specified:

Tract A, less the north 120 feet, less the east 113.62 feet, Lido Beach Subdivision, Section 7, Township 32 South, Range 16 East, as recorded in Plat Book 34, Page 7, Public Records of Pinellas County, Florida;

and that said deposit of money will fully secure and fully compensate the persons lawfully entitled to compensation, as will be determined ultimately by final judgment of the Court, and which said sum of money to be deposited is in no instance less than double the Estimate of Value, as set by the Petitioner.

PROVIDED, FURTHER, that said sum of money in the total amount of Sixty-Nine Thousand and no/100 (\$69,000.00) Dollars shall be deposited in the Registry of this Court within twenty days after the date of this Order, it being understood that the Petitioner herein has consented to the amount of said deposit.

IT IS FURTHER PROVIDED that, upon making such deposit, the Petitioner shall notify, in writing, all attorneys of record that the deposit has been made, and that, upon making said deposit, Petitioner shall be entitled to possession of the property described in the Petition, without further notice or Order of this Court.

If the Petitioner shall default in the depositing of said sum of money within the time provided, this Order shall be void and of no further force or effect.

DONE AND ORDERED in Chambers in Clearwater, Florida, this 28 day of February, A.D. 1967.

B. J. Shumer
Circuit Judge

IN THE CIRCUIT COURT OF THE SIXTH JUDICIAL CIRCUIT
OF THE STATE OF FLORIDA IN AND FOR PINELLAS COUNTY

CIRCUIT LAW NO. 19,620

PINELLAS COUNTY, a political sub-
division of the State of Florida,

Petitioner,

vs.

LIDO BEACH CORPORATION OF ST.
PETERSBURG, INC., a Florida
corporation,

Defendant.

FILED

DEC 30 1966

HAROLD MULLENDORE
CLERK CIRCUIT COURT
Deputy Clerk

RECORDED
PINELLAS CO. FLORIDA
HAROLD MULLENDORE, CLERK
DEC 30 8 29 PM '66

NOTICE OF LIS PENDENS IN
EMINENT DOMAIN PROCEEDINGS

Notice is hereby given that PINELLAS COUNTY, a political subdivision of the State of Florida, as Petitioner, has this day instituted suit in the Circuit Court of the Sixth Judicial Circuit of the State of Florida, in and for Pinellas County, by filing a Petition in Eminent Domain Proceedings, against all persons and parties having or claiming any interest or lien in or against the following described property, to wit:

Tract A, less the north 120 feet, less the east 113.62 feet, Lido Beach Sub-division, Section 7, Township 32 South, Range 16 East, as recorded in Plat Book 34, Page 7, Public Records of Pinellas County, Florida.

The relief sought is to acquire said property for the use set forth in the Petition filed herein.

IN THE CIRCUIT COURT OF THE SIXTH JUDICIAL CIRCUIT
OF THE STATE OF FLORIDA IN AND FOR PINELLAS COUNTY

LAW NO. 19,620

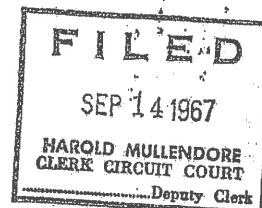
PINELLAS COUNTY, a political sub-
division of the State of Florida,

Petitioner,

vs.

LIDO BEACH CORPORATION OF ST. PETERS-
BURG, INC., a Florida corporation,

Defendant.

FINAL JUDGMENT

It appearing by Stipulation dated the 14th day of
September, 1967, and entered into between Petitioner, PINELLAS
COUNTY, and Defendant, LIDO BEACH CORPORATION OF ST. PETERSBURG,
INC., that all matters in controversy have been amicably
settled, upon consideration,

IT IS ORDERED AND ADJUDGED AS FOLLOWS:

1. The aforesaid Stipulation is confirmed and approved.
2. Full compensation to the fee simple owner of Parcel 3, LIDO BEACH CORPORATION OF ST. PETERSBURG, INC., for the property taken is Eighty-seven Thousand Three Hundred Eighty-two and 49/100 (\$87,382.49) Dollars .
3. From the fund deposited into the Registry of the Court pursuant to the Order of Taking herein, the Clerk is ordered forthwith to pay to the Defendant, LIDO BEACH CORPORATION OF ST. PETERSBURG, INC., the sum of Sixty-nine Thousand (\$69,000.00) Dollars .
4. Petitioner, PINELLAS COUNTY, is hereby directed to pay to the Defendant, LIDO BEACH CORPORATION OF ST. PETERSBURG, INC., the sum of Ten Thousand (\$10,000.00) Dollars
5. The Petitioner, PINELLAS COUNTY, is hereby directed to pay to Fisher, Sauls, Adcock and Keough, the sum of Six Thousand Three Hundred (\$6,300.00) Dollars, said sum constituting attorneys' fees for and on behalf of the Defendant.

RECORDED
PINELLAS CO. FLORIDA
HAROLD MULLENDORE, CLERK
SEP 14 8 37 PM '67

6. The Petitioner, PINELLAS COUNTY, is hereby directed to pay to Frank C. Barrios the sum of One Thousand Four Hundred Fourteen and 93/100 (\$1,414.93) Dollars, said sum constituting appraiser's fees for and on behalf of the Defendant.

7. The Petitioner, PINELLAS COUNTY, is hereby directed to pay to Fisher, Sauls, Adcock and Keough the sum of Six Hundred Sixty-seven and 56/100 (\$667.56) Dollars, said sum constituting the costs incurred by said attorneys in representing the Defendant, LIDO BEACH CORPORATION OF ST. PETERSBURG, INC., in this proceeding.

8. The fee simple title in Parcel 3, legally described as follows, to-wit:

Tract A, less the north 120 feet,
less the east 113.62 feet, LIDO
BEACH SUBDIVISION, Section 7,
Township 32 South, Range 16 East,
as recorded in Plat Book 34, Page
7, Public Records of Pinellas
County, Florida.

heretofore vested in Petitioner, is confirmed and made final and conclusive as against the Defendant, LIDO BEACH CORPORATION OF ST. PETERSBURG, INC., and all persons claiming by, through or under it subsequent to the institution of this proceeding.

DONE AND ORDERED in Chambers in Clearwater, Pinellas County, Florida, this 14th day of September, 1967.

B. J. Danner
Circuit Judge

THIS INDENTURE, Made this 1st day of November, 1954, between LIDO BEACH INCORPORATED OF ST. PETERSBURG, FLORIDA, also known as Lido Beach Corporation of St. Petersburg, Florida, a Florida corporation, with its principal place of business at Lido Beach, Pinellas County, Florida, party of the first part, and MILTON SIERAD, whose mailing address is 2835 Sunset Avenue, Pass-a-Grille Beach, Florida, party of the second part,

W I T N E S S E T H:

That the said party of the first part, for and in consideration of the sum of \$10.00 to it in hand paid, the receipt whereof is hereby acknowledged, has granted, bargained, sold and transferred, and by these presents does grant, bargain, sell and transfer unto the said party of the second part for the use and benefit of all lot owners in the Subdivision of Pinellas County, Florida known as Lido Beach Subdivision, according to the map or plat thereof on file in the Public Records of Pinellas County, Florida in Plat Book 34, page 7, an easement described as follows:

The right to use for walking access to and from the Gulf of Mexico a strip of land 4 ft. wide, described as follows: The southerly 4 feet of the following described property lying west of State Road No. 233, also known as Gulf Boulevard:



That part of Government Lot (1) in Section 7, Township 32 South, Range 16 East, in the form of a parallelogram made by a line running across the north end of said Government Lot One (1) and another line 28 Rods south of the north line and parallel with the same, extending from the Waters of the Gulf of Mexico on the west to the Waters of Boca Ciega Bay on the east, a distance of 116 Rods more or less.

The party of the first part reserves the right to revoke the easement provided in this instrument, but as a condition precedent to the exercise of this power of revocation

LEONARD W. COOPERMAN
ATTORNEY AT LAW
900-05th ST., NORTH
ST. PETERSBURG, FLORIDA

it must place of record another instrument designating another four foot (4 ft.) strip of land which may be used as a substituted easement for that which is provided in this instrument, upon the above described property lying west of said State Road No. 233.

IN WITNESS WHEREOF, the said party of the first part has caused these presents to be signed in its name by its President, and its corporate seal to be affixed, attested by its Secretary, the day and year above written.

LIDO BEACH INCORPORATED OF
ST. PETERSBURG, FLORIDA, also
known as Lido Beach Corporation
of St. Petersburg, Florida

Signed, sealed and
delivered in the
presence of:

By _____
President

[Signature]
As to Fred Berger

ATTEST: [Signature]
Secretary

[Signature]
As to Raymond J. [unclear]

STATE OF NEW YORK)
COUNTY OF NEW YORK)

I HEREBY CERTIFY, That on this 15 day of November, A. D. 1954, before me personally appeared FRED BERGER, President of Lido Beach Incorporated of St. Petersburg, Florida, also known as Lido Beach Corporation of St. Petersburg, Florida, a corporation under the laws of the State of Florida, to me known to be the person described in and who executed the foregoing conveyance to MILTON SIERAD, and he acknowledged the execution thereof to be his free act and deed as such officer, for the uses and purposes therein mentioned; and that the said instrument is the act and deed of said corporation.

WITNESS my signature and official seal at New York, in the County of New York and State of New York, the day and year last aforesaid.

ALEXANDER REINSTEIN
NOTARY PUBLIC

[Signature]
Notary Public

My Commission expires March 30, 1955 -

LEONARD W. COOPERMAN
ATTORNEY AT LAW
400-67th ST., NORTH
ST. PETERSBURG, FLORIDA

STATE OF FLORIDA)
COUNTY OF PINELLAS)

I HEREBY CERTIFY, That on this 20th day of November, A. D. 1954, before me personally appeared RAYMOND J. WEYL, Secretary of Lido Beach Incorporated of St. Petersburg, Florida, also known as Lido Beach Corporation of St. Petersburg, Florida, a corporation under the laws of the State of Florida, to me known to be the person described in and who executed the foregoing conveyance to Milton Sierad, and he acknowledged the execution thereof to be his free act and deed as such officer, for the uses and purposes therein mentioned; and that he affixed thereto the official seal of said corporation, and the said instrument is the act and deed of said corporation.

WITNESS my signature and official seal at St. Petersburg, in the County of Pinellas and State of Florida, this day and year last aforesaid.

Notary Public

My Commission expires:

LEONARD W. COFFMAN
ATTORNEY AT LAW
100-8TH ST., NORTH
ST. PETERSBURG, FLORIDA

- 3 -

Filed for record Nov. 12, 1954 at 2:30 PM, in the book noted above and the record verified. AVERY, Clifford, Clerk of the Circuit Court, Pinellas County, Florida, By W. J. [Signature] Deputy Clerk.

RECORDED
PINELLAS CO. FLORIDA
MAR 11 10 10 AM '69

69024122

D.R. 3032 PAGE 385

ORIGINAL

EASEMENT

THIS INDENTURE, Made this 11 day of March,
A. D. 19 69 between PINELLAS COUNTY, a Political Subdivision of the
State of Florida,

Party of the First Part, GRANTOR herein, and FLORIDA POWER CORPORATION, a
corporation organized and existing under the laws of the State of Florida,
with its principal place of business at 101 Fifth Street South, in the
City of St. Petersburg, County of Pinellas and State of Florida, Party of
the Second Part, GRANTEE herein.

WITNESSETH

A. WHEREAS, the GRANTOR is the owner in fee of a tract of
land in the County of PINELLAS and State of Florida, described on
GRANTEE'S Drawing No. W-1026-E (hereinafter referred to as "drawing") dated
January 16, 1969 attached hereto, incorporated herein and by this
reference made a part hereof; and

B. WHEREAS, GRANTEE is engaged in the business of manufacturing,
transmitting and distributing electric energy to the public; and

C. WHEREAS, GRANTOR is constructing building(s) to be known as
GULF BEACH RESEVOIR AND PUMPING STATION
said building(s) being constructed in part or wholly on that portion of land
described on said drawing (said building(s) and land hereinafter referred
to as "PREMISES"). In connection therewith GRANTOR has requested GRANTEE
to provide, at its expense, such facilities as are necessary to extend electric
service to said PREMISES; and

D. WHEREAS, GRANTEE will construct, install, operate and
maintain all facilities (hereinafter referred to as "FACILITIES") necessary
to provide electric service to the PREMISES and to the general public. The
type, ownership and location of said FACILITIES are shown on attached drawing;
and

E. WHEREAS, GRANTEE is desirous of obtaining an easement
covering the location, construction and maintenance of said FACILITIES,
all in accordance with existing local codes and the National Electrical
Safety Code.

NOW, THEREFORE, for and in consideration of the mutual benefits
hereunder and all mutual covenants and conditions contained herein, GRANTOR
does hereby grant and convey to GRANTEE, for such period of time as it may
require the use of the PREMISES or until the use thereof is abandoned by
GRANTEE, the right, privilege and easement to (1) locate its FACILITIES on,
over, across, through and under said PREMISES within the easement area
shown on said drawing; (2) construct, operate, maintain, repair and remove
its FACILITIES and (3) attain ingress and egress to and upon the PREMISES
for the purpose of exercising rights and privileges herein granted.

The Parties hereto agree as follows:

1. GRANTEE shall have the right to operate, inspect, alter,
improve, repair, remove and rebuild its FACILITIES together with the rights



CANCELLED

ORIGINAL

and privileges necessary and convenient for the full use and enjoyment thereof.

2. GRANTOR shall not utilize the areas in which the FACILITIES are located in any way or manner which would create a dangerous condition with respect to said FACILITIES or create any interference with the construction, reconstruction, removal, repair or safe operation and safe maintenance thereof without written notification to GRANTEE and submission of written plans of such utilization of the easement area and GRANTOR agrees to reimburse GRANTEE for any relocation of the FACILITIES necessitated by GRANTOR'S planned utilization of said easement area, and GRANTOR covenants to indemnify and hold GRANTEE harmless from any and all damages and injuries, whether to persons or property, resulting from interference, from any means whatsoever, with the FACILITIES, to the extent permitted by law.

3. Should GRANTEE remove or abandon the use of its FACILITIES, or fail for any reasonable period of time to exercise the rights herein granted, then in that event all rights and privileges hereunder shall cease and the easement, privileges and rights herein granted shall revert to the GRANTOR.

4. GRANTOR covenants that it has the right to convey this easement and that GRANTEE shall have quiet and peaceful possession, use and enjoyment of said easement.

All covenants, terms, provisions and conditions hereof shall inure to the benefit of and be binding upon the Parties hereto and their respective heirs, administrators, successors or assigns.

IN WITNESS WHEREOF, the GRANTOR has caused these presents to be signed in its name by its Chairman and its official seal to be affixed, attested by its Clerk, the day and year first above mentioned.

Signed, sealed and delivered
in the presence of:

PINELLAS COUNTY, FLORIDA, a Political
Subdivision by and through its Governing
Body, the Board of County Commissioners

Carol M. Cady

Harold M. Mulendore
(Title) Chairman

Attest: HAROLD MULENDORE, CLERK

Harold M. Mulendore

Barry D. Smith
(Title) Deputy Clerk

By Daniel A. Portu
County Attorney

ORIGINAL

STATE OF FLORIDA }
COUNTY OF PINELLAS } ss.

I HEREBY CERTIFY that on this 18th day of February,
A. D. 1969, before me personally appeared Charles F. Rainey
and Ben D. Driver respectively Chairman and
Deputy Clerk of the BOARD OF COUNTY COMMISSIONERS, of PINELLAS
COUNTY, FLORIDA, a Political Subdivision of the State of Florida, to me known
to be the persons described in and who executed the foregoing instrument to the
FLORIDA POWER CORPORATION and severally acknowledged the execution thereof to be
their free act and deed as such officers, for the uses and purposes therein
mentioned; and that they affixed thereto the official seal of said BOARD, and
the said instrument is the act and deed of said BOARD.

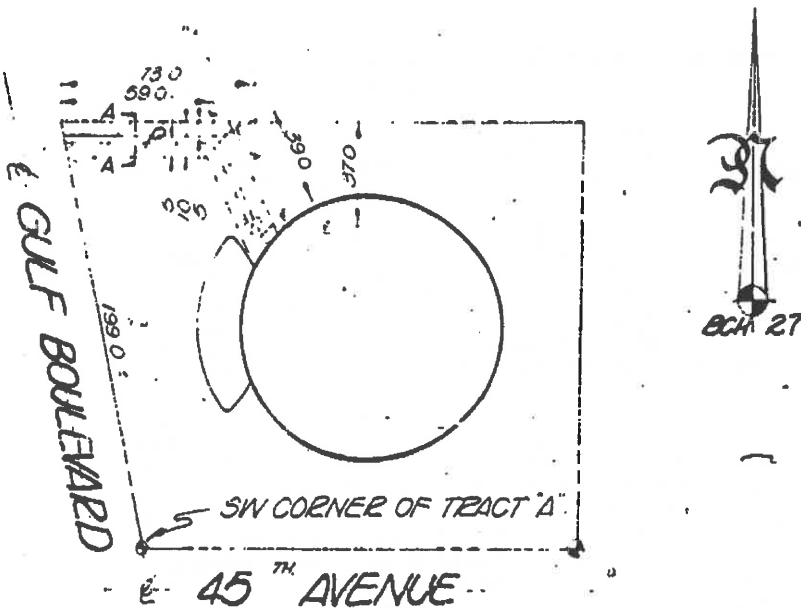
WITNESS my signature and official seal in said County and State,
the day and year last aforesaid.

(NOTARIAL SEAL)

Calphene R. Russell
Notary Public

My Commission Expires:

NOTARY PUBLIC, STATE OF FLORIDA - PLARGE
MY COMMISSION EXPIRES 12/31/70
FORWARDED THROUGH FRED W. D. 1/1/71



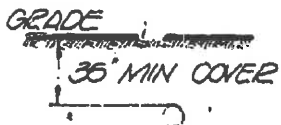
GRANTEE'S FACILITIES

- ☒ UNDERGROUND PRIMARY CONDUIT WITH CABLE
- ☐ TRANSFORMER PAD
- ☐ TRANSFORMER

III F.P.C. EASEMENT AREA
 --- PROPERTY LINE

LEGAL DESCRIPTION

TRACT "A", BLOCK 1, "LIDO BEACH SUBDIVISION",
 AS RECORDED IN PLAT BOOK 34, PAGE 7,
 PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA;
 ALL LYING AND BEING IN SECTION 7, TOWNSHIP
 32 SOUTH, RANGE 16 EAST.

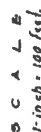


TYPICAL SECTION

FLORIDA POWER CORPORATION DISTRIBUTION ENGINEERING DEPARTMENT	
EASEMENT REQUIREMENTS	
Gulf Beach Reservoir & Pumping Station	
GULF BLVD & 45 AVENUE	
W. O. No.	Date 1-16-69
Drawn R.A.K.	Checked
Approved	
Scale NTS	Dwg. No. W-1026-5

BEING A SUBDIVISION OF A PORTION OF THE NORTH-462-FT. OF GOVERNMENT
LOT-1-IN SECTION-7. TOWNSHIP-32S. RANGE-1E. LYING EAST OF GULF
BOULEVARD (STATE ROAD NO. 699.)
PINELLAS COUNTY FLORIDA

BEING A SUBDIVISION OF A PORTION OF THE NORTH-462-FT. OF GOVERNMENT
LOT-1-IN SECTION-7. TOWNSHIP-32S. RANGE-1E. LYING EAST OF GULF
BOULEVARD (STATE ROAD NO. 699.)
PINELLAS COUNTY FLORIDA

[illegible][illegible]

D E D I C A T I O N : *The undersigned, hereby certifies that it is the owner of the above described Tract of Land, hereby platfied as "LIDO BEACH SUBDIVISION" and that it dedicates to the public all streets, alleys, and public places shown on this plat of the subdivision of said lands.*

LIDO BEACH CORPORATION OF ST. PETERSBURG.

Signed, sealed and delivered in the presence of:

<u>James D. Moore</u>	President
<u>Wm. W. H. H.</u>	Secretary
Witness:	
<u>Charles J. H.</u>	Witness.
<u>William F. H.</u>	Witness.

[illegible]

RESOLUTION OF PARTIAL VACATION OF
Lila Beach Sub
SUBDIVISION HAS BEEN RECORDED IN
O.R. BOOK 10755 PAGE 2651
ON 12-16 1999
KARLENE DOW BLANKER
Clerk of the Circuit Court
By [Signature] Deputy Clerk

James E. Jones
Notary Public, State of Florida at Large
Feb 6, 1946

SURVEYOR'S CERTIFICATE: I hereby certify that on the 12th day of March, A.D. 1944, this property was surveyed and the distances and monuments were set as indicated and the angles and lengths are correct.

George F. Young, Inc.
George F. Young
Fla. Surveyors Register
Fla. Engineers Register

APPROVED for the Board of County Commissioners of Pinellas County, Florida,
this 26 day of April, A.D. 1932.

C. O. Peterson County Engineer

THIS INDENTURE, Made the fourth day of November in the year of our Lord One Thousand Nine Hundred and four between Richard S. B. Roche, of the County of Duval, State of Florida and Margaret D. Roche, and Ethel B. Roche, of the County of Duval, State of Florida

part of the second part, Witnesseth: That the said part 2 of the first part, for and in consideration of the sum of two Dollars, lawful money of the United States of America, to him in hand paid by the said part 2 of the second part at or before the signing and delivery of these presents, the receipt whereof is hereby acknowledged, granted, bargained, sold, conveyed, all confirmed, and by these presents doth grant, bargain, sell, convey, and confirm unto the said parties of the second part, and to their heirs and assigns, forever, all the following piece, parcel, lot, or tract, of land, situate, lying, and being in the County of Duval, State of Florida, and described as follows:

Lot 2 of Lot number one, 30.1, and Section seven, 17, Township numbered thirty-two (32) Range one and (16) East.
More particularly described as follows: That part of lots numbered one (30.1) and two (30.2) of said Township and Range, and containing together the rights and a right lot, and another lot, twenty-eight (28) rods, south of the north line and adjacent to the same, beginning from the E. 1/4 of Sec. 10 and the E. 1/4 of Boca Chico Bay on the east side, a distance of about one hundred and eighty (180) rods more or less, comprising more or less, and being a portion of an island described in the records of the government survey as 'Long Island'.

together with all and singular the appurtenances, hereditaments, and appurtenances thereto belonging or appertaining; and every right, title, or interest, legal or equitable, of the said part 2 of the first part, in and to the same.

TO HAVE AND TO HOLD the same unto the said part 2 of the second part and their heirs and assigns, to their own proper use, benefit, and behoof, forever.

And the said part 2 of the first part, for himself and her heirs, executors, and administrators, do hereby covenant that the said part 2 of the first part, at the date hereof, lawfully seized in fee simple of the above described premises, and in peaceable and undisputed possession of the same; that the said part 2 of the second part, their heirs and assigns, shall, at all times hereafter, have peaceable possession of said premises, without suit, eviction, or disturbance of the said part 2 of the first part, or any person or persons lawfully claiming the same; that said premises are free from all incumbrances and liens of every nature and kind soever, including taxes.

And the said part 2 of the first part, for himself and his heirs, the above described premises, and every part and parcel thereof, with the appurtenances, unto the said part 1 of the second part his heirs and assigns, against the said part 2 of the first part and his heirs and assigns, against all and every person or persons lawfully claiming or to claim the same, shall and will warrant and by these presents forever defend.

IN WITNESS WHEREOF, The said part 1 of the first part has hereunto set his hand and seal, the day and year first above writing.

George H. McMillan
Francis R. Smith

R. J. Baker (Seal.)
Attorney (Seal.)
(Seal.)
(Seal.)
(Seal.)

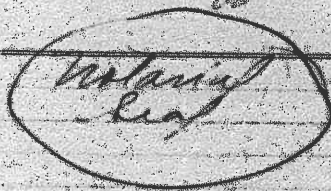
Alabama
THE STATE OF FLORIDA
COUNTY OF Mobile

I hereby certify that on this 23 day of September, A. D. 1904, before me, F. H. Manning, Notary Public, in and for the said County and State, personally appeared R. J. Baker of the County of Mobile, State of Alabama, known to me to be the person whose name is subscribed to the foregoing instrument, and personally acknowledged the execution thereof to be his free act and deed, for the uses and purposes therein mentioned.

And the said she the wife of the said he on an examination taken and made separately and apart from her said husband, acknowledged that she made herself a party to the said Deed for the purpose of

in and to the lands, tenements, and hereditaments therein described and thereby granted and released, and that she executed said Deed freely and voluntarily, and without any compulsion, constraint, apprehension or fear of or from her said husband.

Witness my hand and official seal this 23 day of September, A. D. 1904.



F. H. Manning
Notary Public for Mobile
County, Ala.

Filed Dec 5 1904 and
Recorded Dec 9 1904

W. J. Baker Clerk
W. J. Baker

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That said premises are free from all incumbrances and liens of every nature and kind whatsoever, including taxes for the year 1923 and prior thereto, except a mortgage of \$2500.00

And the said party of the first part, for himself and his heirs, the above described premises and every part and parcel thereof, with the appurtenances unto the said parties of the second part, their heirs and assigns, against the said party of the first part and his heirs and assigns against all and every person or persons lawfully claiming or to claim the same, shall and will warrant and by these presents forever defend.

IN WITNESS WHEREOF the said party of the first part has hereunto set his hand and seal the day and year first above written.

Signed, Sealed and Delivered in presence of

Mary E. Camp.

John J. Lawless

Norris W. Seward (Seal)

(Seal)

(Seal)

(One dollar in Revenue Stamps)

(Seal)

(attached and cancelled.)

(Seal)

STATE OF FLORIDA,
COUNTY OF PINELLAS.)

I HEREBY CERTIFY, That on this 28th day of May A. D. 1924, before me the undersigned authority, personally appeared Norris W. Seward, Unmarried, known to me to be the person described in and who executed the foregoing instrument and severally acknowledged the execution thereof to be his free act and deed for the uses and purposes therein mentioned.

Witness my hand and official seal the date aforesaid.

Mary E. Camp,

Notary Public State at Large

My Commission expires Dec. 19th 1927

(Notarial seal of Mary E. Camp)
Florida.

Filed June 2, 1924 -- 1:30 P.M.

J. N. Brown, Clerk.

M. Mortgage, U. C.

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THIS INDENTURE, Made this 14th day of March A.D., 1924 between LANGFORD J. LOCKE and Violet A. LOCKE, his wife, of the city of Tulsa of the county of TULSA and state of Oklahoma parties of the first part, and THOMAS COURTEWAY LOCKE, of Fort Meavenworth, of the County of and State of Kansas party of the second part,

WITNESSETH, That the said parties of the first part, for and in consideration of the sum of One Dollar (\$1.00) and other valuable considerations in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, have remised, released and quit-claimed, and by these presents do remise, release and quit-claim unto the said party of the second part and their heirs and assigns forever, all the right, title, interest, claim and demand which the said parties of the first part have in and to the following described lot, piece or parcel of land, situate, lying and being in the County of Pinellas and State of Florida, to-wit:

Part of Lot 1, Section 7, Township 32 South, Range 16 East, more particularly described as follows: That part of said Lot No. 1,

s.

in the form of a parallelogram made by a line running across the North end of said lot, and another line 28 rods South of the North line, and parallel with the same, extending from the Gulf of Mexico on the West to Boca Ciega Bay on the East side, a distance of about 116 rods more or less, comprising twenty (20) acres, more or less.

TO HAVE AND TO HOLD the same, together with all and singular the appurtenances thereunto belonging or in anywise appertaining, and all the estate, right, title, interest and claim whatsoever of the said parties of the first part, either in law or equity, to the only proper use, benefit and behoof of the said party of the second part, his heirs and assigns forever.

IN WITNESS WHEREOF, The said parties of the first part have hereunto set their hands and seals the day and year first above written.

Signed, sealed and delivered in presence of

U. E. Cooper
Ruth Crew

Langford J. Locke (Seal)
Violet A. Locke (Seal)

STATE OF OKLAHOMA }
COUNTY OF Tulsa } ss.

I HEREBY CERTIFY, That on this 24th day of May A.D., 1924, before me personally appeared LANGFORD J. LOCKE and VIOLET A. LOCKE, his wife, to me known to be the persons described in and who executed the foregoing Deed and acknowledged the execution thereof to be their free act and deed for the uses and purposes therein mentioned; and the said VIOLET E. LOCKE, the wife of the said LANGFORD J. LOCKE on a separate and private examination taken and made by and before me, and separately and apart from her said husband, did acknowledge that she made herself a party to the said Deed for the purpose of renouncing, relinquishing and conveying all her right, title and interest, whether of dower or of separate property, statutory or equitable, in and to the lands described therein described, and that she executed said deed freely and voluntarily and without any compulsion, constraint, apprehension or fear of or from her said husband.

WITNESS my hand and official seal at Tulsa in the County of TULSA and State of Oklahoma the day and year last aforesaid.

(Notarial seal of Margaret Howell)
(Tulsa Co. Okla.)

Margaret Howell
Notary Public
My commission expires: April 24-1926

Filed June 2, 1924--4:00 P.M.

J. H. Brown, Clerk.

M. Mortgage, U. C.

THIS INSTRUMENT, made this 6th day of February A.D., 1924 BETWEEN J. Webb and wife Abbie M. Webb of the County of Pinellas and State of Florida parties of the first part, and Margaret Morian of the County of Pinellas in the State of Florida, party of the second part,

WITNESSETH, That the said parties of the first part, for and in consideration of the sum of One dollar and other considerations Dollars, to them in hand paid, the receipt whereof is hereby acknowledged, have granted, bargained, sold and transferred, and by these presents do grant, bargain, sell and transfer unto the said party of the second part and her heirs and assigns forever, all that certain parcel of land lying and being in the County of Pinellas and State of Florida, more particularly described as follows:

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THIS INDENTURE, Made this 14th day of March A. D. 1924 between ETHEL BEATRICE LOCKE, un-married, of the county of _____ and state of California party of the first part, and THOMAS COURTENAY LOCKE, of Fort Leavenworth, of the County of _____ and State of Kansas party of the second part,

WITNESSETH, That the said party of the first part, for and in consideration of the sum of One Dollar (\$1.00) and other valuable considerations in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, hath remised, released and quit-claimed and by these presents doth remise, release and quit-claim unto the said party of the second part and his heirs and assigns forever, all the right, title, interest, claim and demand which the said party of the first part hath in and to the following described lot, piece or parcel of land, situate, lying and being in the County of Pinellas and State of Florida, to-wit:

Part of Lot 1, Section 7, Township 32 South, Range 16 East, more particularly described as follows: That part of said Lot No.1, in the form of a parallelogram made by a line running across the North end of said lot, and another line 28 rods South of the North line, and parallel with the same, extending from the Gulf of Mexico on the West to Boca Ceiga Bay on the East side, a distance of about 116 rods more or less, comprising twenty (20) acres, more or less.

TO HAVE AND TO HOLD the same, together with all and singular the appurtenances thereunto belonging or in anywise appertaining, and all the estate, right, title, interest and claim whatsoever of the said party of the first part, either in law or equity, to the only proper use, benefit and behoof of the said party of the second part, his heirs and assigns forever.

IN WITNESS WHEREOF, The said party of the first part hath hereunto set her hand and seal the day and year first above written.

Signed, sealed and delivered in presence of)

Ethel M. Watson)

Ethel Beatrice Locke (Seal)

Rose K. Winslow)

(Seal)

State of California)
COUNTY OF Alameda }

I HEREBY CERTIFY, That on this 9th day of April A. D., 1924, before me personally appeared ETHEL BEATRICE LOCKE, un-married, to me known to be the person described in and who executed the foregoing Deed and acknowledged the execution thereof to be her free act and deed for the uses and purposes therein mentioned;

WITNESS my hand and official seal at Alameda in the County of Alameda and State of California the day and year last aforesaid.

(Notarial Seal-Ina M. Baird, California)

Ina M. Baird (SEAL)

Notary Public

Notary Public

My commission expires: April 1, 1927.

Filed June 2nd 1924 4:00 P M

in and for said Alameda County
State of California

J W BROWN CLERK

M ANDERSON D C

STATE OF FLORIDA)
COUNTY OF PINELLAS }

THIS INDENTURE, Made the 25th day of February in the year of Our Lord one thousand nine hundred and Twenty-four, between E. A. Marshall and Katie T. Marshall, his wife, and E. S. Riddle and Estella C. Riddle, his wife of the County of Pinellas State of Florida parties of

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State of Florida,
County of Pinellas }

This Indenture, Made this Twentieth day of May
in the year of Our Lord one thousand nine hundred and Twenty Four (1924), between
Frances Courtney Lake (widowed)
of Fort Leavenworth
of the County of Leavenworth State of Kansas
party of the first part, and James R. Bussey

of the County of Pinellas
State of Florida party of the second part:

WITNESSETH: That the said party of the first part, for and in consideration of the sum of nine dollars
(\$1.00) and other valuable considerations Dollars,
lawful money of the United States of America, to James R. Bussey in hand paid by the said
James R. Bussey party of the second part as or before the enclosing and delivery of these presents, the receipt whereof is hereby acknowledged, with of the
granted, bargained, sold, conveyed and confirmed, and by these presents do grant, bargain, sell, convey and confirm, unto the said party of
of the second part, and to his heirs and assigns forever, all the following piece, parcel, lot, or tract of land,
situate, lying and being in the County of Pinellas and State of Florida, and described as follows:

Part of Lot 70. Case 1 in section 3, Township 28 North, Range 1
East, more particularly described as follows:

That Part of Lot 70. Case 1 in the form of a parallel
subdivided into two lines running across the north end
of said lot and another line 28 rods south of the north
line, and parallel with the same, extending from the
July 4 line, on the west, to Pine Ridge Bay on the
East side, a distance of 20 rods more or less
comprising twenty (20) acres, more or less.

(\$35.00 Revenue Stamp)

TOGETHER with all and singular, the tenements, hereditaments and appurtenances thereto belonging or appertaining; and every right,
title or interest, legal or equitable, of the said party of the first part of, in and to the same.

TO HAVE AND TO HOLD the same unto the said party of the second part, and his heirs and assigns, to their own
proper use, benefit and behoof forever.

And the said party of the first part for himself and his heirs,
executors and administrators do hereby covenant:

That the said party of the first part, at the date hereof, is lawfully seized in fee simple of the above described premises
and is in peaceable and undisputed possession of the same.

That the said party of the second part, his heirs and assigns, shall at all times hereafter have peaceable possession of said
premises, without suit, eviction or disturbance of the said party of the first part, or any person or persons lawfully claiming the same.

That said premises are free from all incumbrances and liens of every nature and kind whatsoever, including taxes. None

And the said party of the first part, for himself and his heirs, the above described premises and every part and parcel thereof, with the appurtenances unto the said party of the second part, his heirs and assigns, against the said party of the first part and his heirs and assigns and against all and every person or persons lawfully claiming or to claim the same, shall and will warrant and by these presents forever defend.

IN WITNESS WHEREOF, The said party of the first part has hereunto set his hand and seal the day and year first above written.

Signed, sealed and delivered in presence of

Edna Wagoner
W. W. Rothermel

Thomas Conistey Rothermel (Seal)
(Seal)
(Seal)
(Seal)
(Seal)

State of Florida
County of Levy

I HEREBY CERTIFY, That on this 20th day of May, A. D. 1924, before me, the undersigned authority, personally appeared Thomas Conistey Rothermel

and his wife, known to me to be the persons described in and who executed the foregoing instrument, and severally acknowledged the execution thereof to be his free act and deed for the uses and purposes therein mentioned. And the said

The wife Edna of the said Thomas husband, acknowledged that she made on an examination taken and made separately and apart from her husband herself a party to the said deed for the purpose of renouncing and relinquishing her dower and rights of dower and conveying her separate estate in and to the lands, tenements and hereditaments herein described and thereby granted and released, and that she executed said deed freely and voluntarily, and without any compulsion, constraint, apprehension or fear of or from her said husband.

Witness my hand and official seal the date aforesaid.



W. W. Rothermel
Notary Public State at Large.

My commission expires Dec. 31 1925.

Filed on the 2 day of June, 1924, at 4 P. M.

By J. P. Burton Clerk
Clara J. Burton D. C.

State of Florida,
County of Pinellas

This Indenture, Made this 31st day of May

in the year of Our Lord one thousand nine hundred and twenty four between
Georgina Jane Locke Atkinson (her Georgina Jane Locke I joined
myself to Richard James Lindahl Atkinson, (both of the
County of Pinellas, State of Florida)
of the first part, and
James R. Bussery

of the County of Pinellas
State of Florida party of the second part:

WITNESSETH: That the said parties of the first part, for and in consideration of the sum of
One dollar (\$1.00) and other good and valuable considerations Dollars,
lawful money of the United States of America, to them in hand paid by the said
James R. Bussery party of the
second part, at before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, have
granted, bargained, sold, conveyed and confirmed, and by these presents do grant, bargain, sell, convey and confirm, unto the said party
of the second part, and to his heirs and assigns forever, all the following piece, parcel, lot, or tract of land,
situate, lying and being in the County of Pinellas and State of Florida, and described as follows:

Part of Lot Number One (1) in Section Seven (7) Township
thirty two (32) South, Range sixteen (16) East, more particularly
described as follows:

That part of said Lot Number One (1) in the form of a
parallelogram made by a line running across
the North end of said Lot and another line
twenty eight (28) rods south of the North line
and parallel with the same, extending from
the River of Mexico on the West to Boca Ciega
Bay on the East side, a distance of about one
hundred sixteen (16) rods, more or less, comprising
twenty (20) acres more or less and being a
portion of an Island described in the records of
the Government Survey as Long Key
No. Revenue

WITNESSETH: That all and singular, the tenements, hereditaments and appurtenances therein belonging or appertaining; and every right,
title or interest, legal or equitable, of the said part of, in and to the same.

TO HAVE AND TO HOLD the same unto the said party of the second part, and his heirs and assigns, to their own
proper use, benefit and behoof forever.

And the said parties of the first part for themselves and their heirs,
executors and administrators do hereby covenant:

That the said parties of the first part, at the date hereof, have lawfully seized in fee simple of the above described premises
and have in peaceable and undisputed possession of the same.

That the said party of the second part and heirs and assigns, shall at all times hereafter have peaceable possession of said
premises, without suit, restriction or disturbance of the said parties of the first part, or any person or persons lawfully claiming the same.

That said premises are free from all incumbrances and liens of every nature and kind whatsoever, including taxes for 1923

And the said parcels of the first part, for Thomas Edward Ellis heirs, the above described premises and every part and parcel thereof, with the appurtenances unto the said party, of the second part, Ellis heirs and assigns, against the said parcels of the first part and Ellis heirs and assigns and against all and every person or persons lawfully claiming or to claim the same, shall and will warrant and by these presents forever defend.

IN WITNESS WHEREOF, The said parcels of the first part hath been to me Richard hands, and seal & the day and year first above written.

Signed, sealed and delivered in presence of

Charles P. Price
Notary Public
in Hazel Carbone
American Consulate
Dublin

Regina Jane Locks Atkinson (Seal)
James Lindahl Atkinson (Seal)
(Seal)
(Seal)
(Seal)

State of Florida Irish Free State
County of Duval County of the City of Dublin
Consulate General of the United States

I HEREBY CERTIFY, That on this 16th day of October, A. D. 1922, before me, the undersigned authority, personally appeared George in a James Locks Atkinson (Seal)
Regina Jane Locks Atkinson
his husband

known to me to be the persons described in and who executed the foregoing instrument, and personally acknowledged the execution thereof to be their free act and deed for the uses and purposes therein mentioned. And the said George in a James Locks Atkinson (Seal)
Regina Jane Locks Atkinson
the wife of the said James Lindahl Atkinson
on an examination taken and made separately and apart from her husband acknowledged that she has made herself a party to the said deed for the purpose of releasing and relinquishing her claim and rights of donor and conveying her separate estate in and to the lands, tenements and hereditaments herein described and thereby granted and released, and that she has executed said deed freely and voluntarily and without any compulsion, constraint, apprehension or fear of or from her said husband.

Witness my hand and official seal the date aforesaid.



Consul General of the United States of America
at Dublin, Ireland

American Consular Service Fee Three

#2.00.

No 952
Rev 7/4

Filed on the 22 day of Nov, 1922 at Dublin.

J. H. Brown, Clerk
or Dorothy M. Brown, D.C.

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conveying all her right, title and interest, whether of dower or of separate property, statutory or equitable, in and to the lands therein described, and that she executed said deed freely and voluntarily and without any compulsion, constraint, apprehension or fear of or from her said husband.

WITNESS my hand and official seal at St. Petersburg, in the County of Pinellas and State of Florida, the day and year last aforesaid.

Gertrude E. Kruse

Notary Public State of Florida at Large

Notary Public State of Florida at Large

My commission expires Dec. 22, 1928

(Notarial seal, Gertrude E. Kruse

Florida.)

Filed Apr. 9, 1925, 9:30 A. M.

E. B. O'Quinn, Clerk

E. M. Coke, D. C.

92150
m2

THIS INDENTURE, Made this second day of February A.D., 1925, between James R. Bussey and Frances M. Bussey, his wife of the County of Pinellas and State of Florida, parties of the first part, and S. H. McGhee of the County of Pinellas in the State of Florida, party of the second part,

WITNESSETH, That the said parties of the first part, for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable considerations to them in hand paid, the receipt whereof is hereby acknowledged, have granted, bargained sold and transferred, and by these presents do grant, bargain, sell and transfer unto the said party of the second part, and his heirs and assigns forever, all that certain parcel of land lying and being in the County of Pinellas and State of Florida, more particularly described as follows:

That part of Lot No. 1 in the form of a parallelogram made by a line running across the North end of said lot and another line 25 rods south of the North line parallel with the same extending from the Gulf of Mexico on the West to Boca Ceiga Bay on the east side, a distance of about 116 rods, being 20 acres more or less, and being in Section Seven (7), Township 32 South, Range 16 East,

This property is deeded subject to a mortgage in the sum of Ten Thousand (\$10,000.00) Dollars which the grantors hereby agree to pay.

TOGETHER with all the tenements, hereditaments and appurtenances, with every privilege, right, title interest and estate, dower and right of dower, reversion, remainder and easement thereto belonging or in anywise appertaining, TO HAVE AND TO HOLD the same in fee simple forever.

And the said parties of the first part do covenant with the said party of the second part, that they are lawfully seized of the said premises, that they are free from all incumbrances and that they have a good right and lawful authority to sell the same, and the said parties of the first part do hereby fully warrant the title of said land, and will defend the same against the lawful claims of all persons whomsoever.

IN WITNESS WHEREOF, the said parties of the first part have hereunto set their hands and seals the day and year above written.

Signed, sealed and delivered in our presence

C. E. Carley
Raney H. Martin

James R. Bussey (SEAL)

Frances M. Bussey (SEAL)

(\$105.00 Revenue stamps attached & cancelled.)

STATE OF FLORIDA }
COUNTY OF PINELLAS } ss

I HEREBY CERTIFY, That on this second day of February A.D. 1925, before me personally appeared James R. Bussey and Frances M. Bussey his wife, to me known to be the persons described in and who executed the foregoing Deed and acknowledged the execution thereof to be their free act and deed for the uses and purposes therein mentioned and the said Frances M. Bussey the wife of the said James R. Bussey on a separate and private examination taken and made by and before me, and separately and apart from her said husband, did acknowledge that she made herself a party to the said Deed for the purpose of renouncing, relinquishing and conveying all her right, title and interest, whether of dower or of separate property, statutory or equitable, in and to the lands therein described, and that she executed said deed freely and voluntarily and without any compulsion, constraint, apprehension or fear of or from her said husband.

WITNESS my hand and official seal at St. Petersburg, in the County of Pinellas and State of Florida, the day and year last aforesaid.

Raney H. Martin

Notary Public State of Florida at Large

My commission expires 1/31/25

(Notarial seal, Raney H. Martin

Florida.)

Filed Apr. 9, 1925, 8:30 A. M.

L. B. O'Quinn, Clerk

H. M. Cooke, D.C.

Handwritten initials

WARRANTY DEED

STATE OF FLORIDA,)
COUNTY OF PINELLAS.)

THIS INDENTURE, Made the 7th day of April in the year of Our Lord one thousand nine hundred and twenty-five, between Grant and Skinner Realty Company, a corporation, of the County of Pinellas State of Florida party of the first part, and J. L. Kelly and E. B. Casler, Junior, of the County of Pinellas State of Florida parties of the second part:

WITNESSETH, That the said party of the first part, for and in consideration of the sum of ten Dollars and other good and valuable consideration, lawful money of the United States of America, to it in hand paid by the said J. L. Kelly and E. B. Casler, Junior parties of the second part at or before the enrolling and delivery of these presents, the receipt whereof is hereby acknowledged has granted, bargained, sold, conveyed and confirmed, and by these presents does grant, bargain, sell, convey and confirm, unto the said parties of the second part, and to

Finellas, State of Florida, described as follows:

That part of Lot No. One (1) in the form of a parallelogram made by a line running across the north end of said lot and another line twenty eight (28) rods south of the north line parallel with the same extending from the Gulf of Mexico on the west to Boca Ceiga Bay on the east side, a distance of about one hundred sixteen (116) rods, being twenty (20) acres more or less and lying in Section 7, Township 32 South, Range 15 East, comprising therefrom the following lots: Lots Three (3) and B 1 in Block H; Lots 1, 2, 3, 4, 5, 6 and 7 in Block D; Lots 1, 2, 3, 4, 5, 6 and 7 in Block E; Lots 1, 2, 3, 4, 5, 6 and 7 in Block F of corporate tract, according to the plat of said corporate tract, recorded in the public records of the State of Florida, to wit: Book 8, Page 113, in File No. 10,000, and the plat of said corporate tract, recorded in the public records of the State of Florida, to wit: Book 8, Page 113, in File No. 10,000.

together with all and singular the rights, members, privileges, hereditaments and appurtenances to the same belonging or in anywise appertaining.

To have and to hold all and singular the said premises, above mentioned and described, and hereby granted and conveyed, or intended so to be, with the appurtenances, unto the said part 1 of the second part, his heirs and assigns, to the only proper use, benefit and behoof of the said part 1 of the second part, his heirs and assigns forever.

In Witness Whereof, the said Special Master in Chancery, as aforesaid, has hereunto set his hand and seal, the day and year first above written.

Signed, sealed and delivered in the presence of:

Mary M. Swan
Harry R. Hewitt

Harry R. Hewitt (Seal)
As Special Master in Chancery, as aforesaid.

State of Florida,

PINELLAS

County.

I, the undersigned, duly authorized to take acknowledgments, hereby certify that

Harry R. Hewitt

is a person to whom the premises to be the subject of the foregoing instrument, as Special Master in Chancery, as aforesaid, has hereunto set his hand and seal, the day and year first above written.

Witness my hand and seal of office this

26

day of the month of



Notary Public, State of Florida at Large.

My commission expires

CLERK OF THE
COURT OF PINELLAS COUNTY, FLORIDA

Quit Deed

Made this 21st day of OCTOBER, 1957.

Between JAMES R. BUSSEY, FRANCIS R. BUSSEY and BEN E. BUSH, JR., as
Directors and Trustees of James R. Bussey Company, a dissolved
Florida Corporation

of the County of Pinellas and State of Florida
parties of the first part, and P. J. SERGI

of the County of Pinellas and State of Florida
party of the second part,

Witnesseth, that the said parties of the first part, for and in consideration of the sum of Ten Dollars and other good and valuable considerations to them in hand paid, the receipt whereof is hereby acknowledged, have granted, bargained, sold and transferred, and by these presents do grant, bargain, sell and transfer unto the said party of the second part and his heirs and assigns forever, all that certain parcel of land lying and being in the County of Pinellas and State of Florida, more particularly described as follows:

That part of Government Lot One (1) in the form of a parallelogram made by a line running across the north end of said lot and another line twenty-eight (28) rods south of the north line parallel with the same extending from the Gulf of Mexico on the West to Boca Ceiga Bay on the East, a distance of about one hundred sixteen (116) rods, and being in Section Seven (7), Township Thirty-two (32) South, Range Sixteen (16) East; less, however, Blocks "A" and "B" of Gasparilla Beach Subdivision, and also excepting from this conveyance the South sixty (60) feet of Lot Three (3) of Block "K" of said Gasparilla Beach Subdivision, TOGETHER with all riparian rights of every name, nature and description affecting said property, both on the Gulf of Mexico and on Boca Ceiga Bay.

The above corporation, James R. Bussey Company, was dissolved by proclamation of the Governor of the State of Florida, filed in the records of Pinellas County, Florida on October 16, 1936 as instrument No. 527,704.

Together with all the tenements, hereditaments and appurtenances, with every privilege, right, title, interest and estate, dower and right of dower, reversion, remainder and easement thereto belonging or in anywise appertaining:

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

In Witness Whereof, the said parties of the first part have hereunto set their hands and seals the day and year first written.

Signed, Sealed and Delivered in Our Presence.

W. S. Menzies
B. J. Williams
M. J. Williams

James R. Bussey
Francis R. Bussey
Ben E. Bush, Jr.

RECORDED IN PINELLAS COUNTY, FLORIDA
OCTOBER 21, 1957

RECORDED IN PINELLAS COUNTY, FLORIDA
OCTOBER 21, 1957

DEED 770 REG 110

State of Florida,

County of Pinellas

I HEREBY CERTIFY, That on this 23rd day of April A. D. 1937, before me personally appeared Frances M. Bussey and Sam H. Mann, Jr. as Directors and Trustees of James R. Bussey Company, a dissolved Florida Corporation to me known to be the persons described in and who executed the foregoing conveyance to

P. J. Sergi

as such directors and trustees and severally acknowledged the execution thereof to be their free act and deed for the uses and purposes therein mentioned; and the said Frances M. Bussey

the wife of the said

James R. Bussey

and private examination taken and made by and before me, and separately and apart from her said husband, did acknowledge that she made herself a party to the said Deed of Conveyance for the purpose of renouncing, relinquishing and conveying all her right, title and interest, whether of dower or of separate property, statutory or equitable, in and to the lands therein described, and that she executed said deed freely and voluntarily, and without any constraint, fear, apprehension or compulsion of or from her said husband.

WITNESS my signature and official seal at in the County of Pinellas year last aforesaid.

St. Petersburg and State of Florida, the day and

Myrtle Williams
Notary Public

Notary Public, State of Florida at Large
My Commission Expires July 15, 1937

My Commission Expires



Filed for record in the office of the Clerk of the Circuit Court of the County of Pinellas, State of Florida, on APR 24 1937 at 8:30 o'clock A.M. and recorded in Book 24 Page 10 and the record indexed in Index by A. G. McQuinn Clerk

Law Offices of
BUSSEY, MANN & BARTON
ST. PETERSBURG, FLORIDA

ABSTRACT OF DESCRIPTION

Date April 21, 1937.

P. J. Sergi

JAMES R. BUSSEY, et al, as Directors and Trustees of James R. Bussey Company TO

539514
FEE SIMPLE

STATE OF FLORIDA
COUNTY OF LEON

I HEREBY CERTIFY, That on this 21st day of April, 1937, before me personally appeared JAMES R. BUSSEY to me known to be the person described in and who executed the foregoing conveyance to P. J. Sergi and acknowledged the execution thereof to be his free act and deed for the uses and purposes therein mentioned, as director and trustee.

WITNESS my signature and official seal at Tallahassee, in the County of Leon and State of Florida, the day and year last aforesaid.

Sam H. Mann, Jr.
Notary Public State of Florida at Large.



My Commission expires:

Notary Public, State of Florida at Large
My Commission Expires Sept. 22, 1937

FILED FOR RECORD IN THE BOOK NOTED ABOVE. A. G. McQUINN, CLERK OF THE CIRCUIT COURT, PINELLAS COUNTY, FLORIDA. BY *Myrtle Williams* DEPUTY CLERK

THIS INDENTURE, Made this 5th day of July, A. D. 1951, between Pasquale J. Sergi, also known as P. J. Sergi, an unmarried man, of the County of Pinellas in the State of Florida, party of the first part, and Lido Beach Corporation of St. Petersburg, Florida, a Florida Corporation with its principal office at Lido Beach, St. Petersburg, Pinellas County, Florida, party of the second part,

WITNESSETH, That the said party of the first part, for and in consideration of the sum of Ten Dollars (\$10.00) lawful money of the United States, and other valuable considerations to him in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said party of the second part, its successors and assigns forever, the following described land situate, lying and being in the County of Pinellas, State of Florida, to-wit:

That part of Government Lot One (1) in Section 7, Township 22 South of Range 16 east, described as part of said Government Lot One (1) in the form of a parallelogram made by a line running across the north end of said Lot and another line 28 rods south of the north line and parallel with the same, extending from the waters of the Gulf of Mexico on the west side to the waters of Boca Ciega Bay on the east side, a distance of 116 rods more or less, together with riparian rights, Less the south 60 feet of Lot Three (3), of Block "K", Gasparilla Beach Subdivision as the same was formerly platted prior to the vacation of the said plat of said Gasparilla Beach Subdivision according to the public records of Pinellas County, Florida.

This conveyance is made subject to taxes for the year 1951.

And the said party of the first part does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whatsoever.

LEONARD W. COOPERMAN
ATTORNEY AT LAW
100, 6TH ST., NORTH
ST. PETERSBURG, FLORIDA



DEED 1329 PAGE 410

IN WITNESS WHEREOF the said party of the first part
has hereunto set his hand and seal the day and year first
above written.

Pasquale J. Sergi (SEAL)

Signed, sealed and delivered
in our presence:

Samuel M. Mann
Leonard W. Coppsman

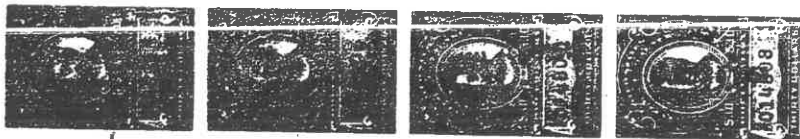
STATE OF FLORIDA)
COUNTY OF PINELLAS)



I hereby certify that on this day personally appeared
before me, an officer duly authorized to administer oaths and
take acknowledgments, Pasquale J. Sergi, also known as P. J.
Sergi, an unmarried man, to me well known and known to me to
be the individual described in and who executed the foregoing
deed, and he acknowledged before me that he executed the same
freely and voluntarily for the purposes therein expressed.

WITNESS my hand and official seal at St. Petersburg,
County of Pinellas and State of Florida, this 5th day of July,
A. D. 1951.

Samuel M. Mann
NOTARY PUBLIC
Notary Public, State of Florida at Large.
My Commission Expires October 20, 1953.



Filed for record July 5, 1951 at 5:00 P.M. in the book noted above
and the record verified WILLIAM CRAWFORD, Clerk of the Circuit Court,
Pinellas County, Florida. By William Crawford Deputy Clerk.

**TECHNICAL REVIEW COMMITTEE MEETING
CITY OF ST. PETE BEACH
COMMISSION CHAMBERS**

Agenda Report

Action Request:

Strategic Objective:

Date: May 22, 2024

Prepared By: Brandon Berry, Senior Planner

Through: Jennifer McMahon, Chief Operating Officer

Summary of Issue: Applicant requests unnecessary and undue hardship variances (5) associated with site plan #24028 to:

a) Exceed the 20' maximum front yard setback along 46th Ave (LDC Sec. 38.9);

b) Reduce the buffer along the Lido Park side from six feet to less than five feet due to parking gravity wall and need for access around the tank (LDC Sec. 22.7.);

c) Reduction of the eight-foot buffer along the Gulf Blvd and 45th Ave frontages of the site to five feet or greater should TRC not administratively reduce the buffer width (LDC Sec. 39.10(b));

d) Eliminate the requirement that the street-level facade be at least 50% transparent (LDC Sec. 39.7.); and,

e) Reduce the percentage of the facade that must be covered with architectural decoration or windows below the 60% maximum along the western, southern and northern sides (LDC Sec. 39.8.(b)).

Funding:

Attachments:

1. Variance Application
2. Variance Description & Application Responses
3. Boundary & Topographic Survey [Not ALTA/ACSM]
4. Civil Plans
5. Landscaping Plans

6. Building Elevations

CASE #: _____

PARCEL #: _____

SUBMITTAL DATE: _____ AMOUNT DUE: _____ PAYMENT DATE: _____

UNNECESSARY AND UNDUE HARDSHIP VARIANCE APPLICATION

The following items are to be submitted, along with this application, **at least 30 days prior to the public hearing:**

- Two (2) copies of the property survey, completed in the last ten years, which contains the legal description, land area, and existing improvements on the site that has been signed and sealed by a surveyor licensed in the State of Florida;
- Seven (7) copies of a site plan showing the request, drawn to scale, of size between 11x17" and 36x48";
- Emailed copy of the survey and site plan to planning@stpetebeach.org.
- The Application Fee, payable to the City of St. Pete Beach (non-refundable)

OWNER/AGENT INFORMATION:

Identification	Name	Address	Phone #
Owner	PINELLAS COUNTY UTILITIES	14 SOUTH FORT HARRISON BLVD, 6TH FL CLEARWATER FL 33756	
Applicant/ Agent	MICHAEL HOFFMAN	601 S LAKE DESTINY DR, SUITE 290 MAITLAND FL 32751	407.720.5712
Owner Email Address: tmenke@pinellas.gov		Applicant/Agent Email Address: michael.hoffman@wright-pierce.com	

PROPERTY FOR PROPOSED VARIANCE:

Zoning Designation	Future Land Use Designation	Lot Area
AC	AC	0.78 ACRES
Legal Description: THE LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 2556, PAGE 55, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, LYING IN GOVERNMENT LOT 1 IN SECTION 7, TOWNSHIP 32 SOUTH, RANGE 16 EAST, PINELLAS COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: TRACT A, LESS THE NORTH 120 FEET, LESS THE EAST 113.62 FEET, LIDO BEACH SUBDIVISION, SECTION 7, TOWNSHIP 32 SOUTH, RANGE 16 EAST, AS RECORDED IN PLAT BOOK 34, PAGE 7, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA		
Address: GULF BLVD, ST PETE BEACH		
Explanation of Request: _____ <u>SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"</u> _____ _____ _____		

Findings Necessary for Granting Request: In order for an application for a unnecessary and undue hardship variance to be approved or approved with conditions, the Board of Adjustment must make a positive finding with regard to each of the provisions below, which are also located in Division 3 of the Land Development Code. The applicant has the burden of proof demonstrating that the application for the variance complies with each of these requirements. Please explain in detail how your case meets these requirements (attach additional sheets if necessary):

1. Special conditions and circumstances exist which are peculiar to the land, structure, or building involved, and which are not applicable to other lands, structures, or buildings in the same zoning district;

SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

2. The special conditions and circumstances do not result from the actions of the applicant or a prior owner of the property;

SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

3. Literal interpretation of the provisions of the Land Development Code deprives the applicant of rights commonly enjoyed by other properties in the same zoning district under the terms of the Land Development Code and results in unnecessary and undue hardship on the applicant;

SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

4. The hardship has not been deliberately or knowingly created or suffered to establish a use or structure which is not otherwise consistent with the Comprehensive Plan or the Land Development Code, nor will it permit an increase in development density;

SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

5. An applicant's desire or ability to achieve greater financial return or maximum financial return from his property does not constitute hardship;

SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

6. Granting the variance application conveys the same treatment to the applicant as to the owner of other lands, buildings, or structures in the same zoning district;

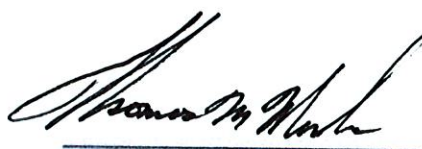
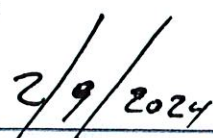
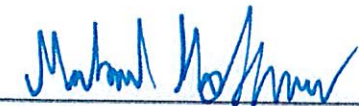
SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

7. The requested variance is the minimum variance that makes possible the reasonable use of the land, building, or structure; and

SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

8. The requested variance is in harmony with the general intent and purpose of the Comprehensive Plan and the Land Development Code, is not injurious to the neighborhood or otherwise detrimental to the public safety and welfare, is compatible with the neighborhood, and will not substantially diminish or impair property values within the neighborhood.

SEE ATTACHED DOCUMENT TITLED "REQUESTED VARIANCES AND FINDINGS"

			
Signature of Applicant	Date	Signature of Authorized Agent	Date

VARIANCE APPLICATION

Applicants must acknowledge understanding of the following. Initial each of the statements below. If you do not understand any of these, staff will explain them to you.

Tom I understand that the City will not accept or process an incomplete application.

Tom I understand that a non-conforming use or structure in a particular zoning district does not, in any way, provide justification for the granting of a variance. Furthermore, the existence of a permitted use or structure in adjacent districts does not constitute grounds for a variance.

Tom On all variances except for administrative (de-minimis) variances, a majority vote is required. Action on this application by the BOA/City Commission may be continued to a later meeting.

Tom I understand that if a variance is approved by the BOA, City Commission or City Manager, the applicant is required to obtain the appropriate building permits within 1 year from the date of the decision. If no permit is obtained within 1 year, the approval becomes voided.

Tom I understand that if any application filed under the provisions of this Code is denied, no subsequent application seeking substantially the same or similar approval shall be filed within six months of the final decision on the original application.

Tom I understand that any person aggrieved by the final decision of the Board of Adjustment or City Commission has the right to file a petition in the Pinellas County Circuit Court within 30 calendar days after the decision. Appeals of decisions made by the City Manager for administrative variances are to a hearing officer designated by the City Commission and must be made within 30 days from the date of the final administrative decision. Permits for construction may be granted prior to the expiration of this 30-day period, but an appeal will be grounds for revocation of the permit.

Tom I understand that I, as the applicant, or my authorized representative must be present at all scheduled public meetings on the application if applicable.

After acknowledgement of these conditions, complete the application form on the following pages.

Thomas M. White 2/9/2024
Signature of Applicant Date

Owner's Authorization for Agent

Community Development Department

City of St. Pete Beach, Florida

I/WE

THOMAS MENKE

(print name of property owner)

hereby authorize

MICHAEL HOFFMAN

(print name of agent)

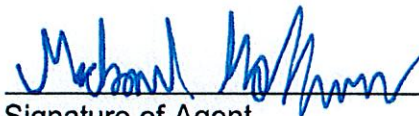
to represent me/us in an application for

VARIANCE

(type of application: variance, conditional use, zoning, etc.)



Signature of Owner



Signature of Agent

THOMAS MENKE

Print Name of Owner

MICHAEL HOFFMAN

Print Name of Agent

The forgoing instrument was acknowledged before me this 9th day of February 2021 by Thomas Menke or who is personally known _____ produced Florida License as identification.



(Notary Signature)

2/9/2024

(Date)

My Commission Expires

10/29/2025



KARA DEVLIN
Notary Public
State of Florida
Comm# HH325344
Expires 10/29/2026



PUBLIC HEARING SIGN POSTING AFFIDAVIT

Applicant, THOMAS MENKE, agrees to post the sign(s) in a conspicuous place, at the principal access to the property, in full view of the public, and not more than five (5) feet from the nearest street right of way or easement a minimum of seven (7) days in advance of the Public Hearing for unnecessary or undue hardship variances and practical difficulty variances, or seven (7) days in advance of the final administrative decision for administrative (de-minimis) variances, and remain in place until the requested action has been heard and decided. Multiple sign postings shall not be more than three hundred (300) feet apart. If the subject parcel(s) abut more than one (1) street, notices shall be posted along each street. When the subject parcel(s) does not front a public road, the sign shall be posted at the point on a public road by which the property is, or can be, reached.

The sign shall be maintained in good readable condition by the applicant. If the said sign is destroyed, lost, or becomes unreadable, the applicant or applicant's representative shall obtain a replacement sign. Any sign posted in accordance with these requirements shall be removed from the property and disposed of by the applicant or applicant's agent not later than 24 hours following the final decision.

Applicant/Agent (must fill out agent authorization form):

Name(print): THOMAS MENKE

Address: 14 SOUTH FORT HARRISON BLVD, 6TH FL, CLEARWATER, FL 33756


Signature

2/9/2024
Date

STATE OF FLORIDA)
) SS:
PINELLAS COUNTY)

The foregoing instrument was acknowledged before me this 9th day of February, 2024 by: Thomas Menke who appeared before me, and is personally known to me, or has produced Florida Driver License as identification, and did take an oath.

My commission Expires: 10/29/2025 NOTARY: 

Print Name: Kara Devlin Notary

Public, State of Florida

(Notarial Seal)



KARA DEVLIN
Notary Public
State of Florida
Comm# HH325344
Expires 10/29/2026

DEAR APPLICANT:

PLEASE COMPLETE THE ATTACHED AFFIDAVIT WHEN FINAL DATES HAVE BEEN DETERMINED FOR YOUR APPLICATION. PRESENT THE COMPLETED NOTARIZED AFFIDAVIT TO COMMUNITY DEVELOPMENT AND YOU WILL BE GIVEN THE SIGN(S) TO POST ON THE SUBJECT PROPERTY.

It is your responsibility to post the sign(s) in a conspicuous place, at the principal access to the property, in full view of the public, and not more than five (5) feet from the nearest street right of way or easement a minimum of seven (7) days in advance of the public hearing for unnecessary and undue hardship variances or final administrative decision for administrative variances. The sign(s) must remain in place until the requested action has been heard and decided by the City Commission, Planning Board, Board of Adjustment, Historic Preservation Board, City Manager, or withdrawn. Multiple sign postings cannot be more than three hundred (300) feet apart. If the subject parcel(s) abut more than one (1) street, notices shall be posted along each street. When the subject parcel(s) does not front a public road, the sign shall be posted at the point on a public road by which the property is, or can be, reached.

You must maintain the sign(s) in good readable condition. If the said sign is destroyed, lost, or becomes unreadable, you or your representative shall obtain a replacement sign. Any sign posted in accordance with these requirements shall be removed from the property and disposed of by the applicant or applicant's representative not later than 24 hours following the final decision by the City Commission, Planning Board, Board of Adjustment, Historic Preservation Board, or City Manager.

A Notary Public is available in City Hall; 155 Corey Avenue.

Requested Variances and Findings

Requested Site Plan Land Development Code Variances

1. *St. Pete Beach, Florida – Land Development Code, Division 38 – AC Activity Center District, Sec. 38.9 – Setbacks: Front yard - For building elements of up to 28 feet: 20 feet maximum on all streets.*
 - a. Meeting this setback requirement would eliminate the driveway on 45th Ave and require a driveway onto Gulf Boulevard resulting in a less safe connection. For safety reasons, County wishes to continue accessing the property from 45th Avenue.
2. *St. Pete Beach, Florida – Land Development Code, Division 22 – Landscaping and Tree Protection, Sec. 22.7 – Development Standards, (b) Vehicular Use Areas, (1) Planting Area. A strip of land at least six feet in depth, located between the property line and the vehicular use area shall be landscaped.*
 - a. The buffer along Lido Park is less than five feet due to the parking gravity wall and the need for access around the tank. The parking gravity wall allows for the proper function of the underground stormwater reservoir to meet stormwater regulatory criteria. Lido Park itself will function as a landscape buffer for nearby residential properties.
3. *St. Pete Beach, Florida – Land Development Code, Division 39 – Community Redevelopment District, Sec. 39.10 – Streetscape design required elements, (b) On all streets not designated a Main street or a street type "A" in section 39.2, a minimum eight-foot wide private landscape zone shall be installed along the property between the sidewalk and the building face; minimum building setbacks may be increased in accordance with the width of the landscape zone.*
 - a. Landscape buffers along 45th Avenue and Gulf Boulevard will be less than eight-foot but equal to or greater than five feet. For 45th Avenue, the buffer is reduced to five feet in the presence of the Duke Energy easement. For Gulf Boulevard, the building cannot be moved further inward as this reduces the space between the tank and the building. This space is needed for tank maintenance activities.
4. *St. Pete Beach, Florida – Land Development Code, Division 39 – Community Redevelopment District, Sec. 39.7 - ...at least 50 percent of the street level facades of buildings used for nonresidential purposes which abut a public street or pedestrian access way, will be transparent.*
 - a. The building's street level façade is not able to meet this requirement due to the need to design the pump building to be able to withstand future flood loads resulting from sea level rise.
5. *St. Pete Beach, Florida – Land Development Code, Division 39 – Community Redevelopment District, Sec. 39.8(b) – At least 60 percent of any elevation will be covered with windows or architectural decoration. For the purpose of this standard, an elevation is that portion of a building that is visible from a particular point outside the parcel proposed for development.*
 - a. The building is not able to meet this requirement due to the need to design the pump building to be able to withstand future flood loads resulting from sea level rise. Furthermore, in our design process for the Pinellas County Water Booster Station, our goal was to honor the established water tank through color, pattern, and material. Our approach aimed to create this balance by fostering a visual cadence between window placement and the surrounding negative space. We added Art Deco elements, characterized by the incorporation of textured waves and fins to echo the aesthetic of the area. We believe that maintaining a restrained approach to added decoration preserves the contrast between old and new, thereby amplifying the station's visual impact within its context.

Findings Necessary for Granting a Request

1. Special conditions and circumstances exist which are peculiar to the land, structure, or building involved, and which are not applicable to other lands, structures, or buildings in the same zoning district:
 - a. The Gulf Beach Water Booster Station is an existing pump station that receives water from the northern isle of capri water booster station to store in the existing pump station's on site ground storage tank during low demand periods, and pumps water to the southern portion of Pinellas County Utilities' water distribution system to maintain system pressures during peak demand periods and to satisfy fire flow needs. The site is located within the FEMA floodplain and is vulnerable to increased flooding in the future due to sea level rise. To ensure the pump station meets current industry standards and fire flow is available in the aftermath of flood events, improvements are required.
 - b. A large portion of the property is dominated by the existing ground storage tank which must be maintained. The ground storage tank greatly limits the project's ability to meet the previously listed land development code sections that the County is seeking a variance on due to the limited amount of area available.
 - c. There is a need to provide clear open space around the perimeter of the ground storage tank to allow for maintenance of and access to the tank.
2. The special conditions and circumstances do not result from the actions of the applicant or a prior owner of the property:
 - a. The Gulf Beach Water Booster Station's vulnerability to flood events from increased sea level rise does not result from actions of Pinellas County. Sea level rise is predominately a result of thermal expansion due to the heating of the ocean and the addition of water mass associated with ice-mass loss from the ice sheets and glaciers according to *Global and Regional Sea Level Rise Scenarios for the United States, NOAA, 2022*.
 - b. The existing location of the storage tank and the pump station is a result of the needs of PCU's water distribution system customers. This facility has been in place since the 1960s with no improvements since that time. The circumstances of the existing ground storage tanks results from the potable water demands.
3. Literal interpretation of the provisions of the Land Development Code deprives the applicant of rights commonly enjoyed by other properties in the same zoning district under the terms of the Land Development Code and results in unnecessary and undue hardship on the applicant:
 - a. New developments along Gulf Boulevard that have access to a City side street will typically have their primary access points located on the City side street as access from low traffic volume city streets is safer than direct access from Gulf Boulevard. Conforming to the maximum front setback requirement would require shifting the driveway connection point to Gulf Boulevard which is near the 45th Avenue and Gulf Boulevard intersection resulting in a less safe connection point.
 - b. Developments or redevelopments in the area do not have existing critical public infrastructure located on their property that must be maintained.
4. The hardship has not been deliberately or knowingly created or suffered to establish a use or structure which is not otherwise consistent with the Comprehensive Plan or the Land Development Code, nor will it permit an increase in development density:
 - a. The hardship was not deliberately created, nor does it permit an increase in development density as the proposed impervious surface ratio and floor area ratio do not exceed the maximum allowed.
5. An applicant's desire or ability to achieve greater financial return or maximum financial return from his property does not constitute hardship:
 - a. The proposed project is to ensure that the pump station is resilient to the effects of sea level rise and ensure that potable water and fire flow is available to the area.
6. Granting the variance application conveys the same treatment to the applicant as to the owner of other lands, buildings, or structures in the same zoning district:

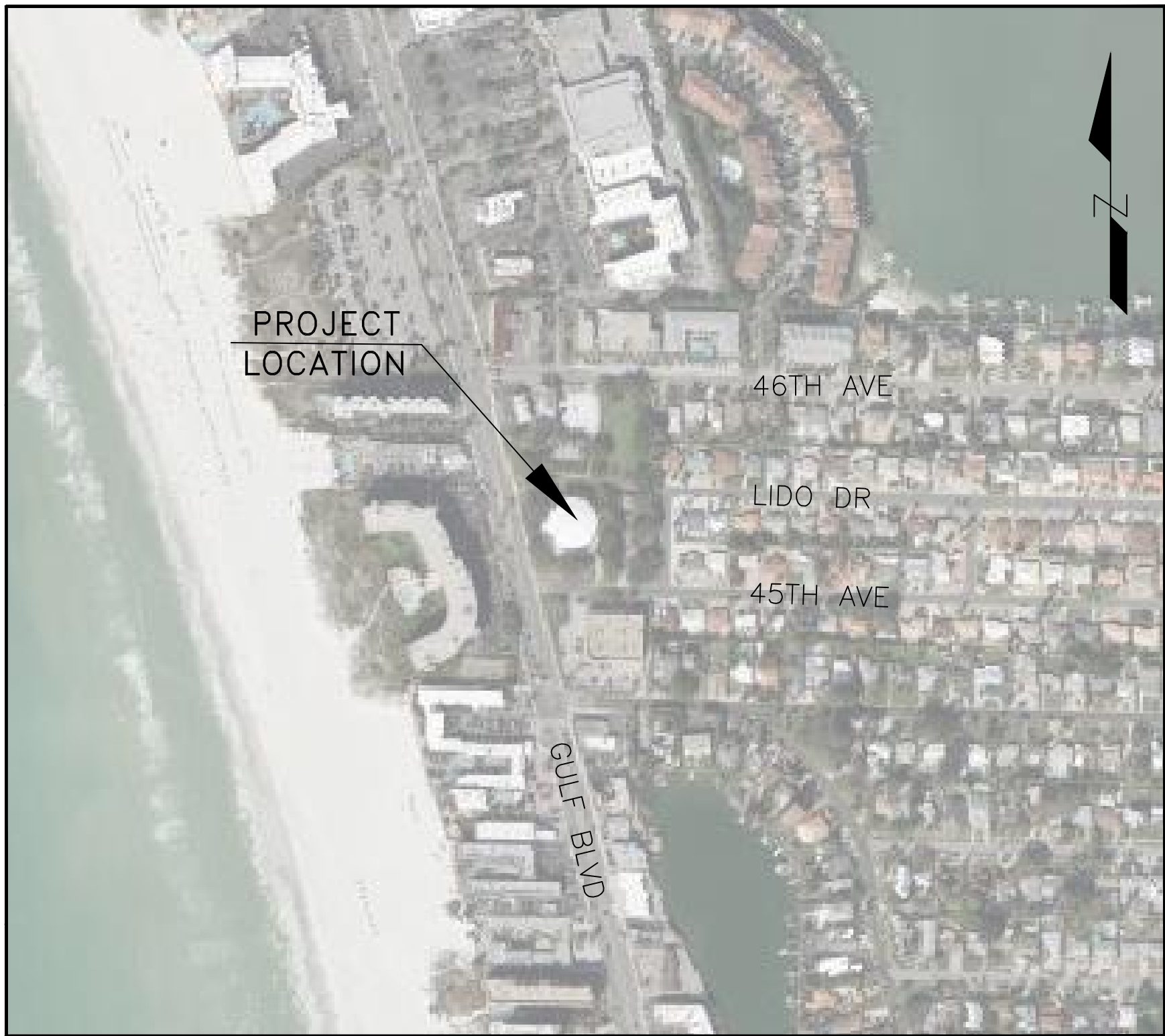
- a. Developments or redevelopments in the area do not have existing critical public infrastructure located on the property that must be maintained.
- 7. The requested variance is the minimum variance that makes possible the reasonable use of the land, building, or structure:
 - a. Requested variances are the minimum needed to allow the proposed project to be possible and meet all other regulatory site plan criteria from the City of St. Pete Beach, FDOT, and FDEP.
- 8. The requested variance is in harmony with the general intent and purpose of the Comprehensive Plan and the Land Development Code, is not injurious to the neighborhood or otherwise detrimental to the public safety and welfare, is compatible with the neighborhood, and will not substantially diminish or impair property values within the neighborhood.
 - a. The proposed improvements to the Gulf Beach Water Booster Station will increase its resiliency ensuring that the tourism facilities such as hotels maintain water system pressure for both normal water use and fire flow thereby contributing to the goal of maximizing the potential for economic benefit resulting from the tourist trade (Comprehensive Plan, Future Land Use Plan Element, Goal 2).
 - b. The proposed improvements directly contribute to ensuring that potable water services are provided by a safe efficient system which maintains adequate facilities and provides for orderly growth and expansion (Comprehensive Plan, Infrastructure Plan Element, Goal 1).
 - c. The proposed improvements do not change the existing use of the site which maintains the overall character of the neighborhood.
 - d. Proposed improvements have a direct benefit to public safety as fire flow for the surrounding area will be maintained even after flooding conditions.

GULF BEACH WATER
BOOSTER STATION
4501 GULF BOULEVARD



VICINITY MAP

NOT TO SCALE



SECTION 6&7, TOWNSHIP 32 SOUTH, RANGE 16 EAST

SHEET INDEX

- 1 COVER SHEET / VICINITY MAP / GRAPHIC SYMBOLS
- 2 LAND SURVEYOR REPORT / MONUMENTATION / VERIFIED VERTICAL AND HORIZONTAL UTILITIES / ABBREVIATIONS
- 3 TOPOGRAPHIC SURVEY
- 4 BOUNDARY SURVEY / ENCROACHMENTS

ADDITIONS OR DELETIONS BY OTHER THAN THE PROFESSIONAL SURVEYOR AND MAPPER IN RESPONSIBLE CHARGE ARE PROHIBITED. THIS DOCUMENT HAS BEEN ELECTRONICALLY SIGNED AND SEALED USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

Thomas P Young Jr Digitally signed by Thomas P Young Jr
Date: 2024.03.25 11:04:39 -04'00'

THOMAS P YOUNG JR, P.S.M.

DATE

PROFESSIONAL SURVEYOR AND MAPPER
LICENSE NO. 7044, STATE OF FLORIDA

ECHO UES, INC.
4803 GEORGE RD, SUITE 350
TAMPA, FL 33634
Phone: (727)431-1580

SURVEY REVISION DATE	SURVEY FILE NO.: 2083
	PID NO.: 002150A
	f2083-c3d-2022.dwg
	SHEET: 1 of 4

GRAPHIC SYMBOLS:

CENTERLINE	---
CONTOUR LINE	---#---
EXISTING TOPOGRAPHIC FEATURE	---
SURFACE WATER /WETLAND BOUNDARY	---
SURVEY REFERENCE LINE	---
RIGHT-OF-WAY (EXISTING)	---
RIGHT-OF-WAY LINE (PROPOSED)	---
PROPERTY OR DEED LINE	---
EASEMENT LINE	---
EASEMENT LINE (PROPOSED)	---
SECTION LINE	---
ORIGINAL LOT LINE/FORMER OWNERSHIP LINE/VACATED EASEMENTS	---
TREE LINE	---
FENCE LINE	---
DRAINAGE (STORM SEWER) PIPE	---
EXISTING TOP OF BANK AND TOE OF SLOPE	---
SANITARY SEWER GRAVITY LINE	---
COMMUNICATION LINE	---
ELECTRIC POWER LINE/CABLE	---
TRAFFIC POWER/COMMUNICATION LINE	---

FORCE MAIN (SANITARY SEWER)	---
GAS LINE	---
HOT OIL LINE	---
OVERHEAD WIRE	---
RECLAIMED WATER LINE	---
POTABLE WATER	---
UNKNOWN UTILITY	---
FOUND CONCRETE MONUMENT	---
FOUND NAIL & DISC/CAP BRASS DISC	---
FOUND IRON ROD	---
FOUND IRON PIPE	---
FOUND PINCH PIPE	---
SET CONCRETE MONUMENT	---
SET NAIL & DISC/CAP BRASS DISC	---
SET IRON ROD	---
XCUT (FOUND)	---
XCUT (SET)	---
SUB PARCEL NO.	---
BLOCK NUMBER	---
PROPERTY APPRAISER PARCEL NUMBER	---
PROPOSED PARCEL	---

FM	FM	FM
G	G	G
OIL	OIL	OIL
OH	OH	OH
R	R	R
W	W	W
UNK	UNK	UNK
1	2	00/00
P###		

BACKFLOW PREVENTER	---
BENCHMARK	---
BUSH / SHRUB	---
CENTERLINE	---
COMMUNICATIONS BOX	---
COMMUNICATIONS MANHOLE	---
DECIDUOUS TREE (OAK UNLESS OTHERWISE ANNOTATED)	---
DELTA ANGLE	---
DRAINAGE CLEAN OUT	---
DRAINAGE MANHOLE	---
ELECTRICAL EQUIPMENT	---
ELECTRICAL OUTLET	---
EVERGREEN TREE	---
FIRE HYDRANT	---
GAS METER	---
GAS VALVE	---

GRATE INLET	---
GUY WIRE	---
HOSE BIB	---
LIGHT POLE	---
MAILBOX	---
MONITOR WELL	---
PALM TREE	---
PEDESTRIAN SIGNAL	---
POLE/POST	---
POWER BOX	---
PROPERTY LINE	---
RECLAIMED WATER MANHOLE	---
RECLAIMED WATER METER	---
RECLAIMED WATER VALVE	---
SANITARY SEWER CLEANOUT	---

SEWER MANHOLE	---
SEWER VALVE	---
SIGN	---
SPRINKLER HEAD	---
SPRINKLER HEAD VALVE	---
SURVEY LINE	---
TARGET	---
TRAFFIC SIGNAL POLE	---
TRAFFIC SIGNAL PULL BOX	---
UNDERDRAIN BOX	---
UTILITY POLE	---
WATER METER	---
WATER VALVE	---

LAND SURVEYOR REPORT:

1. BEARINGS SHOWN HEREON ARE BASED ON THE EAST RIGHT OF WAY LINE OF GULF BOULEVARD (SR 699) BEING NORTH 13°41'41" WEST. BEARINGS AND DISTANCES SHOWN HEREON ARE MEASURED UNLESS OTHERWISE NOTED.
2. THIS SURVEY DOES NOT DETERMINE OWNERSHIP OF THE LANDS SHOWN HEREON.
3. MEASUREMENT METHODS USED FOR THIS SURVEY MEET STANDARDS OF PRACTICE FOR LAND SURVEYING CHAPTER 5J-17 REQUIREMENTS. DIMENSIONS ARE SHOWN IN UNITED STATES STANDARD SURVEY FEET AND DECIMALS THEREOF UNLESS OTHERWISE NOTED.
4. I HAVE REVIEWED THE TITLE SEARCH REPORT # 32697, DATED 10/20/2023 PERFORMED BY AMERICAN GOVERNMENT SERVICES CORPORATION AND ALL RECORDED SURVEY RELATED ENCUMBRANCES, EXCEPT LIENS, HAVE BEEN SHOWN OR NOTED ON THE SURVEY.
5. RIGHT OF WAY INFORMATION SHOWN HEREON WAS DETERMINED BY FOUND MONUMENTATION, RECORDED PLATS, RECORDED RIGHT OF WAY MAPS, AND INFORMATION OBTAINED ON THE PINELLAS COUNTY PROPERTY APPRAISER'S WEB SITE.
6. ADJACENT PROPERTY INFORMATION SHOWN HEREON THAT WAS NOT FURNISHED TO THIS SURVEYOR WAS OBTAINED BY SEARCHING THE PINELLAS COUNTY PROPERTY APPRAISER'S WEBSITE.
7. FEATURES SHOWN BY SYMBOL AS INDICATED IN THE LEGEND ARE NOT TO SCALE.
8. THE HORIZONTAL POSITIONS FOR ALL FEATURES SHOWN ON THE MAP ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT (NAD 83/11). ZONE 902, FLORIDA WEST. HORIZONTAL CONTROL WAS ESTABLISHED USING THE FLORIDA DEPARTMENT OF TRANSPORTATION'S (FDOT) FLORIDA PERMANENT REFERENCE NETWORK (FRPN), A REAL TIME KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS).
9. VERTICAL CONTROL – VERTICAL CONTROL IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). ALL TOPOGRAPHIC FEATURES WERE COLLECTED CONVENTIONALLY FROM CONTROL POINTS ELEVATED FROM A CLOSED LOOP BENCH RUN FROM NATIONAL GEODETIC SURVEY (NGS) POINT "NOAA D".
10. UNLESS SHOWN, ONLY THOSE VISIBLE FEATURES FOUND WITHIN THE BOUNDARIES OF THIS SURVEY OR IN THE IMMEDIATE VICINITY OF THE ABOVE DESCRIBED PARCEL BOUNDARY HAVE BEEN LOCATED.
11. SUBSURFACE UTILITIES DEPICTED HEREON ARE THE HORIZONTAL LOCATIONS OF PAINT MARKS AND FLAGS PLACED BY SUBSURFACE UTILITY ENGINEERING FIELD TECHNICIANS. THE MARKS WERE DETERMINED USING SURFACE GEOPHYSICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO GROUND PENETRATING RADAR (GPR) AND/OR ELECTROMAGNETIC LOCATORS. UTILITY CHARACTERISTICS, METHODS OF INSTALLATION, SOIL CONDITIONS AND THE SURROUNDING ENVIRONMENT ALL MAY ADVERSELY IMPACT THE RESULTS OF ANY UTILITY INVESTIGATION. FOR THESE REASONS THE LOCATIONS OF THE SUBSURFACE UTILITIES SHOULD BE CONSIDERED APPROXIMATE UNLESS CLEARLY EXPOSED AND VISUALLY VERIFIED AT SPECIFIC LOCATIONS. NO GUARANTEE IS MADE THAT ALL UTILITIES WILL BE FOUND AND IDENTIFIED.
12. ALL SUBSURFACE UTILITY ENGINEERING WORK PERFORMED WAS DONE IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS' (ASCE) STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA (ASCE/CI 38-02). QUALITY LEVELS SHOWN IN THE SURVEY ARE REFERENCED TO ASCE/CI 38-02.
13. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN REPRESENT ALL UTILITIES IN THE AREA, WHETHER IN SERVICE OR ABANDONED, OR THAT THE UNDERGROUND UTILITIES ARE IN THE EXACT LOCATION SHOWN, BUT DOES CERTIFY THAT THEY HAVE BEEN LOCATED AS ACCURATELY AS POSSIBLE FROM AVAILABLE INFORMATION.
14. THE SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
15. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
16. THIS SURVEY IS INTENDED TO BE DISPLAYED AT A SCALE OF 1"=20'
17. THE LAST DATE OF FIELD EFFORT WAS 2/28/2024.

MONUMENTATION/
CONTROL POINT COORDINATES:

POINT#	LATITUDE (NORTH) FT.	DEPARTURE (EAST) FT.	ELEVATION	DESCRIPTION
536870912	1231405. 01	417102. 08	3. 39	SET MAG NAIL & DISK *ECHO UES TP 8184*
536870914	1231401. 47	416973. 88	3. 92	SET MAG NAIL & DISK *ECHO UES TP 8184*
536871234	1231499. 98	417003. 27	4. 17	SET MAG NAIL & DISK *ECHO UES TP 8184*
536870913	1231562. 35	416889. 69	4. 77	SET MAG NAIL & DISK *ECHO UES TP 8184*
536870915	1231628. 59	416912. 17	3. 93	SET MAG NAIL & DISK *ECHO UES TP 8184*
536871848	1231648. 97	416976. 43	5. 25	SET 5/8" IRON ROD & CAP *ECHO UES TP LB 8184*
536871849	1231669. 74	417113. 65	4. 47	SET MAG NAIL & DISK *ECHO UES TP 8184*
55	1231450. 91	417116. 06	2. 62	FOUND 3/4" PINCHED PIPE NO ID
56	1231396. 67	416981. 32	4. 24	FOUND 5/8" IRON ROD AND CAP *JOHNSON FL PSM 5913*
57	1231388. 65	417227. 84	3. 83	FOUND 5/8" IRON ROD NO ID
58	1231302. 57	417003. 92	6. 00	FOUND 5/8" IRON ROD AND CAP *JOHNSON FL PSM 5913*
59	1231669. 50	417236. 50	4. 70	FOUND 5/8" IRON ROD NO ID
60	1231665. 31	417366. 44	4. 17	FOUND 4"x4" CONC MONUMENT NO ID
61	1231644. 68	418016. 16	4. 14	FOUND 5/8" IRON ROD NO ID
62	1231643. 20	417122. 35	4. 53	FOUND 5/8" IRON ROD AND CAP *DEUEL LB 107*
63	1231648. 93	416919. 34	4. 45	FOUND 5/8" IRON ROD AND CAP *HARNER LB 2650*
64	1231451. 77	417116. 20	3. 82	FOUND 5/8" IRON ROD AND CAP *DEUEL LB 107*
65	1231455. 56	416966. 28	3. 81	FOUND 5/8" IRON ROD NO ID
83	1231392. 00	416982. 43	4. 28	FOUND 5/8" IRON ROD AND CAP *HARNER LB 2650*
85	1231770. 72	416889. 74	2. 97	FOUND 4"x4" CONC MONUMENT NO ID

VERIFIED VERTICAL AND HORIZONTAL UTILITIES				
Vvh #	POINT #	LATITUDE (NORTH) FT.	DEPARTURE (EAST) FT.	DESCRIPTION
VVH1	536872014	1231637. 36	416929. 81	EL 0. 66 = TOP OF 16" CI
VVH2	536872011	1231628. 98	416930. 87	EL 1. 57 = TOP OF 16" CI
VVH3	536871146	1231455. 41	416992. 94	EL 1. 91 = TOP OF 6" CI
VVH4	536871114	1231451. 98	417019. 38	EL 2. 05 = TOP OF 6" CI
VVH5	536871018	1231450. 62	417095. 11	EL 1. 60 = TOP OF 6" CI
VVH6	536871551	1231537. 76	416975. 29	EL 2. 62 = TOP OF 4" CI
VVH7	536871458	1231532. 40	416955. 96	EL 0. 18 = TOP OF 4" CI
VVH8	536871151	1231456. 51	416993. 09	EL 2. 26 = TOP OF 2" PE
VVH9	536871225	1231543. 23	416949. 21	EL 0. 00 = TOP OF 1. 5" DBC
AC = TRANSITE CI = CAST IRON CP = CONCRETE PIPE DBC = DIRECT BURIED CABLE CMP = CORRUGATED METAL PIPE CONC= CONCRETE DCT = DUCT DIP = DUCTILE IRON PIPE GALV= GALVANIZED PIPE HDPE= HIGH DENSITY POLYETHYLENE PIPE PE = POLYETHYLENE PIPE PVC = POLYVINYL CHLORIDE STL = STEEL VCP = VITRIFIED CLAY PIPE PCCP= PRESTRESSED CYLINDER CONCRETE PIPE RCP = REINFORCED CONCRETE PIPE				

ABBREVIATIONS:

(C)	CALCULATED DATA	DWGRVL	DRIVEWAY, GRAVEL	HWF	HOG WIRE FENCE	RT	RIGHT
(M)	MEASURED (IN FIELD)	DWGS	DRIVEWAY, GRASS	ID	IDENTIFICATION	RTK	REAL TIME KINEMATIC
(P)	PLAT DATA	DWM	DRIVEWAY, MARL	INV	INVERT	RW	RIGHT-OF-WAY
(R)	RECORD DATA	DWS	DRIVEWAY, STONE	JBOX	JUNCTION BOX	SCM	SET CONCRETE MONUMENT
A	ARC LENGTH	ECL	EROSION CONTROL LINE	L	LENGTH	SEC	SECTION, TOWNSHIP, RANGE
AC	ACRE(S)	ECMP	ELLIPTICAL CMP	LL	LANE LINE	SFN	SURVEY FILE NUMBER
AD	AMERICANS WITH DISABILITIES ACT	ELEC	ELECTRIC	LT	LEFT	SIR	SET IRON ROD
ASPH	ASPHALT	ELEV	ELEVATION	MES	MITERED END SECTION	SNC	SET NAIL AND CAP
AUS	AUSTRALIAN	EPA	EDGE OF PAVEMENT, ASPHALT	MH	MANHOLE	SND	SET NAIL AND DISK
BC	BACK OF CURB	EPC	EDGE OF PAVEMENT, CONCRETE	MHW	MEAN HIGH WATER	SNS	SET NAIL AND SHINER
BE	BURIED ELECTRICAL	EQ	EQUATION	MLW	MEAN LOW WATER	SDC	SET DRANGE CAP
BFP	BACKFLOW PREVENTER	EQUIP	EQUIPMENT	MTLF	METAL FENCE	SPLYW	SPILLWAY
BG	BELOW GROUND	ERCP	ELLIPTICAL RCP	NFV	NOT FIELD VERIFIED	SR	STATE ROAD
BLDG	BUILDING	ERD	EDGE OF ROAD, DIRT	NGS	NATIONAL GEODETIC SURVEY	SRC	SET RED CAP
BM	BENCHMARK	ERG	EDGE OF ROAD, GRAVEL	NTS	NOT TO SCALE	SRL#	SURVEY REFERENCE LINE
BOXC	BOX CULVERT	ERM	EDGE OF ROAD, MARL	O/A	OVERALL	SRVT	SET RIVET
BRG	BEARING	ERSH	EDGE OF ROAD, SHELL	QAK C	QAK CLUSTER	SR&D	SET RIVET AND DISK
BWF	BARBED WIRE FENCE	ES	EXISTING STORM	QH(#)	OVERHEAD UTILITY (NUMBER OF LINES)	STA	STATION
C#	CURVE NUMBER	ESMT	EASEMENT	DHW	ORDINARY HIGH WATER	STY	STORY
CALC	CALCULATED	ESS	EXISTING SANITARY SEWER	DR	OFFICIAL RECORD	SWBR	SIDEWALK, BRICK/PAVER
CB	CATCH BASIN	FAC	FLORIDA ADMINISTRATIVE CODE	D/S	OFFSET	SWK	SIDEWALK
CBS	CONCRETE BLOCK STRUCTURE	FCM	FOUND CONCRETE MONUMENT	PALM C	PALM CLUSTER	SYC	SET YELLOW CAP
CCCL	CERTIFIED CORNER RECORD NUMBER	FFE	FINISHED FLOOR ELEVATION	PB	PLAT BOOK	TB	TOP OF BANK
CH	CHORD	FIR	FOUND IRON ROD	PC	POINT OF CURVATURE	TBM	TEMPORARY BENCHMARK
CIP	CAST IRON PIPE	FIP	FOUND IRON PIPE	PCC	POINT OF COMPOUND CURVATURE	TREE C	TREE CLUSTER
CL	CENTERLINE	FL	FLOWLINE	PCED	PINELLAS COUNTY ENGINEERING DEPT	TS	TOP OF SLOPE
CLF	CHAIN LINK FENCE	FM	FORCE MAIN	PCSD	PINELLAS COUNTY SURVEY DIVISION	TYP	TYPICAL
CMP	CORRUGATED METAL PIPE	FNC	FOUND NAIL AND CAP	PG	PAGE	UDBX	UNDERDRAIN BOX
COMM	COMMUNICATIONS	FDEP	FLORIDA DEPT OF ENVIRONMENTAL PROTECTION	PID	POINT OF INTERSECTION	UNK	UNKNOWN
CONC	CONCRETE	FDOT	FLORIDA DEPT OF TRANSPORTATION	PIN	POINT IDENTIFICATION NUMBER	UP ####	UTILITY POLE NUMBER
CONDO	CONDOMINIUM	FNDK	FOUND NAIL AND DISK	PINE C	PINE CLUSTER	VCP	VITRIFIED CLAY PIPE
CONST	CONSTRUCTION	FND	FOUND	PLNTR	PLANTER	VVH	VERIFIED VERTICAL AND HORIZONTAL
CCR	CORNER	FNS	FOUND NAIL AND SHINER	PLS	PROFESSIONAL LAND SURVEYOR	WM	WOOD FENCE
CDRR	CORRUGATED	FDC	FOUND DRANGE CAP	PNT	POINT	W/	WITH
CR	COUNTY ROAD	FDP	FOUND OPEN PIPE	PQB	POINT OF BEGINNING	WKWY	WALKWAY
CRL	CONSTRUCTION REFERENCE LINE	FPP	FOUND PINCHED PIPE	PDC	POINT ON COMMENCEMENT	W/D	WITHOUT
D	DIAMETER	FRG	FOUND RED CAP	PRG	POINT OF REVERSE CURVATURE	WM	WATER MAIN
DB	DEED BOOK	FRRS	FOUND RAILROAD SPIKE	PSM	PROFESSIONAL SURVEYOR AND MAPPER	WLK	CROSS WALK
DESC	DESCRIPTION	FRVT	FOUND RIVET	PT	POINT OF TANGENCY		
DIA	DIAMETER	FS	FLORIDA STATUTES	PVC	POLYVINYL CHLORIDE		
DIP	DUCTILE IRON PIPE	FYDL	FLEXIBLE DELINEATOR	PVCF	POLYVINYL CHLORIDE FENCE		
DIR	DIRECTION	FYC	FOUND YELLOW CAP	R	RADIUS		
DWA	DRIVEWAY, ASPHALT	GALV	GALVANIZED	RCP	REINFORCED CONC PIPE		
DWB	DRIVEWAY, BRICK	GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM	RCW	RECLAIMED WATER		
DWC	DRIVEWAY, CONCRETE	GPR	GROUND PENETRATING RADAR	REF	REFERENCE		
DWD	DRIVEWAY, DIRT	GRAIL	GUARD RAIL	RLS	REGISTERED LAND SURVEYOR		
HDPE	DRIVEWAY, DIRT	HDPE	HIGH DENSITY POLYETHYLENE	RPRP	RIPRAP		
DWG	DRAWING	HW	HEADWALL	RR	RAILROAD		

REVISIONS			BY	DATE	SURVEY BOOK No.: TPA-61		GULF BEACH WATER BOOSTER STATION		LAND SURVEYOR REPORT		PINELLAS COUNTY, FLORIDA		SURVEY FILE NO.: 2083	
					SURVEY SECTION	BY	4501 GULF BOULEVARD		MONUMENTATION, VVH,		PUBLIC WORKS		PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.	
					DESIGNED						22211 U.S. HWY. 19 NORTH		PID No.: 002150A	
					CHECKED						CLEARWATER, FLORIDA 33765-2347		f2083-c3d-2022.dwg	
					DRAWN						PHONE (727) 464-8904		SHEET: 2 of 4	
					CHECKED									

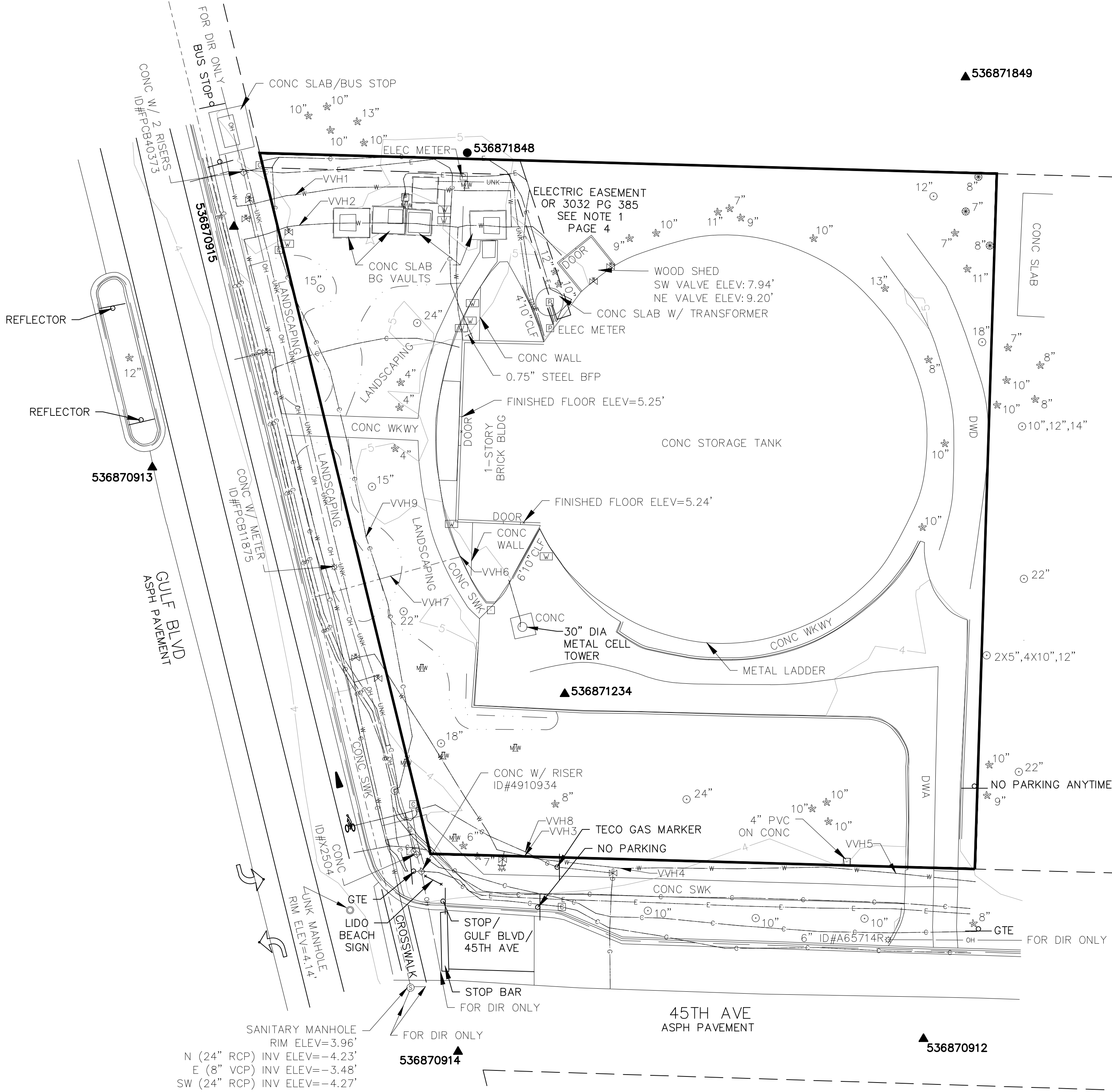
Z:\Projects\Wright-Pierce\22-177_PINCD_GulfBeach_BoosterStation\4_ProjectWork\CAD\ACAD\F2083-c3d-2022.dwg, Mar 25, 2024 - 1059am

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 5J-17.062, F.A.C.

Z:\Projects\Wright-Pierce\22-177_PINCL_GulfBeach_BoosterStation\4_Project\Work\ACAD\F2083-c3d-2022.dwg, Mar 25, 2024 - 10:59am

SECTION 6&7, TOWNSHIP 32 SOUTH, RANGE 16 EAST

SANITARY MANHOLE
RIM ELEV=3.88'
S (24" RCP) INV ELEV=-4.26'



LIDO DRIVE
ASPH PAVEMENT

1ST STREET E
ASPH PAVEMENT

45TH AVE
ASPH PAVEMENT

A SURVEYOR'S REPORT HAS BEEN UTILIZED ON THIS SURVEY AS A TEXT OPTION TO THE MAP. USERS OF THIS SURVEY AND MAP ARE DIRECTED TO ACKNOWLEDGE THE CONTENT OF REPORT ITEMS AS INDICATED ON SHEET 2.

REVISIONS		BY	DATE	SURVEY BOOK No.: TPA-61		
				SURVEY SECTION	BY	DATE
				SURVEYED	AT	05/23
				TECHNICIAN	CM	05/23
				CHECKED	TY	05/23
				DESIGN SECTION		
				DESIGNED	.	.
				DRAWN	.	.
				CHECKED	.	.

GULF BEACH WATER
BOOSTER STATION
4501 GULF BOULEVARD

TOPOGRAPHIC SURVEY

PINELLAS COUNTY, FLORIDA
PUBLIC WORKS

SURVEY AND MAPPING DIVISION
22211 U.S. HWY. 19 NORTH
CLEARWATER, FLORIDA 33765-2347
PHONE (727) 464-8904

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SURVEY FILE NO.: 2083

PID.: 002150A

f2083-c3d-2022.dwg

SHEET: 3 of 4

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SECTION 6&7, TOWNSHIP 32 SOUTH, RANGE 16 EAST

LEGAL DESCRIPTION:

THE LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 2556, PAGE 55, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA, LYING IN GOVERNMENT LOT 1 IN SECTION 7, TOWNSHIP 32 SOUTH, RANGE 16 EAST, PINELLAS COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

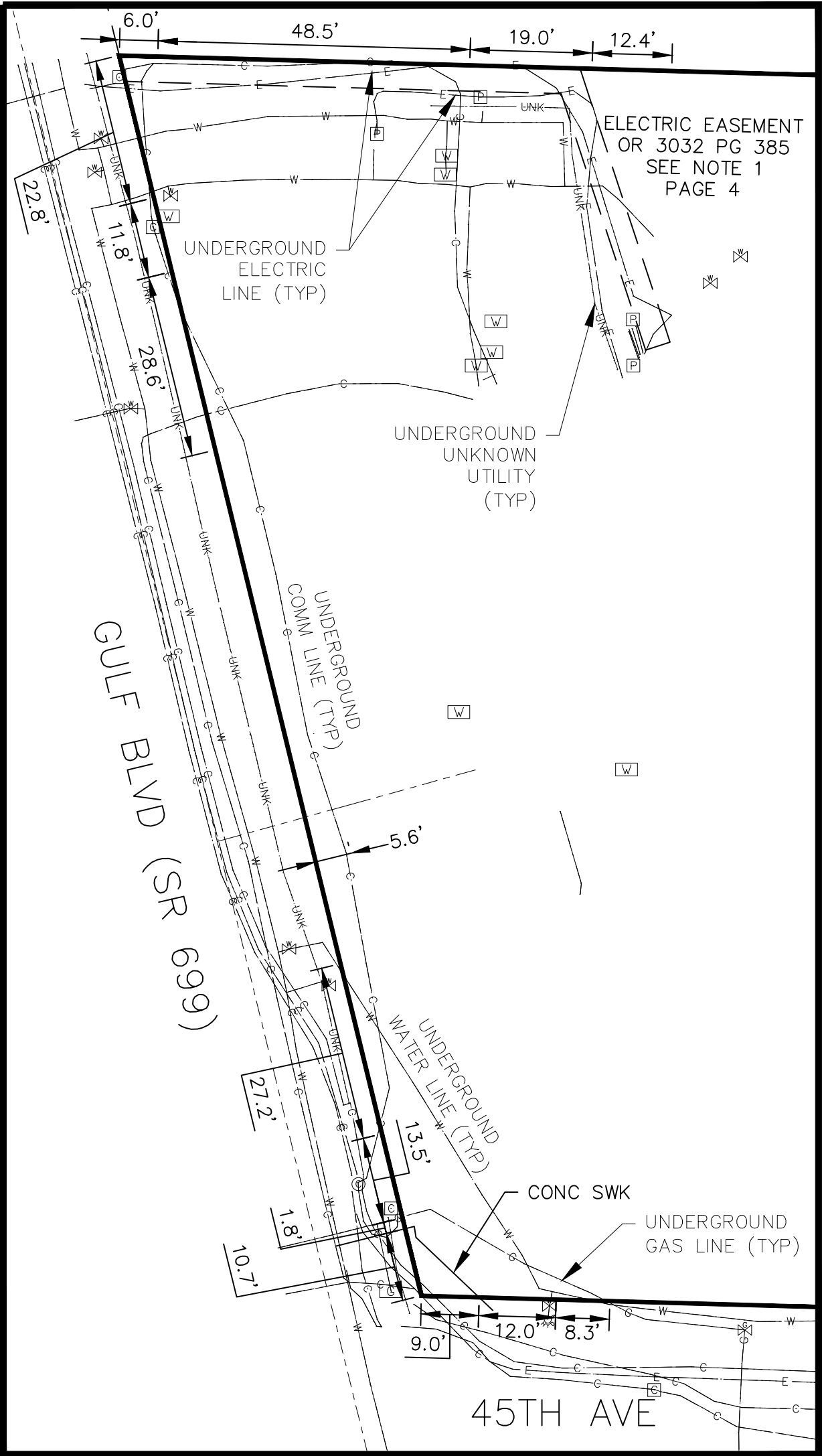
TRACT A, LESS THE NORTH 120 FEET, LESS THE EAST 113.62 FEET, LIDO BEACH SUBDIVISION, SECTION 7, TOWNSHIP 32 SOUTH, RANGE 16 EAST, AS RECORDED IN PLAT BOOK 34, PAGE 7, PUBLIC RECORDS OF PINELLAS COUNTY, FLORIDA

SAID PARCEL CONTAINS 0.78, ACRES MORE OR LESS.

NOTE 1 - ELECTRICAL EASEMENT DESCRIBED IN OR 3032 PG 385 LOCATION APPROXIMATED BY SKETCH AND UNDERGROUND UTILITY LOCATION DUE TO RECORDING DOCUMENT BEING DIFFICULT TO READ AND NO RELEVANT LEGAL DESCRIPTION

NOTE 2 - RIGHT OF USE FOR WALKING ACCESS EASEMENT DESCRIBED IN DB 1504 PG 407 DOES NOT AFFECT SUBJECT PARCEL

EXHIBIT A
ENCROACHMENTS



A SURVEYOR'S REPORT HAS BEEN UTILIZED ON THIS SURVEY AS A TEXT OPTION TO THE MAP. USERS OF THIS SURVEY AND MAP ARE DIRECTED TO ACKNOWLEDGE THE CONTENT OF REPORT ITEMS AS INDICATED ON SHEET 2.

PLAZA BEACH MOTEL LLC
OR 22079 PG 1477

"LESS NORTH 120.00 FEET"

LIDO BEACH SUBDIVISION
PB 34 PG 7

LOT 1
BLOCK 1

LOT 2
BLOCK 1

FOUND
5/8" IRON ROD & CAP
NO ID
0.03' N, 0.29' W

FOUND
4"x4" CONC MON
NO ID
0.03' S, 0.28' W

S 88° 23' 23" E 130.00' (C)
S 88° 13' 36" E 130.00' (P)

LIDO DRIVE
PB 34 PG 7
50' RW

LOT 11
BLOCK 2

LIDO BEACH SUBDIVISION
PB 34 PG 7

LOT 1
BLOCK 2

1ST STREET E
PB 34 PG 7
50' RW

CITY OF ST PETE BEACH
OR 4075 PG 1363

"LESS EAST 113.62 FEET"

LIDO BEACH SUBDIVISION
PB 34 PG 7

TRACT A

PINELLAS COUNTY
ORDER OF TAKING
OR 2556 PG 55
FINAL JUDGMENT
OR 2675 PG 444

FOUND
1/2" IRON ROD & CAP
"DEUEL LB 107"
0.02' N, 0.07' E

ELECTRIC EASEMENT
OR 3032 PG 385
SEE NOTE 1
PAGE 4

SEE EXHIBIT A FOR
ENCROACHMENTS

FOUND
5/8" IRON ROD & CAP
"HARNER BL 2650"
0.07' N, 0.07' E

S 88° 23' 23" E 203.09' (C)

S 88° 23' 23" E 113.62' (C)

S 1° 49' 10" W 120.00' (C)

S 1° 46' 24" W 311.50' O/A (P)
S 1° 49' 10" W 311.50' O/A (C)

S 1° 49' 10" W 191.50' (C)

S 1° 49' 10" W 191.50' (C)

FOUND
1/2" IRON ROD & CAP
"DEUEL LB 107"
0.00' N, 0.00' E
3/4" PINCHED PIPE
NO ID
0.43' S, 0.01' E

S 88° 23' 23" E 149.99' (C)

0.86' S, 0.14' W

S 88° 23' 23" E 263.50' (C)

S 88° 13' 36" E 263.62' (P)

45TH AVE
PB 34 PG 7
60' RW

FOUND
5/8" IRON ROD & CAP
NO ID
0.04' N, 0.03' W

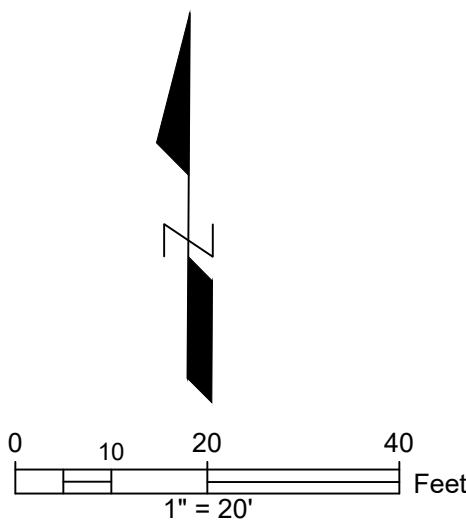
S 88° 23' 23" E 247.22' (C) S 88° 13' 36" E 246.50' (P)

TRACT B

FOUND
5/8" IRON ROD & CAP "JOHNSON FL PSM 5913"
0.21' N, 0.55' E
5/8" IRON ROD & CAP "HARNER LB 2650"
1.66' S, 4.46' E

1005
1001

GULF BOULEVARD (SR 699)
100' RW



REVISIONS

BY

DATE

SURVEY BOOK No.: TPA-61

SURVEY SECTION BY DATE

SURVEYED AT 05/23

TECHNICIAN CM 05/23

CHECKED TY 05/23

DESIGN SECTION

DESIGNED . .

DRAWN . .

CHECKED . .

GULF BEACH WATER
BOOSTER STATION
4501 GULF BOULEVARD

BOUNDARY SURVEY

PINELLAS COUNTY, FLORIDA
PUBLIC WORKS

SURVEY AND MAPPING DIVISION
22211 U.S. HWY. 19 NORTH
CLEARWATER, FLORIDA 33765-2347
PHONE (727) 464-8904

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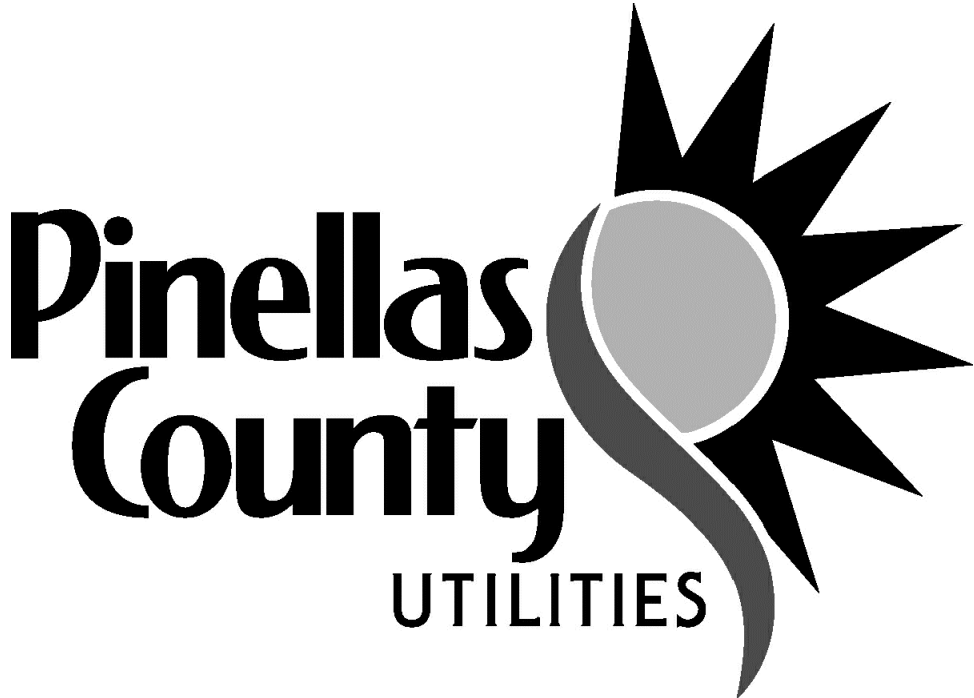
SURVEY FILE NO.: 2083

PID.: 002150A

f2083-c3d-2022.dwg

SHEET: 4 of 4

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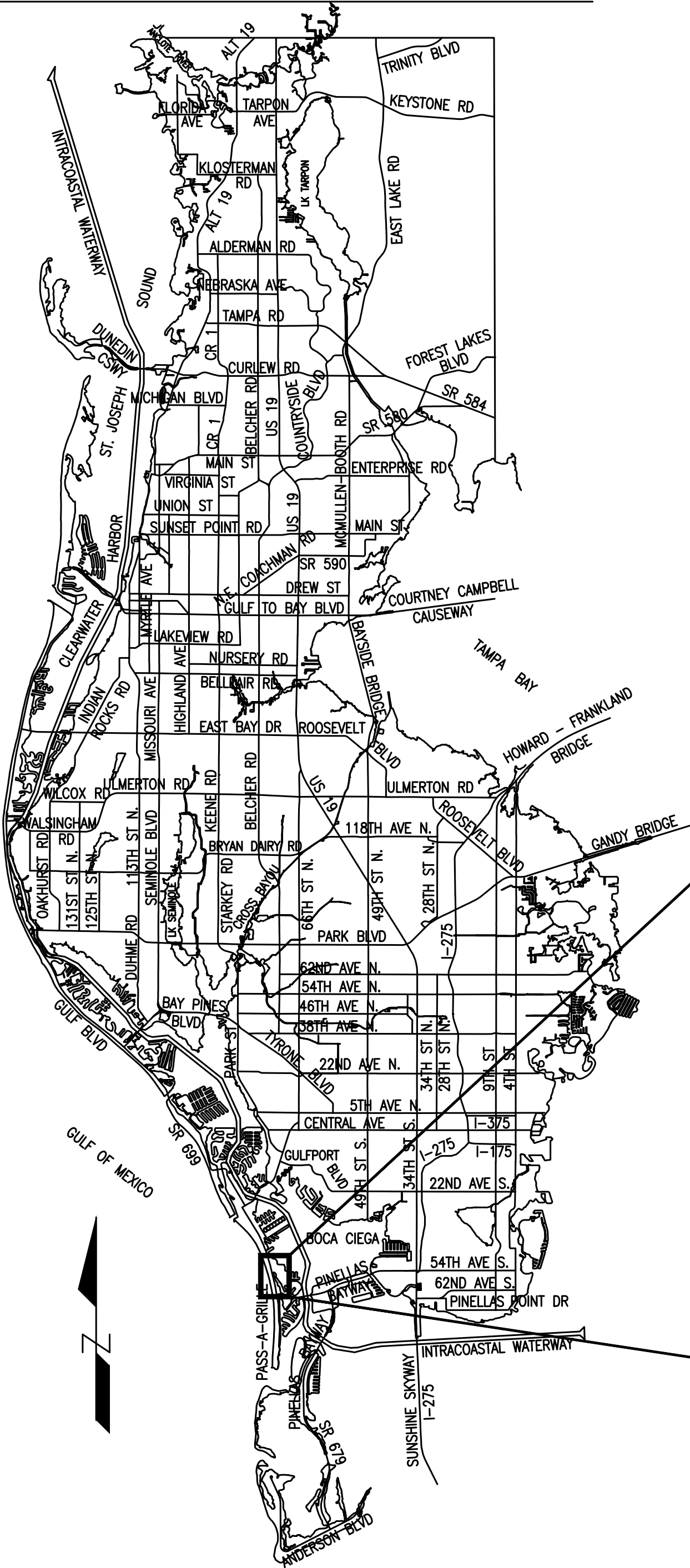


PINELLAS COUNTY, FLORIDA

GULF BEACH WATER BOOSTER

STATION IMPROVEMENTS

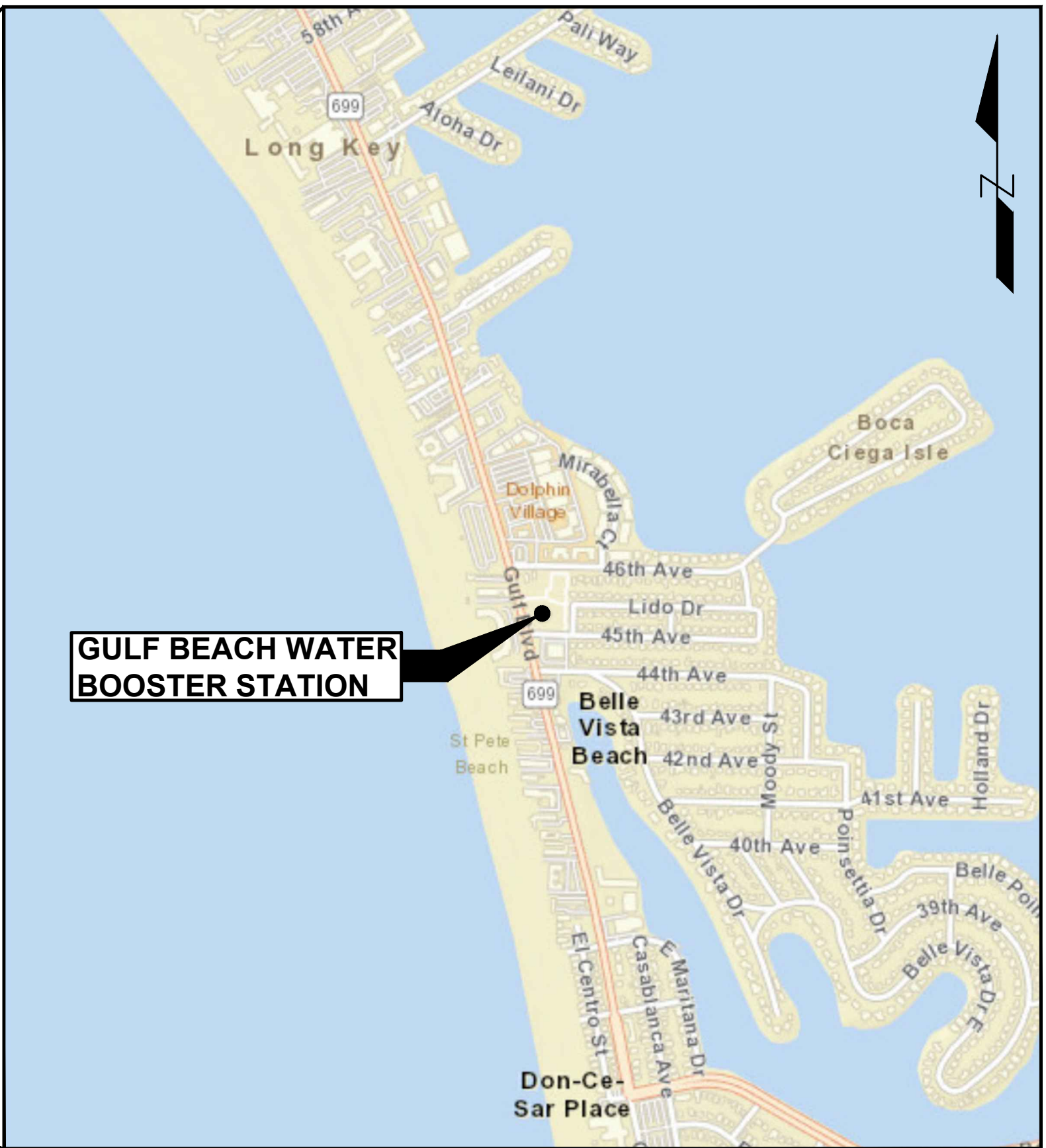
PINELLAS COUNTY
LOCATION MAP



PID 002150A

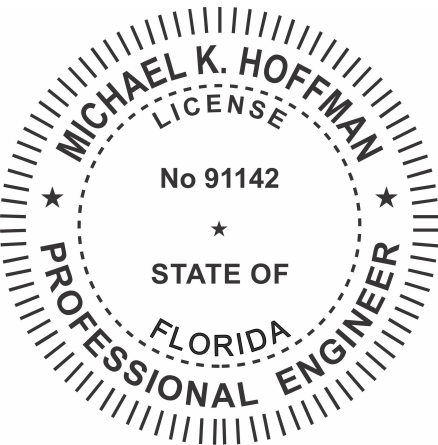
PERMIT SUBMITTAL

INDEX OF DRAWINGS	
C-1	LEGEND AND ABBREVIATIONS
C-2	GENERAL NOTES
C-3	EXISTING SITE PLAN
C-4	DEMOLITION PLAN
C-5	PROPOSED SITE PLAN
C-6	GRADING AND DRAINAGE PLAN
C-7	SITE PIPING PLAN
C-8	INTERIM SOURCE REMOVAL PLAN
C-9	CROSS SECTIONS I
C-10	CROSS SECTIONS II
C-11	CIVIL DETAILS I
C-12	CIVIL DETAILS II
C-13	CIVIL DETAILS III
C-14	STORMWATER POLLUTION PREVENTION PLAN
C-15	STORMWATER POLLUTION PREVENTION NOTES I
C-16	STORMWATER POLLUTION PREVENTION NOTES II
C-17	STORMWATER POLLUTION PREVENTION DETAILS
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE DETAILS
IR-1	IRRIGATION PLANS
IR-2	IRRIGATION DETAILS



4501 GULF BOULEVARD
ST PETE BEACH, FLORIDA 33706

KEY MAP
NOT TO SCALE



THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY MICHAEL
K. HOFFMAN, PE ON THE DATE
ADJACENT TO THE SEAL.

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ELECTRONIC COPIES.

Michael K. Hoffman
2024.04.30 14:37:27 04707

PREPARED BY:
WRIGHT-PIERCE, INC.
3820 NORTHDALE BOULEVARD, SUITE 202
TAMPA, FL 33624

PHONE: 800-422-1095

SUBMITTED FOR APPROVAL:

MICHAEL HOFFMAN, PE
WRIGHT-PIERCE, INC. DATE

RECOMMENDED FOR APPROVAL:

DATE

GRAPHIC SYMBOLS:

	CENTERLINE
	CONTOUR LINE
	EXISTING TOPOGRAPHIC FEATURE
	SURFACE WATER/WETLAND BOUNDARY
	SURVEY REFERENCE LINE
	RIGHT-OF-WAY (EXISTING)
	RIGHT-OF-WAY LINE (PROPOSED)
	(EXISTING W/ ACQUISITION)
	PROPERTY OR DEED LINE
	EASEMENT LINE
	EASEMENT LINE (PROPOSED)
	(EXISTING W/ ACQUISITION)
	SECTION LINE
	ORIGINAL LOT LINE/FORMER OWNERSHIP LINE/ VACATED EASEMENTS
	TREE LINE
	FENCE LINE
	DRAINAGE (STORM SEWER) PIPE
	EXISTING TOP OF BANK AND TOE OF SLOPE
	SANITARY SEWER GRAVITY LINE
	COMMUNICATION LINE
	UNDERGROUND ELECTRIC POWER LINE/CABLE
	TRAFFIC POWER/COMMUNICATION LINE
	FORCE MAIN (SANITARY SEWER)
	GAS LINE
	HOT OIL LINE
	OVERHEAD WIRE
	RECLAIMED WATER LINE
	POTABLE WATER
	UNKNOWN UTILITY

- FOUND CONCRETE MONUMENT

△

FOUND NAIL & DISC/CAP BRASS DISC

○

FOUND IRON ROD

○

FOUND IRON PIPE

▮

FOUND PINCH PIPE

■

SET CONCRETE MONUMENT

▲

SET NAIL & DISC/CAP BRASS DISC

●

SET IRON ROD

×

XCUT (FOUND)

×

XCUT (SET)
- ①

SUB PARCEL NO.
- ②

BLOCK NUMBER
- 00/00

PROPERTY APPRAISER PARCEL NUMBER
- P###

PROPOSED PARCEL

△

GROUND TARGET BENCHMARK

⚡

BACKFLOW PREVENTER

⬮

BENCHMARK

○

BUSH / SHRUB

○

BOLLARD

⊕

BORING

℄

CENTERLINE

☒

COMMUNICATIONS BOX

⊙

COMMUNICATIONS MANHOLE

⊙

DECIDUOUS TREE
(OAK UNLESS OTHERWISE ANNOTATED)

△

DELTA ANGLE

⊠

DRAINAGE CLEAN OUT

⊙

DRAINAGE MANHOLE

⊠

ELECTRICAL EQUIPMENT

⦿

ELECTRICAL OUTLET

🌳

EVERGREEN TREE

🚒

FIRE HYDRANT

⊠

GAS METER

⚡

GAS VALVE

⚡

GATE VALVE

⊠

GRATE INLET

└

GUY WIRE

⊠

HOSE BIBB

⚡

LIGHT POLE

⊠

MAILBOX

🕒

MONITOR WELL

🌴

PALM TREE

🚶

PEDESTRIAN SIGNAL

□

POLE/POST

⊠

POWER BOX

℄

PROPERTY LINE

⊕

RECLAIMED WATER MANHOLE

⊠

RECLAIMED WATER METER

⚡

RECLAIMED WATER VALVE

⊠

SANITARY SEWER CLEANOUT

⊕

EXISTING SANITARY SEWER CLEANOUT

⊕

EXISTING PRIVATE SEWER MANHOLE

⊕

EXISTING PUBLIC SEWER MANHOLE

+

MISCELLANEOUS

○

PROPOSED PUBLIC SEWER MANHOLE

⚡

ROAD ELEVATION POINTS

⚡

SATELLITE/ANTENNAE

└

SIGN

⚡

SPRINKLER HEAD

⚡

SPRINKLER HEAD VALVE

℄

SURVEY LINE

⊠

TARGET

⊠

TEST PIT

⬮

TRAFFIC SIGNAL POLE

⊠

TRAFFIC SIGNAL PULL BOX

⊠

UNDERDRAIN BOX

⬮

UTILITY POLE

⊠

WATER METER

⚡

WATER VALVE

ABBREVIATIONS:

(C)	CALCULATED DATA	DWM	DRIVEWAY, MARL	LBR	LIMEROCK BEARING RATIO	SCM	SET CONCRETE MONUMENT
(M)	MEASURED (IN FIELD)	DWS	DRIVEWAY, STONE	LF, L. F.	LINEAR FEET	SEC ###-###-###	SECTION, TOWNSHIP, RANGE
(P)	PLAT DATA	E	EASTING	LL	LANE LINE	SCH	SCHEDULE
(R)	RECORD DATA	ECL	EROSION CONTROL LINE	LT	LEFT	SD	STORM DRAIN
A	ARC LENGTH	ECMP	ELLIPTICAL CMP	MAX	MAXIMUM	SE	SOUTHEAST
AC	ACRE(S), ACTIVITY CENTER	ELEV	ELEVATION	MES	METERED END SECTION	SFI	SURVEY FILE NUMBER
ADA	AMERICANS WITH DISABILITIES ACT	EPA	EDGE OF PAVEMENT, ASPHALT	MH	MANHOLE	SIR	SET IRON ROD
ALUM	ALUMINUM	EPC	EDGE OF PAVEMENT, CONCRETE	MHW	MEAN HIGH WATER	SNC	SET NAIL AND CAP
ASPH	ASPHALT	EQ	EQUATION	MIN	MINIMUM	SND	SET NAIL AND DISK
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	EQUIP	EQUIPMENT	MLW	MEAN LOW WATER	SPI	SET NAIL AND SHINER
AUS	AUSTRALIAN	ERCP	ELLIPTICAL RCP	MNPT	MALE NATIONAL PIPE TAPERED	SDC	SET DRAINAGE CAP
BC	BACK OF CURB	ERD	EDGE OF ROAD, DIRT	MPH	MILES PER HOUR	SP	SUPERPAVE
BE	BURIED ELECTRICAL	ERG	EDGE OF ROAD, GRAVEL	MTLF	METAL FENCE	SPEC	SPECIFICATIONS
BF	BLIND FLANGE	ERM	EDGE OF ROAD, MARL	NTS	NORTHING	STA	STANDARD PLANS INDEX
BFV	BUTTERFLY VALVE	ERSH	EDGE OF ROAD, SHELL	NAVDB88	NORTH AMERICAN VERTICAL DATUM OF 1988	SPLWY	SPILLWAY
BLDG	BUILDING	ES	EXISTING STORM	NE	NORTHEAST	SQ	SQUARE
BM	BENCHMARK	ESMT	EASEMENT	NFV	NOT FIELD VERIFIED	SR	STATE ROAD
BDC	BOX CULVERT	ESS	EXISTING SANITARY SEWER	NGS	NATIONAL GEODETIC SURVEY	SRC	SET RED CAP
BRG	BEARING	EV	EACH WAY	NTS	NOT TO SCALE	SRL#	SURVEY REFERENCE LINE
BWF	BARBED WIRE FENCE	FAC	FLORIDA ADMINISTRATIVE CODE	NW	NORTHWEST	SRVT	SET RIVET
C#	CURVE NUMBER	FCM	FOUND CONCRETE MONUMENT	D/A	OVERALL	SR&D	SET RIVET AND DISK
C/C	CENTER TO CENTER	FCM	FOUND CONCRETE MONUMENT	DAK C	DAK CLUSTER	SST	STAINLESS STEEL
CALC	CALCULATED	FPE	FINISHED FLOOR ELEVATION	DD	OUTSIDE DIAMETER	STA	STATION
CB	CATCH BASIN	FIR	FOUND IRON ROD	DHK#	OVERHEAD UTILITY (NUMBER OF LINES)	STD	STANDARD
CBS	CONCRETE BLOCK STRUCTURE	FIP	FOUND IRON PIPE	DR	ORDINARY HIGH WATER	STY	STORY
CCR####	CERTIFIED CORNER RECORD NUMBER	FL	FLOWLINE	D/S	OFFICIAL RECORD	SW	SOUTHWEST
CCOL	COASTAL CONSTRUCTION CONTROL LINE	FLG	FLANGE	D/S	OFFSET	SVBR	SIDEWALK, BRICK/PAVER
C.F.R.	CODE OF FEDERAL REGULATIONS	FM	FORCE MAIN	PALM C	PALM CLUSTER	SWJ	SOLVENT WELDED JOINT
CH	CHORD	FNC	FOUND NAIL AND CAP	PB	PLAT BOOK	SWLK	SIDEWALK
CI	CAST IRON	FDEP	FLORIDA DEPT OF ENVIRONMENTAL PROTECTION	PC	POINT OF CURVATURE	SYC	SET YELLOW CAP
CIP	CAST IRON PIPE	FDDT	FLORIDA DEPT OF TRANSPORTATION	PCC	POINT OF COMPOUND CURVATURE	TB	TOP OF BANK
CL	CENTERLINE	FNDK	FOUND NAIL AND DISK	PCED	PINELLAS COUNTY ENGINEERING DEPT	TBM	TEMPORARY BENCHMARK
CLF	CHAIN LINK FENCE	FND	FOUND	PCSD	PINELLAS COUNTY SURVEY DIVISION	TREE C	TREE CLUSTER
CMP	CORRUGATED METAL PIPE	FNPT	FEMALE NATIONAL PIPE TAPERED	PG	PAGE	TS	TOE OF SLOPE
COMM	COMMUNICATIONS	FNS	FOUND NAIL AND SHINER	P1	POINT OF INTERSECTION	TYP	TYPICAL
CONE	CONCRETE	FOD	FOUND ORANGE CAP	PID	PARCEL IDENTIFICATION NUMBER	UD	UNDERDRAIN
CONDD	CONDDMINIUM	FOP	FOUND OPEN PIPE	PINE C	PINE CLUSTER	UDBX	UNDERDRAIN BOX
CONST	CONSTRUCTION	FPP	FOUND PINCHED PIPE	PLNTR	PLANTER	UNK	UNKNOWN
COR	CORNER	FRC	FOUND RED CAP	PLS	PROFESSIONAL LAND SURVEYOR	UP ####	UTILITY POLE NUMBER
CORR	CORRUGATED	FRRS	FOUND RAILROAD SPIKE	PNT	POINT	USEPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CR	COUNTY ROAD	FRVT	FOUND RIVET	PDB	POINT OF BEGINNING	VCP	VITRIFIED CLAY PIPE
CRL	CONSTRUCTION REFERENCE LINE	FS	FLORIDA STATUTES	PDC	POINT ON COMMENCEMENT	VVH	VERIFIED VERTICAL AND HORIZONTAL
D	DELTA/CENTRAL ANGLE	FW	FINISH WATER	PRC	POINT OF REVERSE CURVATURE	WDF	WOOD FENCE
DB	DEED BOOK	FYDL	FLEXIBLE DELINEATOR	PSM	PROFESSIONAL SURVEYOR AND MAPPER	W	WEST
DBI	DITCH BOTTOM INLET	FYC	FOUND YELLOW CAP	PT	POINT OF TANGENCY	W/	WITH
DESC	DESCRIPTION	GA	GALVANIZED	PVC	POLYVINYL CHLORIDE	W/D	WITHOUT
DHW	DESIGN HIGH WATER	GNSS	GLOBAL NAVIGATION SATELLITE SYSTEM	PVCF	POLYVINYL CHLORIDE FENCE	WM	WATER MAIN
DIA	DIAMETER	GPR	GROUND PENETRATING RADAR	R	RADIUS	XWLK	CROSS WALK
DI	DUCTILE IRON	GRIL	GUARD RAIL	RCP	REINFORCED CONCRETE PIPE		
DIP	DUCTILE IRON PIPE	HDPE	HIGH DENSITY POLYETHYLENE	RCW	RECLAIMED WATER		
DR	DRIVEWAY, ASPHALT	HW	HEADWALL	REF	REFERENCE		
DWA	DRIVEWAY, BRICK	HWF	HOT WIRE FENCE	RLS	REGISTERED LAND SURVEYOR		
DWB	DRIVEWAY, CONCRETE	ID	INNER DIAMETER	RPRP	RAILROAD		
DWC	DRIVEWAY, DIRT	IE	INVERT ELEVATION	RR	RAILROAD		
DWD	DRAWING	INV	INVERT	RT	RIGHT		
DWG	DRIVEWAY, GRAVEL	JBDX	JUNCTION BOX	RTK	REAL TIME KINEMATIC		
DWGRVL	DRIVEWAY, GRASS	L	LENGTH	R/W	RIGHT-OF-WAY		
DWGS				S	SOUTH, SANITARY		

				DESIGNED	M.HOFFMAN		PROJECT:	PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION:	LEGEND AND ABBREVIATIONS	 800.422.1095 www.wright-pierce.com 3820 NORTHDIALE BOULEVARD, SUITE 2028, TAMPA, FL 33624	APPROVED BY:	DATE:	04-2024
				DRAWN	D.METZ								PROJECT NO.	002150A
				CHECKED	W.NICKEL									
REV. NO.	DATE	DESCRIPTION	REV. BY										DATE	SHEET:

J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CTV\002150-GEN02.dwg, Apr 30, 2024 - 10:59am

GENERAL NOTES

1. THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE PERMITS LISTED IN THE SUPPLEMENTARY OR SPECIAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH PERMIT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL OBTAINED PERMITS ARE AVAILABLE FOR REVIEW FROM THE OWNER. ALL OTHER PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ALL RIGHTS_OF_WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE OWNER.
3. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
4. CONTRACTOR SHALL COMPLY WITH THE COORDINATION REQUIREMENTS AND RELATED COSTS, IF ANY, AS SPECIFIED IN SPECIFICATION SECTION 01 31 13.

EXISTING SITE CONDITIONS

1. THE LOCATIONS OF UNDERGROUND UTILITIES AND STRUCTURES, AS SHOWN ON THE DRAWINGS, ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE BASED ON PREVIOUS CONSTRUCTION DESIGN PLANS AND SURVEY, WHICH ARE DIGITALLY AVAILABLE UPON REQUEST. NO GUARANTEE IS MADE THAT UTILITIES OR STRUCTURES WILL BE ENCOUNTERED WHERE SHOWN, OR THAT ALL UNDERGROUND UTILITIES AND STRUCTURES ARE SHOWN. ALL LOCATIONS AND SIZES OF EXISTING UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD WITH TEST PITS AS REQUIRED PRIOR TO BEGINNING CONSTRUCTION OF NEW FACILITIES OR PIPING THAT MAY BE AFFECTED. THE CONTRACTOR WILL REALIGN NEW PIPE LOCATIONS AS REQUIRED TO CONFORM TO EXISTING LINES AND AS APPROVED BY THE ENGINEER.
2. BELOW GRADE UTILITY INFORMATION IS BASED ON INFORMATION PROVIDED BY THE SURVEYOR. LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 01 31 13. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

ELECTRIC:
DUKE ENERGY-ST PETERSBURG
DUKE'S CUSTOMER SERVICE CENTER
(407) 629-1010

WATER/SEWER/RECLAIMED:
PINELLAS COUNTY UTILITIES
CARLOS SOLIS
(727) 464-5317

SEWER/RECLAIMED:
CITY OF ST PETE BEACH
BRETT WARNER
(407) 629-1010

CABLE/FIBER:
CHARTER COMMUNICATIONS
DUFFY MCCLELLAND
(352) 527-2189

CATV/COMM:
FRONTIER COMMUNICATIONS
TONI CANNON
(813) 875-1014

FIBER/COMM:
MCI
INVESTIGATIONS TEAM
(800) 624-9675 x2

CONDUIT/FIBER/SIGNAL:
PINELLAS COUNTY HWY/ENG
JAMES JOHNSON
(727) 464-8981

GAS:
TECO PEOPLES GAS-ST PETERSBURG
JOAN DOMNING
(813) 275-3783

FIBER:
UNITI FIBER LLC
CHARLIE CROFT
(215) 214-7059

FIBER:
ZAYO GROUP / FORMERLY LIGHTWAVE, LLC
HENRY KLOBUCAR
(406) 496-6510

DIGSAFE:
SUNSHINE 811
(800) 432-4770

3. THERE ARE NO KNOWN HAZARDOUS ENVIRONMENTAL CONDITIONS WITHIN THE AREA OF WORK. IF THE PRESENCE OF HAZARDOUS ENVIRONMENTAL CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER IMMEDIATELY. ALL ACTIVITIES, HANDLING AND DISPOSAL OF HAZARDOUS ENVIRONMENTAL CONDITIONS AND MATERIALS SHALL BE IN ACCORDANCE WITH OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS.

SITE DEMOLITION

1. A GREY CROSS HATCH HIGHLIGHTS AND REPRESENTS DEMOLITION ON AN ITEM(S) IN THE AREA ASSOCIATED WITH THE HATCH.
2. REFER TO THE EXISTING SITE PLAN, FOR ADDITIONAL INFORMATION REGARDING EXISTING FACILITIES. REFER TO THE LAYOUT DRAWING FOR LIMITS OF WORK.
3. REFER TO ARCHITECTURAL, STRUCTURAL, PROCESS, MECHANICAL, PLUMBING, INSTRUMENTATION AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION REGARDING DEMOLITION AND REMOVAL.
4. REFER TO SPECIFICATION SECTION 01 11 01, WHICH CONTAINS INFORMATION ON CONSTRAINTS OF CONSTRUCTION SEQUENCING.
5. DEMOLISH/REMOVE EXISTING PIPING AS REQUIRED FOR CONSTRUCTION OF NEW FACILITIES. ALL PIPING, EQUIPMENT AND MATERIALS TO BE DEMOLISHED AND/OR REMOVED FROM SERVICE SHALL BE COORDINATED WITH THE OWNER AND ENGINEER BEFORE COMMENCING THAT WORK. EXISTING PIPING THAT NEEDS TO BE REMOVED TO CONSTRUCT THE NEW FACILITIES, BUT IS TO REMAIN, SHALL BE REINSTALLED/REPLACED AS NEEDED. EXISTING PIPES AND CONDUIT DESIGNATED AS "ABANDONED" MAY BE REMOVED IF THE CONTRACTOR SO CHOOSES. IF ABANDONED PIPE CONFLICTS WITH NEW SITE PIPING OR FACILITIES, THEN A PORTION OF THE ABANDONED PIPE SHALL BE REMOVED, AND THE NEW ENDS OF ABANDONED PIPE CAPPED OR PLUGGED WITH CONCRETE.
6. ALL EXISTING PIPING AND UTILITIES WHICH ARE BENEATH PROPOSED STRUCTURES, AND ARE TO BE ABANDONED, SHALL BE REMOVED TO A MINIMUM OF 5-FEET OUTSIDE OF THE STRUCTURE. PIPE AND UTILITIES BENEATH PROPOSED STRUCTURES THAT ARE TO REMAIN SHALL BE CONCRETE ENCASED, UNLESS OTHERWISE INDICATED. REFER TO THE STRUCTURAL DRAWINGS FOR DETAILS.
7. SEVERING OF EXISTING UTILITIES FOR ABANDONMENT, OR REMOVAL OF A SEGMENT FROM SERVICE, SHALL BE PERFORMED IN SUCH A MANNER AS TO ALLOW THE REMAINING ACTIVE SEGMENT TO CONTINUE IN ITS INTENDED SERVICE. CAP ACTIVE SEGMENTS WITH APPROPRIATE FITTINGS, JOINT RESTRAINT, ETC. TO ENSURE THEIR INTEGRITY. PLUG ENDS OF ABANDONED PIPE SEGMENTS WITH CONCRETE UNLESS SPECIAL CIRCUMSTANCES DICTATE PLUGGING ABANDONED PIPES WITH BLIND FLANGES, RESTRAINED MECHANICAL JOINT PLUGS, ETC. AS APPROPRIATE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL DEMOLISHED PIPING, EQUIPMENT AND MATERIALS. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REGULATIONS. THE OWNER RESERVES THE RIGHT TO RETAIN ANY SUCH PIPING, EQUIPMENT AND MATERIALS DESIGNATED FOR DEMOLITION. SUCH MATERIALS TO BE RETAINED SHALL BE PROPERLY STORED IN AN ON-SITE LOCATION. COORDINATE LOCATION AND MATERIALS TO BE SALVAGED WITH THE OWNER/ENGINEER. REFER TO SPECIFICATION SECTION 02 41 00.

9. THE CONTRACTOR SHALL KEEP A RECORD OF DEMOLITION AS PART OF THE PROJECT RECORD DOCUMENTS IN ACCORDANCE WITH SPECIFICATION SECTION 01 78 39.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE THAT ALL PROCESS FLOWS ARE MAINTAINED DURING CONSTRUCTION. GRAVITY OR PUMPED BYPASSES AND OTHER MEANS OF MAINTAINING FLOW SHALL BE SUBJECT TO THE REVIEW AND ACCEPTANCE OF THE ENGINEER. THE CONTRACTOR SHALL COORDINATE ANY TEMPORARY STOPPAGES OR BYPASSES WITH THE OWNER AND ENGINEER. FEDERAL AND STATE REGULATIONS REQUIRE THAT THE TREATMENT FACILITY REMAIN IN OPERATION (ALL TREATMENT, DISINFECTION, SLUDGE HANDLING AND DISPOSAL PROCESSES) THROUGHOUT CONSTRUCTION, AND THAT DISCHARGE PERMITS ARE MET. REFER TO SPECIFICATION SECTION 01 11 01.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF FLOWS RESULTING FROM PRECIPITATION AND GROUNDWATER DEWATERING OPERATIONS.

SITE CLEARING, GRUBBING AND GRADING

1. STRIPPING OF TOPSOIL SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 31 14 00. REFER TO THE LAYOUT AND GRADING DRAWINGS FOR LIMIT OF WORK AND STRIPPING.
2. CONTRACTOR SHALL MINIMIZE CLEARING OPERATIONS. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 31 11 00. CLEARING LIMITS SHALL BE AS INDICATED ON THE DRAWINGS, BUT AT ALL TIMES WITHIN EXISTING ROAD RIGHTS_OF_WAY AND PROPERTY LINES ON STATE OR COUNTY OWNED PROPERTY OR EASEMENTS. ALL CLEARING AND GRUBBING MATERIAL SHALL BE THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT A SITE PROVIDED BY THE CONTRACTOR IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS.
3. CONTRACTOR SHALL PROVIDE PROPER EROSION CONTROL AND DRAINAGE MEASURES IN ALL AREAS OF WORK, AND CONFINE SOIL SEDIMENT TO WITHIN THE LIMITS OF EXCAVATION AND GRADING. PRIOR TO BEGINNING EXCAVATION WORK, EROSION CONTROL FENCE SHALL BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE ACTUAL LIMITS OF GRUBBING AND/OR GRADING, AND AS SHOWN ON THE DRAWINGS. EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS ARE A MINIMUM, CONTRACTOR SHALL TAKE ALL OTHER NECESSARY MEASURES. EROSION CONTROL FENCE SHALL ALSO BE INSTALLED AT THE DOWN GRADIENT PERIMETER OF THE TOPSOIL STOCKPILES. ALL DISTURBED EARTH SURFACES SHALL BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL SHALL BE STABILIZED IN A MANNER THAT WILL MINIMIZE EROSION. ALL INSTALLED EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE END OF THE PROJECT. REFER TO SPECIFICATION SECTION 31 25 00.
4. ALL STORM DRAINAGE INLETS SHALL BE PROTECTED BY HAY BALE FILTERS TO PREVENT ENTRY OF SEDIMENT FROM RUNOFF WATERS DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL COLLECTED SEDIMENT, AND THAT WHICH COLLECTS IN THE STORM DRAIN SYSTEM. REFER TO THE CIVIL DETAIL DRAWINGS.
5. THE GEOTECHNICAL DATA REPORT FOR THE PROJECT SITE IS INCLUDED IN APPENDIX A OF THE SPECIFICATIONS.
6. CONTRACTOR SHALL CONTROL DUST ON THE CONSTRUCTION SITE TO A REASONABLE LIMIT, AS DETERMINED BY THE ENGINEER, AND AS OUTLINED IN SPECIFICATION SECTION 01 57 26.
7. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH, DEBRIS OR OTHER CONSTRUCTION MATERIAL ON PUBLIC OR PRIVATE STREETS AND PLANT DRIVES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE ASSOCIATED CLEAN UP.
8. ALL CATCH BASINS, MANHOLES, VALVE PITS, VALVE BOXES AND OTHER BURIED FACILITIES WITH SURFACE ACCESS SHALL BE ADJUSTED TO MATCH FINAL GRADES, UNLESS OTHERWISE INDICATED.
9. THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL MAY BE INCORPORATED IN THE PROJECT, WITH EXCESS MATERIAL DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR. THESE PROVISIONS SHALL IN NO WAY RELIEVE THE CONTRACTOR OF OBLIGATIONS TO PROPERLY DISPOSE OF AND REPLACE ANY MATERIAL DETERMINED BY THE ENGINEER TO BE UNSUITABLE FOR BACKFILLING. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS.
10. CONTRACTOR SHALL REMOVE AND REPLACE, OR REPAIR, ALL CURBS, SIDEWALKS, PAVEMENT AND OTHER ITEMS DAMAGED BY CONSTRUCTION ACTIVITIES TO AT LEAST THEIR ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND ENGINEER.
11. ALL NON-PAVED AREAS THAT ARE EXCAVATED, FILLED, OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE SODDED, UNLESS OTHERWISE NOTED. REFER TO SPECIFICATION SECTION 32 92 19.

CIVIL SITE LAYOUT

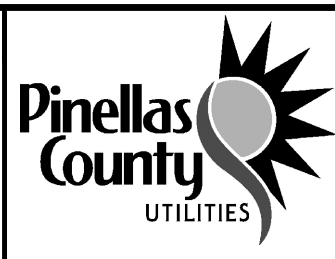
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THIS PROVIDED LAYOUT INFORMATION THROUGHOUT THE COURSE OF CONSTRUCTION. REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
2. REFER TO THE SITE PIPING AND SITE GRADING DRAWINGS FOR ADDITIONAL LAYOUT INFORMATION.
3. CONTRACTOR SHALL EXCAVATE TEST PITS, WHERE NECESSARY, PRIOR TO CONSTRUCTION LAYOUT AND RESULTS REPORTED TO THE ENGINEER FOR REVIEW FOR CONFORMANCE TO THE PLANS. TEST PITS ARE REQUIRED WHERE SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.
4. IN GENERAL, THE GIVEN STRUCTURE LOCATIONS ARE TO THE OUTSIDE FACE OF THE STRUCTURE FOUNDATION WALL, NOT FOOTINGS. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING AND STRUCTURE DIMENSIONS. RADII SHOWN FOR ROADS ARE TO EDGE OF PAVEMENT.
5. PLACE CRUSHED STONE MOWING STRIP AROUND THOSE STRUCTURES AS INDICATED ON THE DRAWINGS. REFER TO THE CIVIL DETAIL DRAWINGS.
6. THE LOCATIONS AND LIMITS OF ALL ON-SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO, THE OWNER AND ENGINEER. THE CONTRACTOR SHALL LIMIT ACTIVITIES TO THESE AREAS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING AND RESETTING ALL EXISTING PROPERTY MONUMENTATION DISTURBED BY CONSTRUCTION. THIS WORK SHALL BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA, AT NO ADDITIONAL COST TO THE OWNER.
8. WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE DISTANCES FROM THE DRAWINGS. REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
9. BOLLARD LOCATIONS SHOWN ARE APPROXIMATE. COORDINATE BOLLARD LOCATIONS WITH THE ENGINEER. REFER TO THE CIVIL DETAIL DRAWINGS.
10. ALL ELEVATIONS REFER TO THE NAVD88 DATUM. HORIZONTAL POSITIONS FOR ALL FEATURES ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT, ZONE 902, FLORIDA WEST. HORIZONTAL CONTROL WAS ESTABLISHED USING THE FDOT FLORIDA PERMANENT REFERENCE NETWORK, A REAL TIME KINEMATIC GLOBAL POSITIONING SYSTEM. ALL TOPOGRAPHIC FEATURES WERE COLLECTED CONVENTIONALLY FROM CONTROL POINTS ELEVATED FROM A CLOSED LOOP BENCH RUN FROM NATIONAL GEODETIC SURVEY POINT "NOAA D". CONTRACTOR SHALL VERIFY BENCHMARK ELEVATIONS PRIOR TO USING IN CONSTRUCTION.
11. EXISTING CONDITIONS SITE PLAN DEVELOPED FROM SURVEY DRAWING PREPARED BY ECHO UES, INC, DATED 9/19/2023, AND EXISTING RECORD DRAWING INFORMATION.

CIVIL SITE PIPING

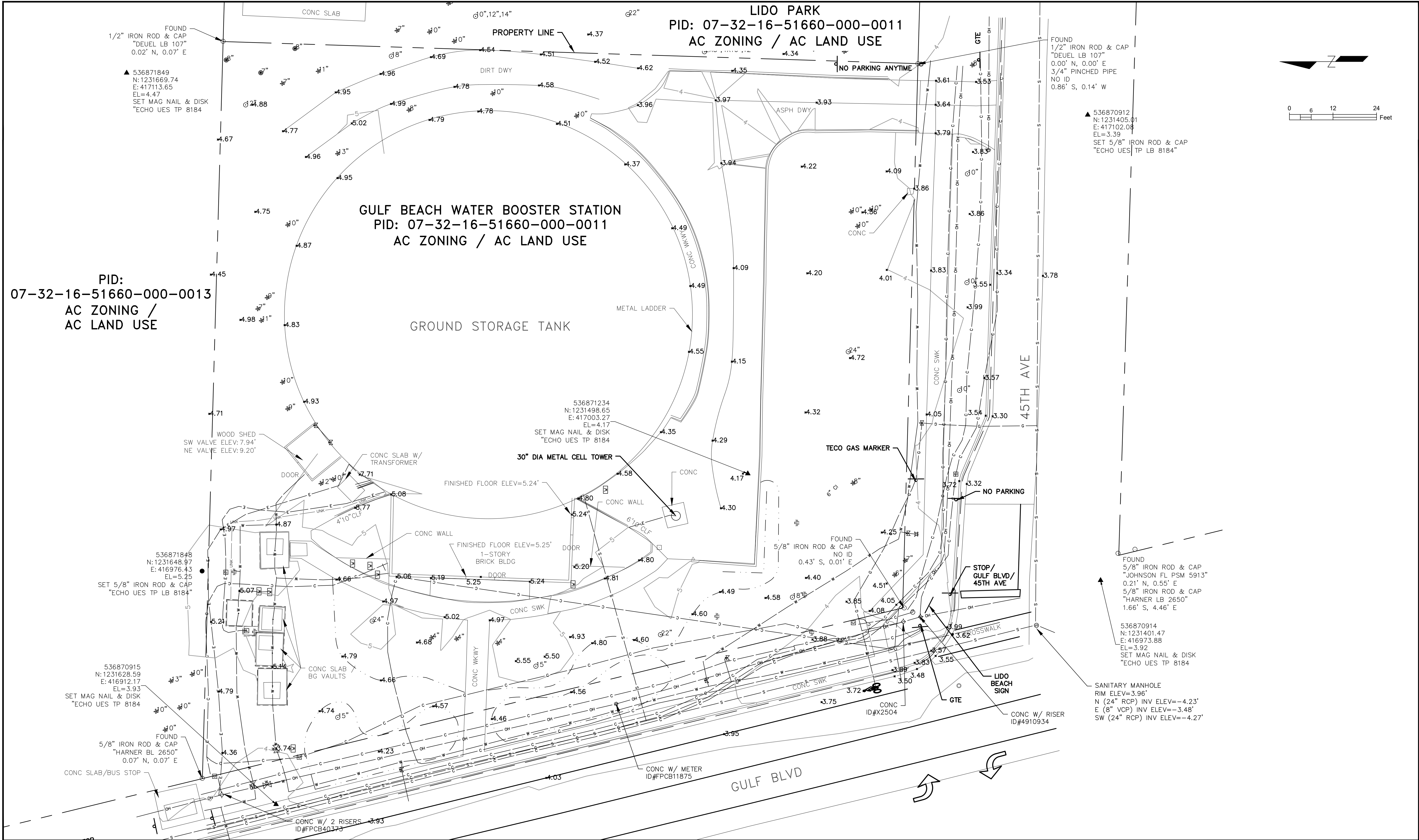
1. PROCESS FLOW DIAGRAM AND PIPING LEGEND ARE ON THE PROCESS DRAWINGS. THE PROCESS PIPING SCHEDULE AND ADDITIONAL PIPING NOTES ARE LOCATED IN SPECIFICATION SECTION 40 05 00.
2. ALL PIPE LINES SHALL SLOPE UNIFORMLY BETWEEN ELEVATIONS INDICATED ON THE DRAWINGS. NO CRESTS IN PIPING WILL BE PERMITTED. CONCRETE THRUST BLOCKS OR OTHER ACCEPTABLE RESTRAINT SYSTEM IS REQUIRED ON ALL FITTINGS ON PRESSURE PIPE. WHERE A RESTRAINED JOINT SYSTEM IS USED, THE NUMBER OF PIPES WITH RESTRAINED JOINTS ON EITHER SIDE OF THE FITTING SHALL BE DESIGNED TO REFLECT THE PROJECT SOIL CONDITIONS AND PEAK SURGE PRESSURE IN THE PIPING SYSTEM. SEE THE CIVIL DETAIL DRAWINGS FOR THRUST BLOCK DETAILS. PROVIDE ALL BENDS (HORIZONTAL AND VERTICAL) AS REQUIRED TO MEET THE GRADES AND ALIGNMENT INDICATED ON THE DRAWINGS.
3. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING PIPING AND UTILITIES IN THE FIELD BY TEST PIT EXCAVATION PRIOR TO COMMENCING INSTALLATION OF ANY OF THE NEW PIPING AFFECTED. WHERE NEW PIPE CONNECTS TO EXISTING PIPING OR STRUCTURAL PENETRATION, CONTRACTOR SHALL VERIFY ELEVATION BY TEST PIT, AS REQUIRED, PRIOR TO INSTALLATION OF ANY OF THE ASSOCIATED/AFFECTED NEW PIPING. IDENTIFIED CONFLICTS WITH EXISTING PIPING AND UTILITIES WILL BE REVIEWED WITH THE ENGINEER PRIOR TO COMMENCING INSTALLATION. THE HORIZONTAL ALIGNMENT OF NEW PIPING MAY BE ADJUSTED IN THE FIELD SUBJECT TO PRIOR REVIEW AND ACCEPTANCE OF THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT OF ALL PROPOSED WORK AS SHOWN ON THE DRAWINGS AND REPORT ANY LAYOUT DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
4. ALL WASTEWATER PIPING (EXCLUDING BUILDING DRAINS) AND ALL PRESSURIZED PIPES (I.E. PLANT WATER, CITY WATER, SOLUTION LINES, HEAT, ETC.) INSTALLED BENEATH STRUCTURES SHALL BE ENCASED IN CONCRETE. SEE STRUCTURAL DRAWING FOR DETAILS.
5. ALL BURIED CONNECTIONS TO STRUCTURES SHALL HAVE SLEEVE TYPE FLEXIBLE CONNECTIONS APPROXIMATELY 4-FEET FROM THE STRUCTURES. ALL SLEEVE TYPE COUPLINGS ON PRESSURE LINES SHALL BE RESTRAINED (SOLID SLEEVE). REFER TO SPECIFICATION SECTION 40 05 06.
6. PROVIDE CAST OR DUCTILE IRON WALL CASTINGS, OR GALVANIZED STEEL PIPE SLEEVES, FOR ALL PIPE PENETRATIONS MADE THROUGH CONCRETE FOUNDATIONS, WALLS AND SLABS. ALL WALL SLEEVES AND WALL CASTINGS SHALL HAVE WATERSTOPS. SEE PROCESS, MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS OF PENETRATIONS. NEW PENETRATIONS THROUGH EXISTING STRUCTURE WALLS SHALL BE BY CORING MACHINE AND LINK-TYPE SEALS, UNLESS OTHERWISE INDICATED. OPENINGS TO BE COMPATIBLE WITH REQUIRED PIPING AND STANDARD LINK SEAL SIZES. SEE PROCESS DETAIL DRAWINGS. REFER TO SPECIFICATION SECTION 15092.
7. MANHOLES ARE 4-FEET IN DIAMETER UNLESS OTHERWISE NOTED. THE TOP OF MANHOLE FRAMES SHALL BE SET FLUSH WITH FINISH GRADE, UNLESS OTHERWISE NOTED ON DRAWINGS. SEWER MANHOLE INVERTS SHOWN ON THE DRAWINGS ARE TO THE INSIDE FACE OF THE MANHOLE.
8. PIPES WITHIN VALVE PITS (MANHOLES) SHALL BE SUPPORTED 12-INCHES ABOVE BOTTOM OF MANHOLE ON ADJUSTABLE PIPE SADDLE SUPPORTS, IN ACCORDANCE WITH SPECIFICATION SECTION 40 05 10, UNLESS OTHERWISE INDICATED.
9. CONTRACTOR SHALL RE-SHAPE INVERTS AS REQUIRED WHEN CONNECTING INTO EXISTING MANHOLES.
10. REFER TO SPECIFICATION SECTION 31 23 00 FOR PIPE AND STRUCTURE BEDDING AND BACKFILL REQUIREMENTS.
11. COMPACTION TESTS WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 31 23 00. ANY SETTLEMENT OCCURRING WITHIN ONE-YEAR OF FINAL COMPLETION OF THE WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST.
12. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTICE TO THE RESPECTIVE UTILITY POLE OWNER. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
13. WHERE NEW PIPING IS TO BE CONNECTED TO EXISTING PIPING, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ADAPTERS, FITTINGS, AND ADDITIONAL PIPE AS REQUIRED TO COMPLETE THE CONNECTION. CONTRACTOR SHALL VERIFY LOCATION, ELEVATION, ORIENTATION AND MATERIAL OF CONSTRUCTION. TEST PITS SHALL BE USED AS REQUIRED.
14. ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION ARE TO REMAIN IN SERVICE UNLESS OTHERWISE NOTED ON THE CIVIL EXISTING CONDITIONS AND DEMOLITION PLAN. ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL DEMOLITION MATERIALS IN ACCORDANCE WITH SPECIFICATION SECTION 02 41 00.
16. WHENEVER SEWER AND WATER MAINS MUST CROSS, WATER LINES SHOULD BE INSTALLED ABOVE WASTEWATER OR SLUDGE LINES. A MINIMUM SEPARATION OF 18-INCHES BETWEEN THE BOTTOM OF THE WATER LINE AND THE TOP OF THE WASTEWATER OR SLUDGE LINE SHALL BE MAINTAINED. WHERE A WATER LINE CROSSES UNDER A WASTEWATER OR SLUDGE LINE, A FULL LENGTH OF PIPE SHALL BE CENTERED ABOVE THE WATER LINE SO THAT BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE.
17. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO ANY TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY OR RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR, RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE OWNER.
18. PIPING ON THE SITE PIPING PLAN HAS BEEN SHOWN BROKEN FOR CLARITY ONLY. PIPE BREAKS DO NOT INDICATE RELATIVE ELEVATIONS OF PIPING.
19. ELECTRICAL CONDUIT RUNS ARE INDICATED ON THE ELECTRICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION, EXCAVATION AND BACKFILLING REQUIRED FOR THE ELECTRICAL CONDUITS, AND SHALL FURNISH AND INSTALL ELECTRICAL MANHOLES AND HANDHOLES. COORDINATE THE LOCATION OF THE ELECTRICAL MANHOLES AND HANDHOLES, AND THE REQUIRED OPENING SIZES, WITH THE ELECTRICAL CONTRACTOR.
20. WHENEVER PROPOSED STRUCTURES ARE LOCATED PARTLY WITHIN A PAVED AREA AND PARTLY IN A NON-PAVED AREA, A BITUMINOUS CONCRETE PAVED APRON 2-FEET WIDE SHALL BE SUPPLIED AROUND THE PROPOSED COVER. PAVEMENT SHALL SLOPE AWAY FROM THE COVER.

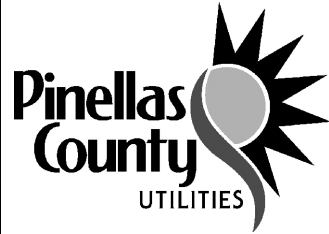
GULF BOULEVARD RIGHT OF WAY

1. ALL DISTURBED AREAS IN THE GULF BOULEVARD RIGHT OF WAY SHALL BE SODDED.
2. ALL WORK WITHIN THE GULF BOULEVARD RIGHT OF WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FY 2024-2025 FDOT STANDARD SPECIFICATIONS AND FY 2024-2025 FDOT STANDARD PLANS.
3. SIDEWALK WITHIN THE GULF BOULEVARD RIGHT OF WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT STANDARD PLAN INDEX 522-001. DETECTABLE WARNINGS AND CURB RAMPS WITHIN THE GULF BOULEVARD RIGHT OF WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT STANDARD PLAN INDEX 522-002.

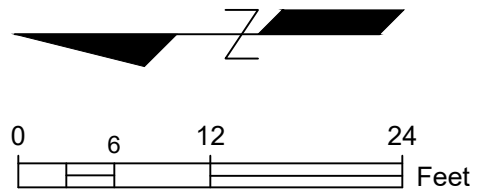
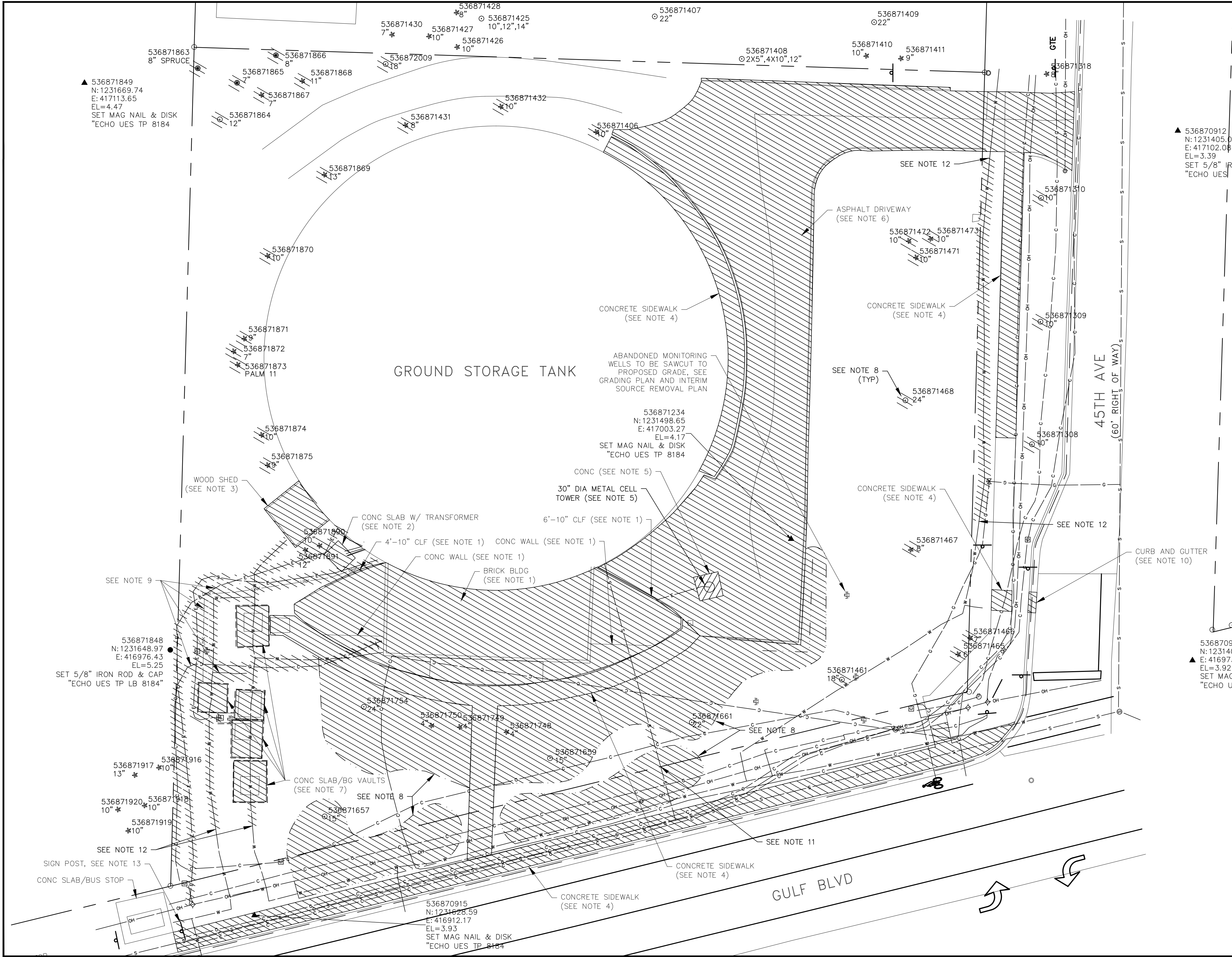
				DESIGNED <u>M.HOFFMAN</u>		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: GENERAL NOTES	 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: _____ DATE	DATE: 04-2024
				DRAWN <u>D.METZ</u>						PROJECT NO. 002150A
				CHECKED <u>W.NICKEL</u>						SHEET: C-2
REV. NO.	DATE	DESCRIPTION			REV. BY					

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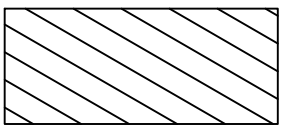


			DESIGNED <u>M.HOFFMAN</u>			PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS		DESCRIPTION: EXISTING SITE PLAN		 800.422.1095 www.wright-pierce.com 3820 NORTHDAL BOULEVARD, SUITE 202B, TAMPA, FL 33624		APPROVED BY:		DATE: 04-2024			
			DRAWN <u>D.METZ</u>											PROJECT NO. 002150A			
REV. NO. DATE DESCRIPTION			CHECKED <u>W.NICKEL</u>									DATE		SHEET: C-3			

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TREE DEMO	
SURVEY TREE NUMBER	SIZE REPLACEMENT TREE REQUIRED
536871308	10"
536871309	10"
536871310	10"
536871406	10"
536871431	8"
536871432	10"
536871461	18"
536871465	6"
536871466	7"
536871467	8"
536871468	24"
536871471	10"
536871472	10"
536871473	10"
536871657	15"
536871661	22"
536871748	4"
536871749	4"
536871750	4"
536871754	24"
536871863	8"
536871864	12"
536871865	7"
536871866	8"
536871867	7"
536871868	11"
536871869	13"
536871870	10"
536871871	9"
536871872	7"
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536871874	10"
536871875	9"
536871890	10"
536871891	12"
536872009	18"



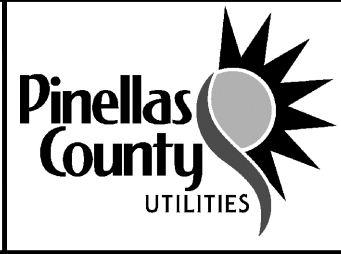
LIMITS OF DEMOLITION

NOTES:

- DEMOLISH BRICK BUILDING, CONCRETE WALLS AND CHAIN LINK FENCES.
- REMOVE TRANSFORMER AND DEMOLISH CONCRETE SLAB.
- DEMOLISH WOOD SHED.
- DEMOLISH CONCRETE SIDEWALK.
- REMOVE CELL TOWER AND DEMOLISH CONCRETE SLAB.
- DEMOLISH ASPHALT DRIVEWAY AND CURBS.
- DEMOLISH CONCRETE SLABS AND BG VAULTS.
- REMOVE TREES AND VEGETATION.
- REMOVE ELECTRIC, WATER, COMMUNICATION AND UNKNOWN UTILITIES TO THE EXTENTS SHOWN.
- DEMOLISH CURB AND GUTTER.
- DEMOLISH SANITARY LATERAL TO ROW.
- CUT EXISTING CI WATER MAIN. REPAIR SURFACE AND LINING OF EXISTING CI WM TO REMAIN.
- REMOVE SIGN POST.

REV. NO.	DATE	DESCRIPTION

DESIGNED	M.HOFFMAN
DRAWN	D.METZ
CHECKED	W.NICKEL



PROJECT:	DESCRIPTION:
PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DEMOLITION PLAN

WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:	DATE

DATE:	04-2024
PROJECT NO.	002150A
SHEET:	C-4

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

PID:
07-32-16-
51660-
000-0013
AC ZONING /
AC LAND USE

5' LANDSCAPE
BUFFER—TYPE A

ALUMINUM PIPE
GUIDERAIL,
FDOT SPI 515-070

CONCRETE —
SIDEWALK
TOP OF —
BANK (TYP)

536871848
N: 1231648.97
E: 416976.43
EL=5.25
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184'

CONC
SLAB/BUS
STOP

536870915
N: 1231628.59
E: 416912.17
EL=3.93
SET MAG NAIL & DISK
"ECHO UES TP 8184

DESIGNED M.HOFFMAN
DRAWN D.METZ
CHECKED W.NICKEL



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:

PROPOSED SITE PLAN

WRIGHT-PIERCE 
800.422.1095 | www.wright-pierce.com
3820 NORTHDAL E BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:

DATE _____

DATE:	04-2024
PROJECT NO.	002150A
SHEET:	C-5

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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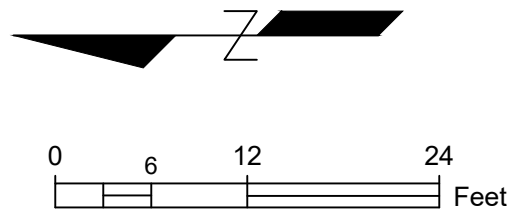
J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CV\002150A-CRAD.dwg, Apr 30, 2024 - 11:01am

536871849
N: 1231669.74
E: 417113.65
EL=4.47
SET MAG NAIL & DISK
"ECHO UES TP 8184"

PID:
07-32-16-
51660-
000-0013
AC ZONING /
AC LAND USE

LIDO PARK
PID: 07-32-16-51660-000-0011
AC ZONING / AC LAND USE

536870912
N: 1231405.01
E: 417102.08
EL=3.39
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"



S-7
TYPE C DBI
INV. W 1.40' 18"
INV. S 1.40' 18"
RIM EL= 6.03
14 L.F. 18" SD
TOP OF
BANK (TYP)

83 L.F. 18" SD

S-6
TYPE C DBI
INV. NW 1.40' 18"
RIM EL= 4.00
14 L.F. 18" SD

50 L.F. 18" SD

536871848
N: 1231648.97
E: 416976.43
EL=5.25
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"

CONC
SLAB/BUS
STOP

POND 2

POND 3

GULF BEACH WATER
BOOSTER STATION
PID:
07-32-16-51660-000-0011
AC ZONING / AC LAND USE

GROUND STORAGE TANK

(2) CONCRETE STEPS WITH ALUMINUM RAILING,
FDOT SPI 400-021 AND FDOT SPI 515-070

536871234
N: 1231498.65
E: 417003.27
EL=4.17
SET MAG NAIL & DISK
"ECHO UES TP 8184"

EXISTING GRADE
CONTOURS (TYP)

SAWCUT ABANDONED
MONITORING WELL TO
FINISHED GRADE

PUMP BUILDING
FFE=6.50

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PID:
07-32-16-
51660-
000-0013
AC ZONING /
AC LAND USE

536871849
N:1231669.74
E:417113.65
EL=4.47
SET MAG NAIL & DISK
"ECHO UES TP 8184"

LIDO PARK
PID: 07-32-16-51660-000-0011
AC ZONING / AC LAND USE

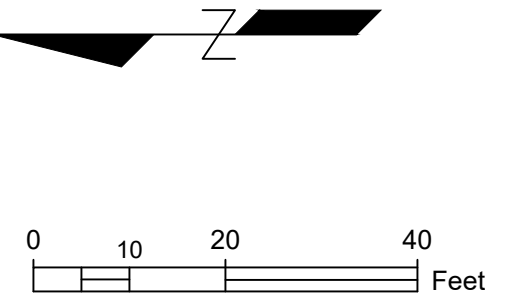
GULF BEACH WATER BOOSTER STATION
PID: 07-32-16-51660-000-0011
AC ZONING / AC LAND USE

GROUND STORAGE TANK

EQUIPMENT
YARD

45TH AVE
(60' RIGHT OF WAY)

GULF BLVD



536870912
N:1231405.01
E:417102.06
EL=3.39
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"

TH 1-5
TOP EL: 2.05

TH 1-4
TOP EL: 1.60

TH 1-3
TOP EL: 1.91

536870914
N:1231401.47
E:416973.88
EL=3.92
SET MAG NAIL & DISK
"ECHO UES TP 8184"

SANITARY MANHOLE
RIM ELEV=3.96'
N (24" RCP) INV ELEV=-4.23'
E (8" VCP) INV ELEV=-3.48'
SW (24" RCP) INV ELEV=-4.27'

536871234
N:1231498.65
E:417003.27
EL=4.17
SET MAG NAIL & DISK
"ECHO UES TP 8184"

TH 1-7
TOP EL: 0.18

TH 1-6
TOP EL: 2.62

536870915
N:1231628.59
E:416912.17
EL=3.93
SET MAG NAIL & DISK
"ECHO UES TP 8184"

CONNECT 4" S 45
DEGREE ELBOW TO
EXISTING 4" CI
SANITARY LATERAL
IE: AS REQUIRED

S-2
RELOCATE
WATER MAIN

12" DRAIN (TO BE FIELD
LOCATED WITH APPROVAL
OF ENGINEER)

S-7
S-8

16" FW
INV=-3.58
16"X4" TEE

536871848
N:1231648.97
E:416976.43
EL=5.25
SET 5/8" IRON ROD & CAP
"ECHO UES TP LB 8184"

S-5
16" FW
INV=-0.96

16" BFV
16" SLEEVE

16" FW
INV=-0.76
TH 1-1
TOP EL: 0.66

CONC SLAB/BUS
STOP

16" FW
INV=-1.13
4" GATE VALVE
4" FW
DOUBLE CHECK
BACKFLOW PREVENTER

1-1/2" PWS-1
METER AND BOX
SERVICE TAP
16" FW
INV=-1.49

REDUCED PRESSURE
PREVENTER
TH 1-2
TOP EL: 1.57
16" FW
INV=0.14
EXISTING
16" CI WM

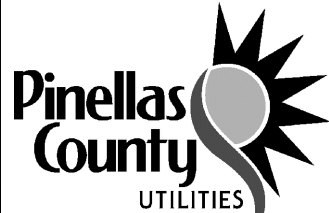
PUMP
BUILDING
FFE=6.50
4" WYE
INV=AS REQUIRED
4" S LATERAL
(1% MIN SLOPE)

S-4
4" WYE
INV=0.40

SEWER LATERAL
CLEANOUT (TYP)
4" WYE
INV=0.24
4" S LATERAL
(1% MIN SLOPE)

EXISTING 6"
CI SANITARY
LATERAL
TH 1-9
TOP EL: 0.00

DESIGNED C.BAGGETT
DRAWN D.METZ
CHECKED W.NICKEL



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:
SITE PIPING PLAN

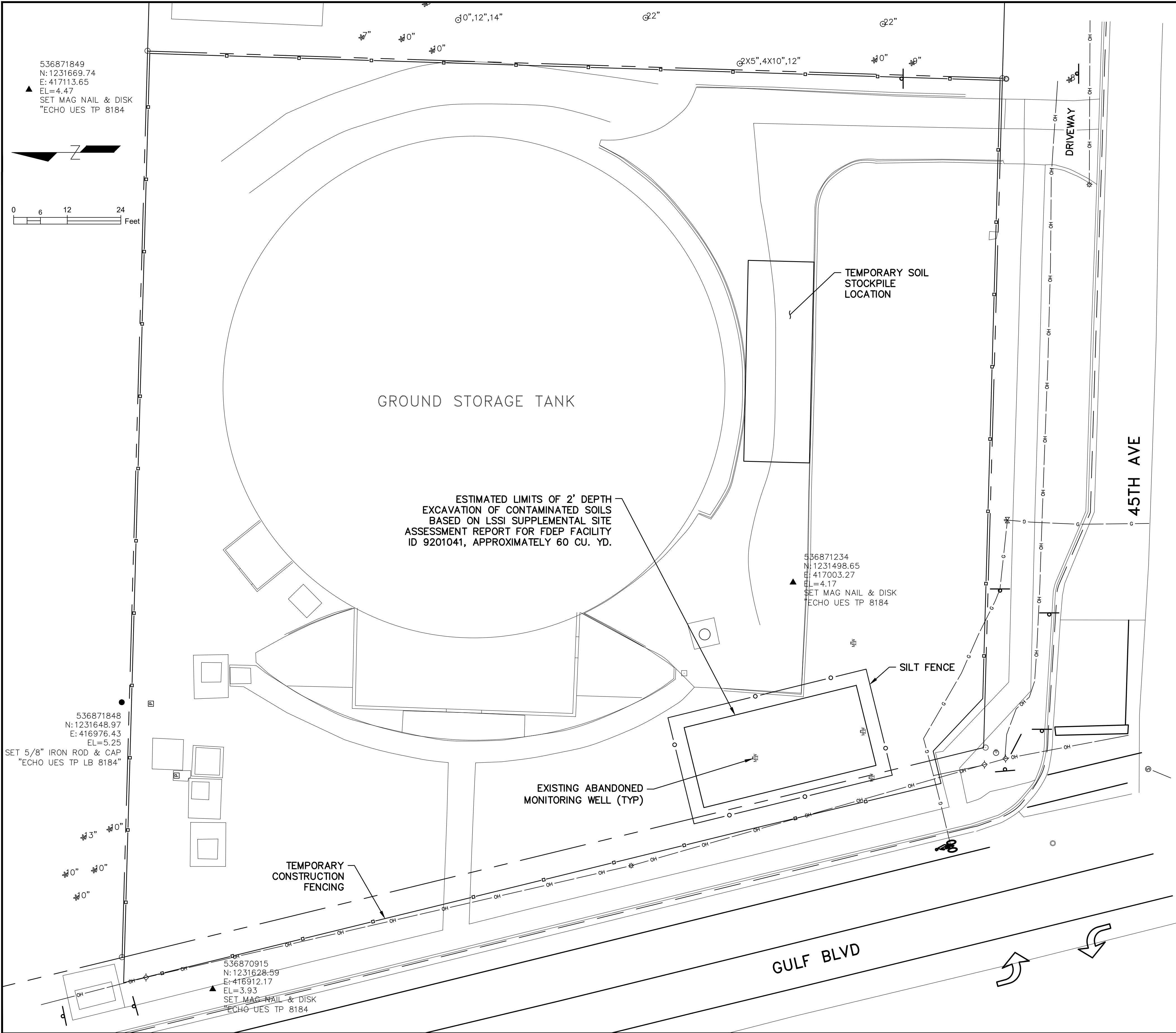
WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALIE BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:
DATE

DATE: 04-2024
PROJECT NO. 002150A
SHEET: C-7

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CTV\P002150A-ENV.dwg, Apr 30, 2024 - 1102am



INTERIM SOURCE REMOVAL NOTES:

- CONTRACTOR SHALL PROVIDE TO FDEP A WRITTEN NOTIFICATION IN ACCORDANCE WITH THE TIME FRAMES IN TABLE A, THAT INCLUDES A DESCRIPTION OF THE TYPE OF CONTAMINATION, ESTIMATED VOLUME OF SOIL OR SEDIMENT TO BE REMOVED, AND PROPOSED DISPOSAL METHODS TO BE UTILIZED.
- CONTAMINATION SHALL NOT BE SPREAD INTO PREVIOUSLY UNCONTAMINATED AREAS OR LESS CONTAMINATED AREAS THROUGH UNTREATED DISCHARGES, IMPROPER TREATMENT, IMPROPER DISPOSAL, OR IMPROPER STORAGE.
- FLAMMABLE PRODUCTS SHALL BE HANDLED IN A SAFE MANNER.
- WHEN A SOIL VACUUM EXTRACTION SYSTEM IS NECESSARY TO ABATE AN IMMINENT THREAT TO HUMAN LIFE, HEALTH, OR SAFETY WITHIN A STRUCTURE OR UTILITY CONDUIT, THEN THE VACUUM EXTRACTION SYSTEM SHALL BE DESIGNED AND OPERATED BY THE CONTRACTOR ONLY TO ABATE THE IMMINENT THREAT. THE DEPARTMENT SHALL BE NOTIFIED BY THE CONTRACTOR, WITHIN 24 HOURS, OF THE IMMINENT THREAT AND THE INTENT TO USE A SOIL VACUUM EXTRACTION SYSTEM. THE AIR EMISSIONS MONITORING AND FREQUENCY OF MONITORING SHALL BE PERFORMED BY THE CONTRACTOR PURSUANT TO PARAGRAPHS 62-780.700(4)(A) AND (11)(I), F.A.C
- CONFIRMATORY SOIL OR SEDIMENT SAMPLES SHALL BE COLLECTED BY THE CONTRACTOR AT THE BOTTOM OF THE EXCAVATION AND WALLS OR PERIMETER OF THE EXCAVATION. THESE SAMPLES SHALL BE TESTED WITH FDEP APPROVED METHODOLOGY TO DETERMINE THE CLEAN POINTS OF THE EXCAVATION.
- CONTRACTOR SHALL PERFORM TESTING OF THE CONTAMINATED SOIL TO DETERMINE IF THE SOIL OR SEDIMENT CONTAINS HAZARDOUS WASTE AS LISTED IN 40 C.F.R. PART 261 SUBPART D (7-1-12 EDITION)
- CONTRACTOR SHALL PERFORM TESTING OF THE CONTAMINATED SOIL USING USEPA TEST METHOD 1311, TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) AND SUBSEQUENT ANALYZING OF THE LEACHATE ON A SUFFICIENT NUMBER OF SAMPLES TO DETERMINE WHETHER OR NOT THE CONTAMINATED SOIL OR SEDIMENT EXCEEDS MAXIMUM CONCENTRATIONS FOR THE TOXICITY CHARACTERISTICS OF THE CONSTITUENTS IDENTIFIED IN 40 C.F.R 261.24 (7-1-12 EDITION).

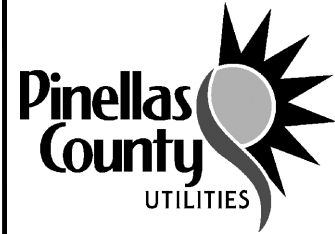
7.1 PURSUANT TO 40 C.F.R. 261.4(B)(10), SUBPART A (7-1-12 EDITION), PETROLEUM CONTAMINATED MEDIA AND DEBRIS, ASSOCIATED WITH AN UNDERGROUND STORAGE TANK SYSTEM, THAT FAIL THE TEST FOR THE TOXICITY CHARACTERISTIC OF 40 C.F.R 261.24, SUBPART C (HAZARDOUS WASTE CODES D018 THROUGH D043 ONLY) ARE SOLID WASTE, NOT HAZARDOUS WASTE. CONTAMINATED SOIL ASSOCIATED WITH AN UNDERGROUND STORAGE TANK SYSTEM, WHICH WILL BE MANAGED AS SOLID WASTE, IS NOT SUBJECT TO THE REQUIREMENT THAT TCLP EXTRACTION AND SUBSEQUENT ANALYSIS OF THE LEACHATE BE PERFORMED.
- WHEN EXCAVATED CONTAMINATED SOIL OR SEDIMENT IS TEMPORARILY STORED OR STOCKPILED ONSITE, THE SOIL OR SEDIMENT SHALL BE PLACED ON AN IMPERMEABLE SURFACE TO PREVENT LEACHATE INFILTRATION AND SECURED IN A MANNER THAT PREVENTS HUMAN EXPOSURE TO CONTAMINATED SOIL OR SEDIMENT AND PREVENTS SOIL OR SEDIMENT EXPOSURE TO PRECIPITATION THAT MAY CAUSE SURFACE RUNOFF. ANY EXCAVATION SHALL BE SECURED TO PREVENT ENTRY BY THE PUBLIC.
- THE TEMPORARY STORAGE OR STOCKPILING OF EXCAVATED CONTAMINATED SOIL OR SEDIMENT SHALL NOT EXCEED 60 DAYS.
- CONTRACTOR SHALL DISPOSE OF CONTAMINATED SOIL AT A FDEP APPROVED AND ACCEPTING LANDFILL IN A LEGAL MANNER.
- PREVIOUS DISCUSSIONS WITH FDEP HAVE INDICATED THAT A GROUNDWATER SAMPLE WILL NOT BE REQUIRED. IF THIS CONDITION CHANGES, A SAMPLE SHALL BE COLLECTED AS FOLLOWS:

11.1 A GROUNDWATER SAMPLE SHALL BE COLLECTED FROM THE VICINITY OF THE EXCAVATION AREA FOLLOWING COMPLETION OF EXCAVATION ACTIVITIES. GROUNDWATER SAMPLE SHALL BE TESTED IN ACCORDANCE WITH FAC 62-780.680(1).
- WITHIN THE TIME FRAMES SPECIFIED IN TABLE A, THE CONTRACTOR SHALL SUBMIT AN ELECTRONIC OR PAPER COPY OF AN INTERIM SOURCE REMOVAL REPORT TO FDEP AND THE ENGINEER FOR REVIEW.

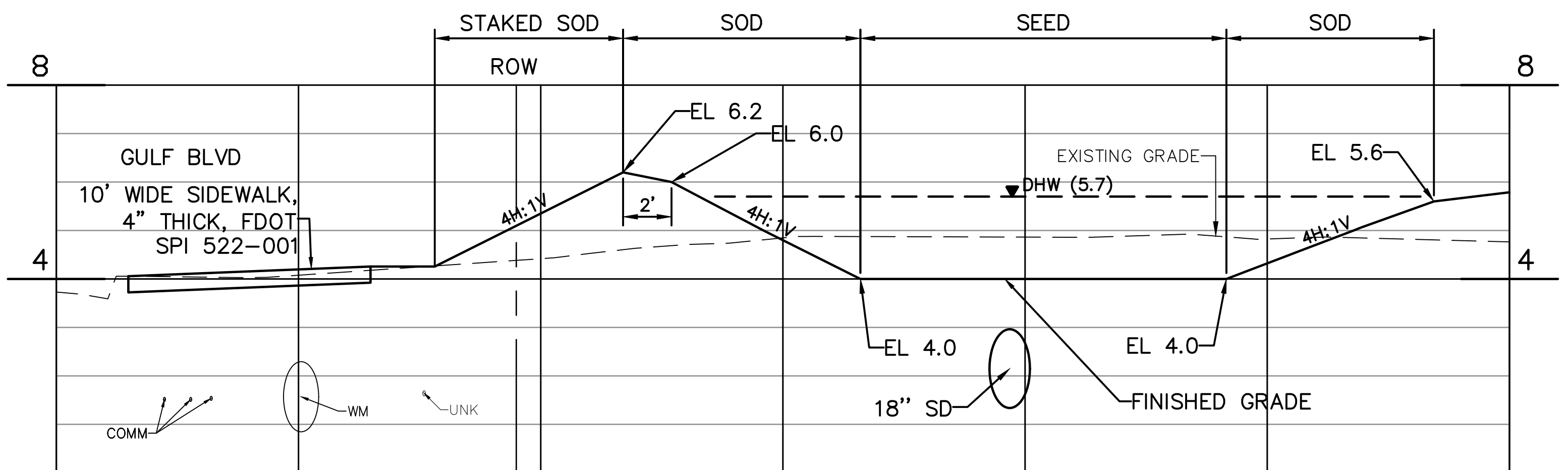
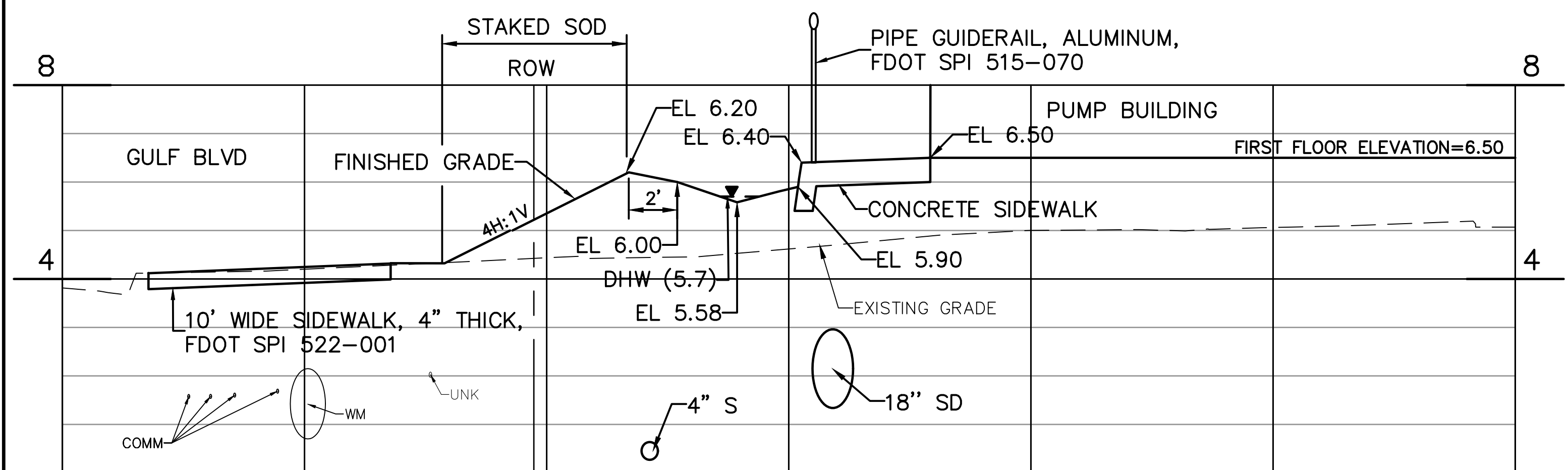
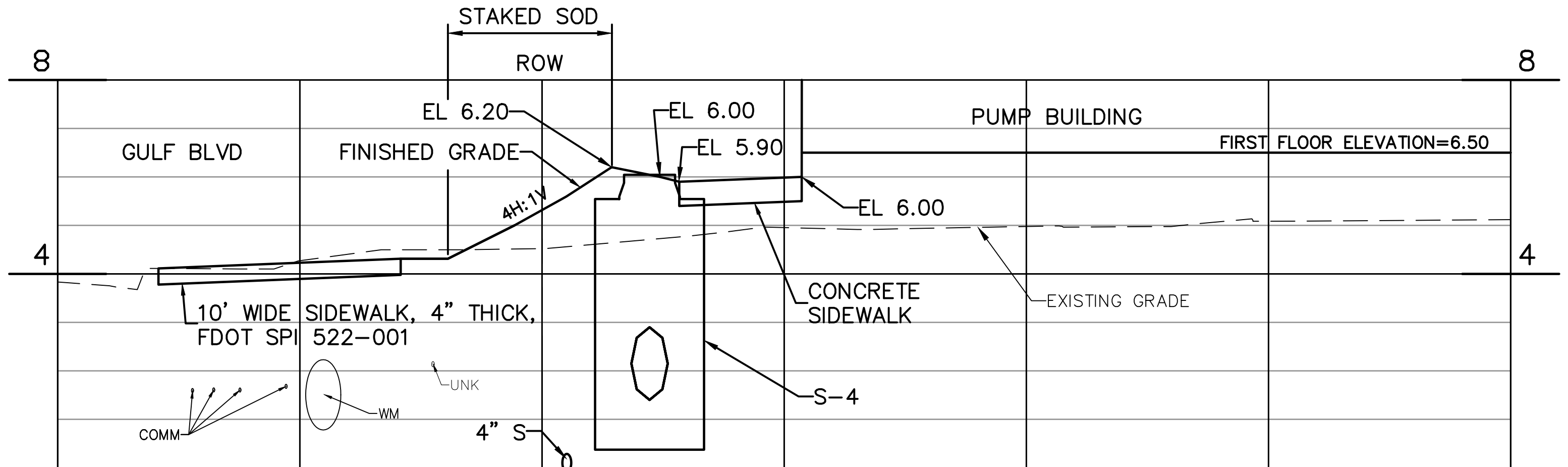
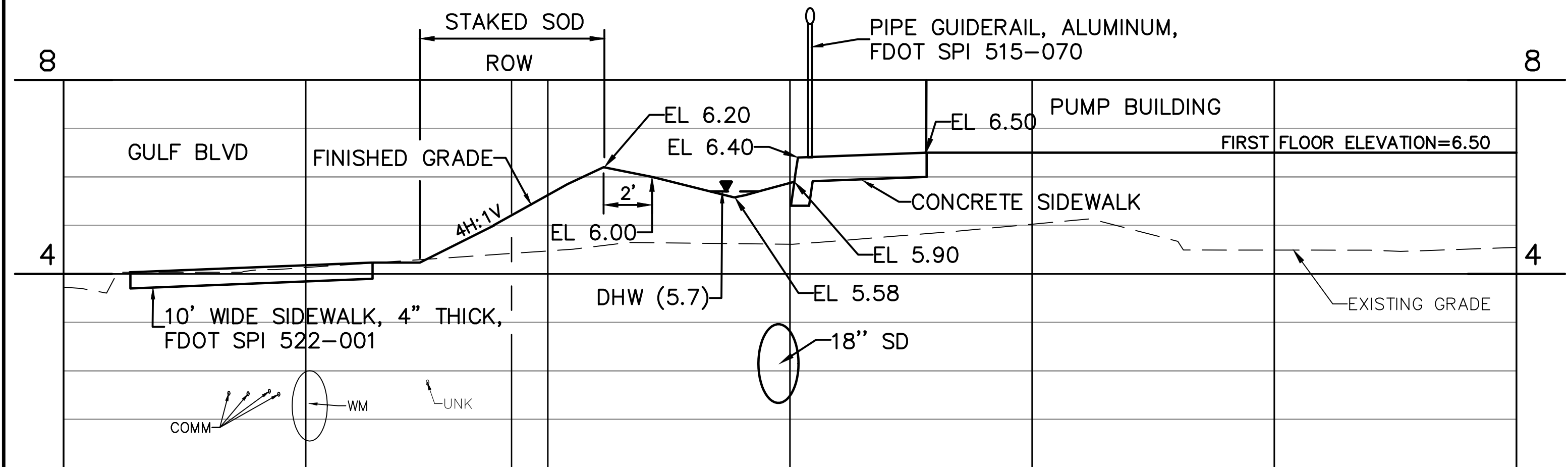
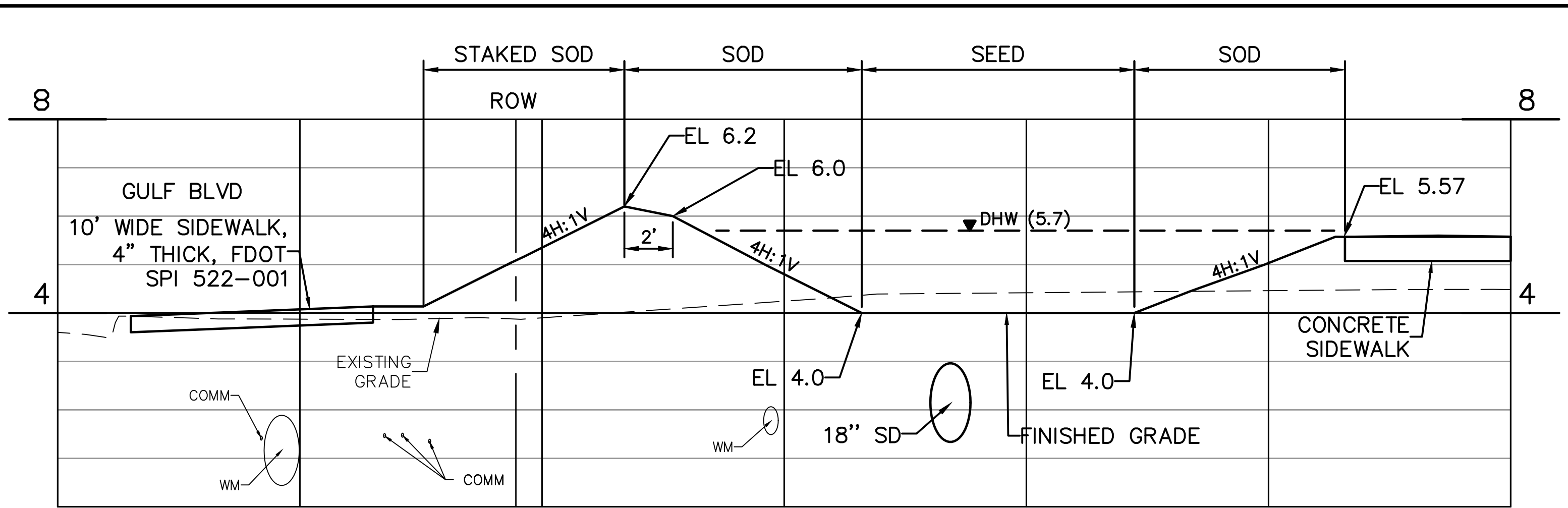
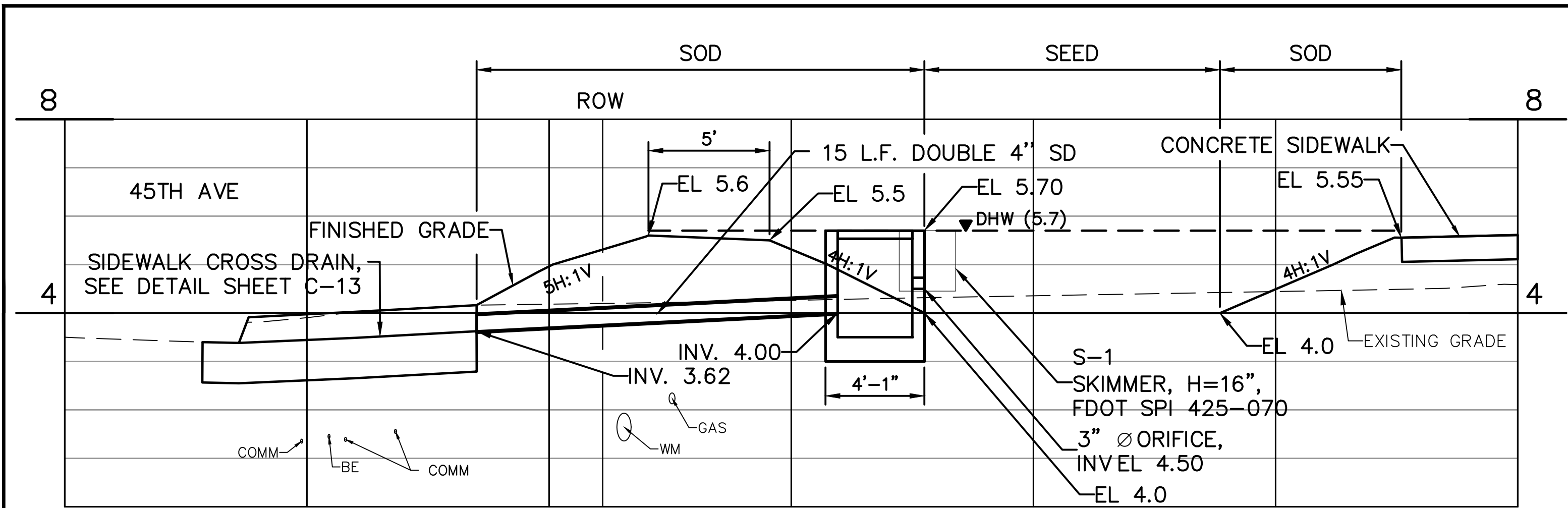
12.1 IF ANALYTICAL RESULTS OBTAINED AFTER COMPLETION OF THE INTERIM SOURCE REMOVAL, DEMONSTRATE THAT THE NO FURTHER ACTION CRITERIA OF SUBSECTION 62-780.680(1), F.A.C., ARE MET, A SITE ASSESSMENT REPORT PURSUANT TO SUBSECTION 62-780.600(7), F.A.C., MAY BE SUBMITTED IN LIEU OF AN INTERIM SOURCE REMOVAL REPORT.
- CONTRACTOR SHALL OBTAIN A NO FURTHER ACTION WITHOUT INSTITUTIONAL CONTROLS DECISION FROM FDEP UPON COMPLETION OF THE SOURCE REMOVAL.
- ABANDONED MONITORING WELLS TO BE CUT TO FINISH GRADE. SEE DRAINAGE AND GRADING PLAN. MONITORING WELLS WERE ABANDONED ON 10/31/2023 BY GROUTING THE WELLS FROM THE BOTTOM OF THE WELL SCREEN, 12 FEET BELOW LAND SURFACE, TO LAND SURFACE.
- ESTIMATED EXCAVATION LIMITS AND DEPTH PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE LIMITS OF SOIL CONTAMINATION ON-SITE, VERTICALLY AND HORIZONTALLY, BASED ON PREVIOUS COLLECTED DATA AND, IF REQUIRED, ADDITIONAL TESTING.

FDEP PROJECT MANAGER: MELISSA BROCK, 850-245-8903, Melissa.Brock@FloridaDEP.gov

TABLE A	
SUBMITTALS AND TIME FRAMES	
TYPE OF REPORT OR ACTIVITY	ACTION OR SUBMITTAL TIME FRAMES
NOTICE OF INTERIM SOURCE REMOVAL ACTION	WITHIN 24 HOURS OF INITIATION OF THE ACTION
INTERIM SOURCE REMOVAL STATUS REPORT	WITHIN 60 DAYS OF INITIATING INTERIM SOURCE REMOVAL ACTIVITIES AND EVERY 60 DAYS THEREAFTER
INTERIM SOURCE REMOVAL REPORT	WITHIN 60 DAYS OF COMPLETION OF INTERIM SOURCE REMOVAL ACTIVITIES
NO FURTHER ACTION PROPOSAL	WHEN SITE MEETS THE CRITERIA FOR NO FURTHER ACTION PER 62-780.80, FAC

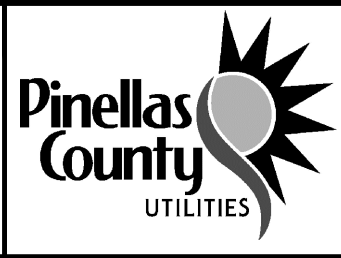
				DESIGNED <u>M.HOFFMAN</u>		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: INTERIM SOURCE REMOVAL PLAN	 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: DATE	DATE: 04-2024
				DRAWN <u>D.METZ</u>						PROJECT NO. 002150A
				CHECKED <u>W.NICKEL</u>						SHEET: C-8
REV. NO.	DATE	DESCRIPTION	REV. BY							

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REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED	M. HOFFMAN
DRAWN	D. METZ
CHECKED	W. NICKEL

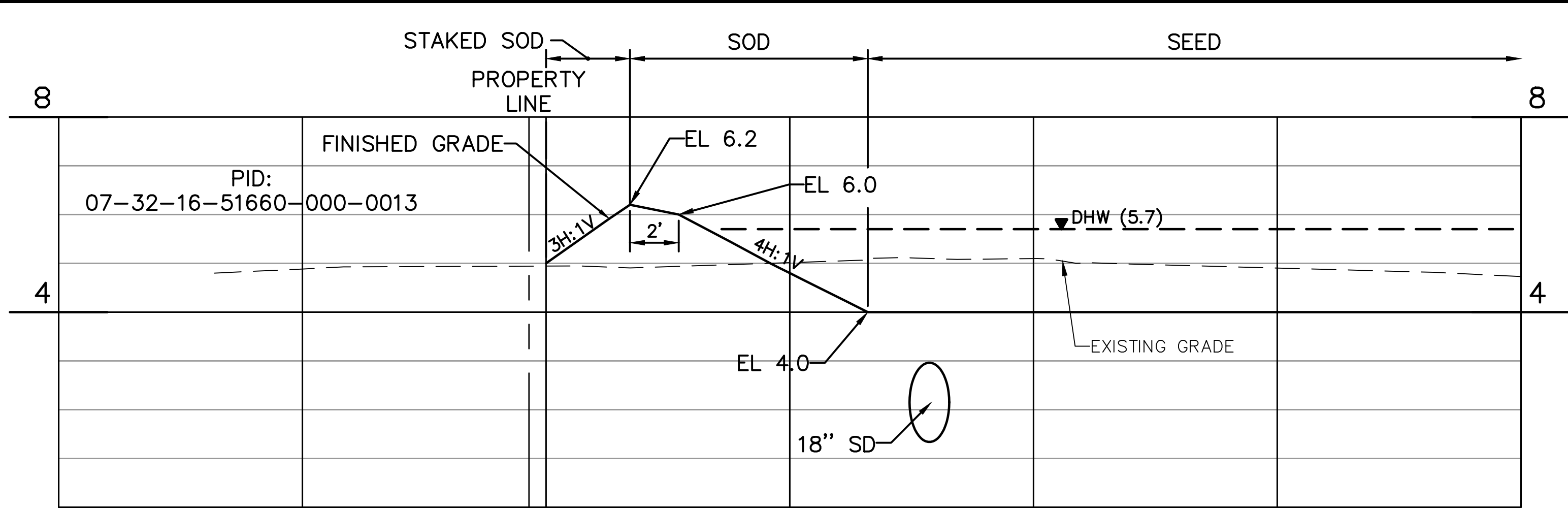


PROJECT:	PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS
DESCRIPTION:	CROSS SECTIONS I

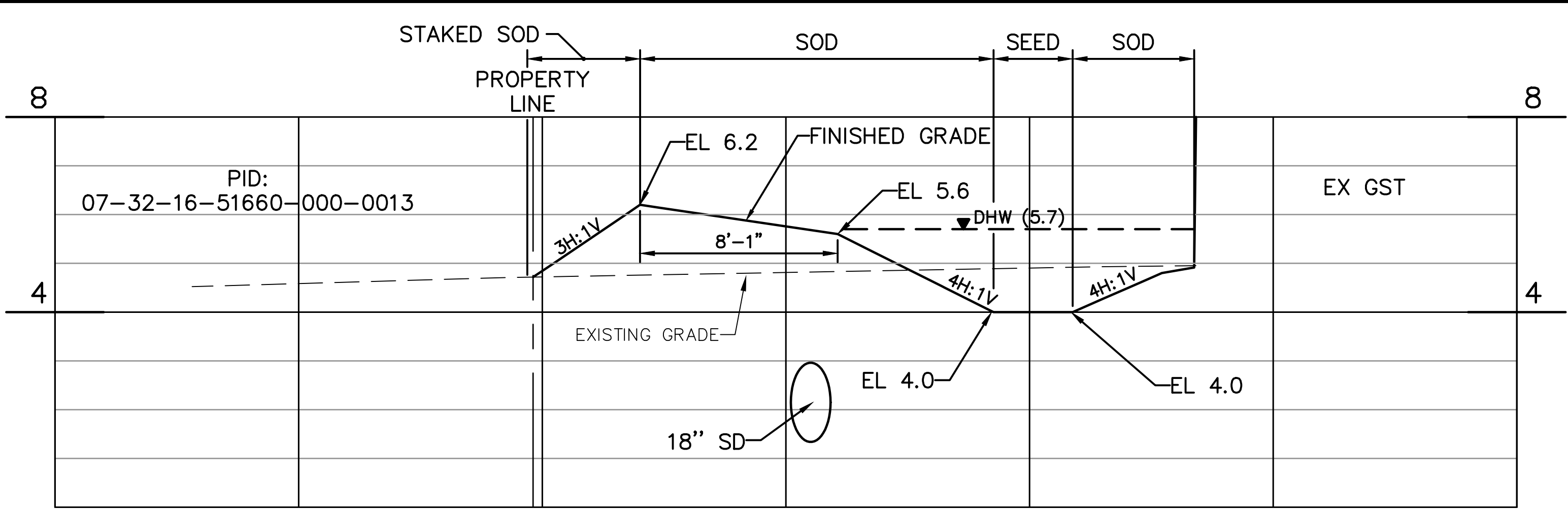
WRIGHT-PIERCE 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY:	DATE:
		04-2024
		PROJECT NO. 002150A
		SHEET: C-9

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

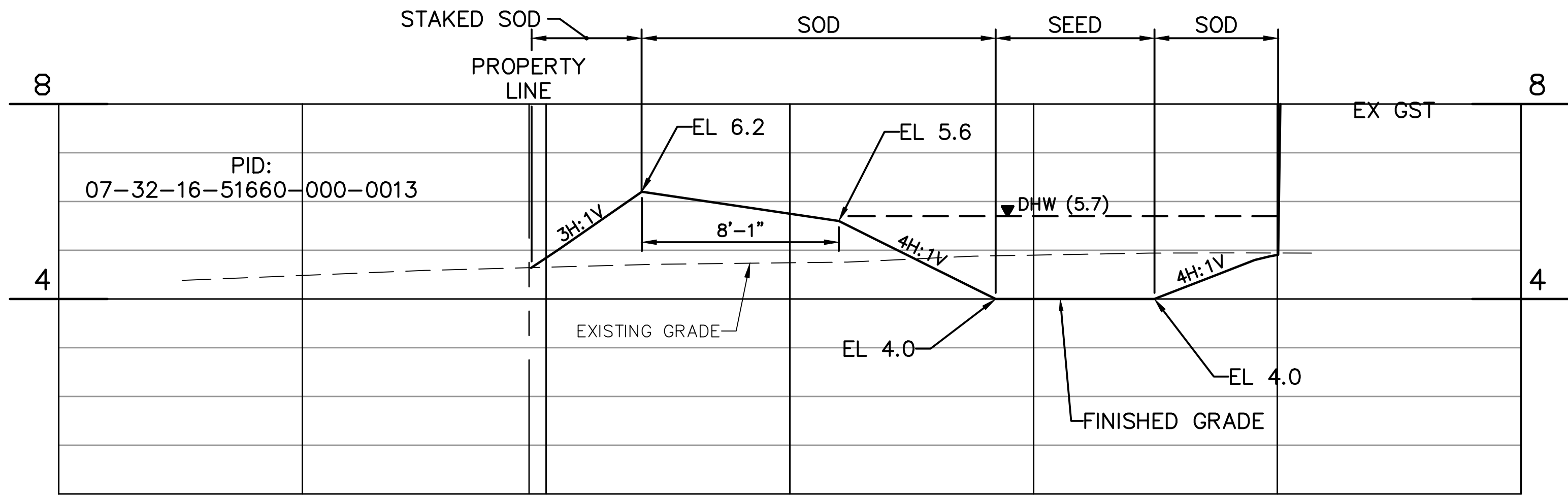
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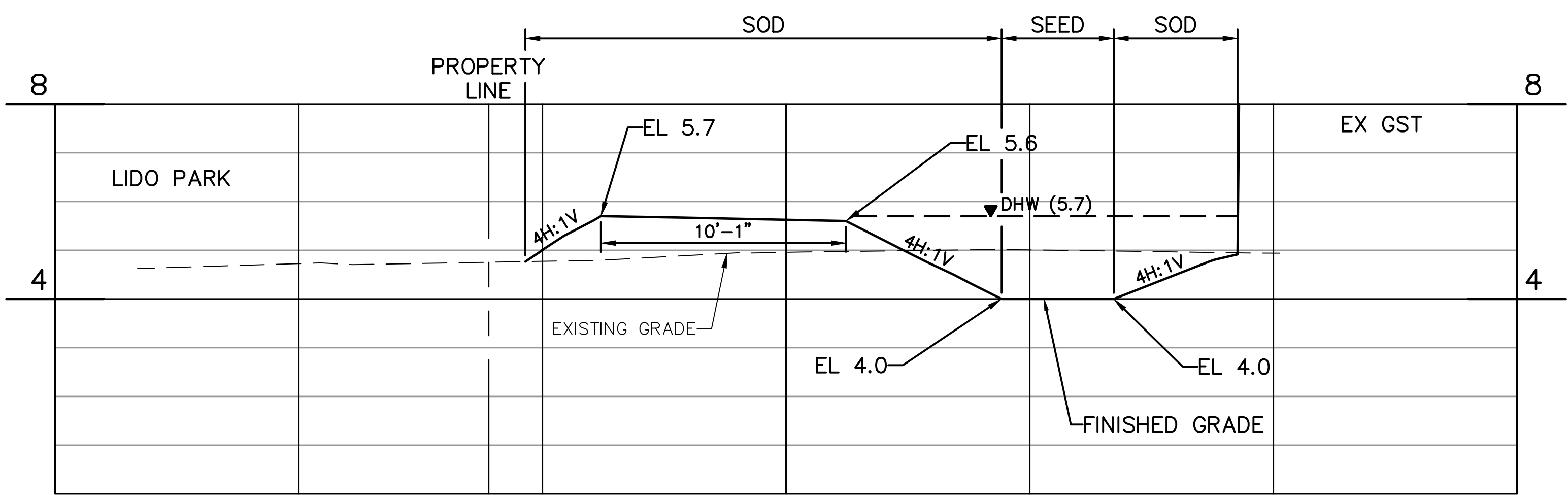
1 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



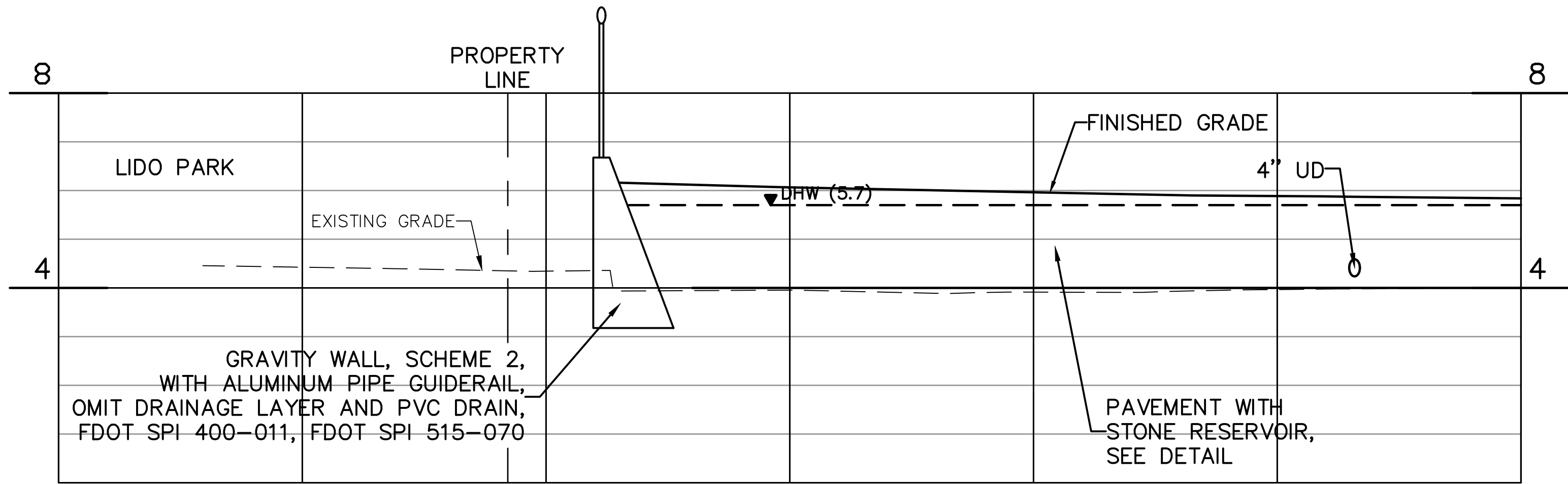
2 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



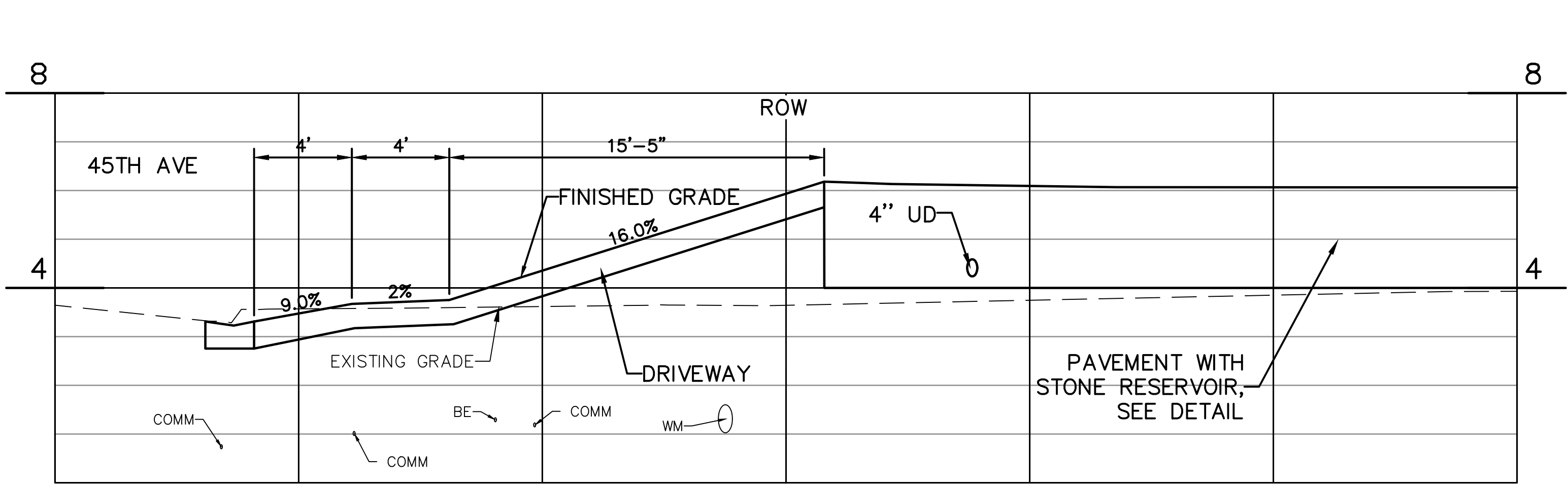
3 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



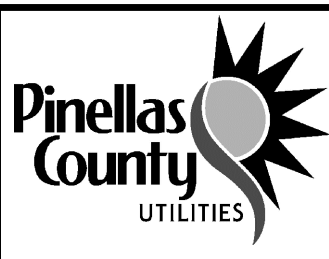
4 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'



5 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'

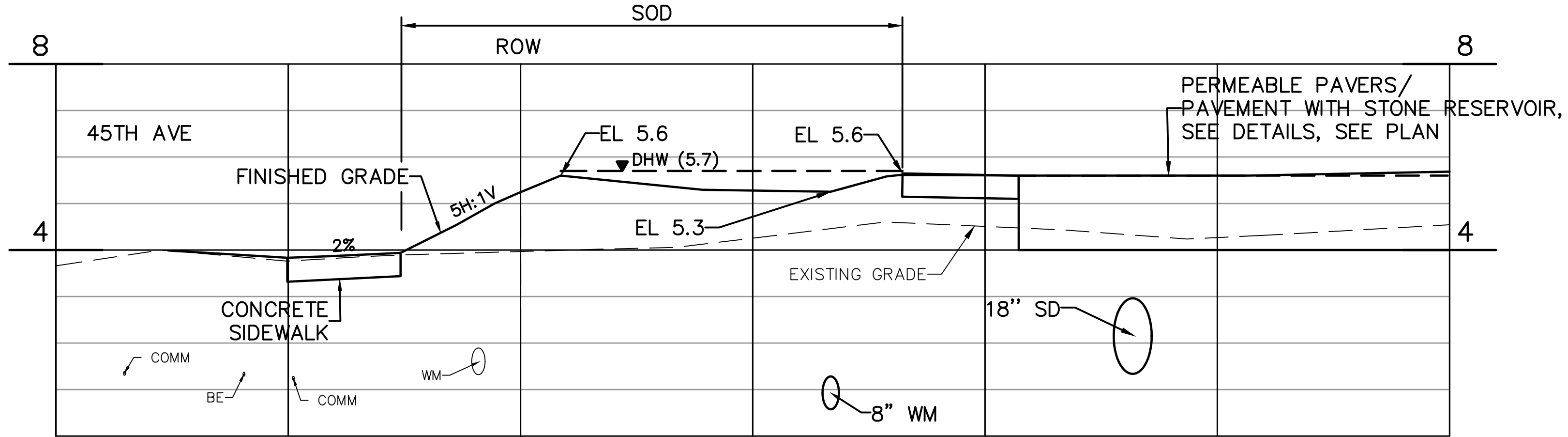


6 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'

				DESIGNED	M.HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: CROSS SECTIONS II	 800.422.1095 www.wright-pierce.com 3820 NORTHDAL E BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: DATE	DATE:	04-2024
				DRAWN	D.METZ						PROJECT NO.	002150A
REV. NO.	DATE	DESCRIPTION	REV. BY	CHECKED	W.NICKEL						SHEET:	C-10

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

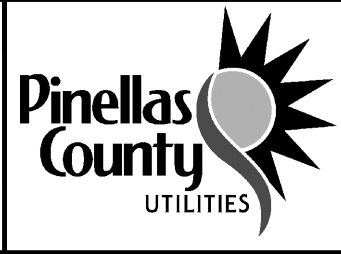
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1 SECTION
C-6 SCALE: HORIZ 1"=4'
VERT 1"=2'

REV. NO.	DATE	DESCRIPTION

DESIGNED	M.HOFFMAN
DRAWN	D.METZ
CHECKED	W.NICKEL



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:
CROSS SECTIONS III

WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALÉ BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:

DATE

DATE: 04-2024
PROJECT NO. 002150A
SHEET: C-11

1. $\frac{1}{2}$ " EXPANSION JOINT EVERY 500', BETWEEN CURB SECTIONS, AT RADII. END OF POUR AND STRUCTURES. (CONTRACTION JOINTS EVERY 10', LONGITUDINALLY. SEE SECTION 520 OF THE F.D.O.T. STANDARD SPECIFICATIONS.)
2. IF CURB IS BUILT IN CROSSWALK, DO NOT CONSTRUCT THE LIP PER FDOT STANDARD PLANS INDEX 522-002, PAVEMENT RELIEF DETAILS



CURB AND GUTTER TYPE A AND HEADER CURB
NTS

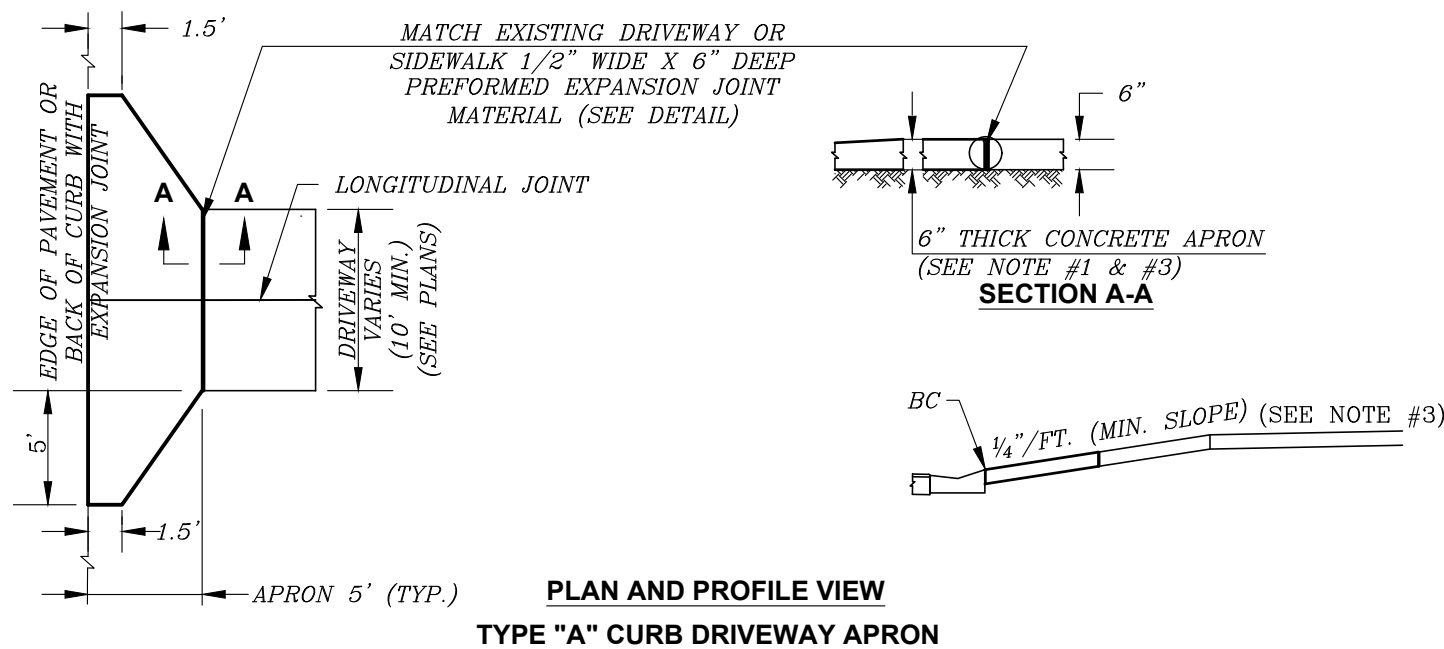
1. SURFACE OF PAVEMENT SHALL BE $\frac{1}{4}$ " ABOVE LIP OF GUTTER.
2. INSTALL $\frac{1}{2}$ " EXPANSION JOINT AS SHOWN AND AT CENTERLINE OF SIDE STREET, WITH (SAWCUT) CONTRACTION JOINTS EVERY 10', LONGITUDINALLY. (SEE SECTION 520 OF THE F.D.O.T. STANDARD SPECIFICATIONS).



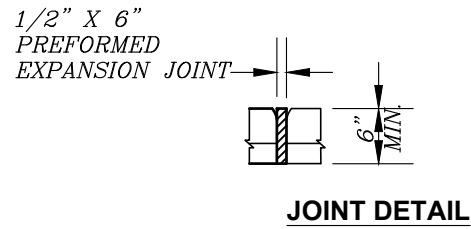
VALLEY GUTTER NOTE:
ALL REFERENCES TO VALLEY
GUTTER AND DIMENSIONS FOR
VALLEY GUTTER SHALL BE
REPLACED BY DETAILS FOR FDOT
DROP CURB, SEE FDOT SPI
520-001 FOR MORE DETAIL.

VALLEY GUTTER AND TRANSITION

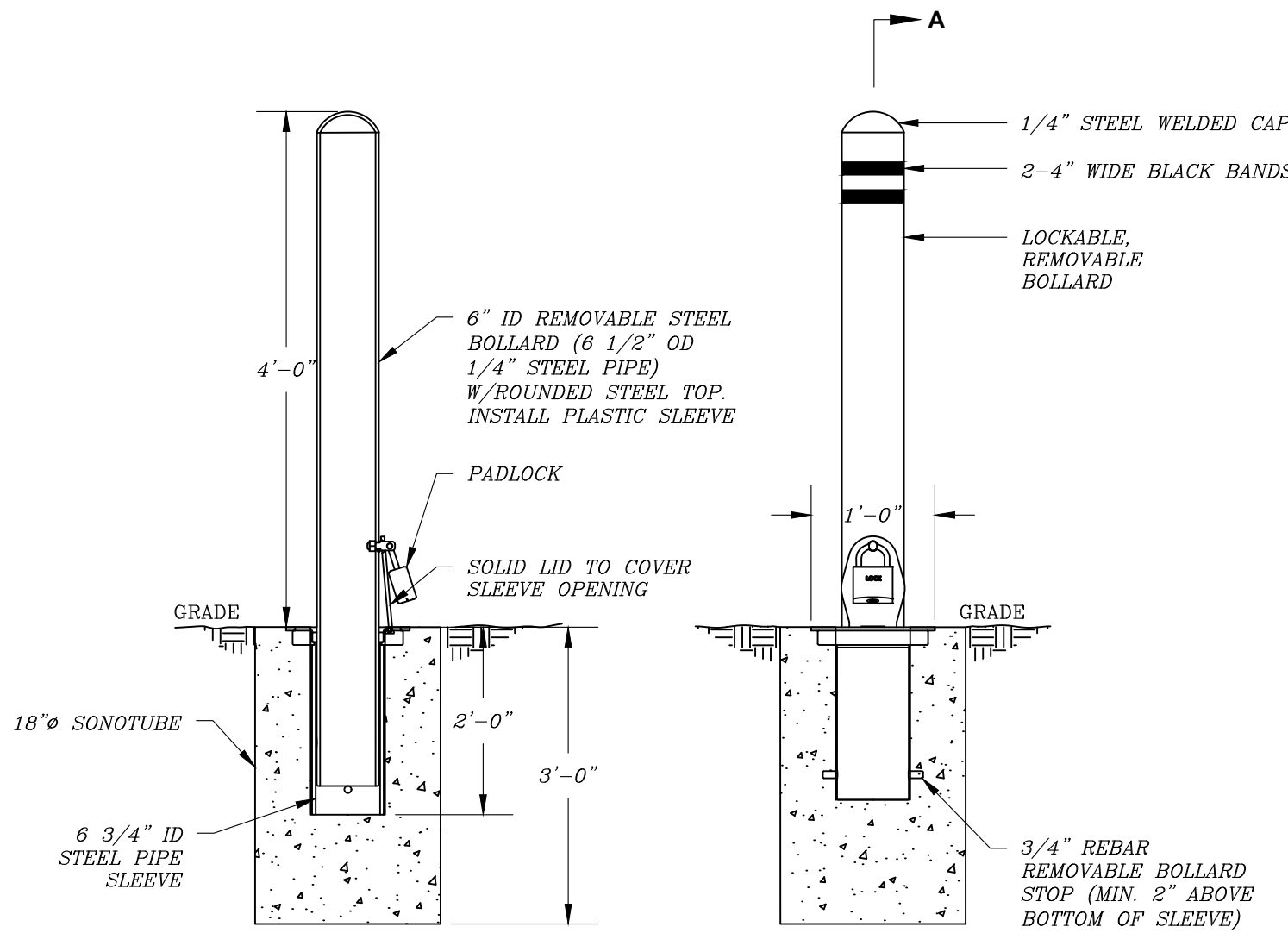
1. CEMENT DRIVEWAY APRONS AND SIDEWALK CROSSINGS SHALL BE CONSTRUCTED OF CONCRETE. DRIVEWAY (3000 PSI), 6" THICK REINFORCED WITH 6" X 6" #10@10" WELDED WIRE FABRIC, (12" MINIMUM CURE) AND SIDEWALK (3000 PSI), 4" THICK REINFORCED WITH 6" X 6" #10@10" WELDED WIRE FABRIC, (12" MINIMUM CURE).
2. FIBER REINFORCED CONCRETE 3000 PSI (MIN.) MAY BE USED IN PLACE OF THE REQUIREMENTS OF NO 1 ABOVE.
3. CONSTRUCTION OF APRON/DRIVEWAY CROSS SLOPES AND SIDEWALK CROSS SLOPE THROUGH THE DRIVEWAY SHALL COMPLY WITH F.D.O.T. INDEX NO. 522-003 FOR ADA REQUIREMENTS.
4. REMOVE TREE ROOTS WITHIN 10' OF PROPOSED GRADE.
5. WHEN THERE IS EXISTING SIDEWALK CROSSING THE PROPOSED DRIVEWAY, IT MUST BE REMOVED TO THE NEAREST JOINT BEYOND THE DRIVEWAY.
6. SIDEWALKS AND DRIVEWAY JOINT LINES SHALL NOT HAVE A CROSS SLOPE GREATER THAN 2% PER F.D.O.T. INDEX 522-001.
7. THERE SHOULD BE AT LEAST ONE LONGITUDINAL CONTROL JOINT AT THE CENTER LINE FOR ALL DRIVEWAYS UP TO 18'-0" WIDE. LONGITUDINAL CONTROL JOINT SHOULD NOT EXCEED 8'-0" ON ALL DRIVEWAYS WIDER THAN 18'-0" MATCH JOINTS IN CURB AND GUTTER TO JOINTS IN DRIVEWAYS.



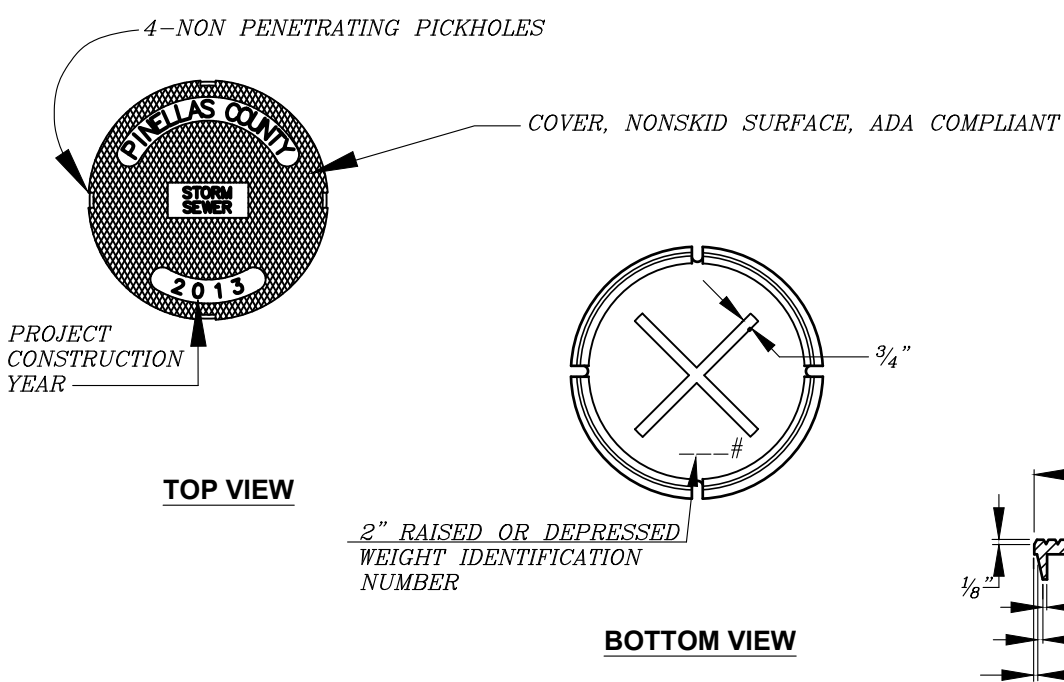
CONCRETE DRIVEWAY APRON
NTS



REMOVABLE LOCKING BOLLARD
NTS

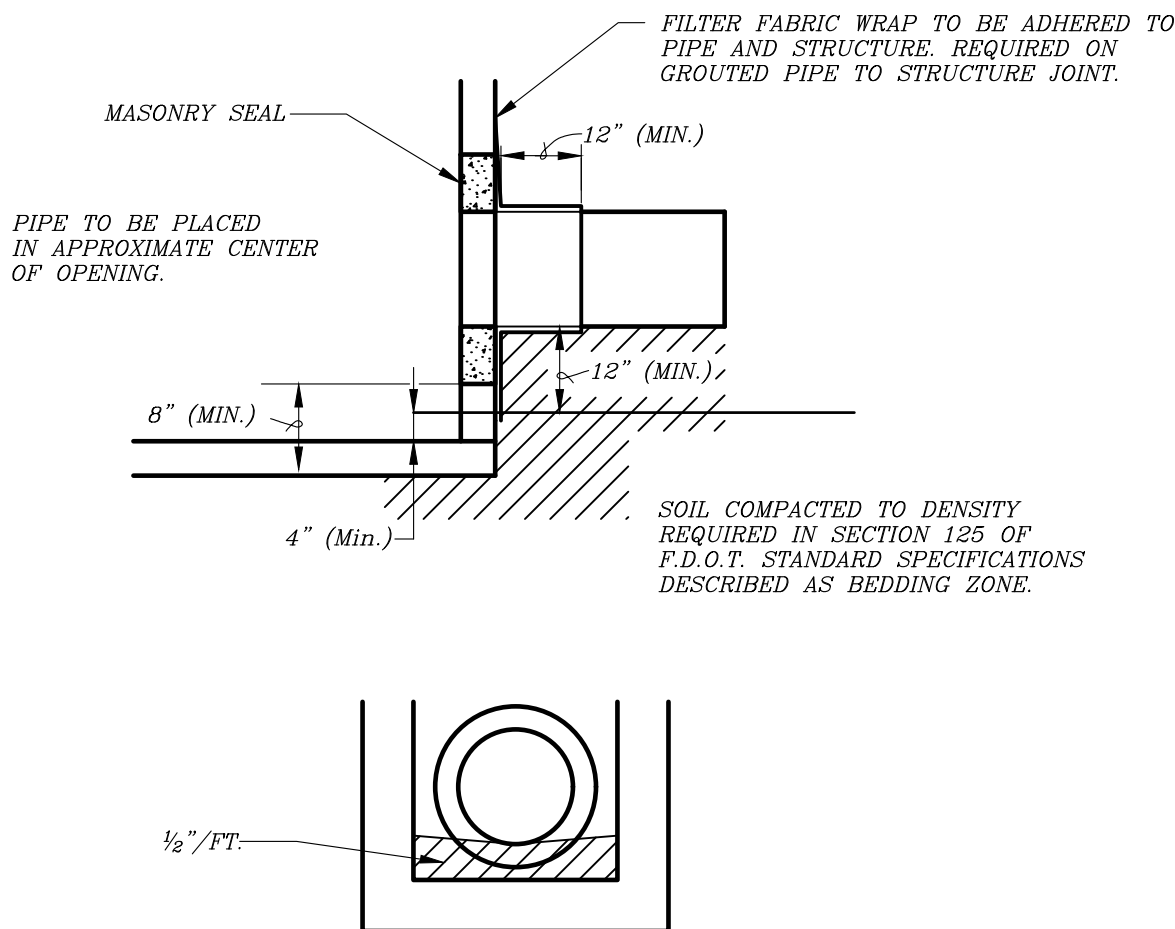


1. THIS COVER IS NOT TO BE USED FOR SANITARY SEWER MANHOLES.
2. THIS COVER MAY BE USED WITH FRAME TYPE I, II OR III AS DETAILED IN F.D.O.T. INDEX No. 425-001. TYPE I SHALL BE USED UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. MATERIALS AND FABRICATION SHALL CONFORM TO SECTION 425 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. COVERS FOR UNDERDRAIN INSPECTION BOXES SHALL BE LABELED UNDERDRAIN AND NOT STORM SEWER.



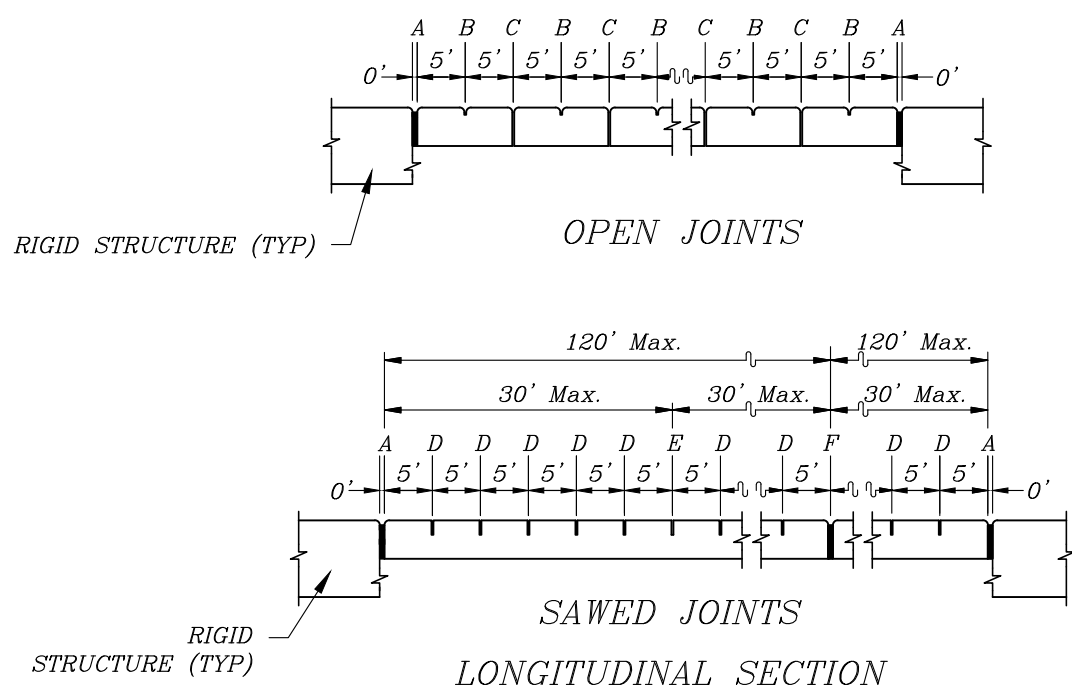
STORM SEWER COVER
NTS

1. GROUT TO CONSIST OF 3:1 SAND-CEMENT MIXTURE OR ANY CLASS CONCRETE.
2. FOR ALL STRUCTURES, UNLESS EXCLUDED BY SPECIAL DETAIL, BRICKS SHALL NOT BE USED IN THIS AREA, UNLESS THEY ARE COVERED WITH 4" THICK (MIN.) CONCRETE ABOVE THE BRICKS.



FILTER FABRIC WRAP AND GROUT AT STRUCTURES

1. SEE SITE LAYOUT AND GRADING PLAN FOR WIDTH.
2. CONSTRUCT SIDEWALKS IN ACCORDANCE WITH SPECIFICATION 02510.
3. BOND BREAKER MATERIAL CAN BE ANY IMPERMEABLE COATED OR SHEET MEMBRANE OR PREFORMED MATERIAL HAVING A THICKNESS OF NOT LESS THAN 6 MILS AND NOT MORE THAN 1/2".
4. CONCRETE SIDEWALK TO HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI.
5. USE 1/2" EXPANSION JOINT (PREFORMED JOINT FILLER) BETWEEN SIDEWALK AND ALL OTHER FIXED OBJECTS.



A- 1/2" EXPANSION JOINTS (PREFORMED JOINT FILLER) BETWEEN THE SIDEWALK AND; DRIVEWAYS, SIDEWALK-INTERSECTIONS, AND ALL OTHER FIXED OBJECTS (E.G. DRAINAGE INLETS AND UTILITY POLES).

B- $\frac{1}{8}$ " CONTRACTION JOINTS, TOOLED

C- 1/8" FORMED OPEN JOINTS

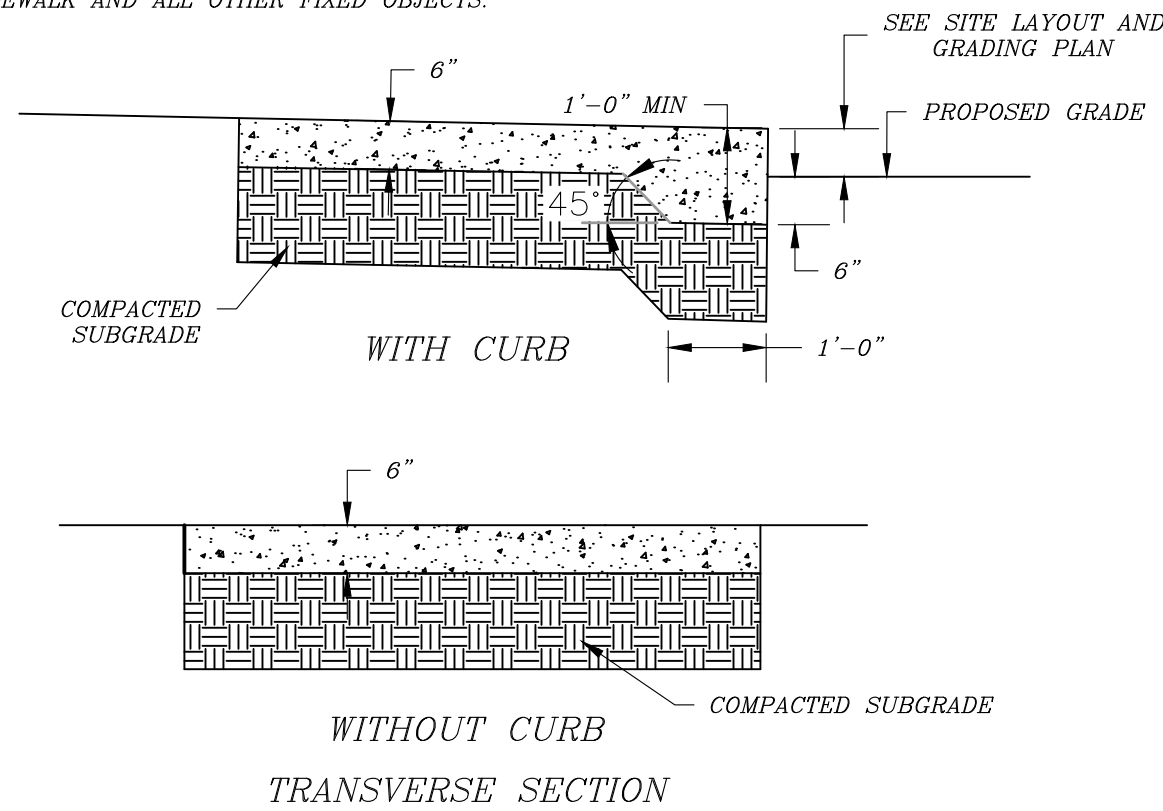
D- $\frac{3}{16}$ " SAW CUT JOINTS, $1\frac{1}{2}$ " DEEP (WITHIN 96 HOURS) MAX. 5' CENTERS

E- $\frac{3}{16}$ " SAW CUT JOINTS, $1\frac{1}{2}$ " DEEP (WITHIN 12 HOURS) MAX. 30' CENTERS JOINT(S) REQUIRED WHEN LENGTH EXCEEDS 30

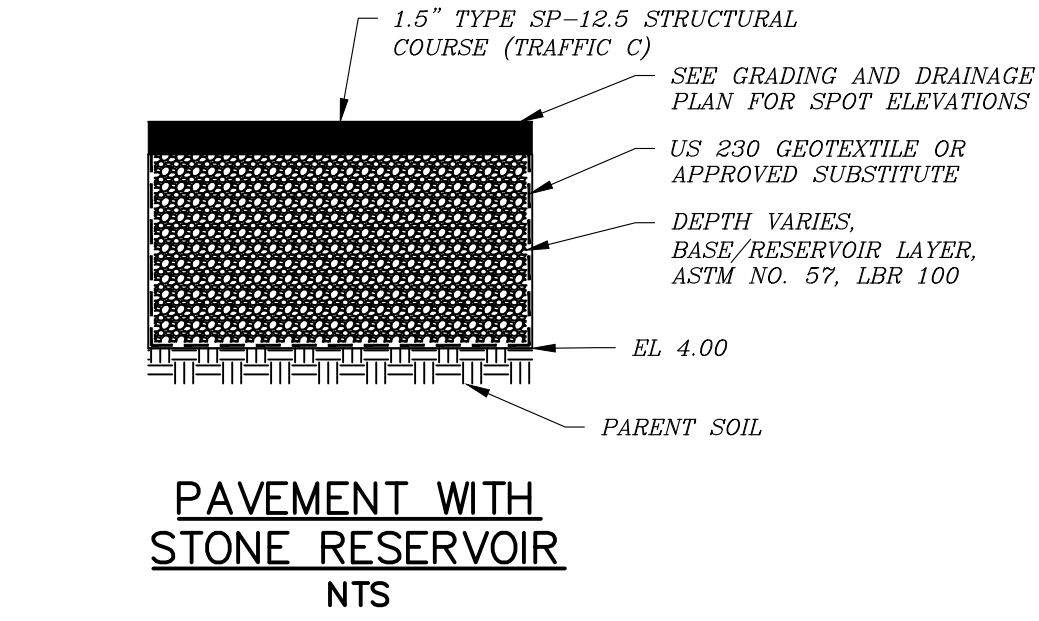
F- 1/2" EXPANSION JOINT WHEN RUN OF SIDEWALK EXCEEDS 120'. INTERMEDIATE LOCATIONS WHEN CALLED FOR IN THE PLANS OR AT LOCATIONS AS DIRECTED BY THE ENGINEER.

G- COLD JOINT WITH BOND BREAKER, TOOLED

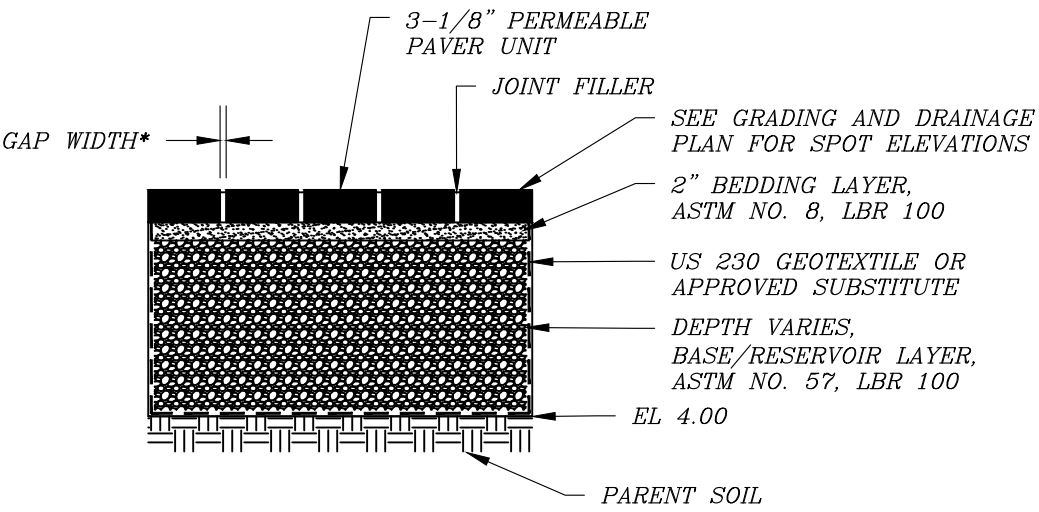
CONCRETE SIDEWALK
NTS

Page 236 of 248

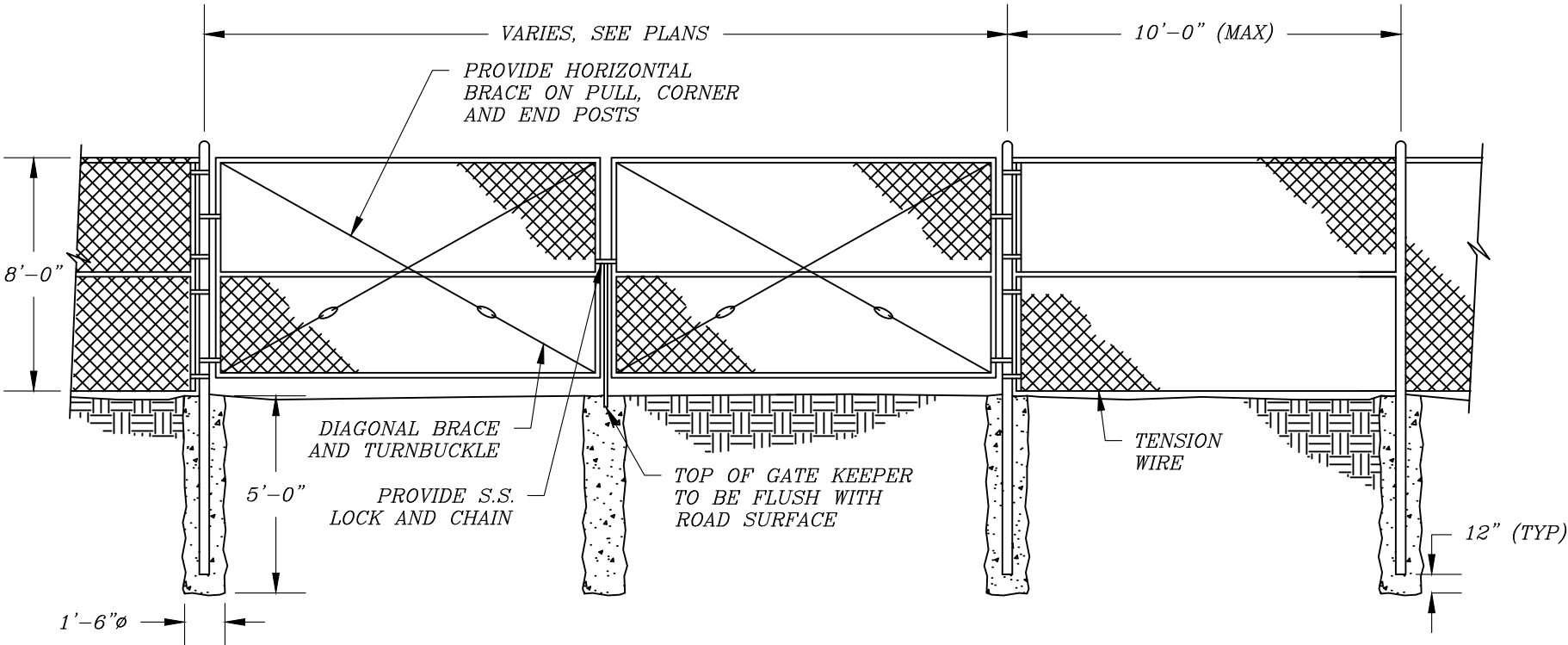
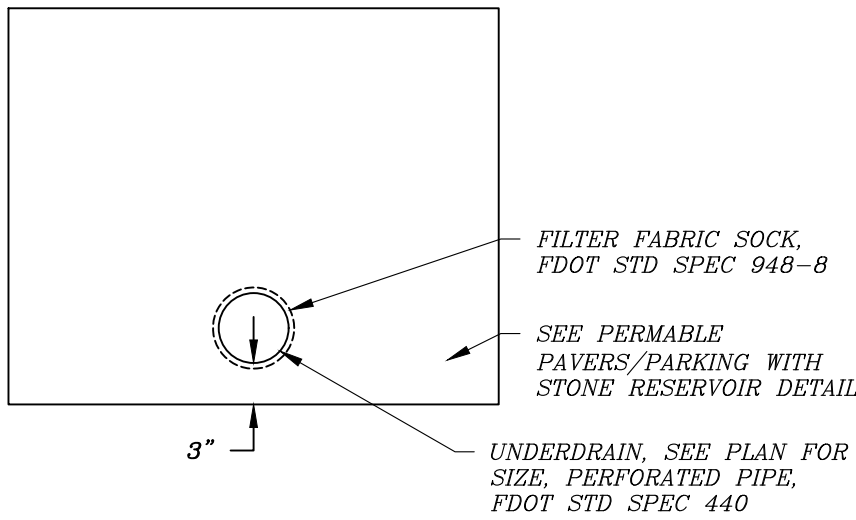
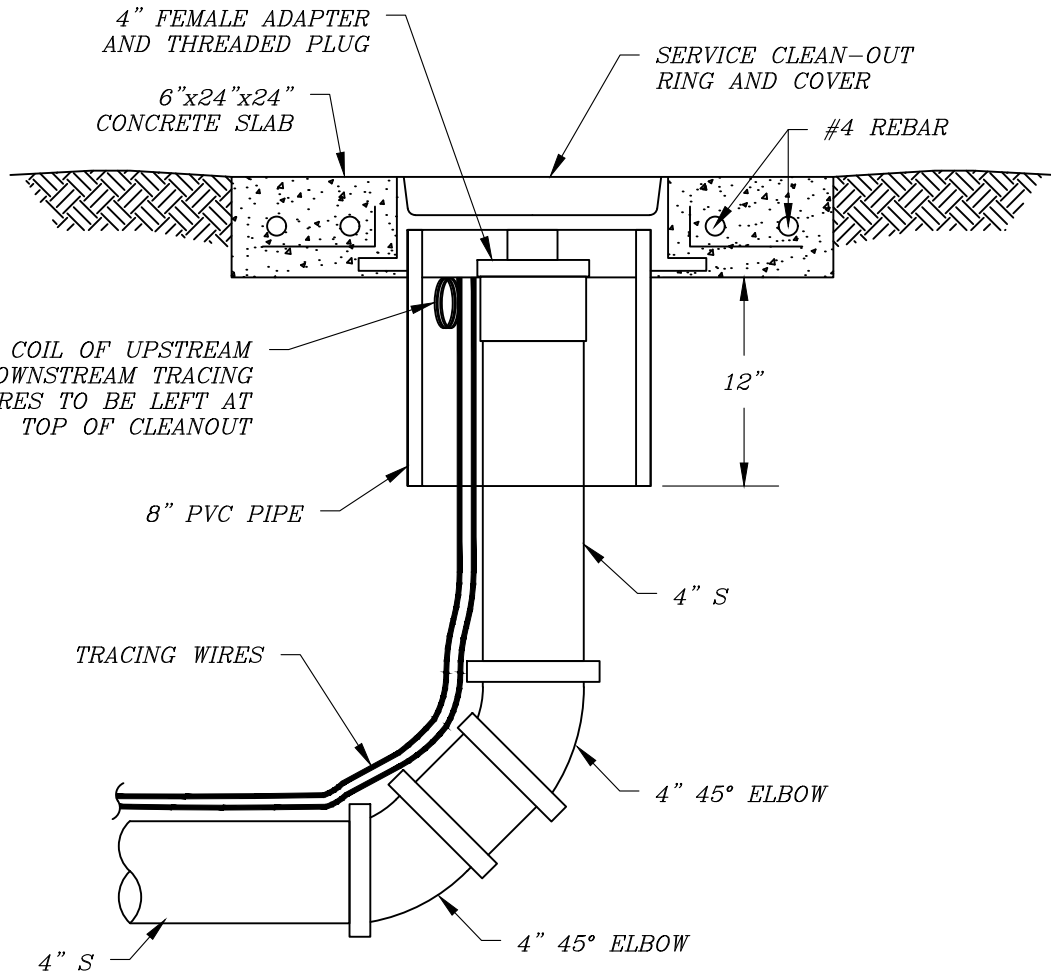
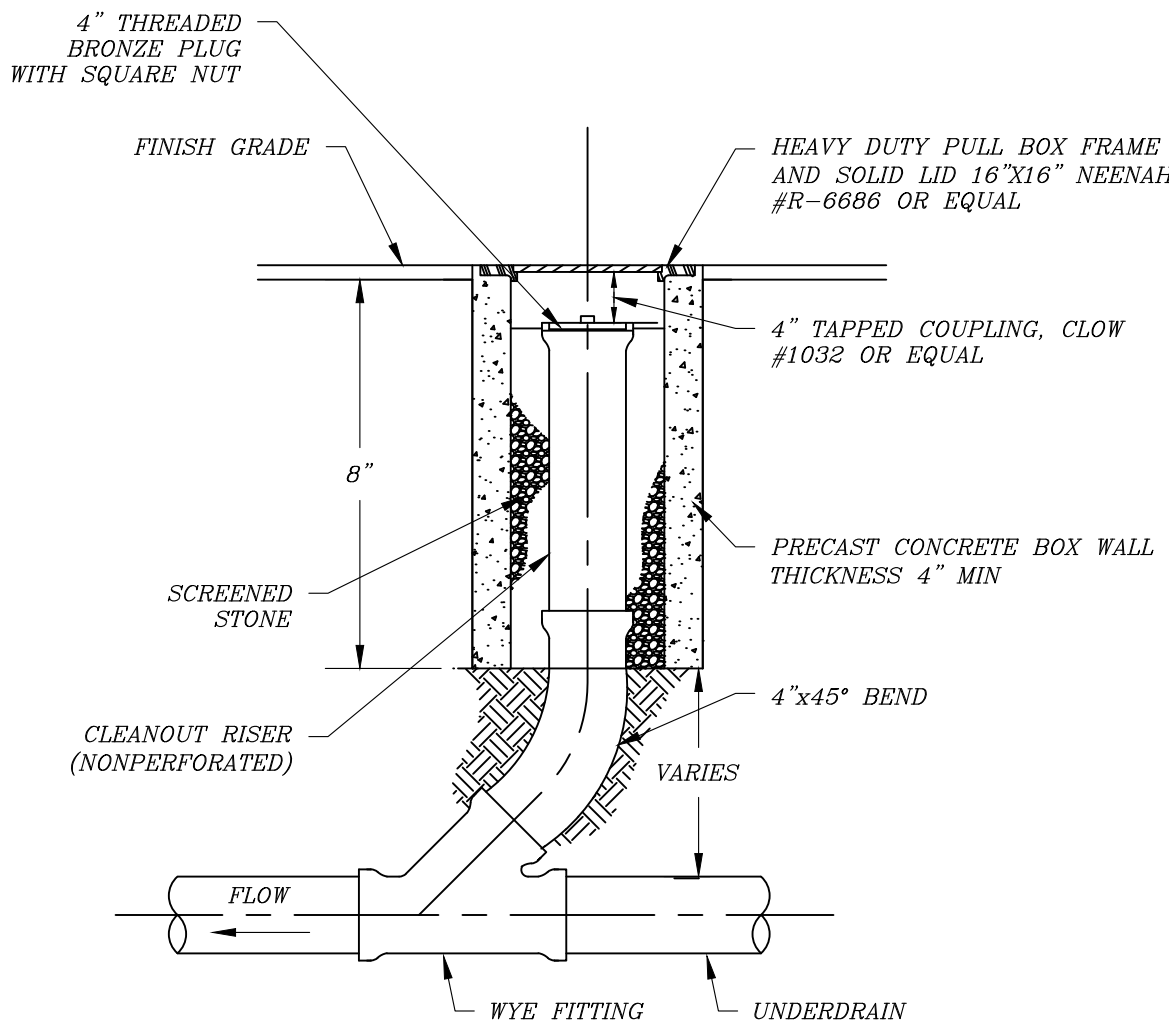
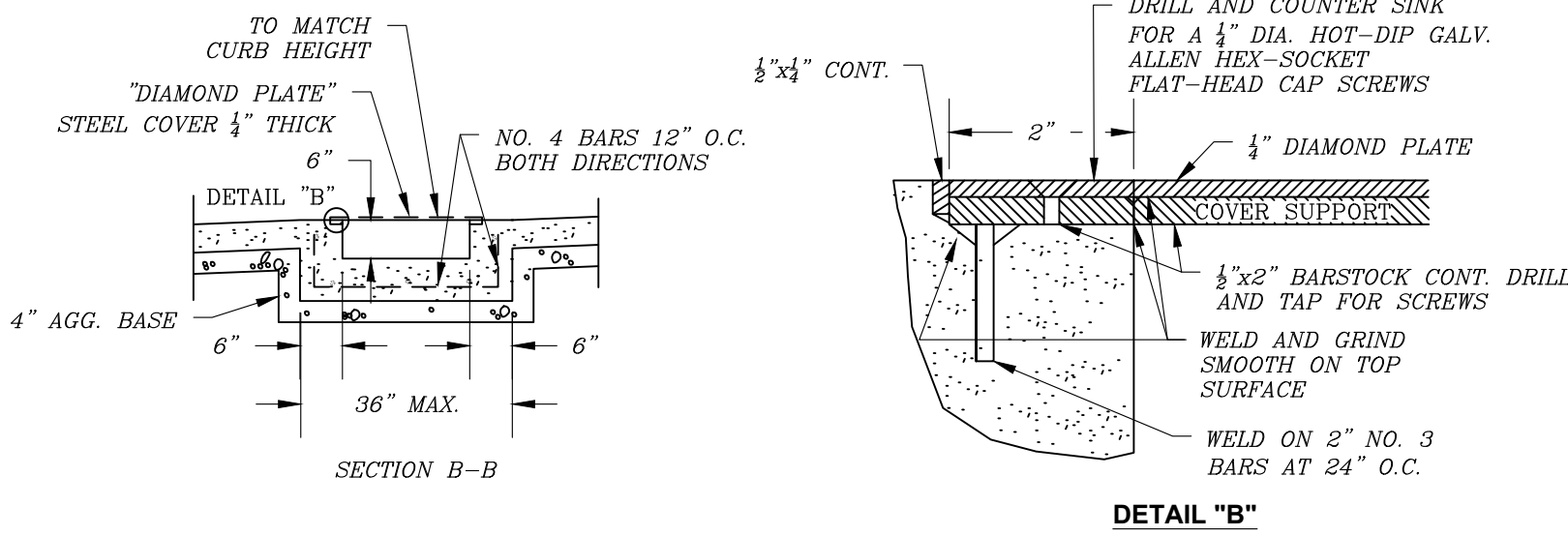
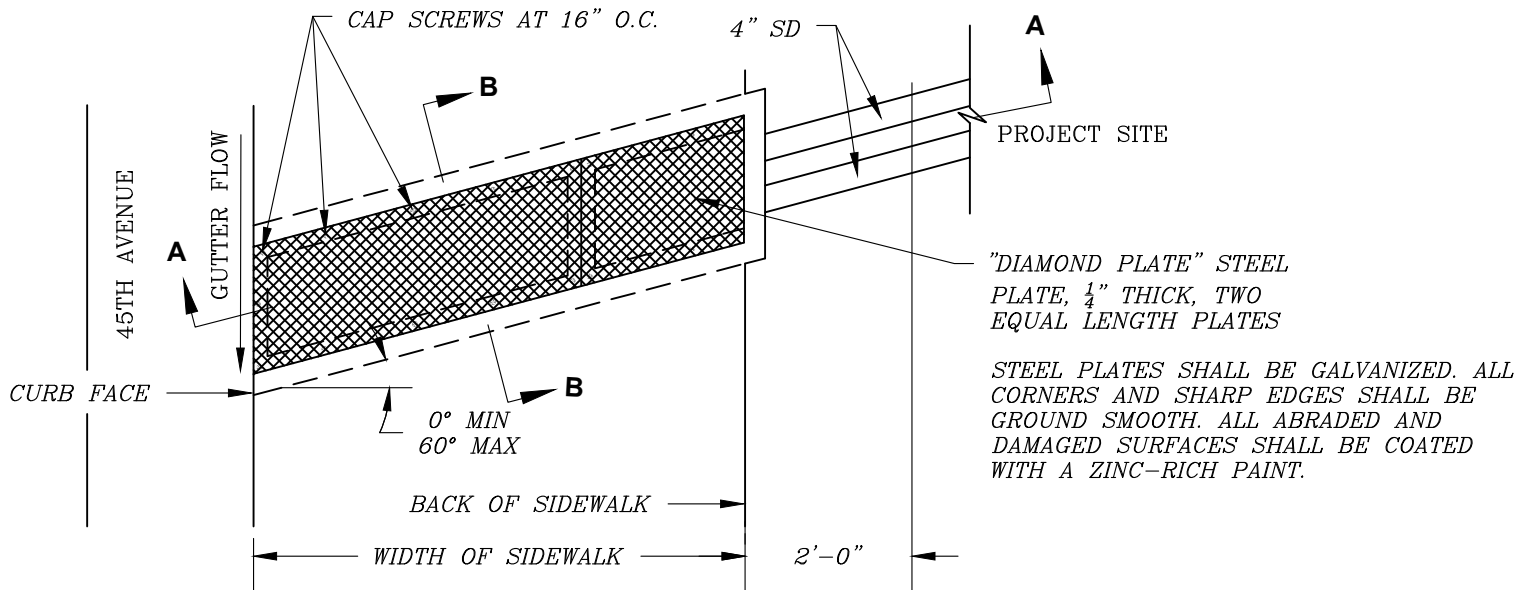
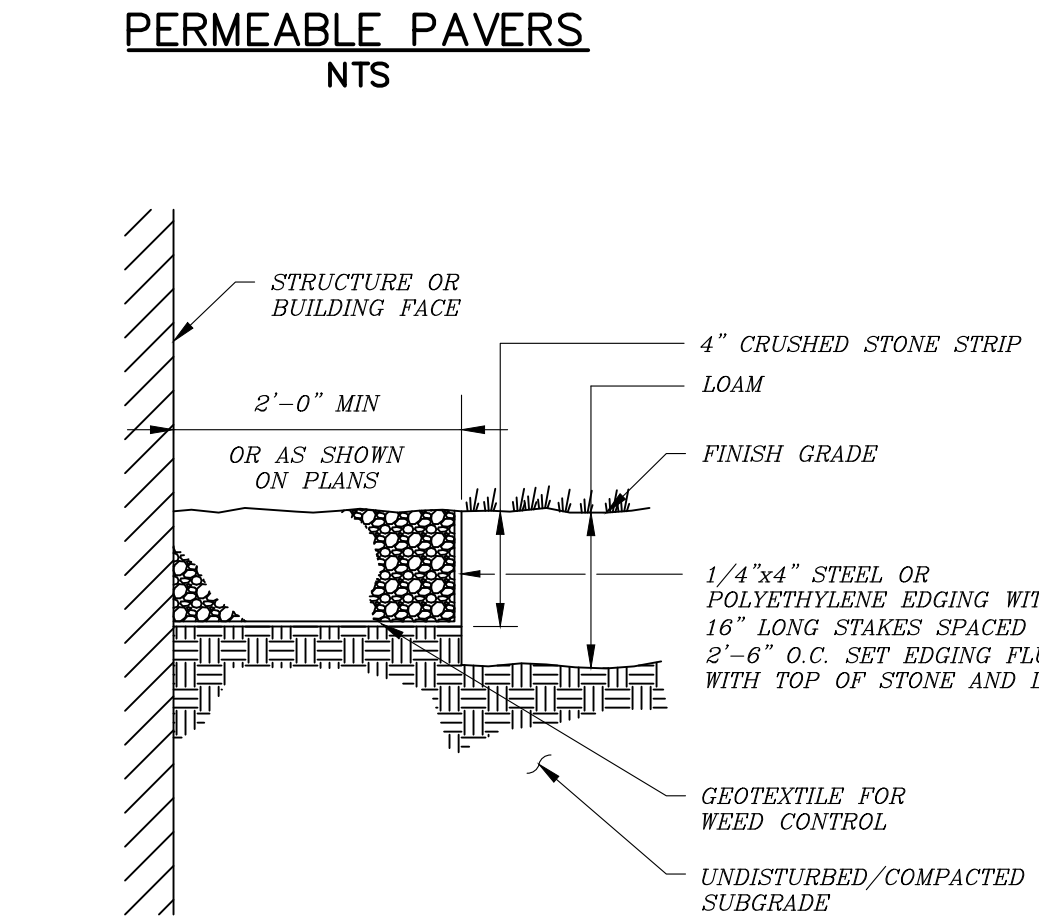
NOTES:
1. PARENT SOIL TO HAVE A MAXIMUM COMPACTION OF 95% AND A MINIMUM COMPACTION OF 92% MODIFIED PROCTOR DENSITY (ASTM D-1557) TO A TOTAL DEPTH OF 24 INCHES.
2. PARENT SOIL UNDERLYING AREAS WITH PREVIOUSLY EXISTING PAVEMENT SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 24 INCHES AND RE-GRADE TO PREVIOUSLY MENTIONED COMPACTION.
3. MATERIAL FINER THAN NO. 100 SIEVE SHALL NOT EXCEED 2 PERCENT FOR ANY AGGREGATE LAYER.



NOTES:
1. PARENT SOIL TO HAVE A MAXIMUM COMPACTION OF 95% AND A MINIMUM COMPACTION OF 92% MODIFIED PROCTOR DENSITY (ASTM D-1557) TO A TOTAL DEPTH OF 24 INCHES.
2. PARENT SOIL UNDERLYING AREAS WITH PREVIOUSLY EXISTING PAVEMENT SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 24 INCHES AND RE-GRADE TO PREVIOUSLY MENTIONED COMPACTION.
3. MATERIAL FINER THAN NO. 100 SIEVE SHALL NOT EXCEED 2 PERCENT FOR ANY AGGREGATE LAYER.



GAP WIDTH (IN)*	JOINT FILLER AGGREGATE
3/8 OR 1/2	ASTM NO. 5
1/4	ASTM NO. 9 OR 89
1/8	ASTM NO. 10



NOTES:
1. SECURE POSTS IN CONCRETE AS SHOWN AT PULL, CORNER AND END POSTS (INCLUDING GATE POSTS)
2. IF CHAINLINK FENCE IS INSTALLED IN UNFRACTURED ROCK, POST SHALL PENETRATE 2'-0" INTO THE ROCK AND SHALL BE GROUTED INTO 6" Ø HOLE.

				DESIGNED	M.HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: CIVIL DETAILS II	 800.422.1095 www.wright-pierce.com 3820 NORTHDALIE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY:	DATE:
				DRAWN	D.METZ						PROJECT NO.
				CHECKED	W.NICKEL						002150A
REV. NO.	DATE	DESCRIPTION	REV. BY							SHEET:	
										DATE	C-13

3/4" HOSE BIBB WITH INTEGRAL VACUUM BREAKER

SST HOSE RACK SUPERKLEAN MODEL 11-S OR EQUAL

SECURE HOSE RACK TO ANGLE OR HANDRAIL W/ 3/16 SST NUTS, BOLTS, AND WASHERS

3/4" BV

3"x4" ALUM CHANNEL SUPPORT

3/4" GS 2-HOLE TRAP SST BOLTS

BOLT TOGETHER W/ 1/4"x1" SST BOLTS OR WELD

4" PSW-2 TO BE INSTALLED PLUMB

SLAB OR CONCRETE PAD

PS-2 3/4" 90 DEGREE BEND

PS-2 ADAPTER W/ REDUCER AS REQUIRED

SUPPLY LINE SEE PLANS FOR SIZE AND MATERIAL

DOUBLE CHECK BACKFLOW PREVENTER

12"

3'

2"

FINISHED GRADE

FW

90 DEGREE BEND (TYP)

6" THICK X 3' WIDE CONCRETE PAD W. 6X6 W/ 4 X 1.4 AND 3/4" CHAMFER ALL AROUND

1/2" THK PREMOLDED EXPANSION JOINT FILLER W/ FLOW SEALANT (TYP)

FROM POTABLE WATER SYSTEM

90 DEGREE BEND (TYP)

FW ← → CW

The diagram illustrates the assembly of a water meter. At the top, a 'METER BOX (CAST IRON LID)' is shown with a 'FINISHED GRADE' line indicating its position. Below the box, a 'BRONZE BALL METER VALVE (METER FLG x FNPT)' is connected to a 'SCH 80 PVC SERVICE LINE FROM MAIN'. This valve is also connected to a 'BRONZE METER FLANGE (METER FLG x FNPT)'. The flange is connected to a 'WATER DISC METER'. The other side of the water disc meter is connected to another 'SCH 80 PVC SERVICE LINE' via a 'SWJ x MNPT SCH 80 PVC THRD ADAPTER'. A second 'SWJ x MNPT SCH 80 PVC THRD ADAPTER' is shown on the left side of the meter assembly.



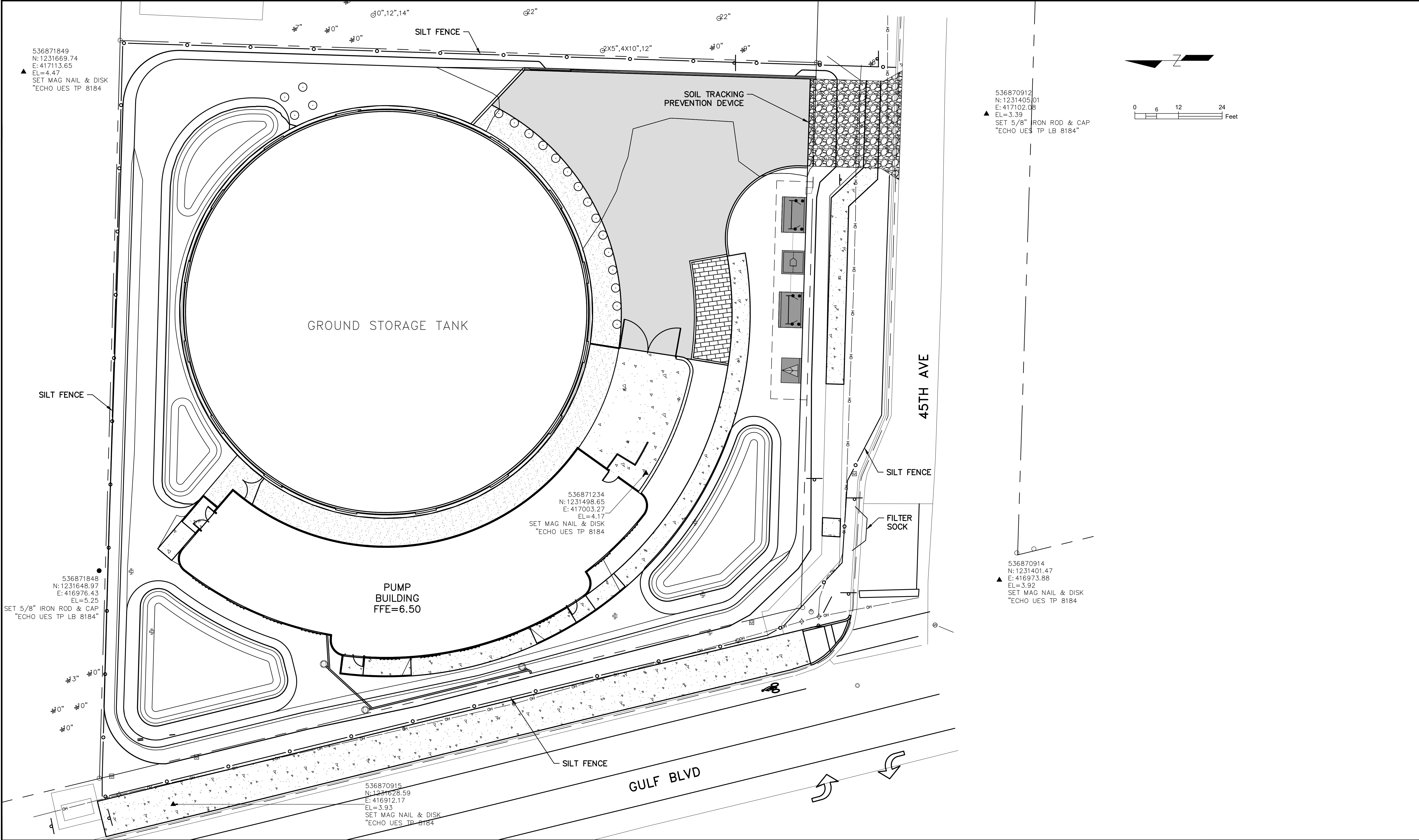
Pinellas County
UTILITIES

x MNPT SCH 80
 ADAPTER

DESCRIPTION:	CIVIL DETAILS III
--------------	-------------------

 PIERCE ENGINEERING 10000 W. BOULEVARD SUITE 202B, TAMPA, FL 33624	APPROVED BY:	DATE:	04-2024
	_____	PROJECT NO.	002150A
	DATE	SHEET:	C-14

J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CIV\P002150A-SVPP.dwg, Apr 30, 2024 - 11:05am



			DESIGNED M. HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: STORMWATER POLLUTION PREVENTION PLAN	 800.422.1095 www.wright-pierce.com 3820 NORTHDALIE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: DATE	DATE: 04-2024
			DRAWN D. METZ						PROJECT NO. 002150A
			CHECKED W. NICKEL						SHEET: C-15
REV. NO.	DATE	DESCRIPTION	REV. BY						

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

J:\ENG\FL\PinellasCounty\21464-GulfBeachWaterBoosterStation\Drawings\CTV-P002150A-SVPP.dwg, Apr 30, 2024 - 11:05am

I. SITE DESCRIPTION

A. CONSTRUCTION ACTIVITY

THE PROPOSED IMPROVEMENTS CONSIST OF REMOVAL AND REPLACEMENT OF A PUMP BUILDING; REMOVAL AND REPLACEMENT OF SIDEWALKS; REMOVAL AND REPLACEMENT OF THE PARKING LOT; REMOVAL AND REPLACEMENT OF THE DRIVEWAY CONNECTION TO 45TH AVENUE; STORMWATER MANAGEMENT FACILITIES; AND VARIOUS UTILITY IMPROVEMENTS.

B. PROJECT LIMITS

PID: 07-32-16-51660-000-0011, PORTION OF GULF BLVD ROW, PORTION OF 45TH AVE ROW

C. PROJECT DESCRIPTION

THE GBWBS FUNCTIONS AS A RE-PUMP STATION, RECEIVING WATER FROM THE NORTHERN ISLE OF CAPRI WASTER BOOSTER STATION TO STORE IN THE GBWBS ON-SITE GROUND STORAGE TANK (GST) DURING LOW DEMAND PERIODS, AND PUMPING WATER TO THE SOUTHERN PORTION OF PCU'S WATER DISTRIBUTION SYSTEM TO MAINTAIN SYSTEM PRESSURES DURING PEAK DEMAND PERIODS AND TO SATISFY FIRE FLOW NEEDS. THE PURPOSE OF THE PROJECT IS TO UPGRADE THE GBWBS TO MEET CURRENT INDUSTRY AND OPERATION STANDARDS.

D. MAJOR SOIL DISTURBING ACTIVITIES

CLEARING AND GRUBBING, DEMOLITION, GRADING OF SITE

TOTAL PROJECT AREA: 0.8 ACRES
TOTAL AREA TO BE DISTURBED: 0.8 ACRES

F. RUNOFF DATA

	100-YEAR/24-HOUR DISCHARGE (CFS)
EXISTING CONDITION	0.9
PROPOSED CONDITION	0.5

G. SOIL DATA

19-PALM BEACH FINE SAND: FINE SAND, EXCESSIVELY DRAINED, HYDROLOGIC SOIL GROUP "A"

H. DRAINAGE AREA (ATTACH DRAINAGE MAP OR PROVIDE DRAINAGE AREA IN ACRES)

0.75 ACRES

I. RECEIVING WATERS

BOCA CIEGA BAY (CENTRAL SOUTH), WATERBODY ID 1694A2

J. WETLANDS AREAS

NOT APPLICABLE

II. CONTROLS

ALL CONTROLS SHALL BE CONSISTENT WITH PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORM-WATER TREATMENT SET FORTH IN s.62-40.432, F.A.C., THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, THE APPLICABLE STORM-WATER OR ENVIRONMENTAL RESOURCE PERMITTING REQUIREMENTS OF THE DEPARTMENT OR A WATER MANAGEMENT DISTRICT, THE GUIDELINES CONTAINED IN THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (DEP, 1988) AND ANY SUBSEQUENT AMENDMENTS.

A. SEQUENCE OF MAJOR ACTIVITIES

- INSTALLATION OF PERIMETER CONTROL MEASURES AND SOIL TRACKING PREVENTION DEVICES.
- NTERIM SOURCE REMOVAL AND CLEARING AND GRUBBING
- DEMOLITION AND TEMPORARY UTILITY SYSTEMS AS DESCRIBED IN PROCESS DRAWINGS
- CONSTRUCTION OF STORMWATER MANAGEMENT FEATURES.
- SITE CONSTRUCTION & INTERIM EROSION CONTROL MEASURES.
- FINAL VEGETATION

WHEN CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE EROSION PROTECTION DEVICES AND CONSTRUCTION ENTRANCE AS REQUIRED.

B. EROSION AND SEDIMENT CONTROL CONSTRUCTION ACTIVITIES

THE CONTRACTOR IS REQUIRED TO REVIEW THE SITE SPECIFIC EROSION CONTROL PLAN. THE CONTRACTOR MAY ALSO BE REQUIRED TO MODIFY THE PLAN OR MATERIALS TO ADAPT TO SEASONAL VARIATIONS OR SITE CONDITIONS. CONTRACTOR WILL COMPLY WITH E & S PLAN. ANY MODIFICATIONS TO THIS PLAN MUST BE SIGNED BY A PROFESSIONAL ENGINEER REPRESENTING THE CONTRACTOR. THE EROSION CONTROL DEVICES, DETAILS, AND NOTES APPLICABLE TO THESE ACTIVITIES ARE SPECIFIED IN THE PLANS. THE PROJECT ENGINEER IS RESPONSIBLE FOR DETERMINING IF ADDITIONAL CONTROLS ARE THE PROJECT ENGINEER MAY REQUIRE ADDITIONAL CONTROLS TO MEET STANDARDS AND REGULATIONS.

PERFORM WEEKLY INSPECTION OF EROSION AND SEDIMENT CONTROLS AND AFTER EVERY ½" RAINFALL

REMOVE ALL SEDIMENTS THAT HAVE MIGRATED OFF SITE AND RESTORE AFFECTED AREAS AS DIRECTED BY THE ENGINEER

C. STABILIZATION PRACTICES

DURING CONSTRUCTION THE CONTRACTOR WILL PROVIDE STABILIZATION FOR AREAS WHICH HAVE BEEN CLEARED AND NOT REWORKED WITHIN FOURTEEN (14) CALENDAR DAYS. THE CONTRACTOR MAY UTILIZE TEMPORARY SEEDING OR TEMPORARY SODDING IN ACCORDANCE WITH SECTION 570 OF THE "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".

- TEMPORARY SODDING
- TEMPORARY GRASSING
- PERMANENT SODDING OR SEEDING
- PRESERVATION OF NATURAL RESOURCES
- BUFFER ZONES

D. STRUCTURAL PRACTICES

- SYNTHETIC BALES (LF)
- ARTIFICIAL COVERINGS/ ROLLED EROSION CONTROL PRODUCTS (SY)
- INLET PROTECTION SYSTEM (EA)
- LITTER REMOVAL AND DISPOSAL (AC)
- MOWING (AC)
- SLOPE DRAINS (TEMPORARY)/ RUNOFF CONTROL STRUCTURES (LF)
- SOIL TRACKING PREVENTION DEVICE (EA)
- SEDIMENT BASINS/CONTAINMENT SYSTEMS (EA)
- SEDIMENT BASIN/ CONTAINMENT SYSTEM CLEANOUT (EA)
- FLOATING TURBIDITY BARRIER (LF)
- STAKED SILT FENCE (LF)
- CHEMICAL TREATMENT - POWDERED (SY)
- CHEMICAL TREATMENT (FLOC LOGS, DRUMS OF PRODUCT) (EA)
- OTHER

E. DESCRIPTION OF STORM WATER MANAGEMENT

FOUR STORMWATER MANAGEMENT FACILITIES ARE PROPOSED. THREE OF THESE FACILITIES ARE DRY RETENTION PONDS AND ONE OF THE FACILITIES IS A PERMEABLE PAVEMENT SYSTEM. ALL FACILITIES WILL BE CONNECTED BY EQUALIZER PIPES, SO THE SYSTEM FUNCTIONS AS ONE COMBINED DRY RETENTION FACILITY.

F. WASTE DISPOSAL

THE CONTRACTOR SHALL PROVIDE LITTER CONTROL AND COLLECTION WITHIN THE PROJECT BOUNDARIES DURING CONSTRUCTION ACTIVITIES. ANY CHEMICAL CONTAINERS SHALL BE DISPOSED OF BY THE CONTRACTOR ACCORDING TO EPA'S STANDARD PRACTICES AS DETAILED BY THE MANUFACTURER. NO SOLID MATERIALS INCLUDING BUILDING & CONSTRUCTION MATERIALS SHALL BE DISCHARGED TO WETLANDS OR BURIED ON SITE. ALL WASTE MATERIAL WILL BE COLLECTED AND STORED IN DUMPSTERS PER LOCAL SOLID WASTE REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF TWICE A WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED TO THE APPROPRIATE COUNTY LOCATION FOR DUMPING.

G. OFFSITE VEHICLE TRACKING

STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS AND INSPECTED/MAINTAINED DAILY. THE PAVED STREETS WILL BE CLEANED AS DIRECTED BY THE CONSTRUCTION INSPECTOR AND ENGINEER TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM OR TO THE SITE WILL BE COVERED WITH A TARPAULIN AT ALL TIMES.

H. SANITARY WASTE

FDOT STANDARD SPEC. FOR ROAD AND BRIDGE CONSTRUCTION" SECTION 7 - 6 "SANITARY PROVISIONS. "THE CONTRACTOR SHALL PROVIDE AND MAINTAIN, IN A NEAT AND SANITARY CONDITION, SUCH ACCOMMODATION FOR THE USE OF HIS EMPLOYEES AS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS AND REGULATIONS OF THE STATE AND LOCAL BOARDS OF HEALTH. COMMIT NO PUBLIC NUISANCE."

I. HAZARDOUS WASTE

THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE COUNTY IN WRITING IF ANY HAZARDOUS WASTE MATERIAL IS ENCOUNTERED DURING SITE INVESTIGATION OR CONSTRUCTION.

THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR NOTIFYING THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) WITHIN 24 HOURS OF THE DISCOVERY.

ALL HAZARDOUS WASTE MATERIALS, IF ENCOUNTERED, WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

IN CASE OF DISPOSING ANY HAZARDOUS WASTE MATERIAL FOLLOWING LOCAL, STATE, AND FEDERAL REGULATIONS, A COPY OF DISPOSAL MANIFEST HAS TO BE PROVIDED TO THE COUNTY IN TIMELY FASHION.

J. APPROVED STATE, LOCAL PLANS, OR STORM WATER PERMITS

NONE AT THE TIME OF PERMITTING

PERMITTEE CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

XXXX X. XXXXXXX, P.E., MANAGER
DIVISION, PUBLIC WORKS, PINELLAS COUNTY.

DATE

CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH , THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

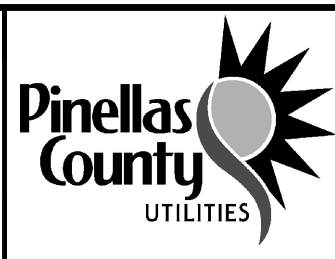
GENERAL CONTRACTOR NAME & TITLE

DATE

COMPANY NAME

COMPANY STREET ADDRESS

CITY, STATE, ZIP CODE

				DESIGNED <u>M.HOFFMAN</u>		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: STORMWATER POLLUTION PREVENTION NOTES I	 800.422.1095 www.wright-pierce.com 3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: _____ DATE	DATE: 04-2024
				DRAWN <u>D.METZ</u>						PROJECT NO. 002150A
				CHECKED <u>W.NICKEL</u>						SHEET: C-16
REV. NO.	DATE	DESCRIPTION	REV. BY							

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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III. MAINTENANCE

A. ALL OF THE CONTROLS SHALL BE MAINTAINED AT ALL TIMES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTION AND MAINTENANCE OF ALL PERMANENT AND TEMPORARY EROSION CONTROL DEVICES THROUGHOUT ALL CONSTRUCTION PHASES OF THE PROJECT. MAINTENANCE SHALL BE IN ACCORDANCE WITH THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, PINELLAS COUNTY "STANDARD TECHNICAL SPECIFICATIONS FOR ROADWAY AND RELATED CONSTRUCTION", AND THE PROJECT CONSTRUCTION CONTRACT.

B. INSPECTION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE PINELLAS COUNTY NPDES / SWPPP CONSTRUCTION INSPECTION REPORT AFTER ANY ½" RAINFALL OR WEEKLY, IF NO RAIN EVENT OCCURRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN RAIN GAUGES ON THE PROJECT SITE AND RECORD WEEKLY RAIN FALL. THE CONTRACTOR SHALL NOTIFY PINELLAS COUNTY DIVISION OF ENVIRONMENTAL MANAGEMENT OF ANY NON-COMPLIANCE PER SECTION 58-244 TO 246 OF THE PINELLAS COUNTY CODE. COUNTY INSPECTOR MAY INSPECT SITE FOR COMPLIANCE AT ANY TIME.

C. NON-STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES MAY OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:

- WATER FROM WATER LINE FLUSHING
- PAVEMENT WASH WATERS (WHERE NO SPILL OR LEAKS OF VEHICLE AND HAZARDOUS MATERIALS HAVE OCCURRED)
- UNCONTAMINATED GROUNDWATER FROM DE-WATERING ACTIVITIES

ALL NON-STORM WATER DISCHARGES SHOULD BE CONTAINED ON SITE AND DIRECTED TO SEDIMENT TREATMENT BMPs. UNTREATED OFF SITE DISCHARGES WILL BE REPORTED TO THE COUNTY INSPECTOR AND PINELLAS COUNTY DIVISION OF ENVIRONMENTAL MANAGEMENT FOR FURTHER INVESTIGATION. IF CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, DEWATERING SHOULD CEASE IMMEDIATELY AND THE ENGINEER WILL BE CONTACTED.

D. MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL HANDLING PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF:

1. THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON-SITE DURING THE CONSTRUCTION PROJECT.

- STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB ON SITE.
- ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR ORIGINAL MANUFACTURER'S LABELED CONTAINERS UNDER A ROOF OR OTHER CONTAINED ENCLOSURE.
- SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- WHENEVER POSSIBLE, ALL OF A PRODUCT SHALL BE USED BEFORE DISPOSING OF THE CONTAINER. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
- THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE.

2. THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RE-SEALABLE.
- SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL OPENED CONTAINERS. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE KEPT ON-SITE ON THE CONSTRUCTION OFFICE TRAILER.
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS OR LOCAL STATE RECOMMENDED METHODS OF PROPER DISPOSAL SHALL BE FOLLOWED.
- THE CONTRACTOR MUST IDENTIFY A DESIGNATED FUEL TANK STORAGE AREA, AWAY FROM DRAINAGE STRUCTURES, PONDS, BASINS, AND WETLANDS, WITH SECONDARY CONTAINMENT (SPILL COLLECTION).

3. CONCRETE TRUCKS

- CONTRACTOR SHALL DESIGNATE AN AREA AWAY FROM DRAINAGE STRUCTURES, PONDS, BASINS, AND WETLANDS FOR DISCHARGE OF SURPLUS CONCRETE OR DRUM WASH WATER AND SHALL INSTALL A CONTAINMENT BERM AROUND THIS AREA TO PREVENT RUNOFF TO THE REMAINDER OF THE SITE.
- HARD DEBRIS SHALL BE DISPOSED OF BY CONTRACTOR UPON COMPLETION OF THE PROJECT.
- DISPOSAL OF CONCRETE SLURRY DIRECTLY INTO PUBLIC DRAINAGE SYSTEMS IS A VIOLATION OF THE "ILLICIT DISCHARGE" PROVISION OF THE PINELLAS COUNTY LAND DEVELOPMENT CODE AND SECTION 58-244 OF THE PINELLAS COUNTY CODE.
- SECTION 58-239 OF THE PINELLAS COUNTY CODE AUTHORIZES PENALTIES OF UP TO \$10,000.00 FOR EACH OFFENSE.

4. SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIALS MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP.

- MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION CLEANUP SUPPLIES.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.
- THE SPILL PREVENTION PLAN WILL BE PREPARED BY THE CONTRACTOR AND KEPT IN THE CONSTRUCTION OFFICE TRAILER AND WILL INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE ARE OTHERS. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED. ALL SPILLS AND RESPONSES WILL BE REPORTED TO THE APPROPRIATE AGENCY.
- THE SITE SUPERINTENDENT WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON SITE.
- USE AND CHARACTERISTICS OF FUEL OR CHEMICAL STORAGE TANK ON SITE SHALL COMPLY WITH ALL RELATED FEDERAL, STATE, AND LOCAL REGULATIONS. STORAGE TANKS MUST BE LOCATED AS FAR AS POSSIBLE FROM ANY DRAINAGE STRUCTURES, DITCHES, AND/OR SURFACE WATERS. IN ADDITION, THE CONTRACTOR MUST PROVIDE A SECONDARY CONTAINMENT WITH A LINER CHEMICALLY RESISTANT TO THE FUEL OR CHEMICAL STORED ON SITE. THE SECONDARY CONTAINMENT MUST BE SIZED TO CONTAIN MINIMUM OF ONE AND A HALF TIME THE TOTAL CAPACITY OF STORAGE TANK BEING USED. CONTRACTOR HAS TO PROVIDE A DAILY INSPECTION LOG FOR THE SECONDARY CONTAINMENT WITH INDICATION OF DATE, INSPECTORS NAME AND INSPECTION REPORT. FURTHERMORE, ANY CONTAMINATION HAS TO BE IMMEDIATELY CONTAINED AND THE COUNTY INSPECTOR MUST BE NOTIFIED OF THE NATURE AND EXTEND OF THE CONTAMINATION.

PERMITTEE CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

XXXX X. XXXXXXXX, P.E., MANAGER
DIVISION, PUBLIC WORKS, PINELLAS COUNTY.

CONTRACTOR CERTIFICATION

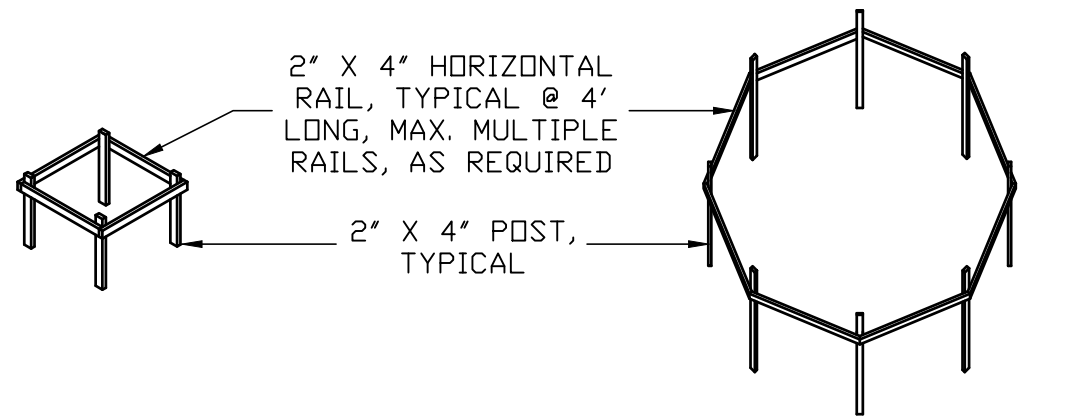
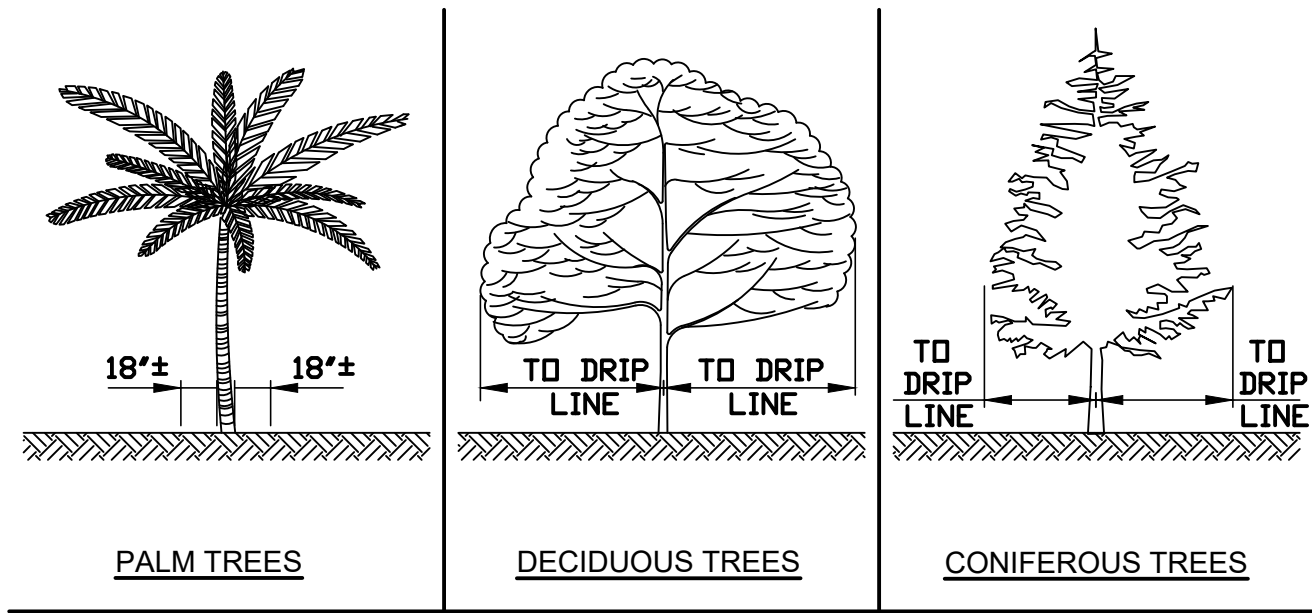
I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH , THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

GENERAL CONTRACTOR NAME & TITLE
DATE
COMPANY NAME
COMPANY STREET ADDRESS
CITY, STATE, ZIP CODE

				DESIGNED M.HOFFMAN		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: STORMWATER POLLUTION PREVENTION NOTES II	 800.422.1095 www.wright-pierce.com 3820 NORTHDALÉ BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: DATE	DATE: 04-2024
				DRAWN D.METZ						PROJECT NO. 002150A
				CHECKED W.NICKEL						SHEET: C-17
REV. NO.	DATE	DESCRIPTION		REV. BY						

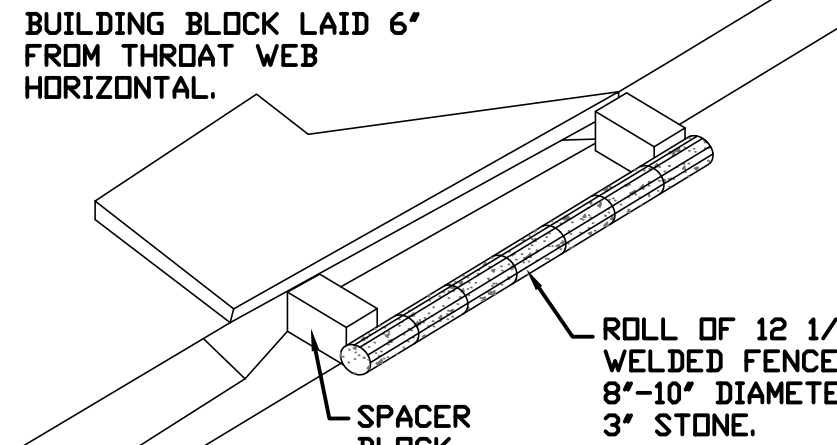
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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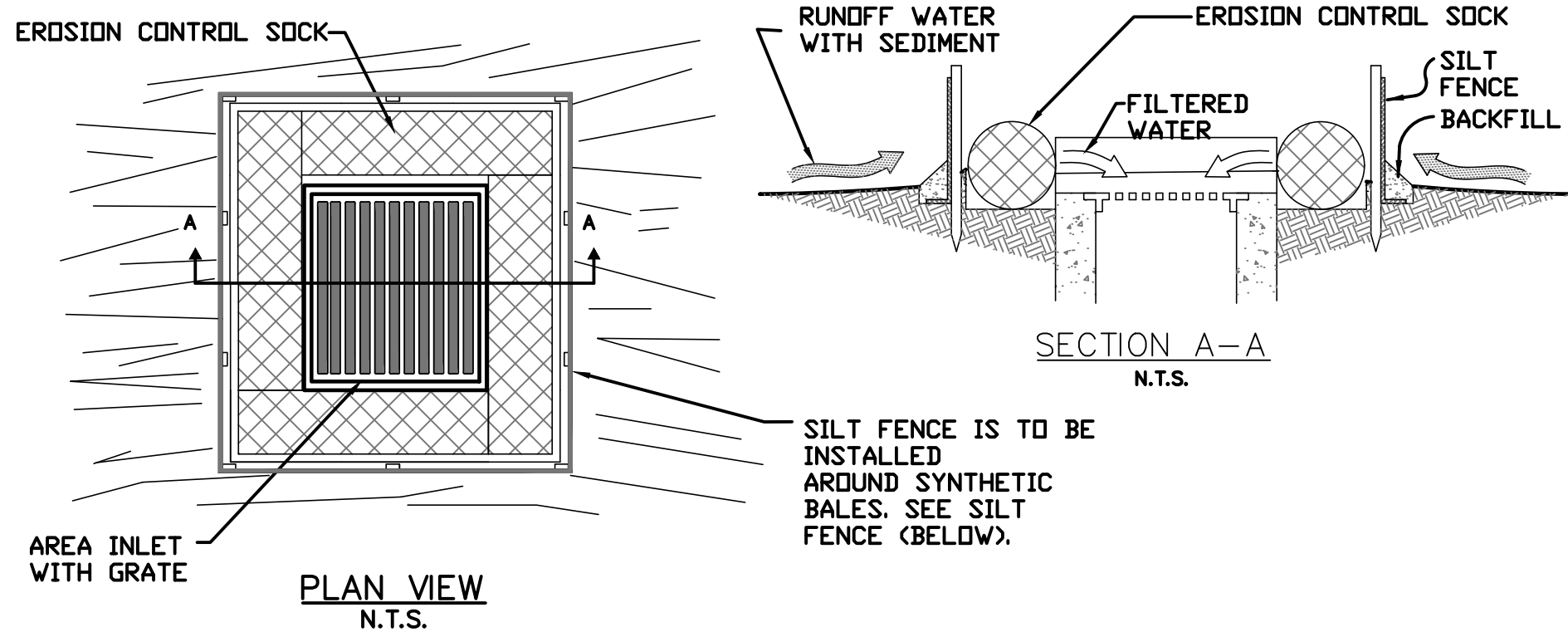
- NOTES:
1. NO TRUCKS OR HEAVY EQUIPMENT ALLOWED WITHIN BARRIERS, ONLY HAND LABOR ALLOWED.
 2. NO CONSTRUCTION MATERIALS, SOIL DEPOSITS, OR SOLVENTS SHALL BE ALLOWED WITHIN BARRIERS.
 3. BARRIERS ARE TO BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN TREE AREA.
 4. BARRIERS ARE TO STAY IN PLACE UNTIL ALL PAVING, CONSTRUCTION, AND HEAVY EQUIPMENT IS REMOVED FROM THE AREA.

TREE PROTECTION BARRIERS DETAIL
NTS

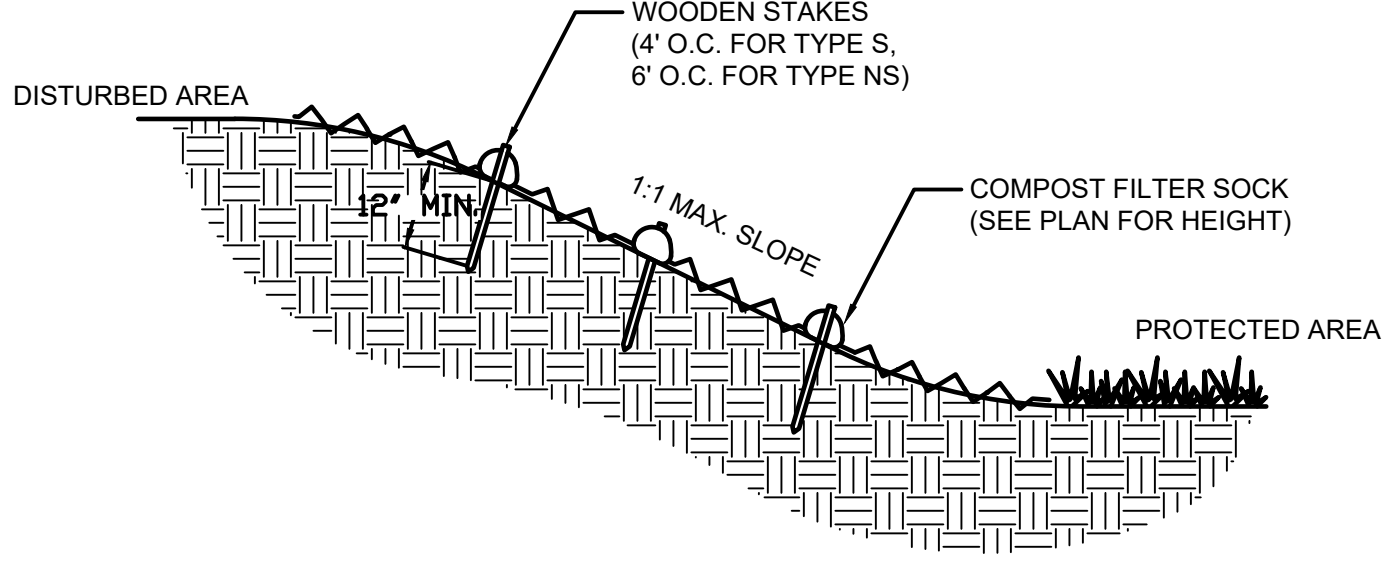


- NOTES:
1. FIBROUS FILLER MATERIAL IN FRONT OF BLOCK PREVENTS GRAVEL FROM WASHING INTO STRUCTURE.
 2. 2"X4" BEHIND BLOCK AND ACROSS THROAT HELPS KEEP BLOCK IN PLACE. PLACE IN OUTER HOLE OF SPACER BLOCK.

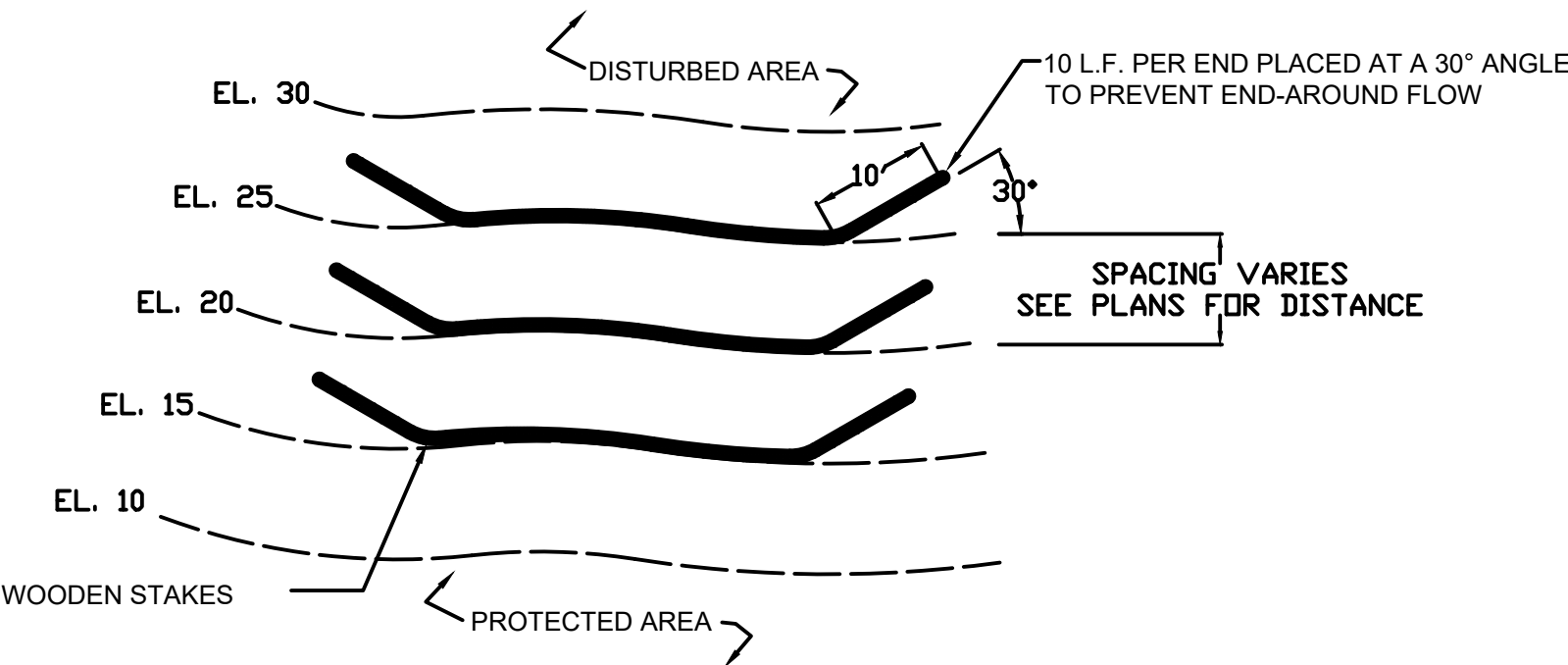
CURB INLET FILTER SOCK
N.T.S.



THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5%) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 CFS) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS STREET OR HIGHWAY MEDIANS.



SECTION
NTS

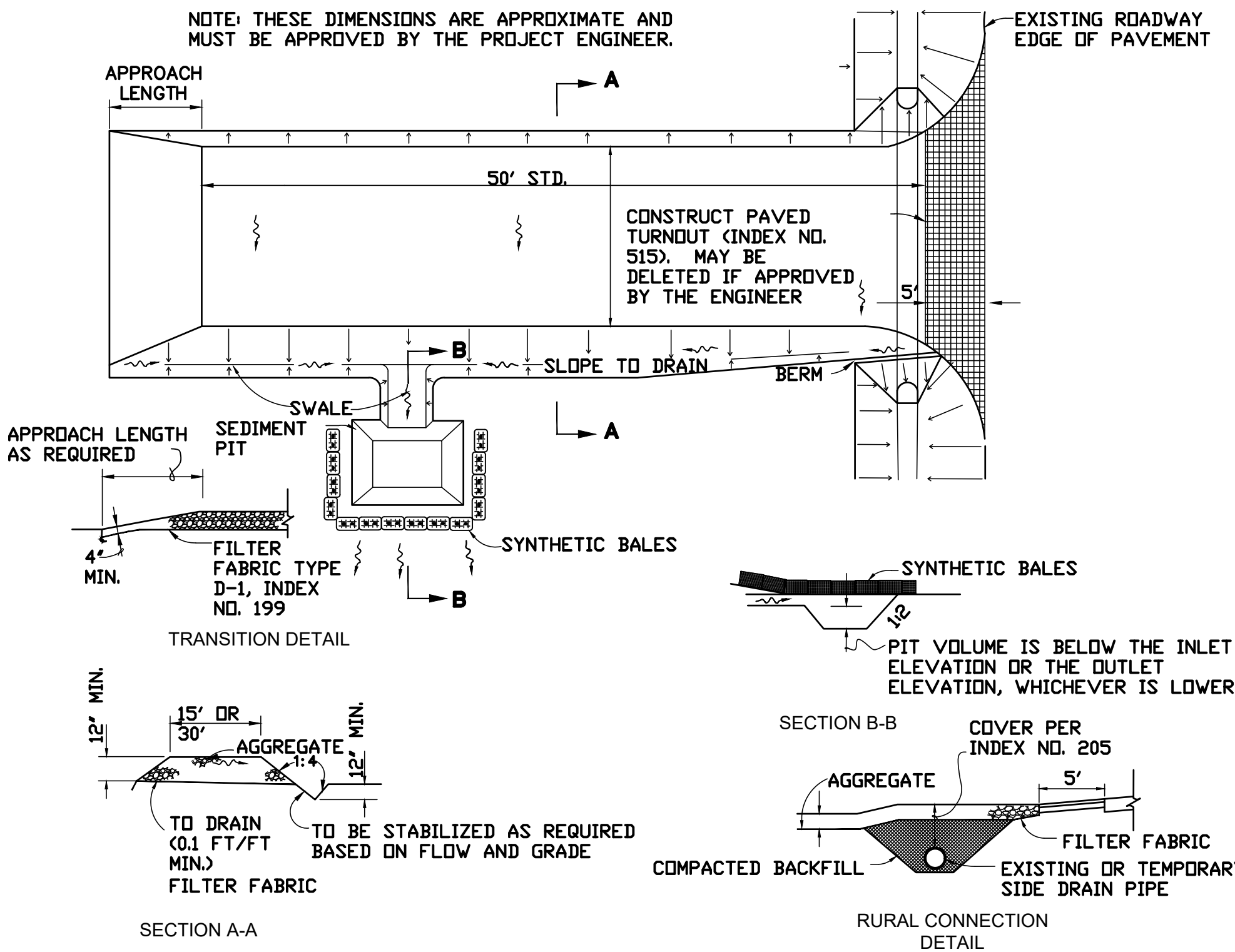


PLAN
NTS

SYNTHETIC BALES OR APPROVED BARRIERS
NTS

SOIL TRACKING PREVENTION DEVICE NOTES

1. A SOIL TRACKING PREVENTION DEVICE (STPD) SHALL BE CONSTRUCTED AT LOCATIONS DESIGNATED BY THE ENGINEER FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFF SITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THROUGH STPD BARRIERS. FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STPD.
2. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFF SITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STPD AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
4. AGGREGATES SHALL BE DESCRIBED IN SECTION 901 EXCLUDING 901-2.3. AGGREGATES SHALL BE FDOT SIZE #1. IF THIS SIZE IS NOT AVAILABLE, THE NEXT AVAILABLE SMALLER SIZE AGGREGATE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE NOT SUITABLE.
5. THE SEDIMENT PIT SHOULD PROVIDE A RETENTION VOLUME OF 3600 CUBIC FEET/ACRE OF SURFACE AREA DRAINING TO THE PIT. WHEN THE STPD IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT:
15'X50'=100 FT³
30'X50'=200 FT³
AS AN OPTION TO THE SEDIMENT PIT, THE WIDTH OF THE SWALE BOTTOM CAN BE INCREASED TO OBTAIN THE VOLUME. WHEN THE SEDIMENT PIT OR SWALE VOLUME HAS BEEN REDUCED TO ONE HALF, IT SHALL BE CLEANED. WHEN A SWALE IS USED, SYNTHETIC BALES OR SILT FENCE SHALL BE PLACED ALONG THE ENTIRE LENGTH.
6. THE SWALE DITCH DRAINING THE STPD SHALL HAVE A 0.2% MINIMUM AND A 1.0% MAXIMUM GRADE ALONG THE STPD AND TO THE SEDIMENT PIT.
7. MITERED END SECTIONS ARE NOT REQUIRED WHEN THE SIDE DRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.
8. THE STPD SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFFSET TRACKING, THE STPD SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THROUGH THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STPD MAY BE REQUIRED TO LIMIT MUD TRACKED.
9. A STPD SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SOIL TRACKING PREVENTION DEVICE, EA. THE UNIT PRICE SHALL CONSTITUTE FULL COMPENSATION FOR CONSTRUCTION, MAINTENANCE, REPLACEMENT OF MATERIALS, REMOVAL, AND RESTORATION OF THE AREA UTILIZED FOR THE STPD: INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TEMPORARY PIPE (INCLUDING M.E.S. WHEN REQUIRED), FILTER FABRIC, AGGREGATE, PAVED TURNOUT (INCLUDING ASPHALT AND BASE CONSTRUCTION), DITCH STABILIZATION, APPROACH ROUTE STABILIZATION, SEDIMENT REMOVAL AND DISPOSAL, WATER, RINSING AND CLEANING OF THE STPD AND CLEANING OF PUBLIC ROADS, GRASSING AND SOD. SYNTHETIC BALES SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR HAY OR STRAW BALED, EA. SILT FENCE SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE, L.F.
10. THE NOMINAL SIZE OF A STANDARD STPD IS 15'X50' UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUME OF ENTERING AND EXITING VEHICLES WARRANT, A 30' WIDTH STPD MAY BE USED IF APPROVED BY THE ENGINEER. WHEN A DOUBLE WIDTH (30') STPD IS USED, THE PAY QUANTITY SHALL BE 2 FOR EACH LOCATION.



SOIL TRACKING PREVENTION DEVICE
TYPE A
NTS

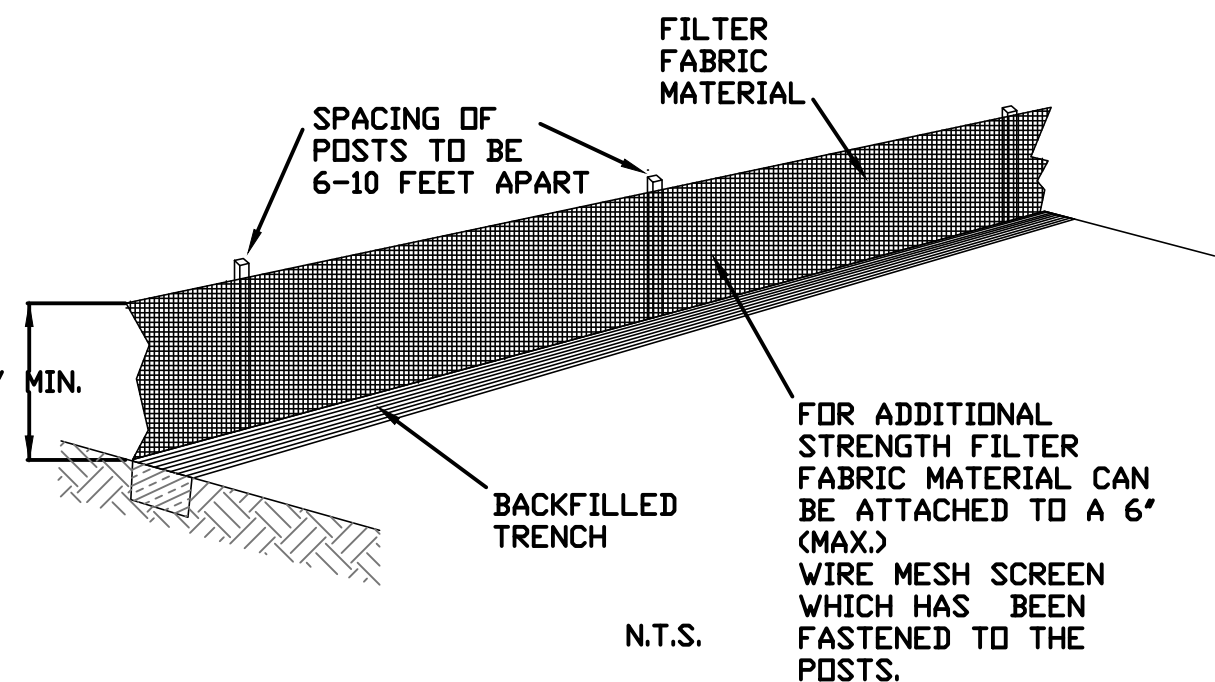
ATTACHING TWO SILT FENCES



PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.

ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.

DIRECTION OF RUNOFF WATER: DRIVE BOTH POSTS ABOUT 10 INCHES INTO THE GROUND AND BURY THE FLAP.



FOR ADDITIONAL STRENGTH FILTER FABRIC MATERIAL CAN BE ATTACHED TO A 6" (MAX.) WIRE MESH SCREEN WHICH HAS BEEN FASTENED TO THE POSTS.

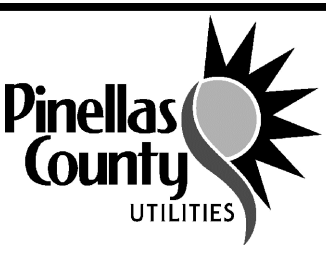
APPROXIMATELY 8 INCHES OF FILTER FABRIC MATERIAL MUST EXTEND INTO A TRENCH AND BE ANCHORED WITH COMPACTED BACKFILL MATERIAL.

APPROXIMATE 4'X4" TRENCH

SILT FENCE
NTS

REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED **M. HOFFMAN**
DRAWN **D. METZ**
CHECKED **W. NICKEL**



PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:
STORMWATER POLLUTION
PREVENTION DETAILS

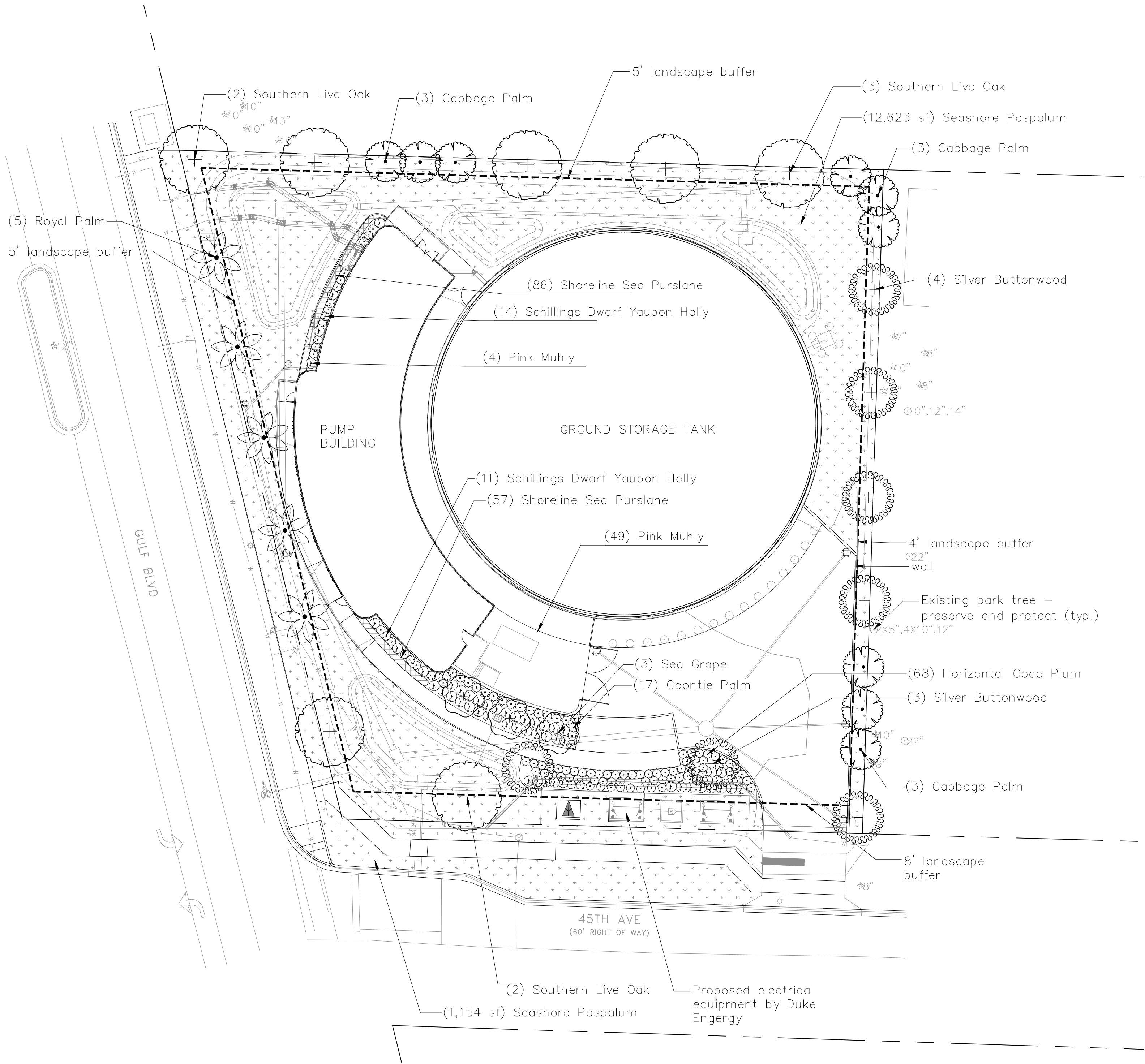
WRIGHT-PIERCE
800.422.1095 | www.wright-pierce.com
3820 NORTHDALE BOULEVARD, SUITE 202B, TAMPA, FL 33624

APPROVED BY:

DATE

DATE: **04-2024**
PROJECT NO. **002150A**
SHEET: **C-18**

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

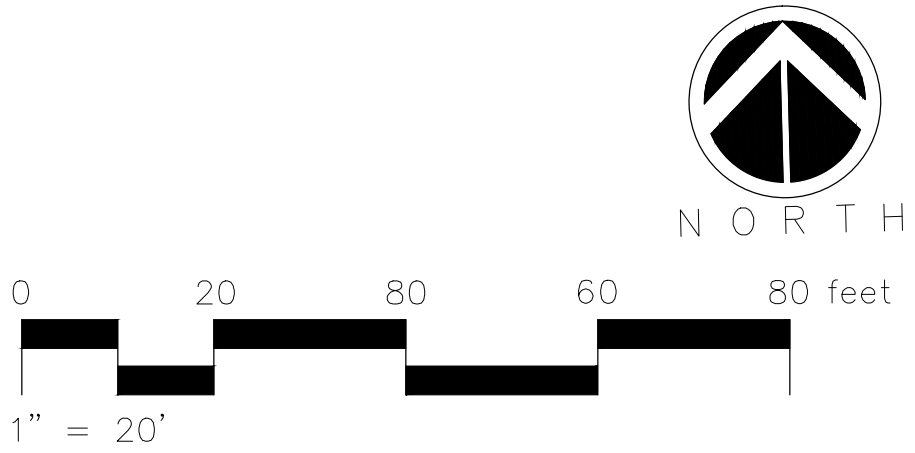


PLANT SCHEDULE				
SYMBOL	QTY	BOTANICAL / COMMON NAME	CONT	SIZE
TREES				
	3	Coccoloba uvifera / Sea Grape	15 gal.	2" DBH, 8' HT. MIN
	7	Conocarpus erectus sericeus / Silver Buttonwood	25 gal	2" CAL, 6' HT MIN
	7	Quercus virginiana / Southern Live Oak	100 gal	4" CAL, 10' HT, 6' SPRD
	5	Roystonea regia / Royal Palm	45 gal.	12" C.T.
	9	Sabal palmetto / Cabbage Palm	B & B	10' HT CT
SHRUBS				
	67	Chrysobalanus icaco 'Horizontalis' / Horizontal Coco Plum	3 gal	24" HT X 24" SPRD
	25	Ilex vomitoria 'Schillings Dwarf' / Schillings Dwarf Yaupon Holly	3 gal	24" HT X 24" SPRD
	17	Zamia floridana / Coontie Palm	7 gal	24" HT X 24" SPRD
GRASSES				
	53	Muhlenbergia capillaris / Pink Muhly	3 gal.	36" Ht
GROUND COVERS				
	13,883 sf	Paspalum vaginatum / Seashore Paspalum	1 gal	Sod
	143	Sesuvium portulacastrum / Shoreline Sea Purslane	1 gal.	12" HT X 12" SPRD

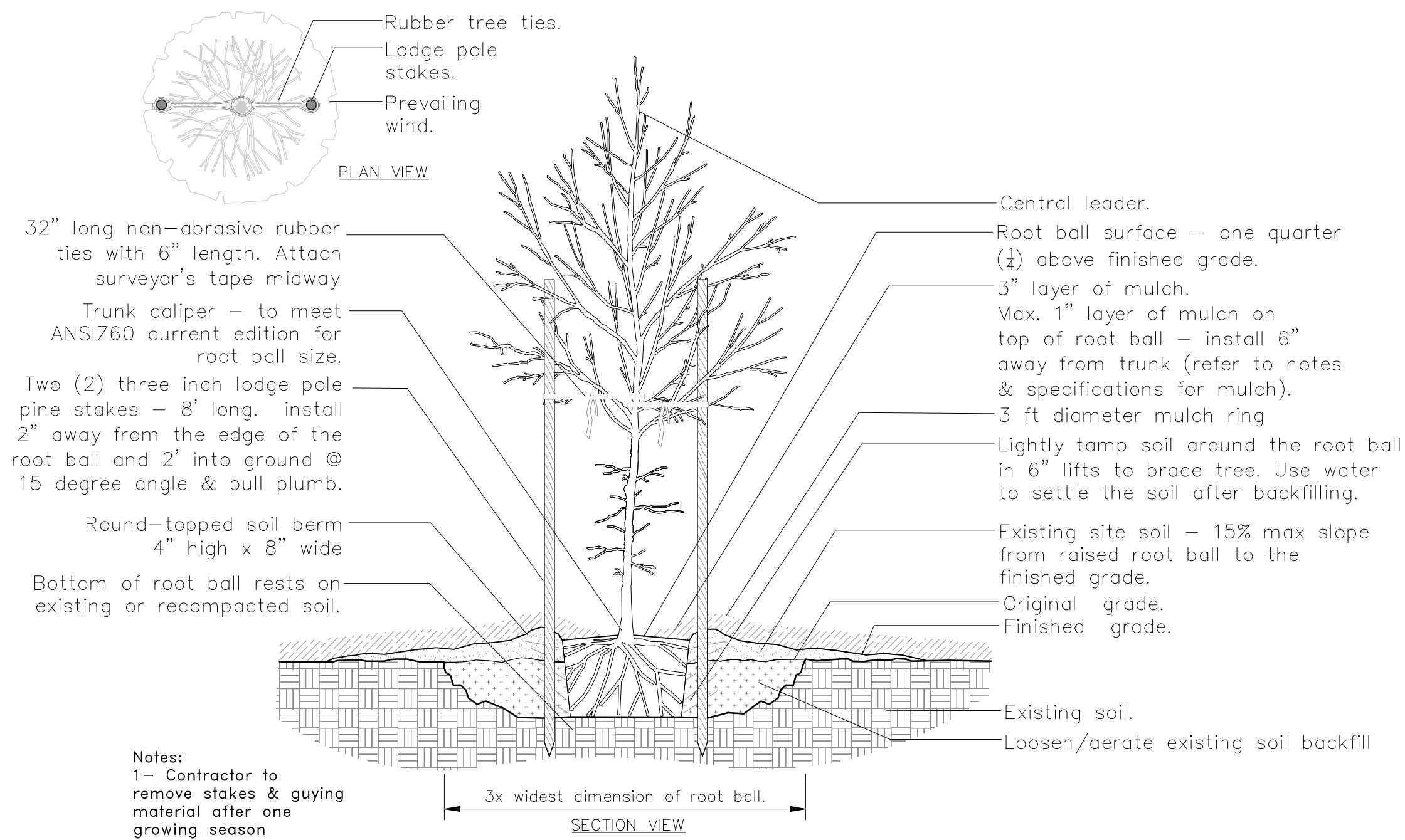


This item has been electronically signed and sealed by Matti Rukholm using a Digital Signature (date is to right). Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Matti Rukholm
Location: 3918 N Highland Ave., Tampa, FL 33603
Madrid CPWG, LC no. LA001411, Matti Rukholm PLA no. LA6667261.
This item has been digitally signed and sealed by Matti Rukholm. Printed copies of this document are not considered signed & sealed. The signature must be verified on the electronic documents.
2024.04.30 11:00:15-04'00'

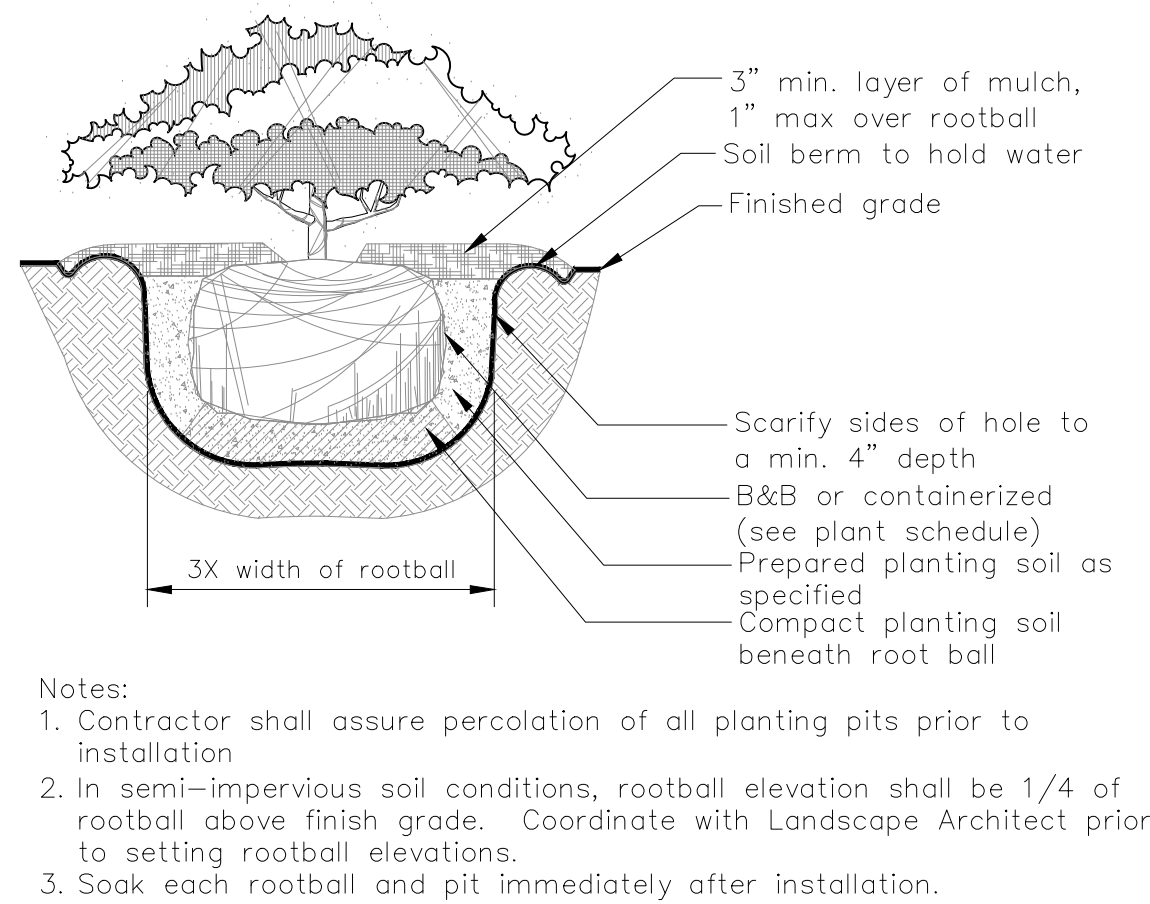


			DESIGNED	MR		PROJECT: RESTORE ACT WASTEWATER COLLECTION SYSTEM IMPROVEMENTS – BOCA CIEGA	DESCRIPTION: LANDSCAPE PLAN	PREPARED BY: WRIGHT-PIERCE 407.906.1776 www.wright-pierce.com 601 S LAKE DESTINY ROAD, SUITE 290, MAITLAND, FL 32751	ADMINISTERED BY: 5001 N Nebraska Ave., Ste. A, Tampa, FL 33603 Phone: 813.361.2644 www.MadridCPWG.com MATTI RUKHOLM, P.L.A., FL LIC NO. LA6667261, CPWG LC NO. 2600439	DATE:	MARCH 2023
			DRAWN	MR/JR						PROJECT NO.	5015A
			CHECKED	GH						SHEET:	L-1
REV. NO.	DATE	DESCRIPTION	REV. BY								



1 TREE STAKING AND PLANTING DETAIL

NTS



2 SHRUB PLANTING DETAIL

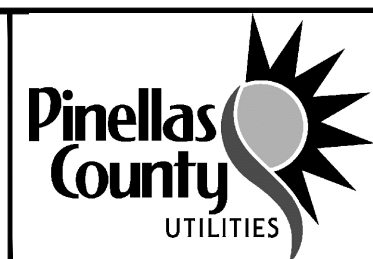
N.T.S.

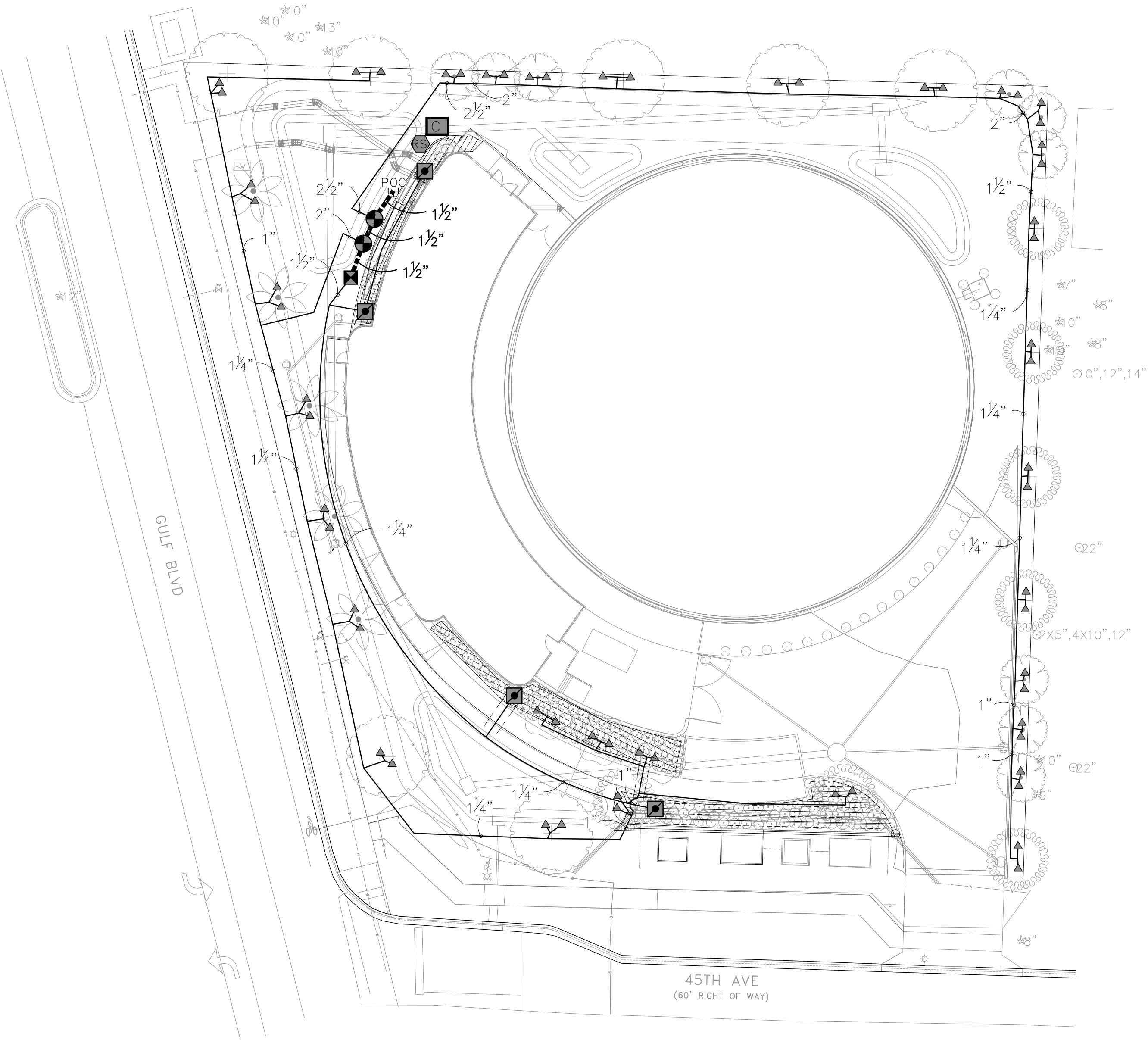
LANDSCAPE INSTALLATION NOTES

- Plant material shall meet or exceed the standards for Florida No. 1 as set out in the most current edition of "Grades and Standards for Nursery Plants Part 1 and Part 2", State of Florida, Department of Agriculture, Tallahassee. All trees to be free of mechanical injuries to the trunk.
- The selection, installation, and maintenance of the subject landscape falls under the auspices of the ANSI A300 series; all 10 parts. This subject landscape also falls under the auspices of ANSI Z133, and local governmental codes and regulations
- All plant material shall be purchased and/or grown at a location that allowed the trees to become adapt to the local environment for application on this site.
- All planting beds shall receive a 3" layer (1" over root ball) of pine bark mulch or approved equal and shall be weed free. Mulch shall be Grade B or better.
- The Landscape Contractor shall be responsible for verification of all quantities on the plant schedule. In the event of a conflict between quantities on the plant schedule and the plans, the plans shall take precedence and the discrepancy shall be brought to the attention of the landscape architect prior to bid. Any deviation from these plans must be approved by the landscape architect or owner's representative. The Contractor shall be responsible for verifying and calculating all material quantities including, but not limited to, sod and mulch.
- The Landscape Contractor is responsible for compliance with all applicable building codes, "ordinances" and local regulations. The contractor shall be responsible for obtaining all necessary permits to perform the work.
- The Landscape Contractor is responsible for inspection of existing site conditions and promptly reporting all discrepancies and improper planting conditions (wetness, muck, debris, etc.) to landscape architect prior to bidding.
- Prior to the start of construction, the Landscape Contractor shall be responsible for familiarizing themselves with the location of all utilities (underground and overhead). The exact location of all utilities and underground irrigation sprinklers and pipes may not be indicated on drawings. The Landscape Contractor shall protect utility services which must remain operational throughout the time of construction. The Contractor shall be responsible for utility replacement if damaged by the Contractor.
- The Landscape Contractor shall be responsible for fine grading all landscape areas, and eliminating all bumps, depressions, sticks, stones, concrete, and other debris to the satisfaction of the Landscape Architect. All inorganic debris that may damage or inhibit the growth of plant material will be removed from all planting beds. Sod shall not be installed until final grades have been approved by Landscape Architect.
- New sod shall match existing adjacent species as needed and as approved by Landscape Architect. Contractor shall determine exact quantities of sod in the field.
- The Landscape Contractor shall maintain all lawn areas (sod/seed), planting beds, ground covers, shrubs, palms, and trees until final acceptance including: watering, weeding, fertilizing, mowing (maintain 3" height or as specified) and edging, insect and disease control, mulching (3" depth or as specified), maintenance of tree stakes and braces, and maintenance of tree rings per tree planting detail.
- The Landscape Contractor is responsible for ensuring all plant material is watered; at time of planting, during plant establishment, and until final acceptance. Plant watering requirements (quantity and schedule) shall be determined by the contractor and will be dependent on the plant species, site conditions, time of year, and weather. Plants shall be kept alive and in good health (i.e. not showing signs of stress including leaf wilting, leaf browning, and premature leaf drop) from time of planting until final acceptance.
- Tree braces and support systems shall be left in place until the tree(s) are firmly rooted into the landscape. Removal of braces and supports is the responsibility of the Landscape Contractor. The Landscape Contractor shall determine the time when the braces or supports should and shall be removed. The Landscape Contractor shall notify the Landscape Architect in writing prior to the removal of stakes or braces providing the tree species name, location in the field, and date and time of removal.
- Plant material shall be guaranteed for one year after planting and shall be replaced within 30 days should they die or have over 30% leaf damage due to pests. Exceptions to this guarantee include theft, vandalism, and acts of God.
- The landscape will be inspected by a third party for compliance with the specifications prior to final acceptance.

PLANTING SOIL SPECIFICATION

- Existing site soil to be used whenever possible.
- All soils (existing and imported) shall not be amended with peat, compost, pine bark, manure, or other organic material, unless otherwise directed to do so by the Landscape Architect.
- Top 9–12" of existing soil in all planting areas to be tilled prior to planting.
- All soils (existing and imported) shall be free of weeds, roots, stumps, rocks, and/or other debris larger than 1/2–inch diameter.
- All soils (existing and imported) shall be free of organic muck, hard pan, toxic substances detrimental to plant growth, and construction debris such as lime rock, concrete, and asphalt pieces.
- Imported soil shall be fine sand or loamy fine sand indigenous to the area and suitable for plant growth. Imported soils shall be delivered in a normal moist condition, neither muddy nor wet and shall meet the following criteria measured in accordance with the appropriate AASHTO and ASTM standard.
 - USDA Texture: fine yellow sand, loamy fine sand
 - AASHTO Classification: A–3
 - Ph Range 5.5 – 6.0
- All imported soils shall have the above–mentioned characteristics resulting from a current agronomic and full textural class analysis of soil samples collected from the actual soil proposed to be used.
- The Landscape Contractor is responsible for soil analysis of all soils (existing and imported) prior to installation of plantings and all costs shall be at the expense of the Landscape Contractor.
- The results of the soil tests shall be submitted to the Landscape Architect 3 weeks prior to the anticipated date of the start of soil installation and must include sample date and reference the collection location.
- One soil sample for each separate imported soil source is required.
- 4 soil sample locations are required for tested existing site soil. Sample locations to be approved by Landscape Architect.
- If tests of imported soil fail to meet the specifications, Landscape Contractor is to obtain other sources of material, retest and resubmit until accepted by the Landscape Architect.
- Existing site soil shall be tested for pH levels, organic matter, and nutrient levels by parts per million including: nitrogen, phosphorus, potassium, magnesium, manganese, iron, zinc and calcium.
- Nutrient test shall include the testing laboratory recommendations for supplemental additions to the soil for optimum growth of the plantings specified. Granulated commercial grade slow–release fertilizer shall be added to the existing soil as recommended by the soil testing laboratory.

				DESIGNED	MR		PROJECT: RESTORE ACT WASTEWATER COLLECTION SYSTEM IMPROVEMENTS – BOCA CIEGA	DESCRIPTION: LANDSCAPE DETAILS	PREPARED BY:  407.906.1776 www.wright-pierce.com 601 S LAKE DESTINY ROAD, SUITE 290, MAITLAND, FL 32751	ADMINISTERED BY:  5001 N Nebraska Ave., Ste. A, Tampa, FL 33603 Phone: 813.361.2644 www.MadridCPWG.com MATTI RUKHOLM, P.L.A., FL LIC NO. LA6667261, CPWG LC NO. 2600439	DATE:	MARCH 2023
				DRAWN	MR/JR						PROJECT NO.	5015A
				CHECKED	GH						SHEET:	L-2
REV. NO.	DATE	DESCRIPTION	REV. BY									

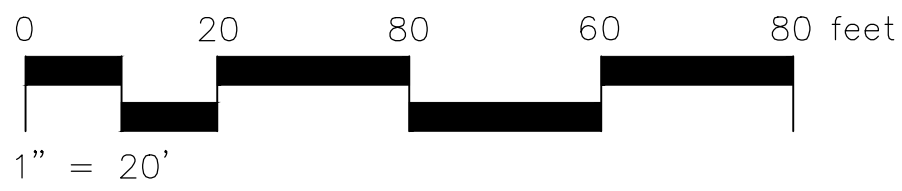


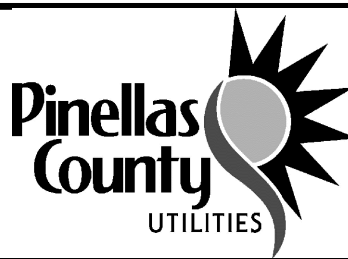
IRRIGATION SCHEDULE

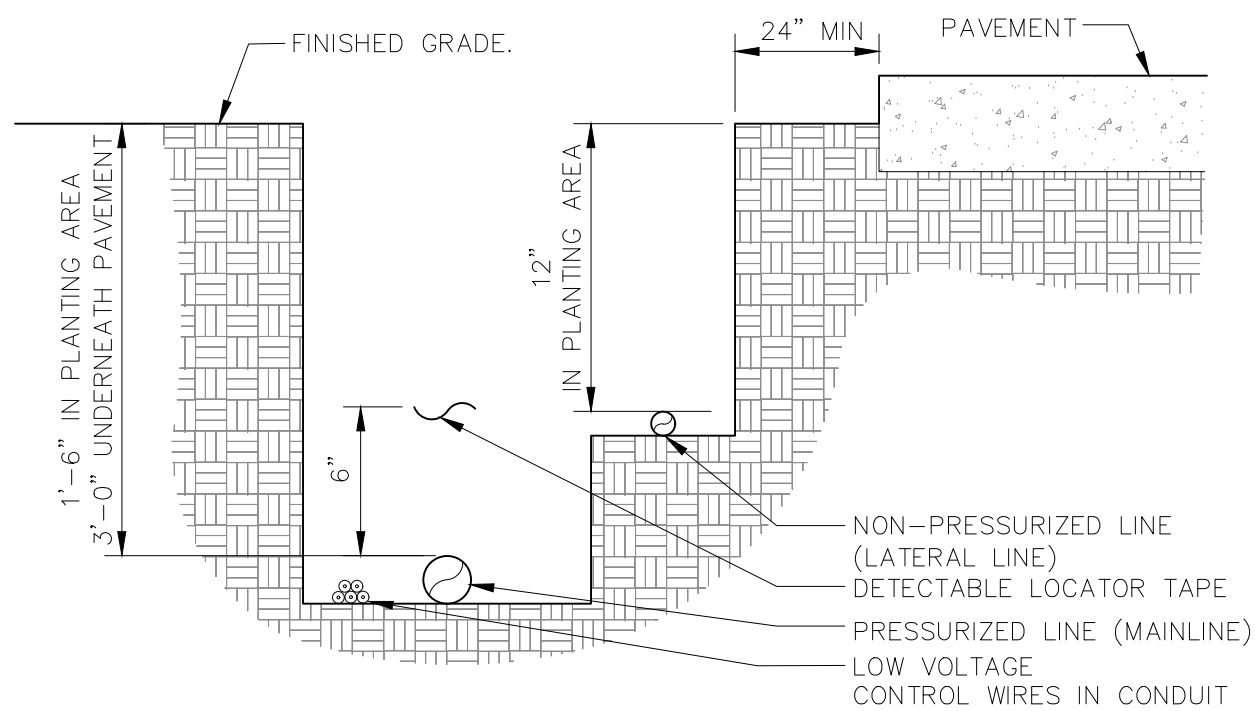
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
▲ 1401 1402 1404 1408	Rain Bird 1804–1400 Flood Flood Bubbler 4.0in. popup	62	20
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
■	Rain Bird X CZ–100–IVMQ Wide Flow IVM Drip Control Kit for Commercial Applications. 1in. Ball Valve with 1in. PESBIVM Smart Valve w/ factory installed IVM–SOL 0.3–20 gpm and 1in. Pressure Regulating 40psi Quick–Check Basket Filter 0.3–20 gpm	1	
■	Pipe Transition Point above grade Pipe transition point from PVC lateral to drip tubing with riser to above grade installation.	4	
▨	Area to Receive Dripline Rain Bird XFDe–09–12 XFDe On–Surface Pressure Compensating Landscape Dripline. 0.9 GPH emitters at O.C. Dripline laterals spaced at RR apart, with emitters offset for triangular pattern. UV & Kink Resistant. Use XF insert fittings.	1,090 l.f.	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
●	Rain Bird PEB 1in., 1–1/2in., 2in. Plastic Industrial Valves. 2 Low Flow Operating Capability, Globe Configuration. With IVM	2	
■	Hunter P2C–400 Light Commercial & Residential Controller, 1 4–station base module controller, 120 VAC, Outdoor/Indoor model	1	
■	Hunter MINI–CLIK Rain Sensor, mount as noted	1	
POC	Point of Connection Potable water line. Refer to Civil Engineering plans for water meter and backflow prevention details.	1	
—	Irrigation Lateral Line: PVC Schedule 40	1,239 l.f.	
—	Irrigation Mainline: PVC Class 200 SDR 21	23.4 l.f.	
—	Pipe Sleeve: PVC Schedule 40	27.5 l.f.	
Valve Callout	Valve Number Valve Flow Valve Size		

IRRIGATION NOTES

- Irrigation system to meet the 2023 Florida Building Code Plumbing, Eighth Edition, Appendix F (Proposed Construction Building Codes for Turf and Landscape Irrigation Systems), Chapters 13, and Chapter 14 'Reserved' regarding reclaimed/effluent water pipe, valve, and valve box identification. Per Appendix F, all pipe, valves, and valve boxes used with effluent water systems shall be designated for nonpotable use by either label or by the industry standard color purple. Irrigation pipe, valves, and valve boxes are to be purple.
- Irrigation is from the Point of Connection (POC) only. Refer to plan for POC location.
- Contractor shall notify Landscape Architect immediately if water pressure is below 65 PSI or above 80 PSI.
- Prior to construction, Contractor to establish the location of all utility and service lines within work area(s). All damage to utilities as a result of construction are responsibility of the Contractor. Necessary repairs must be undertaken at no additional cost to the owner.
- Irrigation equipment shown in hardscape and outside property lines for clarity only. All irrigation shall be installed within landscape areas unless noted within a sleeve.
- This plan is diagrammatic. The exact location of valves and irrigation heads are to be determined in the field by the contractor. Do not scale drawing.
- All components to be installed as per manufacturer's recommendations.
- Refer to manufacturer's installation details.
- Refer to manufacturer's catalog for performance specifications.
- All head spray patterns shall be adjusted to eliminate all over spray onto hardscape & roadway surfaces.
- Mainline depth to be no less than 18". Lateral line depth to be no less than 12". Backfill with rock free soil and compact to 90% of the maximum density for the material used as determined by ASTM D–698 (Standard).
- Lateral lines are to be located within the 6' wide cemetery walkway area and the 10' wide vehicle access route area. The mainline and laterals shall not be located within the area of the burial plots.
- Allow 12" minimum space between heads and edge of concrete bench pads.
- Electric control valves to be covered with 12" valve box or larger flush with grade. Group nearby valves in one valve box.
- Wiring between controller and remote control valve shall be in conduit. Conduit shall have a minimum 12" cover. All wiring shall be 14 gauge or larger per specifications.
- Tracer wire shall be installed on all mains and laterals.
- Electrical wiring shall be installed in the same trench as the pipe; install wire above pipe, taped to the pipe every 10'.
- Locate drain valves at the lowest point(s) of elevation within each section.
- Coordinate with owner when programming controller. Watering times shall be from midnight to early morning.
- Locate valves as far back from existing trees as possible and conceal from view to the greatest extent possible. Install all valves within turf or planting areas.
- Wire splice connections to be waterproof.
- All pipes run underneath hardscape shall be installed inside sleeves.
- Sleeve inside diameter shall be two times the size of the outside diameter of the pipe(s) going through it. Sleeves to extend 12" past past the hard surface and are to be marked with flags.
- Install all components as per local, state, and federal codes.
- All electrical wire shall be for 110/ 220 volt service. Wiring shall be installed by a licensed and competent electrician and installed to City code.
- All work performed shall conform to applicable City building and plumbing codes.
- Contractor is responsible for his/her own take-offs and is to verify all quantities. In the event of a conflict between the quantities on the irrigation schedule and the plans, the plans shall take precedence and the discrepancy shall be brought to the attention of the Landscape Architect prior to bid.
- Items such as wiring, valve boxes, connectors etc. are considered incidental to construction and are the responsibility of the contractor.
- Care is to be taken when digging around near existing tree roots. Contractor to hand dig around existing tree roots to minimize damage. All roots larger than 1" in diameter shall be root pruned. Contractor to bore under the tree when installing mainline within the dripline of a tree.
- All air/vacuum relief valves, valves, pressure reducing valves, pumps, pump control valves, etc. must be tagged or labeled indicating whether it is on the reclaimed water or potable water system.

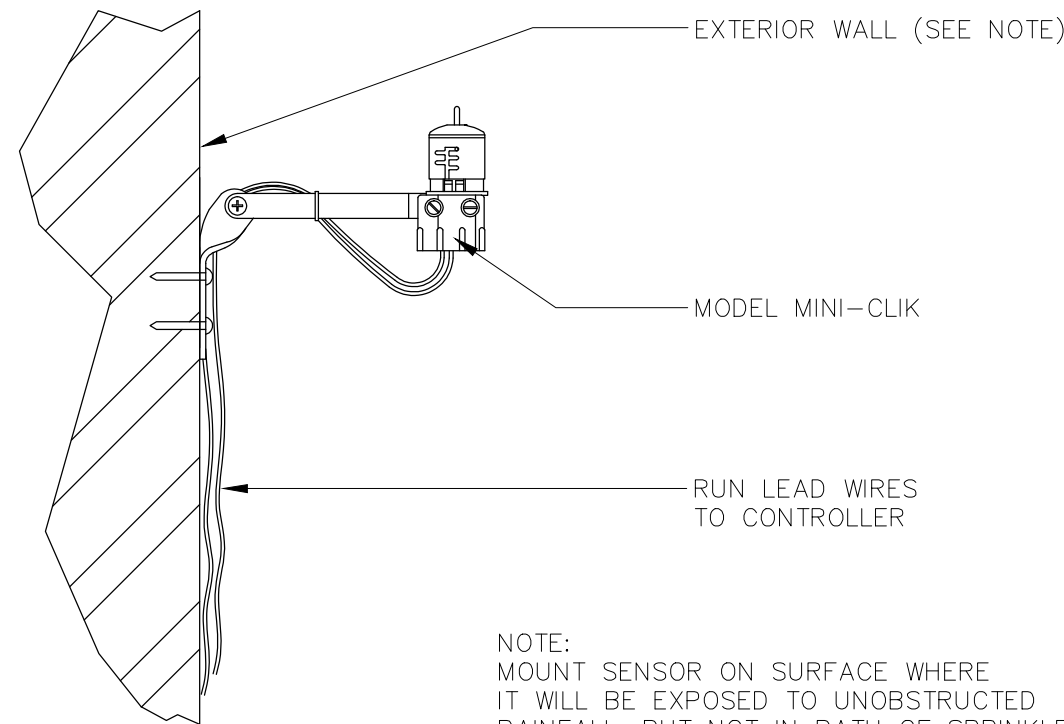


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				DRAWN	MR/JR						PROJECT NO. 5015A
				CHECKED	GH						SHEET: IR-1
REV. NO.	DATE	DESCRIPTION	REV. BY								

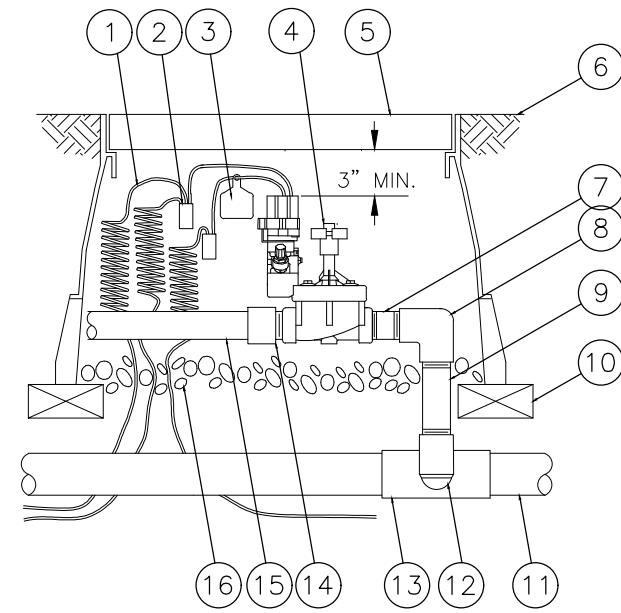


NOTES:
1- SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
2- IRRIGATION WIRE SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT.
3- DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

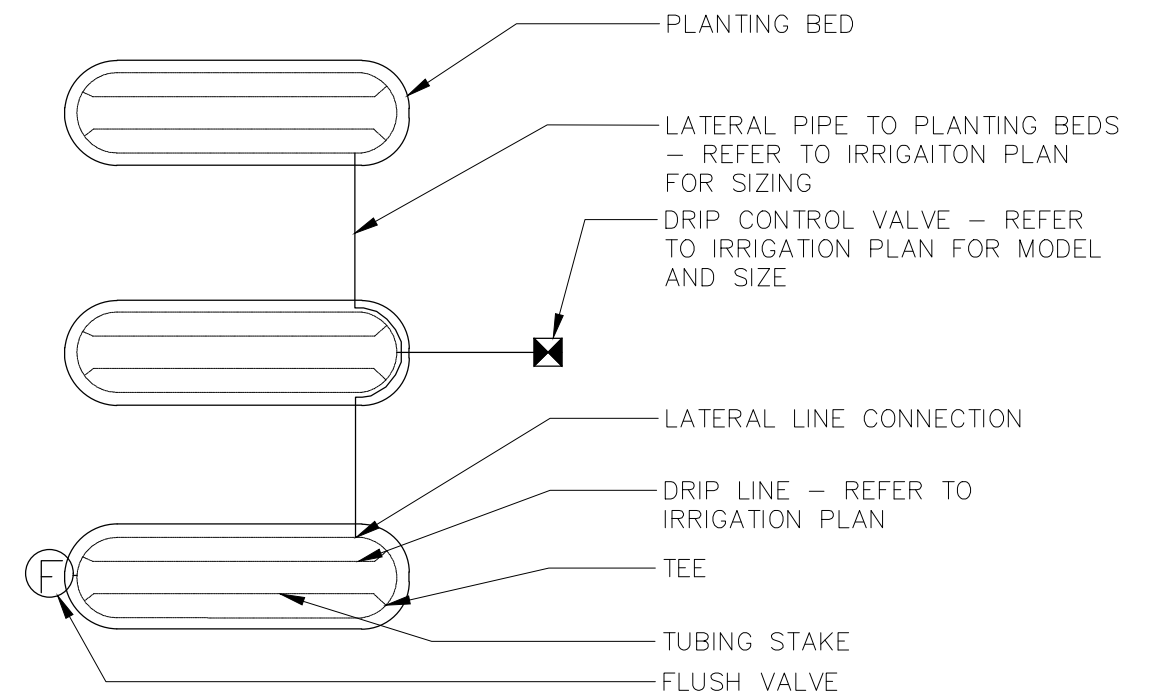
URBAN TREE FOUNDATION ©2014
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NOTE:
MOUNT SENSOR ON SURFACE WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY.



- 30-INCH LINEAR LENGTH OF WIRE, COILED
- WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)
- ID TAG: RAIN BIRD VID SERIES
- REMOTE CONTROL VALVE: RAIN BIRD PEB
- VALVE BOX WITH COVER: RAIN BIRD VB-STD
- FINISH GRADE/TOP OF MULCH
- PVC SCH 80 NIPPLE (CLOSE)
- PVC SCH 40 ELL
- PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- BRICK (1 OF 4)
- PVC MAINLINE PIPE
- SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
- PVC SCH 40 TEE OR ELL
- PVC SCH 40 MALE ADAPTER
- PVC LATERAL PIPE
- 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL



1 IRRIGATION TRENCHING

NTS

P-CO-JIM-07

2 MINI-CLIK RAIN SENSOR

NTS-OR APPROVED EQUAL

P-CO-JIM-10

3 ELECTRIC REMOTE-CONTROL VALVE - PEB SERIES

NTS -OR APPROVED EQUAL

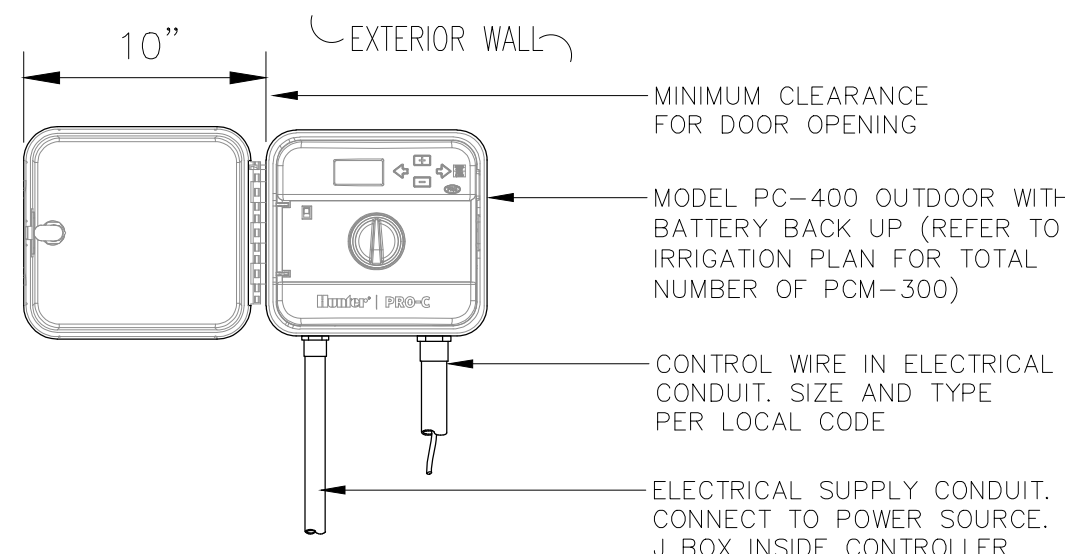
P-CO-JIM-13

4 DRIPLINE LAYOUT - PLANTING BEDS

N.T.S.

P-CO-JIM-14

-OR APPROVED EQUAL

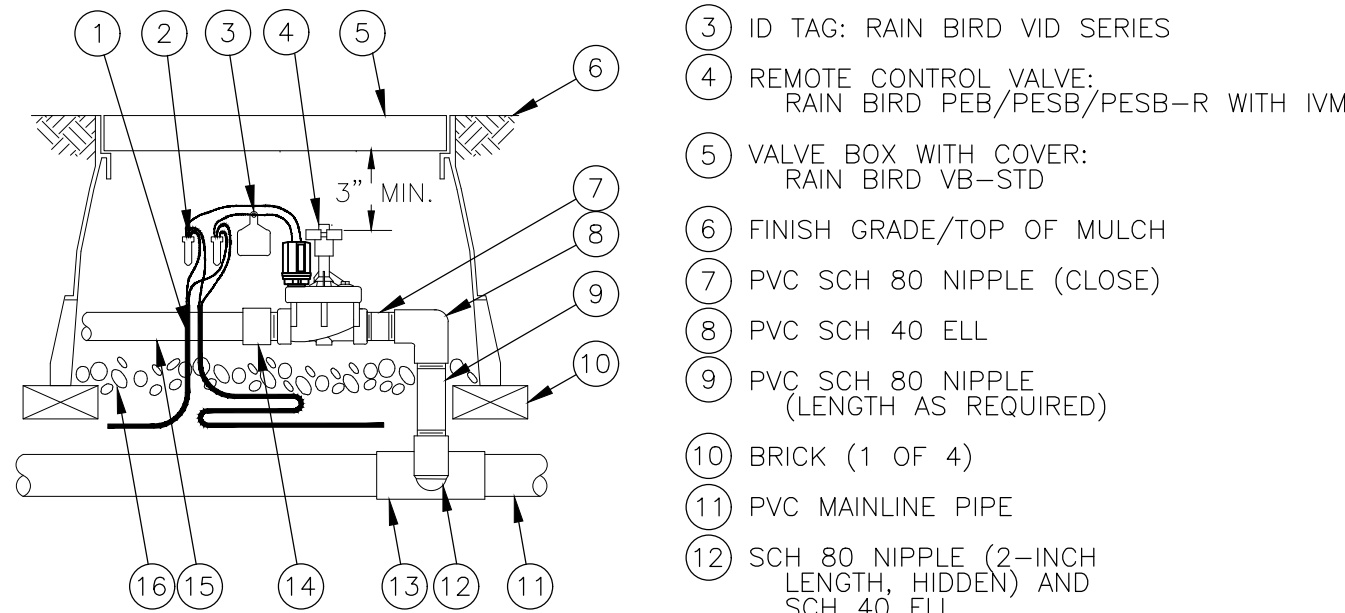


NOTE
MOUNT CONTROLLER WITH LCD SCREEN AT EYE LEVEL (WHERE POSSIBLE). CONTROLLER SHALL BE HARD-WIRED TO GROUNDED 110 VAC SOURCE. POWER SOURCE BY FLORIDA CERTIFIED & LICENSED ELECTRICIAN. IRRIGATION CONTRACTOR TO COORDINATE LOCATION & POWER SUPPLY WITH CLIENT.

5 HUNTER PRO-C CONTROLLER

N.T.S. -OR APPROVED EQUAL

P-CO-ORL-25

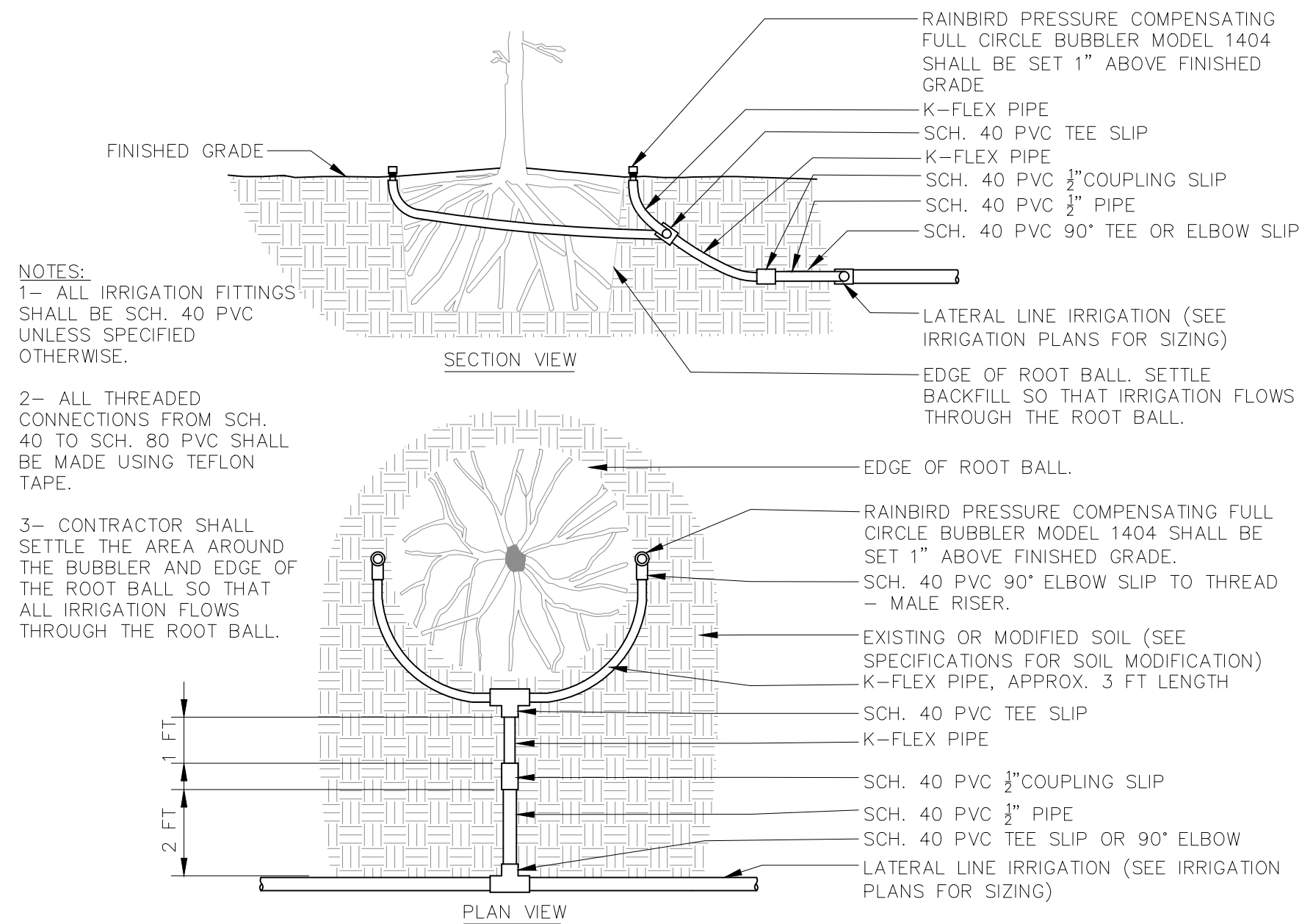


- 30-INCH LENGTH OF 2-WIRE CABLE
- WATERPROOF CONNECTION RAIN BIRD WC20 (TWO REQUIRED)
- ID TAG: RAIN BIRD VID SERIES
- REMOTE CONTROL VALVE: RAIN BIRD PEB/PESB/PESB-R WITH IVM
- VALVE BOX WITH COVER: RAIN BIRD VB-STD
- FINISH GRADE/TOP OF MULCH
- PVC SCH 80 NIPPLE (CLOSE)
- PVC SCH 40 ELL
- PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- BRICK (1 OF 4)
- PVC MAINLINE PIPE
- SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
- PVC SCH 40 TEE OR ELL
- PVC SCH 40 MALE ADAPTER
- PVC LATERAL PIPE
- 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

6 ELECTRIC REMOTE-CONTROL VALVE - PEB/PESB/PESB-R WITH IVM

NTS-OR APPROVED EQUAL

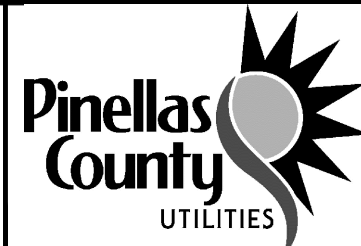
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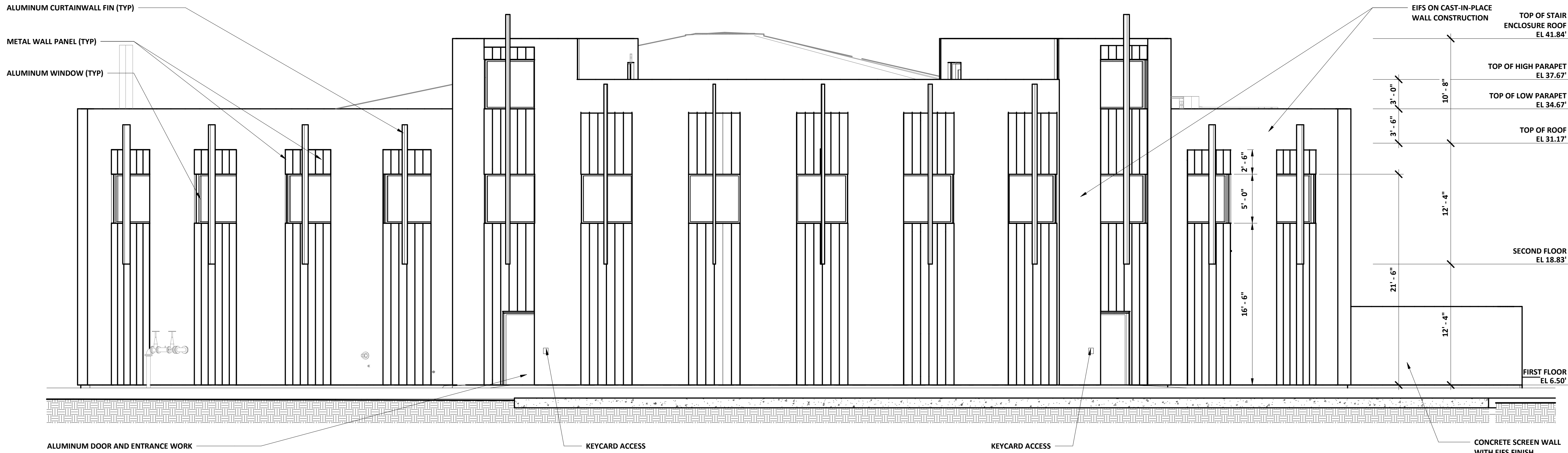
7 IRRIGATION BUBBLER (2) W/ LAYOUT

NTS-OR APPROVED EQUAL

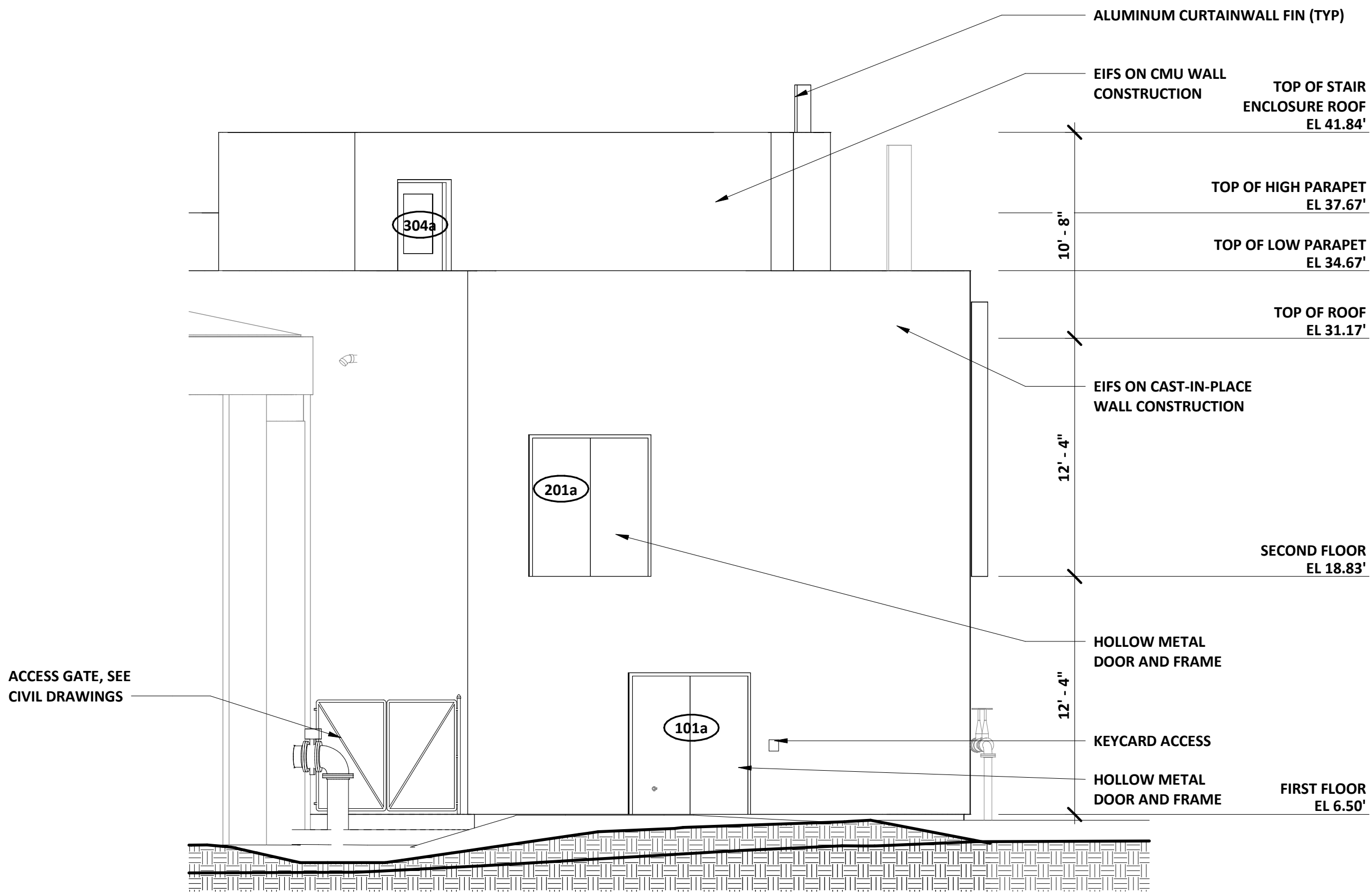
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				DESIGNED	MR		PROJECT:	RESTORE ACT WASTEWATER COLLECTION SYSTEM IMPROVEMENTS – BOCA CIEGA	DESCRIPTION:	IRRIGATION DETAILS	PREPARED BY:	 407.906.1776 www.wright-pierce.com 601 S LAKE DESTINY ROAD, SUITE 290, MAITLAND, FL 32751	ADMINISTERED BY:	 5001 N Nebraska Ave., Ste. A, Tampa, FL 33603 Phone: 813.361.2644 www.MadridCPWG.com MATTI RUKHOLM, P.L.A., FL LIC NO. LA6667261, CPWG LC NO. 2600439	DATE:	MARCH 2023
				DRAWN	MR/JR						PROJECT NO.		5015A			
				CHECKED	GH						SHEET:		IR-2			
REV. NO.	DATE	DESCRIPTION	REV. BY													

Autodesk Docx / FL - PinellasCounty-21464-GulfBeachBoosterStation.rvt



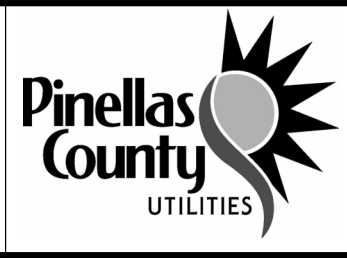
WEST ELEVATION
SCALE: 3/16" = 1'-0"



NORTHEAST ELEVATION
SCALE: 3/16" = 1'-0"

REV. NO.	DATE	DESCRIPTION	REV. BY

DESIGNED	E.SHIELDS
DRAWN	E.SHIELDS
CHECKED	



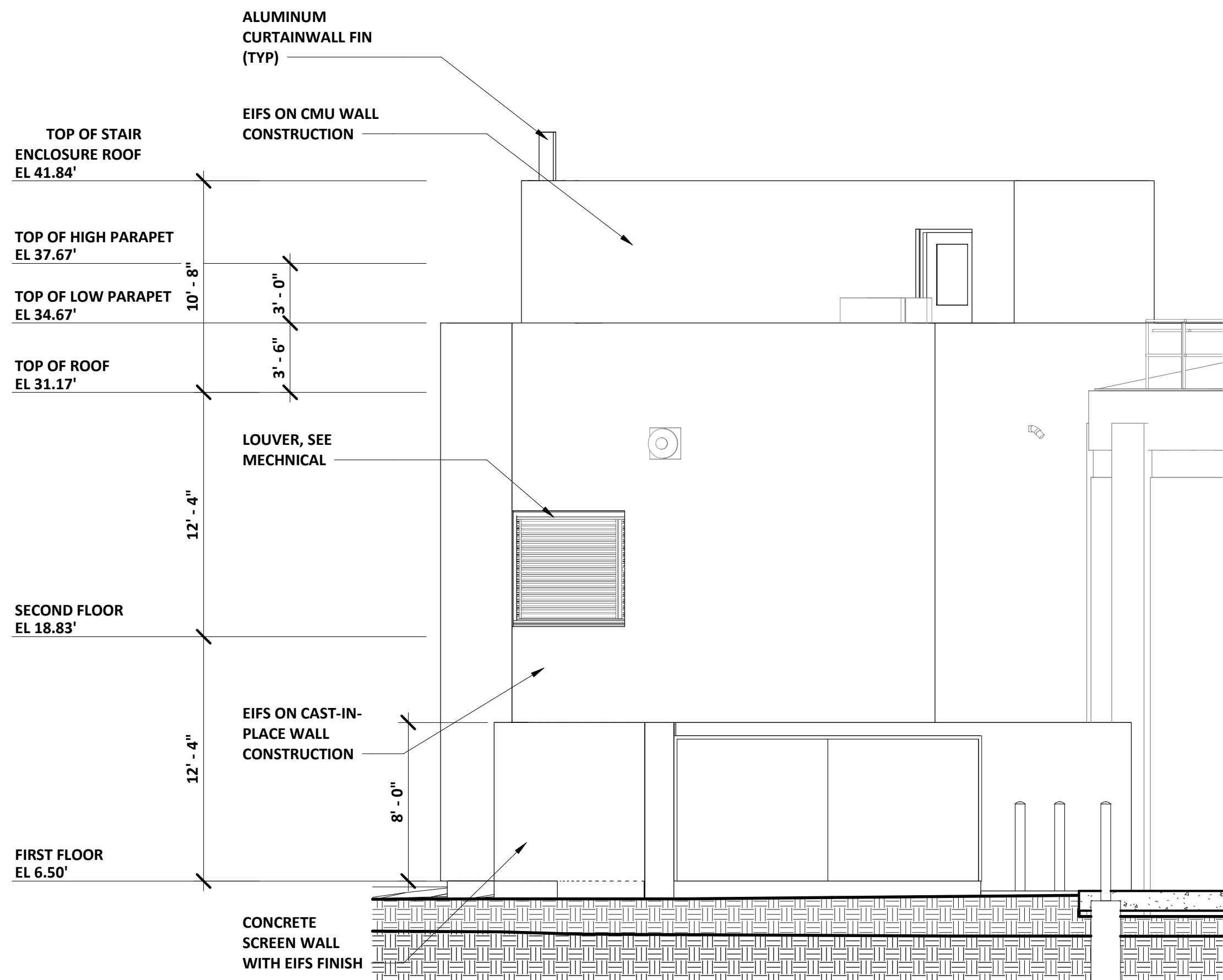
PROJECT:
PINELLAS COUNTY, FLORIDA
GULF BEACH WATER BOOSTER
STATION IMPROVEMENTS

DESCRIPTION:
ARCHITECTURAL EXTERIOR
ELEVATIONS I

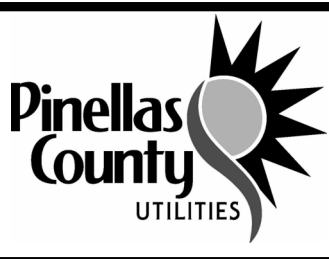


APPROVED BY:	DATE:
	03-2024
	PROJECT NO. 002150A
	DRAWING: A-7

Autodesk Docx / FL - PinellasCounty-21464-CuliffBeachBoosterStation.rvt



SOUTHEAST ELEVATION
SCALE: 3/16" = 1'-0"

				DESIGNED	E.SHIELDS		PROJECT: PINELLAS COUNTY, FLORIDA GULF BEACH WATER BOOSTER STATION IMPROVEMENTS	DESCRIPTION: ARCHITECTURAL EXTERIOR ELEVATIONS II	 800.422.1095 www.wright-pierce.com 3820 NORTHDALIE BOULEVARD, SUITE 202B, TAMPA, FL 33624	APPROVED BY: DATE	DATE:	03-2024
				DRAWN	E.SHIELDS						PROJECT NO.	002150A
				CHECKED							DRAWING:	A-8
REV. NO.	DATE	DESCRIPTION	REV. BY									