



CITY OF TAMPA

Bob Buckhorn, Mayor

CONTRACT ADMINISTRATION DEPARTMENT

Michael W. Chucran, Director

ADDENDUM 1

DATE: March 26, 2018

Contract 18-C-00014; 30th Street Outfall

Bidders on the above referenced project are hereby notified that the following addendum is made to the Contract Documents. BIDS TO BE SUBMITTED SHALL CONFORM TO THIS NOTICE.

Item 1: Attached is the Report of Geotechnical Exploration.

Item 2: Replace the plans set with the attached plans set which includes Sheets S-1 through S-8.

Item 3: Attached is the pre-bid meeting sign-in sheet.

All other provisions of the Contract Documents and Specifications not in conflict with this Addendum shall remain in full force and effect. Questions are to be e-mailed to ContractAdministration@tampagov.net.

Jim Greiner

Jim Greiner, P.E., Contract Management Supervisor

July 14, 2016

Ms. Barbara Graves
City of Tampa – Stormwater Division
306 W. Jackson Street, 6N
Tampa, FL 33602

E-mail: barbara.graves@tampagov.net

Subject: Report of Geotechnical Exploration
30th Street Outfall
Tampa, Florida
AREHNA Project B-16-054

AREHNA Engineering, Inc. is pleased to submit this report of our geotechnical exploration for the proposed project. The purpose of our geotechnical study was to obtain information on the general subsurface conditions at the project site.

PROJECT INFORMATION

The project site is located near the southeast corner of E. Waters Avenue and N. 30th Street, near the Hillsborough River, in Tampa, Florida, as shown on the **Project Site Location Map, Figure 1** in **Appendix A**. The site is currently a vacant property with several large oak trees. We understand a residence was recently demolished and removed from the site.

SCOPE OF SERVICES

The purpose of our geotechnical exploration was to obtain information on the general subsurface conditions within the proposed limits of the proposed outfall. The subsurface materials encountered were evaluated with respect to the available project characteristics. The following services were performed to achieve the above-outlined objectives:

- Coordinated utility location services with Sunshine811.
- Performed three Standard Penetration Test (SPT) borings drilled to depths of 20 to 24 feet.
- Visually classified and stratified soil samples in the laboratory using the Unified Soil Classification System and conducted a laboratory testing program for classification and stratification.
- Reported the results of the field exploration, lab testing, and engineering analyses. The results of the subsurface exploration are presented in this written report, signed and sealed by professional engineers specializing in geotechnical engineering, including a standard Report of Core Boring Sheet.

FIELD EXPLORATION

Our scope included three Standard Penetration Test (SPT) borings, drilled to depths of 20 to 24 feet. The SPT borings were performed with the use of a Power Drill Rig using Bentonite “Mud” drilling procedures. The soil sampling was performed in general accordance with ASTM Test Designation D-1586, entitled “Penetration Test and Split-Barrel Sampling of Soils.”

Representative portions of these soil samples were sealed in glass jars, labeled and transferred for appropriate classification.

Figure 2, in Appendix A, provides a boring location site plan showing the relationship of existing features to the borings. The borings were located in the field relative to existing site features.

LABORATORY TESTING PROGRAM

Our laboratory testing program included natural moisture content, single sieve (#200) gradation, and Atterberg limits (plasticity) tests. The results are presented in **Appendix B**.

USGS TOPOGRAPHIC DATA

The topographic survey map published by the United States Geological Survey was reviewed for ground surface features at the proposed project location (**Figure 3, Appendix A**). Based on this review, the natural ground surface elevation includes the +25 through the +35 foot NGVD contours.

USDA NATURAL RESOURCES CONSERVATION SERVICE DATA

A review of the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) survey for Hillsborough County, attached as **Figure 4, Appendix A**, indicates that the natural soils at the project site consist of Zolfo fine sand, 0 to 2 percent slopes (mapping unit 61). The NRCS published profiles typically report soils extending to 80 inches below the ground surface. An excerpt from the published Soil Survey is provided below for reference:

Characteristics of Zolfo fine sand: This soil is nearly level and somewhat poorly drained. It is on broad, low ridges on the flatwoods. The slope is 0 to 2 percent. Typically, this soil has a surface layer of very dark gray fine sand about 3 inches thick. The upper part of the subsurface layer, to a depth of about 15 inches, is grayish brown, mottled fine sand. The middle part, to a depth of about 51 inches, is light gray, mottled fine sand. The lower part, to a depth of about 60 inches, is grayish brown fine sand. The subsoil to a depth of about 80 inches is dark brown fine sand. Similar soils, included in mapping in some places, have subsoil that extends to a depth of more than 80 inches. Other similar soils, in some of the higher parts of the landscape, are moderately well drained..

Based on the borings performed, the upper soils that underlie the site are generally consistent with the unit described above; however, it appears that some of the upper sands were previously cut from the northern portion of the site.



SUBSURFACE CONDITIONS

A pictorial representation of the subsurface conditions encountered in the borings is shown on the General Subsurface Profile, **Figure 5**, in **Appendix B**. This profile and the following soil conditions highlight the general subsurface stratification. The Soil Test Boring Records in Appendix B should be consulted for a detailed description of the subsurface conditions encountered at each boring location. When reviewing the boring records and the subsurface profiles, it should be understood that soil conditions may vary between and away from boring locations.

Borings B-01 and B-02 encountered a two foot thick layer of very loose fine sand (SP) underlain by soils with higher fines contents. To a depth of 15 feet these soils included clayey fine sand (SC), sandy high plasticity clay (CH), and slightly silty sand (SP-SM). These soils had N-values ranging from 5 to 21 blows per foot. In boring B-02, an N-value of 5 was recorded, but no sample was recovered between depths of 17 and 22 feet. In boring B-1, a soft weathered limestone was found from 17 feet to the boring termination depth of 20 feet. In boring B-02, a hard limestone was found between 22 feet and the boring termination depth of 24 feet. A 90% loss of drilling fluid circulation was noted at the surface of the limestone formation in boring B-02.

Boring B-03 encountered a different profile than the other borings. Loose to medium dense fine sand (SP) was found to a depth of 8 feet. Medium dense silty fine sand (SM) was then penetrated to a depth of 17 feet. A soft sandy high plasticity clay (CH) was then found to the boring termination depth of 20 feet.

The ground water level in boring B-01 was not encountered before drilling mud was introduced to stabilize the borehole. In borings B-02 and B-03, the ground water was found at depths of 6.5 and 4.5 feet, respectively. The ground water level will vary with seasonal climatic changes, rainfall, and other factors.

A page defining the terms and classification symbols used in the boring profiles is included in **Appendix B** of this report.

ESTIMATED SEASONAL HIGH GROUND WATER LEVEL

Based on the mapping performed by the USDA and our experience in the area, we estimate that the seasonal high ground water level will generally parallel the existing ground surface. The seasonal high ground water level is estimated to be encountered at a depth of approximately 2 to 3.5 feet below the existing ground surface.

GEOTECHNICAL RECOMMENDATIONS

Assuming the bearing soils are compacted to at least 95 percent of ASTM D-1557, an allowable bearing pressure of 2,000 psf is available for foundation design. Retaining walls may be designed with a maximum allowable toe bearing pressure of 2,500 psf.



We recommend that below grade structures be designed assuming an angle of internal friction of 30 degrees and a total unit weight of 125 pcf for existing soils and compacted backfill. Assuming that below grade structures will not deflect appreciably, we recommend an at-rest lateral pressure coefficient of 0.5. Designs should also include the effects of hydrostatic pressure induced by the ground water below the estimated seasonal high ground water level.

Depending upon the planned excavation depths, dewatering using both sumps and wellpoints will likely be needed. Surface water runoff should be diverted away from the work area.

Excavations should be sloped at 1:2.5 (V:H), or shored to protect the work area. The excavation for the outfall at the river should be sheeted. OSHA requirements for Type C soils should be observed to protect workmen.

Backfill should be relatively clean sand with less than 12% material passing a No. 200 sieve, compacted to at least 95% of the Modified Proctor (ASTM D-1557) maximum dry density. Some of the clayey soils encountered in the borings will not meet this requirement and should not be used for structural backfill.

The analyses and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated. Regardless of the thoroughness of a geotechnical exploration, there is always a possibility that conditions between borings will be different from those at specific boring locations and that conditions will not be as anticipated by the designers or contractors. In addition, the construction process itself may alter soil conditions. AREHNA is not responsible for the conclusions, opinions or recommendations made by others based on the data presented in this report.

CLOSING

AREHNA appreciates the opportunity to have assisted you on this project. Should you have any questions with regards to this report, or if we can be of any further assistance, please contact this office.

Respectfully Submitted,

AREHNA ENGINEERING, INC.

FLORIDA BOARD OF PROFESSIONAL ENGINEERS CERTIFICATE OF AUTHORIZATION NO. 28410

Kristina LaCava, P.E.
Geotechnical Engineer
Florida Registration 77594

Curtis J. Roos, P.E.
Principal Geotechnical Engineer
Florida Registration 27570



Distribution:

Addressee – email and 3 paper copies

Michael T. Miller, P.E. michaelt.miller@tampagov.net – email

APPENDIX A

Project Site Location Map – Figure 1

Field Exploration Location – Figure 2

USGS Topographic Survey – Figure 3

USDA Soil Survey Map – Figure 4

APPENDIX B

Generalized Subsurface Profile – Figure 5

Soil Boring Logs

Key to Classifications Symbols

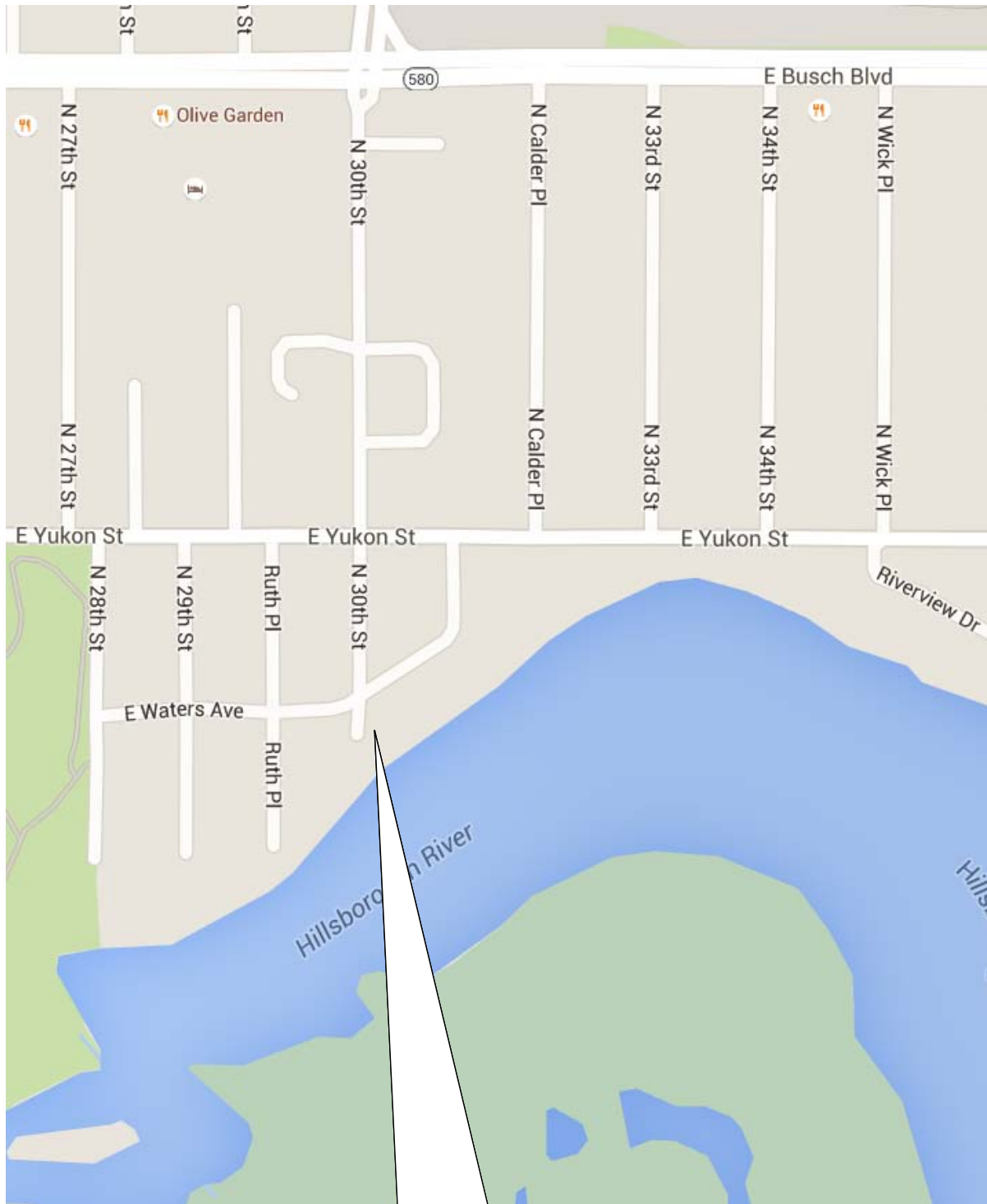
Laboratory Test Results – Table 1

Report of Core Boring Sheet



APPENDIX A

Project Site Location Map – Figure 1
Field Exploration Location – Figure 2
USGS Topographic Survey – Figure 3
USDA Soil Survey Map – Figure 4



SITE

30th Street Outfall Tampa, Florida

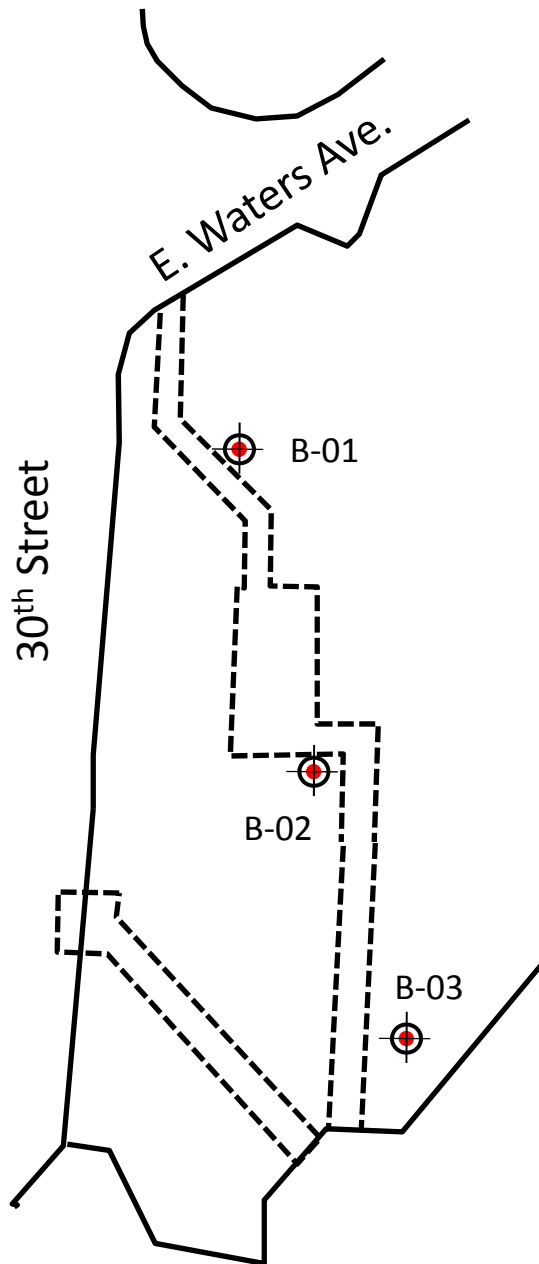
Client: City of Tampa
Project No: B-16-054
Date: 07/08/2016



PROJECT SITE LOCATION MAP

Designed By: GSL
Checked By: CJR
Drawn By: KCA

FIGURE
1



LEGEND



B-# - Standard Penetration Test Borings

30th Street Outfall
Tampa, Florida

Client: City of Tampa
Project No: B-16-054
Date: 07/08/2016



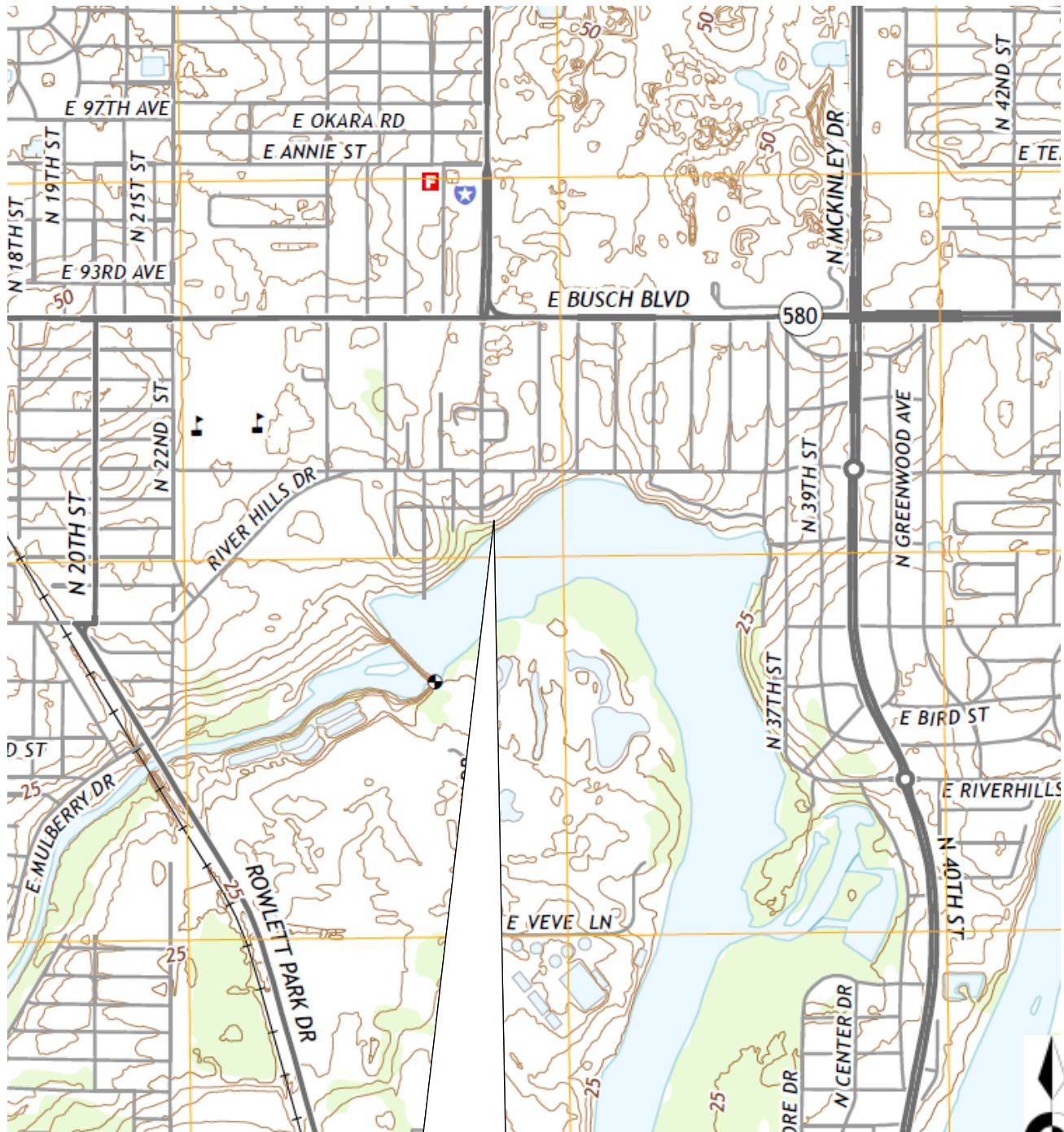
AREHNA | Engineering, Inc.

5012 West Lemon Street, Tampa, FL 33609
Phone 813.944.3464 ▪ Fax 813.944.4959

**FIELD EXPLORATION
LOCATION MAP**

Designed By: GSL
Checked By: CJR
Drawn By: KCA

**FIGURE
2**



SITE

30th Street Outfall
Tampa, Florida

Client: City of Tampa
Project No: B-16-054
Date: 07/08/2016


AREHNA | Engineering, Inc.
5012 West Lemon Street, Tampa, FL 33609
Phone 813.944.3464 ■ Fax 813.944.4959

**USGS TOPOGRAPHIC
SURVEY**

Designed By: GSL
Checked By: CJR
Drawn By: KCA

**FIGURE
3**

APPENDIX B

Generalized Subsurface Profile – Figure 5

Soil Boring Logs

Key to Classifications Symbols

Laboratory Test Results – Table 1

Report of Core Boring Sheet

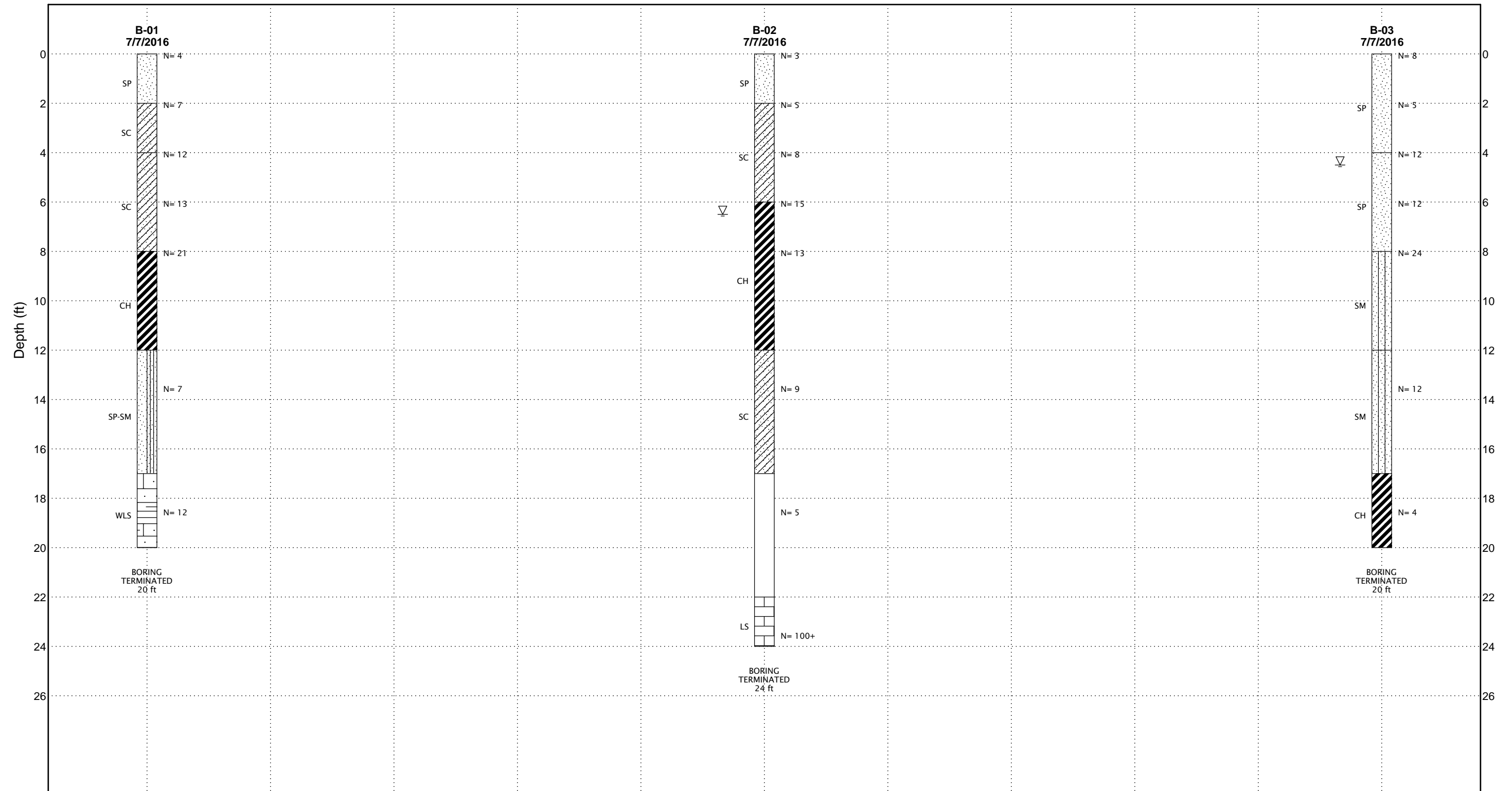
30th Street Outfall
Tampa, FL

Prepared for
City of Tampa - Stormwater Division
Project No.: B-16-054

GENERALIZED SUBSURFACE PROFILE
Figure 5



Soil Classification Key



DEPTH (ft)	SOIL DESCRIPTION AND REMARKS	WATER LEVEL	GRAPHIC LOG	SAMPLE TYPE	SPT BLOW COUNTS	N-VALUE	● SPT N VALUE ●
							20 40 60 80
							PL MC LL 20 40 60 80
							▲ FINES CONTENT (%) ▲
							20 40 60 80
0	Very loose gray fine SAND (SP)			SPT	2-2-2-3	4	
	Loose gray and red clayey fine SAND (SC)			SPT	2-3-4-5	7	
	Medium dense gray clayey fine SAND (SC)			SPT	3-5-7-8	12	
				SPT	5-6-7-10	13	
	Very stiff gray sandy high plasticity CLAY (CH)			SPT	9-10-11-13	21	
10							
	Loose tan slightly silty fine SAND (SP-SM)			SPT	5-4-3	7	
	Soft white clayey weathered LIMESTONE (WLS)						
20				SPT	9-8-4	12	

Bottom of borehole at 20.0 feet.

Date Drilled: 7/7/16
Drilled By: AREHNA
Method: ASTM D-1586, Standard Penetration Test Boring

Ground Water Level:
 Groundwater not encountered in top 10 feet

Remarks:

**30TH STREET OUTFALL
TAMPA, FL**

AREHNA Project No.: B-16-054
 City of Tampa - Stormwater Division

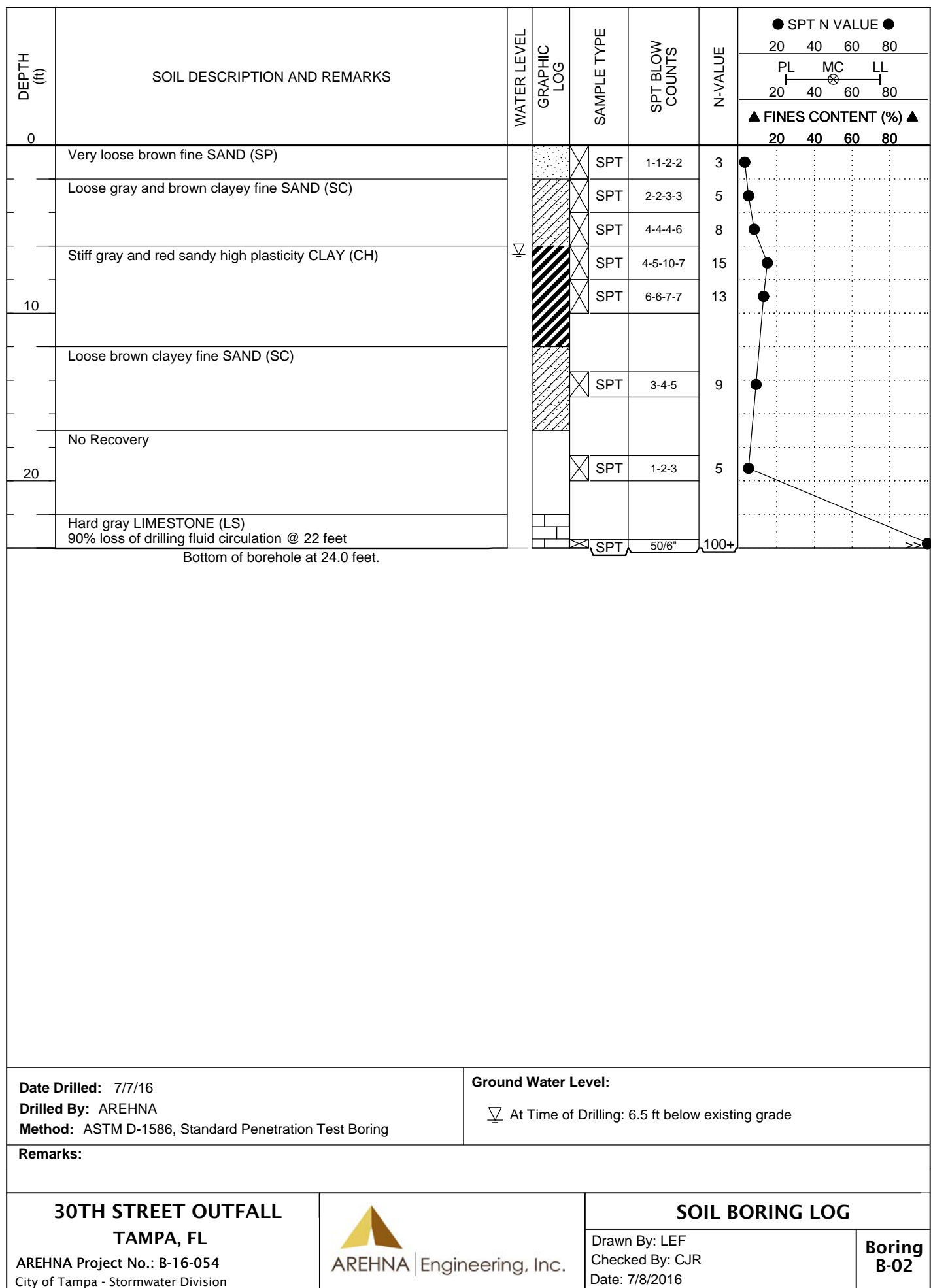


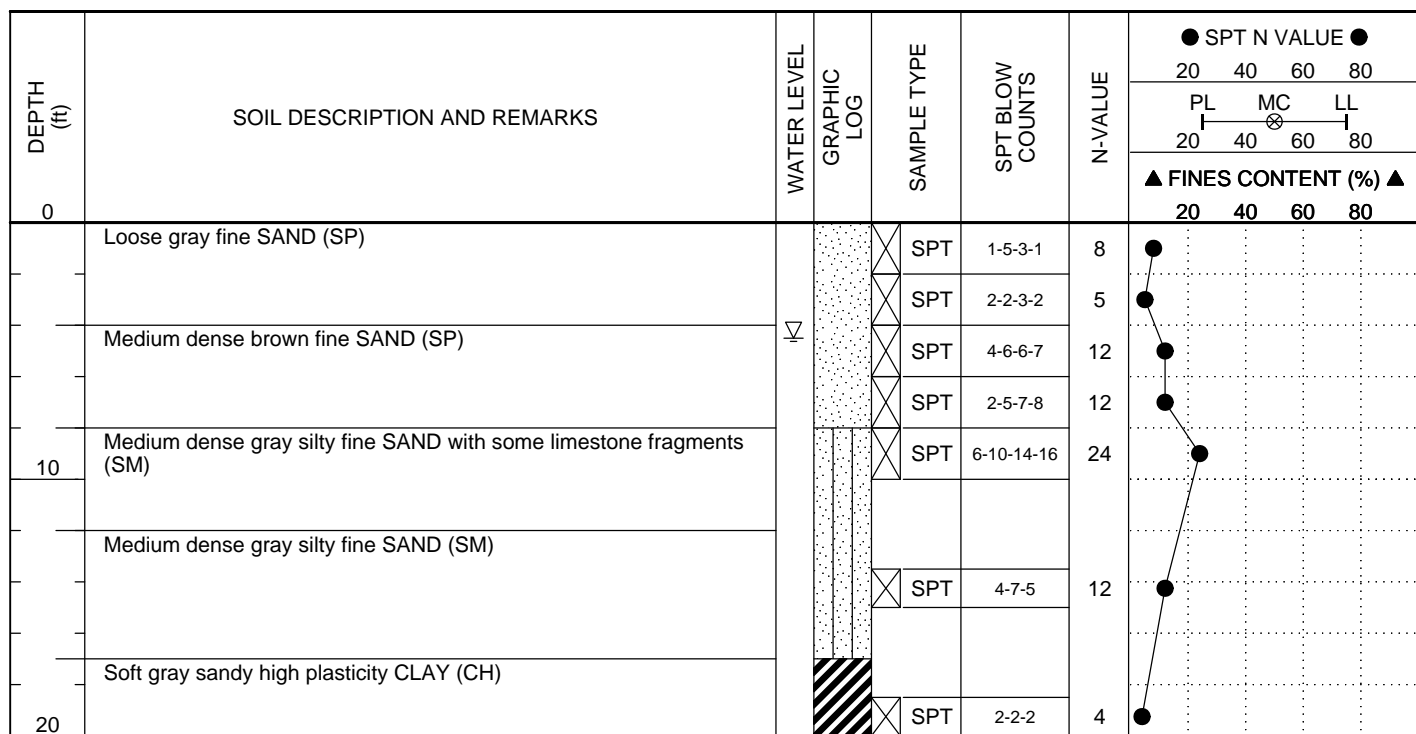
AREHNA Engineering, Inc.

SOIL BORING LOG

Drawn By: LEF
 Checked By: CJR
 Date: 7/8/2016

**Boring
B-01**





Bottom of borehole at 20.0 feet.

Date Drilled: 7/7/16
Drilled By: AREHNA
Method: ASTM D-1586, Standard Penetration Test Boring

Ground Water Level:

▽ At Time of Drilling: 4.5 ft below existing grade

Remarks:

**30TH STREET OUTFALL
TAMPA, FL**

AREHNA Project No.: B-16-054
 City of Tampa - Stormwater Division



SOIL BORING LOG

Drawn By: LEF
 Checked By: CJR
 Date: 7/8/2016

**Boring
B-03**



CLIENT City of Tampa - Stormwater Division

PROJECT NAME 30th Street Outfall

PROJECT NUMBER B-16-054

PROJECT LOCATION Tampa, FL

LITHOLOGIC SYMBOLS (Unified Soil Classification System)



SP: Poorly-graded Sand



SC: Clayey Sand



CH: High Plasticity Clay



SP-SM: Poorly-graded Sand with Silt



WLS: Weathered Limestone



LS: Limestone



SM: Silty Sand

SAMPLER SYMBOLS



Standard Penetration
Test

Standard Penetration Resistances

SAND & GRAVEL

No. of Blows	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
Greater than 50	Very Dense

SILT & CLAY

No. of Blows	Consistency
0 - 2	Very Soft
3 - 4	Soft
5 - 8	Firm
9 - 15	Stiff
16 - 30	Very Stiff
Greater than 30	Hard

LIMESTONE

No. of Blows	Consistency
10 - 20	Soft
21 - 50	Medium
51 - 50/3"	Hard
Greater than 50/3"	Very Hard

WOR = Weight of Rod
WOH = Weight of Hammer

Ground Water Level Measurements



Water Level at Time
Drilling, or as Shown



Water Level After 24
Hours, or as Shown

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTICITY INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200- PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)

SOIL BOUNDARY CLASSIFICATIONS

FINE GRAINED SOILS

COARSE GRAINED SOILS

SILT or CLAY	SAND				GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse		Fine	Coarse		
	# 200 Sieve	#40 Sieve	#10 Sieve	#4 Sieve	3/4-inch	3-inch	12-inch	

TABLE 1
SUMMARY OF LABORATORY TEST RESULTS

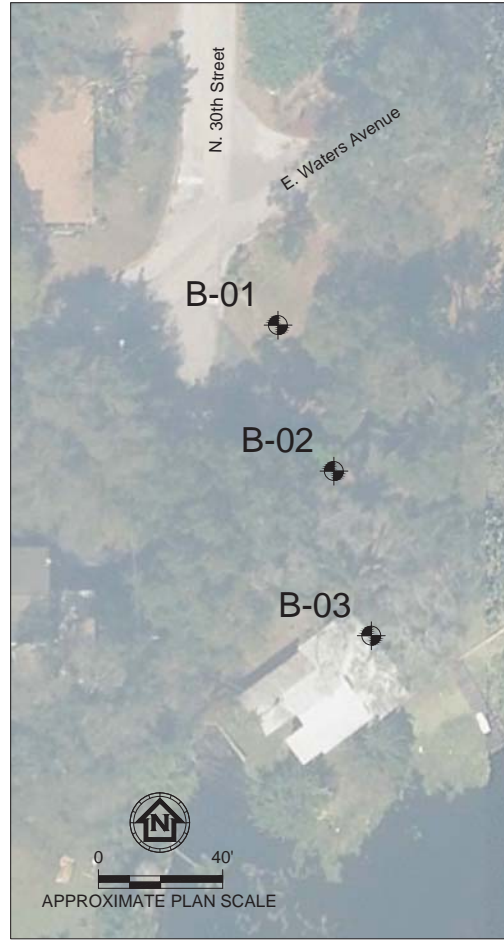
30th Street Outfall
Tampa, Florida
AREHNA Project B-16-054

Boring No.	Sample Depth (feet)	Percent Moisture Content	Percent Finer (-200 sieve)	Liquid Limit	Plasticity Index
B-01	2.0 – 4.0	12.8	21.7	- - -	- - -
B-01	6.0 – 8.0	17.1	28.0	- - -	- - -
B-01	8.0 – 10.0	25.0	57.8	65	46

- - - Not Tested

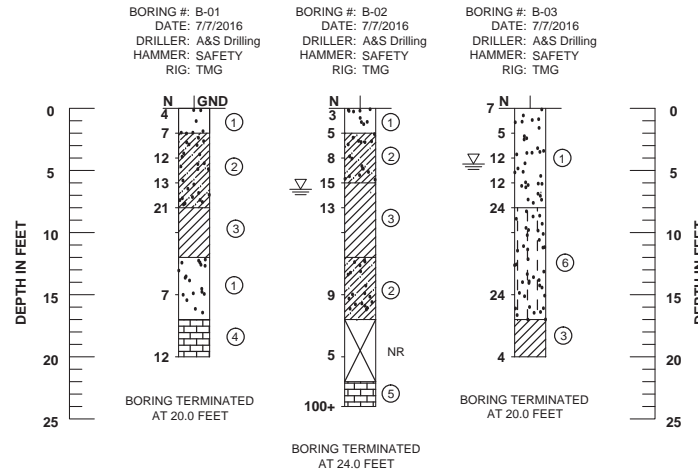


BORING LOCATION PLAN



NOTES:
1.0 AERIAL IMAGE OBTAINED FROM WWW.LABINS.ORG

SOIL PROFILES



SPT Boring N-Value (Blow/Foot)

Granular Materials			Silts and Clays		
Relative Density	Safety Hammer SPT N-Value (Blow/Foot)	Automatic Hammer SPT N-Value (Blow/Foot)	Consistency	Safety Hammer SPT N-Value (Blow/Foot)	Automatic Hammer SPT N-Value (Blow/Foot)
Very Loose	Less than 4	Less than 3	Very Soft	Less than 2	Less than 1
Loose	4 - 10	3 - 8	Soft	2 - 4	1 - 3
Medium Dense	10 - 30	8 - 24	Firm	4 - 8	3 - 6
Dense	30 - 50	24 - 40	Stiff	8 - 15	6 - 12
Very Dense	Greater than 50	Greater than 40	Very Stiff	15 - 30	12 - 24
			Hard	Greater than 30	Greater than 24

Soil Profile Notes:

- The profiles depicted are of a generalized nature to highlight the major subsurface stratification features and material characteristics. The soil profiles include soil description, stratifications and penetration resistances. The stratifications shown on the boring profiles represent the conditions only at the actual boring location. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual.
- Groundwater levels generally fluctuate during periods of prolonged drought and extended rainfall and may be affected by man-made influences. In addition, a seasonal effect will also occur in which higher groundwater levels or temporary perched conditions are normally recorded in rainy seasons.

LEGEND

- Gray to Brown to Tan SAND to SAND With Silt (SP/SP-SM)
- Gray to Gray Red Clayey SAND (SC)
- Gray to Gray and Red Sandy Highly Plastic CLAY (CH)
- White Weathered LIMESTONE
- Gray LIMESTONE
- Gray Silty SAND (SM)

N SPT N-Value In Blows/Foot For 12 Inches Of

Penetration Utilizing Safety Hammer
(unless otherwise noted)
SP Unified Soil Classification System (ASTM D 2488)

Group Symbol As Determined By Visual Review
GND Groundwater Table Not Determine Due To Drilling

NR No Recovery
Methods Utilized
Groundwater Water Table at the Time of Drilling

Approximate Location of SPT Boring

Note:

- The Boring Locations Presented are Approximate.

REVISIONS				ENGINEER OF RECORD:	NAME	DATE	PROJECT NAME	PROJECT NO.	FIGURE NO.
NO.	DATE	DESCRIPTIONS	APPROVED						
				 AREHNA Engineering Inc. 5012 West Lenton Street, Tampa, FL 33609 Phone 813.944.3464 Fax 813.944.4959 Certificate of Authorization No. 28410	DESIGNED BY:	LMC	07/2016	30th Street Outfall City of Tampa, Fl.	B-16-054
					DRAWN BY:	LMC	07/2016		
					CHECKED BY:	CJR	07/2016		
					SUPERVISED BY:	Curtis J. Roos, P.E.			



CITY of TAMPA



DEPARTMENT OF
TRANSPORTATION AND STORMWATER SERVICES
STORMWATER ENGINEERING DIVISION

PLANS FOR
30TH STREET
OUTFALL
PROJECT # 1000580

Richard Alfred Hoel
RICHARD ALFRED HOEL, P.E. #41026
CHIEF ENGINEER

DES: MTM
DRN: MP
CKD: *MP*
DATE: *1-5-18*

No.	DATE	REVISIONS
3		
2		
1		

CITY of TAMPA
Department of Transportation and
Stormwater Services
Stormwater Engineering Division

COVER SHEET

SHEET
1
OF 13

LEGEND

ABBREVIATIONS

INDEX

SW

EX STORMWATER

FORCE MAIN
PIPES & MANHOLES
CATCH BASIN, GRATE
DITCHES, SWALES

PROP STORMWATER

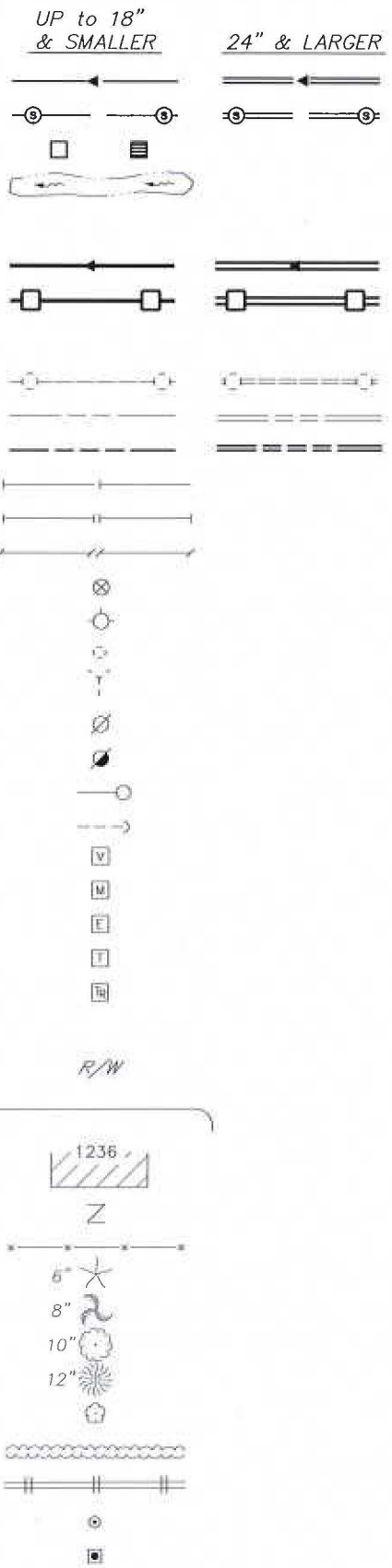
FORCE MAIN
PIPES & MANHOLES

OTHER UTILITIES

SAN SEWER & MANHOLES
WATER LINE
GAS LINE
ELECTRICAL CABLE or DUCT
TELEPHONE CABLE or DUCT
TV CABLE
VALVE
HYDRANT
CLEAN OUT
EXISTING WYE
POWER POLE
TELEPHONE POLE
GUY POLE
GUY WIRE
VALVE VAULT
WATER METER
ELECTRICAL MANHOLE or VAULT
TELEPHONE MANHOLE or VAULT
TRAFFIC BOX or VAULT

OTHER FEATURES

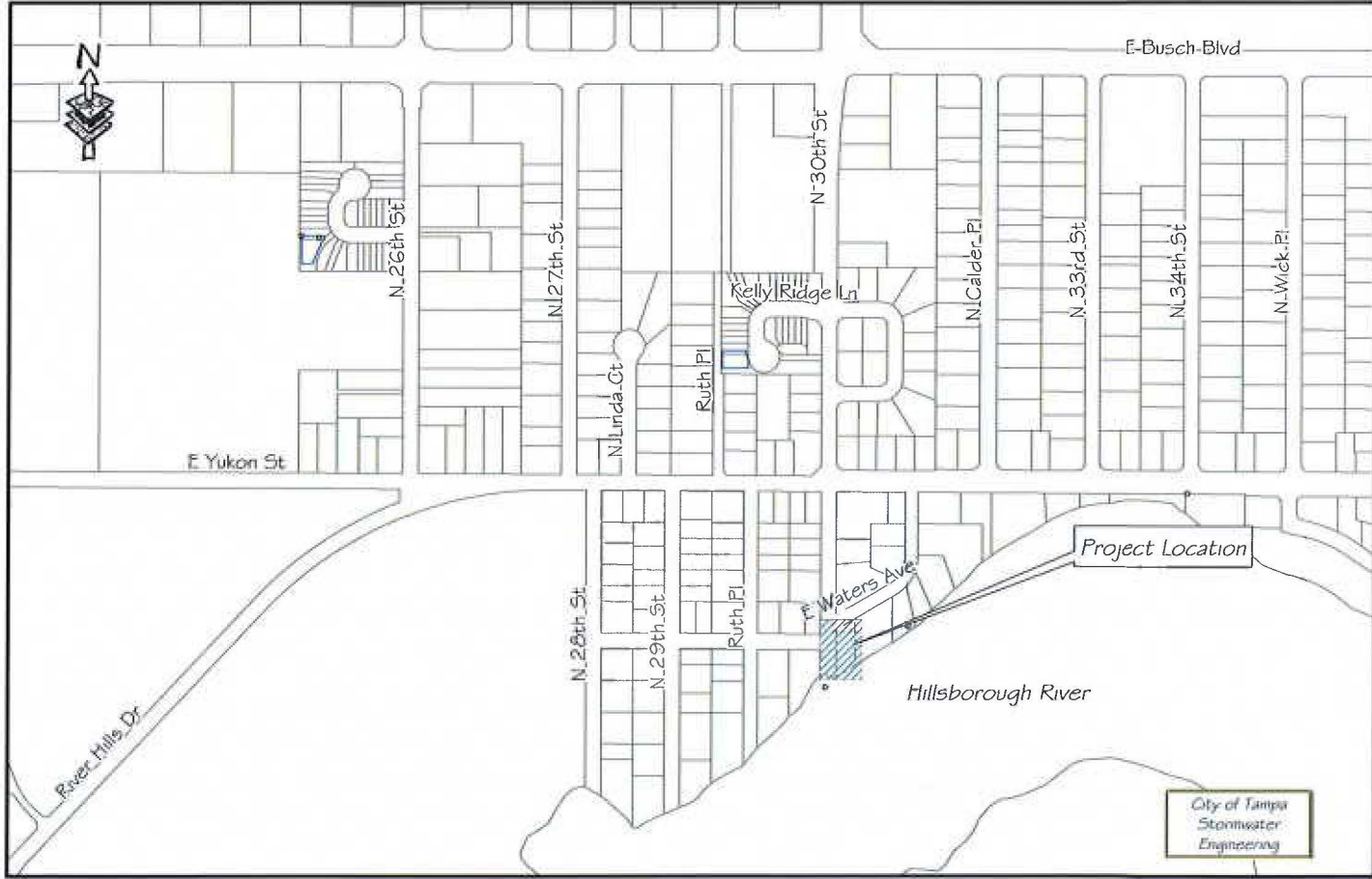
RIGHT of WAY LINE
EDGE of PAVEMENT
BUILDING LIMIT
PROPERTY OWNERSHIP
FENCE
CONIFER
PALM
OAK
OTHER
SHRUB
HEDGE
RAILROAD TRACKS
IRON PIPE
CONCRETE MONUMENT



TOP of PIPE
INVERT ELEVATION
RIGHT of WAY
MANHOLE
POLYVINYL CHLORIDE PIPE
VITRIFIED CLAY PIPE
ADVANCED DRAINAGE SYSTEM
DUCTILE IRON PIPE
REINFORCED CONCRETE PIPE
CONCRETE PIPE
APPROXIMATE LOCATION
BENCH MARK
POINT of INTERSECTION

TP
IE or INV EL
R/W
MH
PVCP
VCP
ADS
DIP
RCP
CP
AL
BM
PI

No.	DESCRIPTION
1	COVER SHEET
2	LEGEND, INDEX, AND MAP
3	GENERAL NOTES
4-6	EXISTING CONDITIONS, PLAN VIEW & ENVIROMENTAL IMPACT
7-8	SECTION VIEWS
9	BASIN DETAILS
10-11	DRAINAGE PLAN & PROFILE
12-13	VARIOUS DETAILS
S1-S8	STRUCTURAL DETAILS



LOCATION MAP

PLOT

FILENAME

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: MTM
DRN: ME
CKD: *BBB*
DATE: *5/10*

CITY of TAMPA
Department of Transportation
and Stormwater Services
Stormwater Engineering Division

LEGEND, INDEX &
LOCATION MAP

GENERAL NOTES

SW

1.

LOCATIONS OF EXISTING UNDERGROUND UTILITIES WERE PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE. VERIFY THE LOCATION AND DEPTH OF ALL PERTINENT UTILITIES PRIOR TO CONSTRUCTION. ALL LOCATIONS, ELEVATION AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PLAN PREPARATION. THE CONTRACTOR IS CAUTIONED THAT THERE MAY BE OTHER UTILITIES AND/OR IMPROVEMENTS NOT SHOWN ON THE DRAWINGS WHICH MAY IMPACT THE WORK REPRESENTED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE, THEREFORE, FOR VERIFYING, PRIOR TO CONSTRUCTION, THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES (WHETHER SHOWN OR NOT ON THE PLANS) WHICH COULD AFFECT THE CONTRACTOR'S WORK. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE MAY BE SOME UTILITY CONFLICTS INHERENT IN THE PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES FROM ACCIDENTAL DAMAGE. THE CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE VARIOUS UTILITY COMPANIES IN ORDER TO PERMIT THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. CONTACT UTILITIES NOTIFICATION CENTER (SUNSHINE STATE ONE CALL) AT 1-800-432-4770.
2.

THE INFORMATION SHOWN IN THESE PLANS IS PROVIDED SOLELY FOR THE PURPOSE OF ASSISTING THE CONTRACTOR IN ASSESSING THE PHYSICAL CONDITIONS UNDER WHICH THE PROJECT IS TO BE BID AND CONSTRUCTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EVALUATION THE CONTRACTIBILITY OF THE PROJECT AND CONDUCTING HIS OWN INVESTIGATION INTO THE PHYSICAL CHARACTERISTICS OF THE PROJECT, INCLUDING THE EXISTENCE AND IMPACT OF ANY STRUCTURES, UTILITIES, OR OTHER SITE FEATURES (WHETHER SHOWN OR NOT SHOWN) PRIOR TO PREPARING AND SUBMITTING A SEALED BID.
3.

FIELD CONDITIONS MAY NECESSITATE SLIGHT ALIGNMENT AND GRADE DEVIATIONS OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS DIRECTED BY THE ENGINEER.
4.

CONTRACTOR SHALL PROVIDE, OPERATE AND MAINTAIN ALL TEMPORARY BY-PASS OPERATIONS OF UTILITIES, IF REQUIRED, FOR THE COMPLETION OF THE WORK.
5.

THE CONTRACTOR SHALL REPLACE ALL EXISTING PAVING, STABILIZED EARTH, CURBS, CONCRETE DRIVEWAYS, SIDEWALKS, FENCES, MAILBOXES, IRRIGATION LINES, SIGNS AND OTHER IMPROVEMENTS WITH THE SAME TYPE OF MATERIAL THAT WAS DISTURBED DURING CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
6.

THE CONTRACTOR SHALL PROTECT IN PLACE ALL FACILITIES AND PLANT MATERIALS THAT ARE NOT TO BE RELOCATED AND/OR REMOVED BUT ARE TO REMAIN.
7.

CONTRACTOR SHALL MAINTAIN A CLEAR PATH FOR ALL SURFACE WATER DRAINAGE STRUCTURES AND DITCHES DURING ALL PHASES OF CONSTRUCTION.
8.

MAINTENANCE OF TRAFFIC WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL WARNING SIGNALS, SIGNS, LIGHTS AND FLAGMEN AS REQUIRED BY THE F.D.O.T. IN THE "MANUAL ON TRAFFIC CONTROL & SAFE PRACTICES." THE CONTRACTOR SHALL SUBMIT "MAINTENANCE OF TRAFFIC" PLANS TO THE CITY FOR APPROVAL.
9.

CONTRACTOR SHALL PROVIDE CONTINUOUS ACCESS TO ALL RESIDENTIAL AND COMMERCIAL PROPERTIES FOR OWNERS, DELIVERY PERSONNEL AND MAINTENANCE STAFF.
10.

RESTORATION OF ALL CURBS, LANDSCAPING, SOD, ACCESS DRIVES, STREETS AND ROADWAYS SHALL BE COMPLETE WITHIN (10) TEN CALENDAR DAYS OF INITIAL DISTURBANCE IN AREAS OUTSIDE THE PROJECT AREA; OR IN AREAS USED FOR ACCESS OR TRAFFIC BY THE GENERAL PUBLIC. THE RESTORED EARTH MUST BE STABILIZED WITHIN 72 HOURS.
11.

CONTRACTOR SHALL MAINTAIN AN UPDATED SET OF CONSTRUCTION PLANS WITH CURRENT FIELD CHANGES MARKED THEREON. SAID PLANS SHALL BE DELIVERED TO THE PROJECT MANAGER UPON COMPLETION OF ALL CONSTRUCTION OPERATIONS. CONTRACTOR'S MARKUPS SHALL INDICATE ALL VALVES, FITTINGS AND APPURTENANCES IN GPS STATE PLAN COORDINATES. PIPES SHALL BE DIMENSIONALLY LOCATED, FROM THE R.O.W. LINE, BACK OF CURB AND/OR EDGE OF PAVEMENT WITH SUFFICIENT REGULARITY (NO LESS THAN EVERY 100 FT) TO PROVIDE ACCURATE FIELD LOCATION. CONTRACTOR SHALL ALSO IDENTIFY THE TOP OF PIPE ELEVATION AT EACH CHANGE IN HORIZONTAL OR VERTICAL LOCATION.
12.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.
13.

CONTRACTOR SHALL RETURN THE ENTIRE AREA DISTURBED BY CONSTRUCTION ACTIVITIES TO THE ORIGINAL CONDITION OR BETTER UPON COMPLETION OF THE WORK, IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
14.

SOD USED TO REPLACE OWNER MAINTAINED AREAS IN THE RIGHT-OF-WAY SHALL BE OF THE SAME TYPE AND QUALITY THAT WAS IN PLACE PRIOR TO THE START OF CONSTRUCTION. ANY EXCEPTION MUST BE APPROVED BY THE ENGINEER.
15.

ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE AREA WITHIN THE CITY RIGHT-OF-WAY, PROPERTY LIMITS OR EASEMENTS AS SHOWN ON THE CONTRACT DRAWINGS.
16.

OVERALL CLEAN UP SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH CITY STANDARDS OR AS DIRECTED BY THE ENGINEER. ANY AND ALL EXPENSES INCURRED FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPLICABLE LINE ITEM.
17.

THE CONTRACTOR SHALL ENDEAVOR TO PROTECT PRIVATE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR IN THE PERFORMANCE OF HIS WORK SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. PAYMENT WILL NOT BE MADE FOR THIS WORK.
18.

ANY DAMAGE TO STATE, COUNTY OR LOCAL ROADS CAUSED BY THE CONTRACTOR'S HAULING OR EXCAVATION EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. PAYMENT WILL NOT BE MADE FOR THIS WORK.
19.

THE CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL BARRIERS IN COMPLIANCE WITH THE LATEST EDITION OF THE FLORIDA EROSION AND SEDIMENTATION CONTROL MANUAL, AND AS DIRECTED BY THE ENGINEER. THE MAINTENANCE OF EROSION CONTROL DEVICES AND THEIR COMPLETE REMOVAL ARE TO BE INCLUDED IN THE UNIT BID PRICE FOR EACH INDIVIDUAL ITEM.
20.

CONTRACTOR SHALL INSTALL THE GRAVITY STORM DRAINS ACCORDING TO THE SLOPES AND ELEVATIONS SHOWN ON THE PLANS WITH NO INTERMEDIATE HIGH POINTS OR LOW POINTS BETWEEN THE INDICATED VERTICAL POINTS OF INTERSECTION.
21.

ALL GRAVITY STORM DRAIN PIPE SHALL BE INSTALLED WITH CLASS "C" BEDDING UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER.
22.

CONTRACTOR SHALL COORDINATE ANY UTILITY RELOCATIONS WITH UTILITY OWNER PRIOR TO UTILITY ADJUSTMENT. CONTRACTOR SHALL CONTACT UTILITY OWNERS AT THE BEGINING OF CONSTRUCTION TO ALLOW ADEQUATE TIME FOR UTILITY RELOCATION WORK.
23.

OVERHEAD UTILITIES – THE CONTRACTOR IS TO PROTECT IN PLACE ALL OVERHEAD UTILITY LINES WITHIN THE PROJECT LIMITS.
24.

ALL DISTURBED SIDEWALKS AND DRIVEWAYS DURING CONSTRUCTION ARE TO BE REPLACED IN LIKE KIND AND PER CITY OF TAMPA STANDARDS,
25.

ALL SUBMITTALS AND SHOP DRAWINGS SHALL BE ORIGINALS OR HIGH QUALITY COPIES (EASILY READABLE). NO FAXED SHEETS OR POOR QUALITY COPIES WILL BE ACCEPTED FOR SUBMITTAL REVIEW.
26.

CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY PERMITS FOR WORK WITHIN THE RIGHT OF WAYS.
27.

BACKFILL (NO CLAY OR CLAYEY MATERIAL) SHALL BE COMPACTED IN 12 INCH LAYERS TO 98% MAXIMUM DRY DENSITY OF MODIFIED PROCTOR IN CONFORMANCE WITH AASHTO T-180, METHOD A.
28.

BOLTS, WASHERS, NUTS, SCREWS, HOOKS, BRACKETS, HINGES, ETC. INSTALLED WITHIN STRUCTURES SHALL BE TYPE 316 STAINLESS STEEL UNLESS OTHERWISE SPECIFIED.
29.

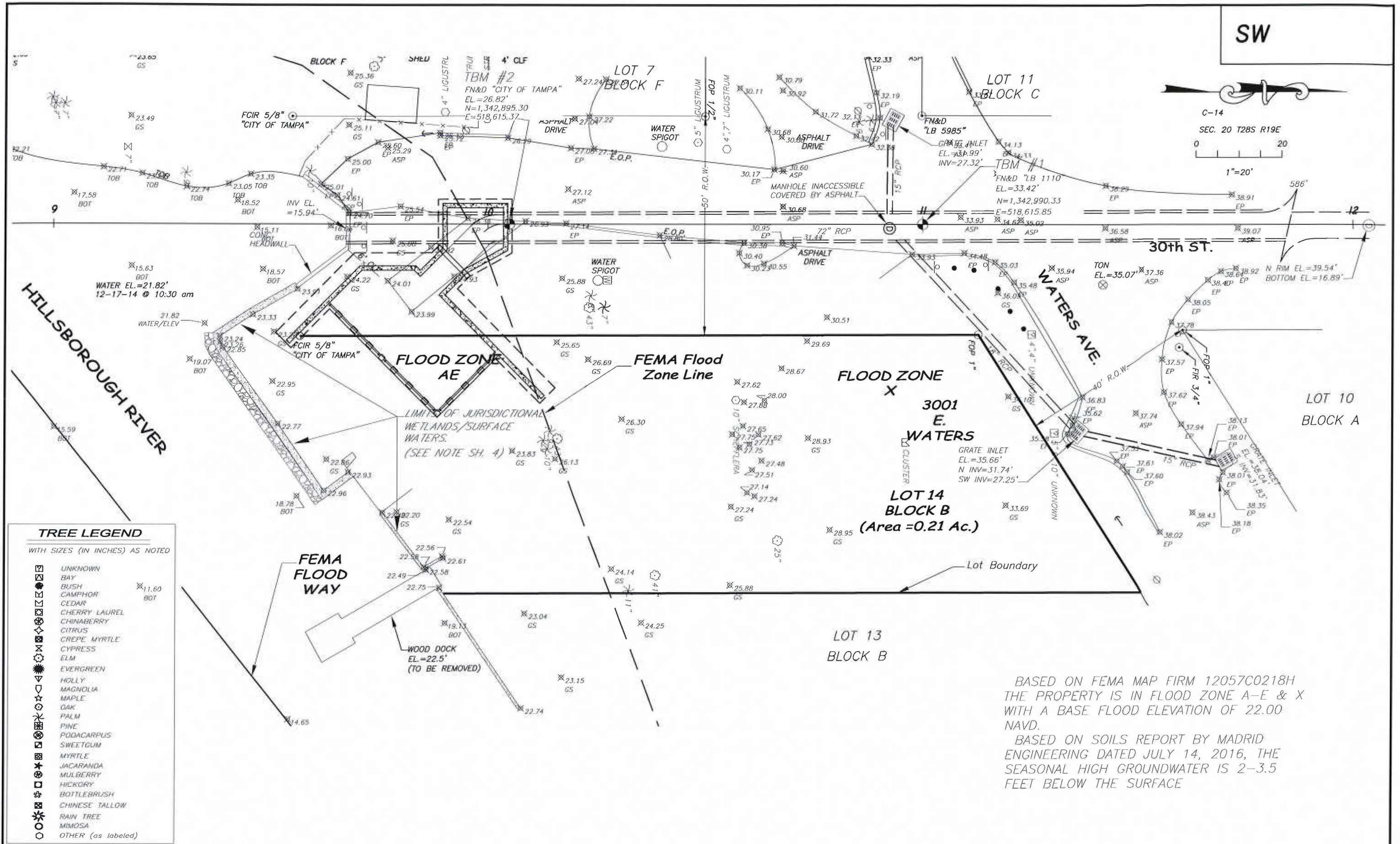
ALL METAL SURFACES COMING IN CONTACT WITH CONCRETE SHALL BE PROVIDED WITH NEOPRENE PADS OR 2 COATS OF COAL TAR EPOXY WITH PROPER SURFACE PREPARATION. CONTRACTOR SHALL SUBMIT SYSTEM(S) FOR APPROVAL.

SURVEY NOTES

1. FIELD WORK PERFORMED BY SUNCOAST LAND SURVEYING, INC.
DATE OF SURVEY: DECEMBER 17,2014.
2. ELEVATIONS ARE BASED ON CITY OF TAMPA BENCHMARK "HV 02-0234" HAVING AN ELEVATION OF 42.0' AND CITY OF TAMPA BENCHMARK "HV 02-0257 HAVING AN ELEVATION OF 35.65' NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM DRN: ME CKD: BSG DATE: 1-5-15	CITY of TAMPA Department of Transportation and Stormwater Services Stormwater Engineering Division	30TH ST. OUTFALL PROJECT GENERAL NOTES	SHEET 3 OF 13
3			6						
2			5						
1			4						

SW

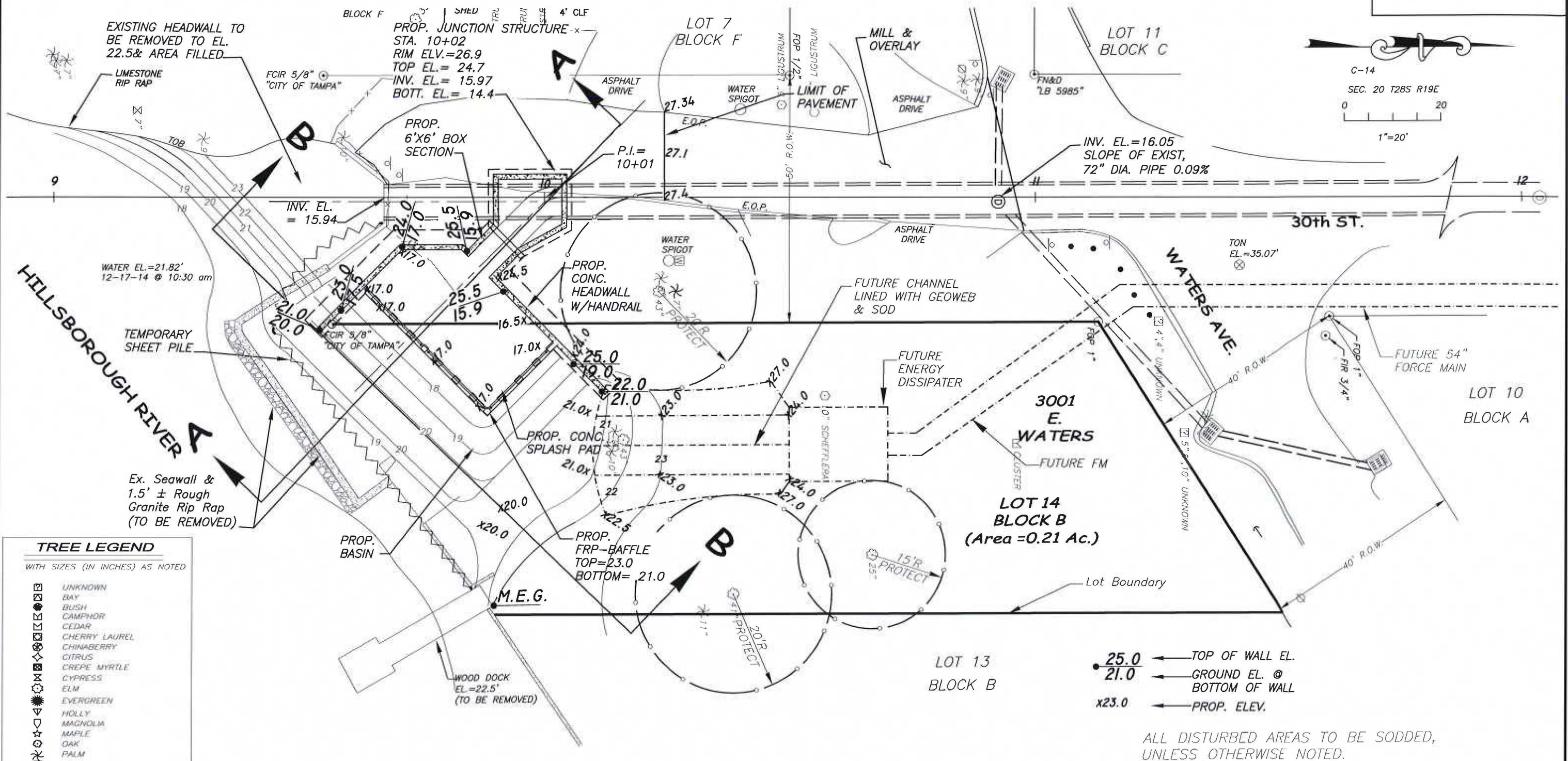


BASED ON FEMA MAP FIRM 12057C0218H
THE PROPERTY IS IN FLOOD ZONE A-E & X
WITH A BASE FLOOD ELEVATION OF 22.00
NAVD.

BASED ON SOILS REPORT BY MADRID
ENGINEERING DATED JULY 14, 2016, THE
SEASONAL HIGH GROUNDWATER IS 2-3.5
FEET BELOW THE SURFACE

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET
3			6			DRN: ME	Department of Transportation	EXISTING CONDITIONS	4
2			5			CKD: Bgr	and Stormwater Services		OF 13
1			4			DATE: 6-5-19	Stormwater Engineering Division		

SW

**TREE LEGEND**

WITH SIZES (IN INCHES) AS NOTED

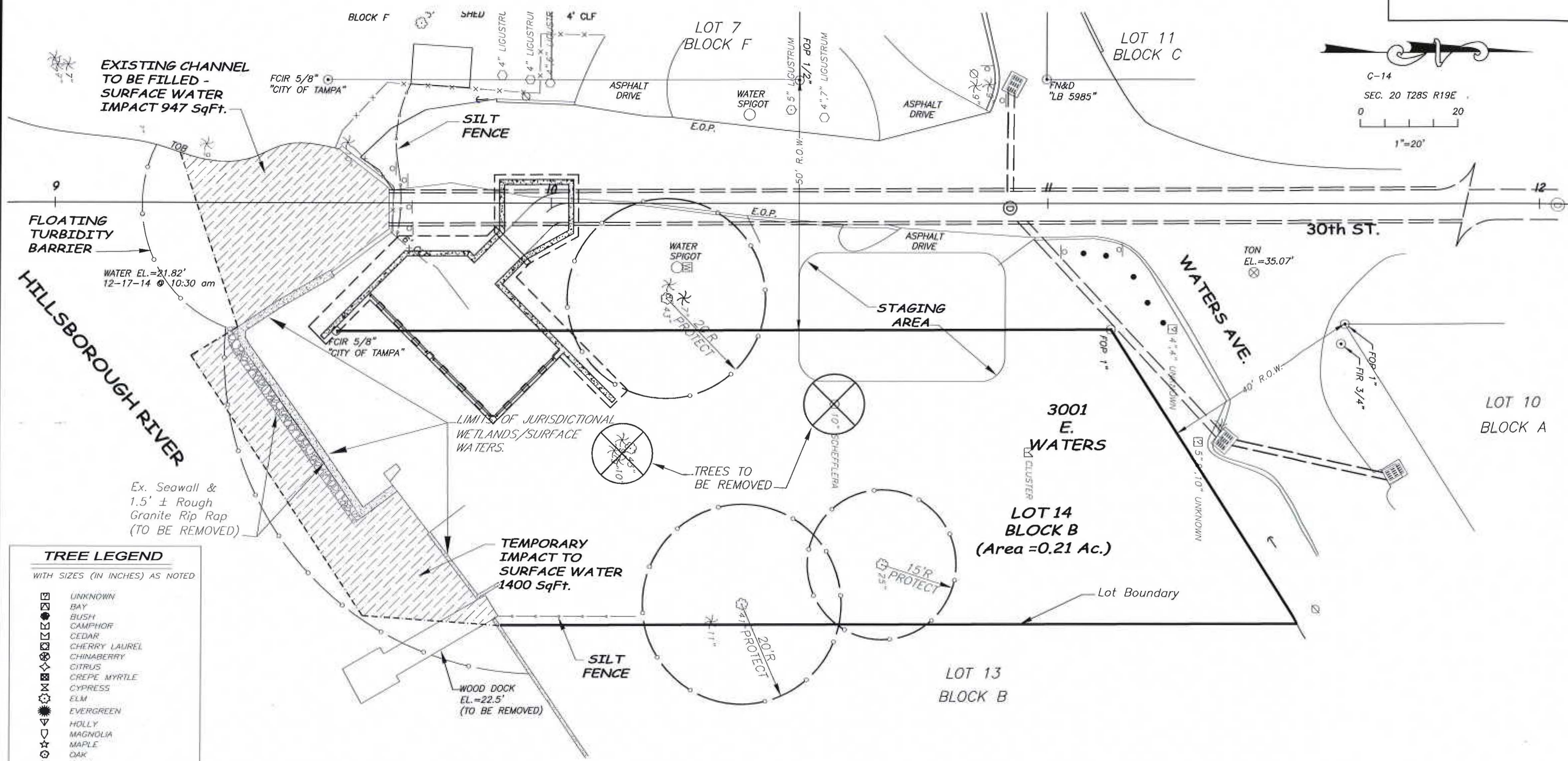
- UNKNOWN
- BAY
- BUSH
- CAMPOR
- CEDAR
- CHERRY LAUREL
- CHINABERRY
- CITRUS
- CREPE MYRTLE
- CYPRESS
- ELM
- EVERGREEN
- HOLLY
- MAGNOLIA
- MAPLE
- OAK
- PALM
- PINE
- PODACARPUS
- SWEETGUM
- MYRTLE
- JACARANDA
- MULBERRY
- HICKORY
- BOTTLEBRUSH
- CHINESE TALLOW
- RAIN TREE
- MIMOSA
- OTHER (as labeled)

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET
3			6			DRN: ME	Department of Transportation and Stormwater Services	PLAN VIEW	5
2			5			CKD: PJS	Stormwater Engineering Division		OF 13
1			4			DATE: 1-5-18			

SW



C-14
SEC. 20 T28S R19E
0 20
1"=20'

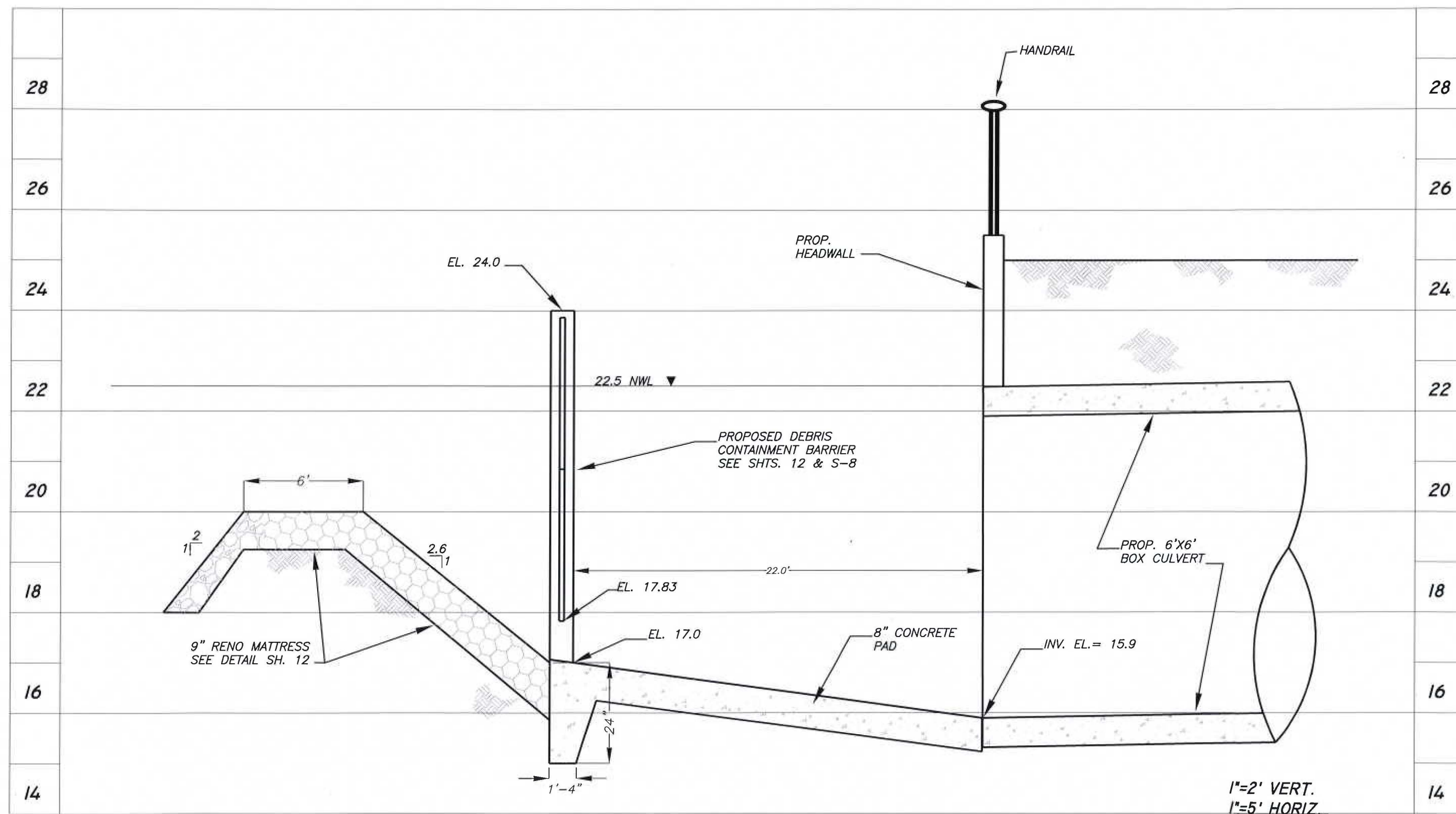


TREE LEGEND

WITH SIZES (IN INCHES) AS NOTED

- UNKNOWN
- BAY
- BUSH
- CAMPBELL
- CEDAR
- CHERRY LAUREL
- CHINABERRY
- CITRUS
- CREPE MYRTLE
- CYPRESS
- ELM
- EVERGREEN
- HOLLY
- MAGNOLIA
- MAPLE
- OAK
- PALM
- PINE
- PODACARPUS
- SWEETGUM
- MYRTLE
- JACARANDA
- MULBERRY
- HICKORY
- BOTTLEBRUSH
- CHINESE TALLOW
- RAIN TREE
- MIMOSA
- OTHER (as labeled)

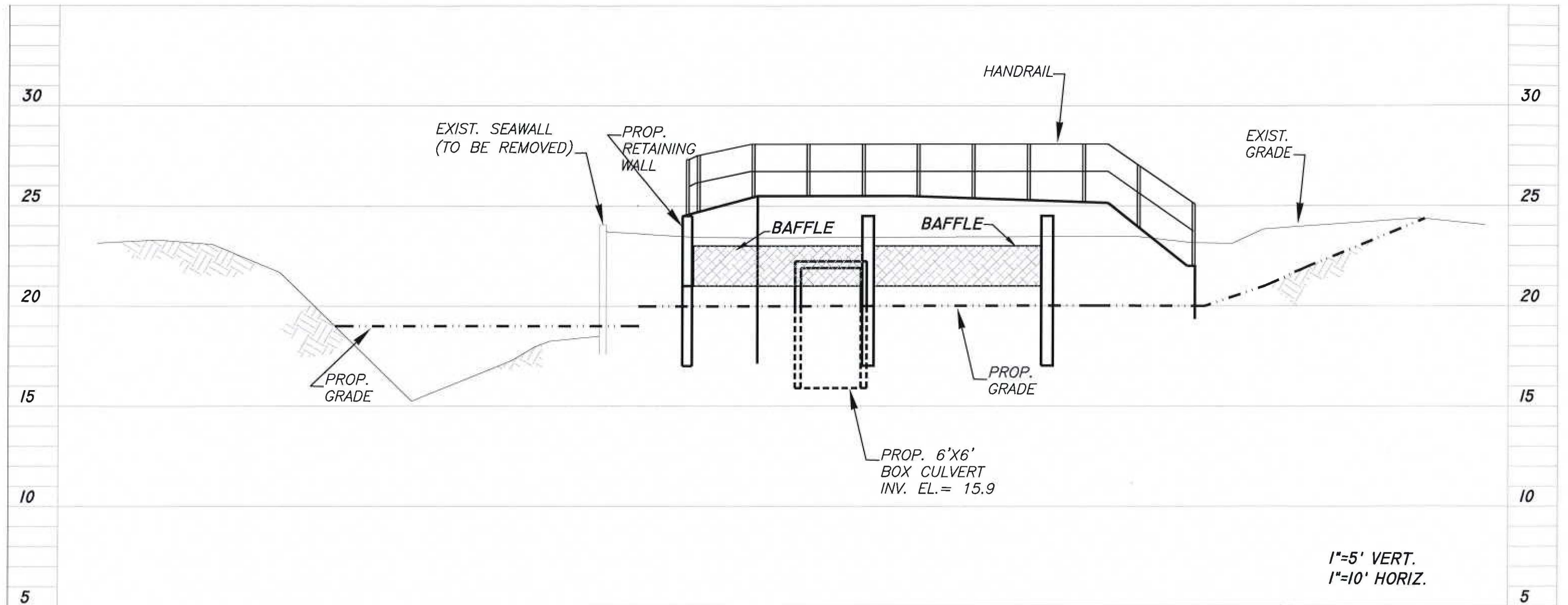
No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET
3			5			DRN: PE	Department of Transportation	ENVIROMENTAL IMPACT	6
2			5			CKD: PPR	and Stormwater Services		OF 13
1			4			DATE: 1-5-15	Stormwater Engineering Division		



SECTION A-A

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET 7
3			6			DRN: MP	Department of Transportation and Stormwater Services	BASIN SECTION	OF 13
2			5			CKD: <i>PSG</i>	Stormwater Engineering Division		
1			4			DATE: 1-5-18			

SW



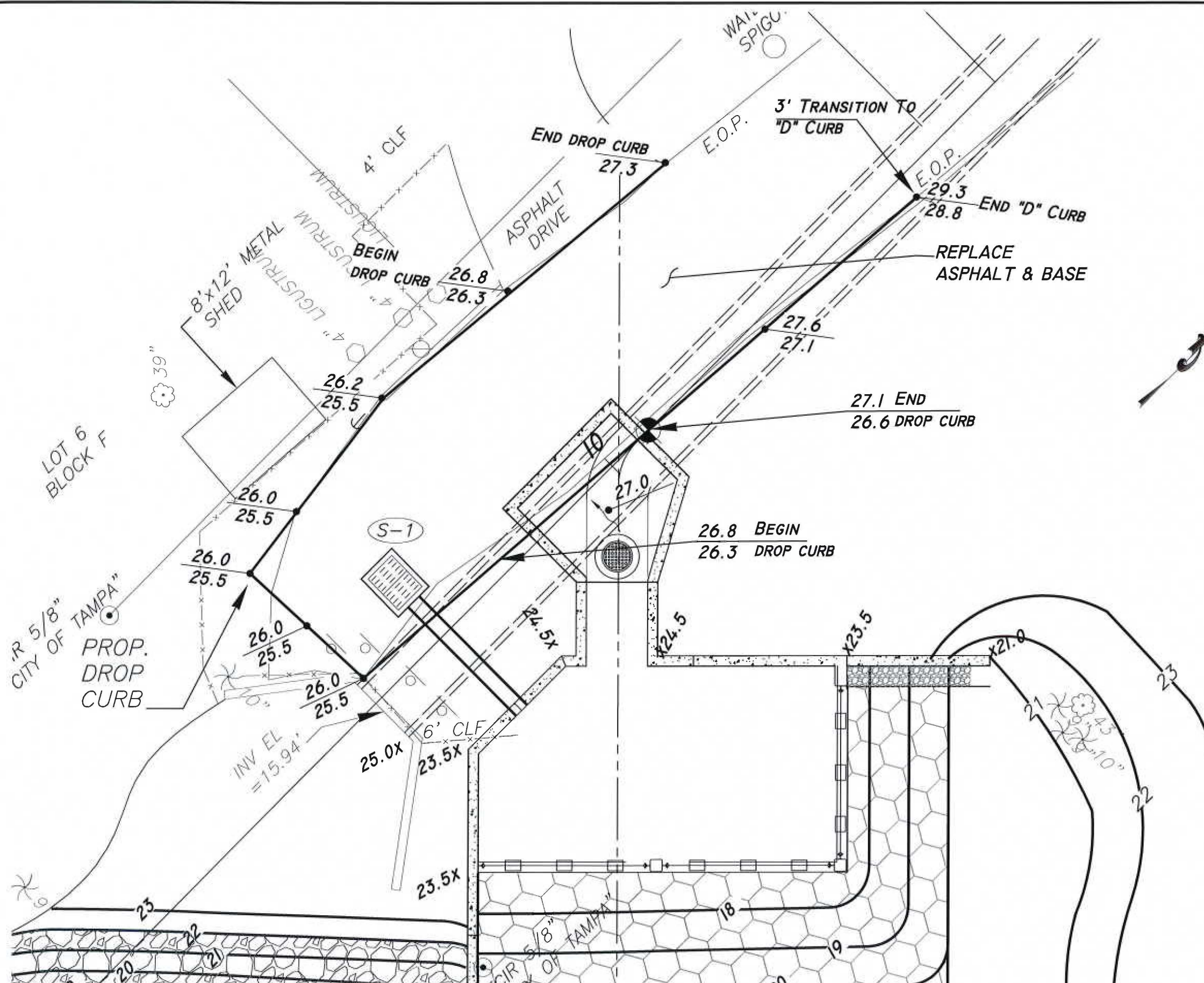
SECTION B-B

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET
3			6			DRN: MP	Department of Transportation	SECTION VIEWS	8
2			5			CKD: <i>MS</i>	and Stormwater Services		OF 13
1			4			DATE: 1-5-18	Stormwater Engineering Division		

[illegible]

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM DRN: MD CKD: BSG DATE: 1-5-18	<p align="center">CITY of TAMPA Department of Transportation and Stormwater Services Stormwater Engineering Division</p>	<p align="center">30TH ST. OUTFALL PROJECT BASIN DETAILS</p>	<p align="center">SHEET 9 OF 13</p>
3			6						
2			5						
1			4						

SW

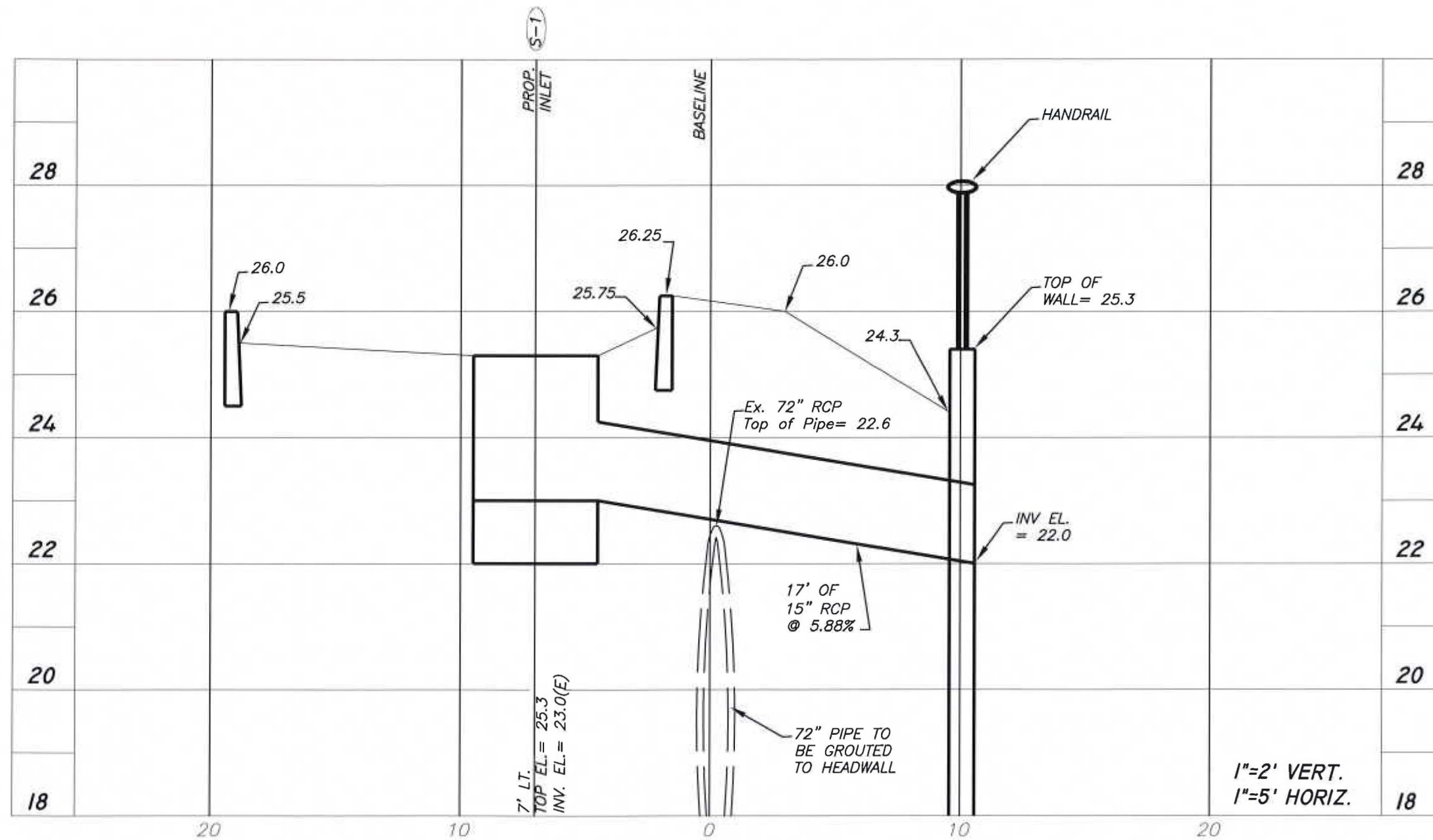


S-1 STA 9+77, 7'± LT
PROP TYPE "E" GRATE INLET
TOP= 25.3
I.E. 15" RCP =23.0(E)

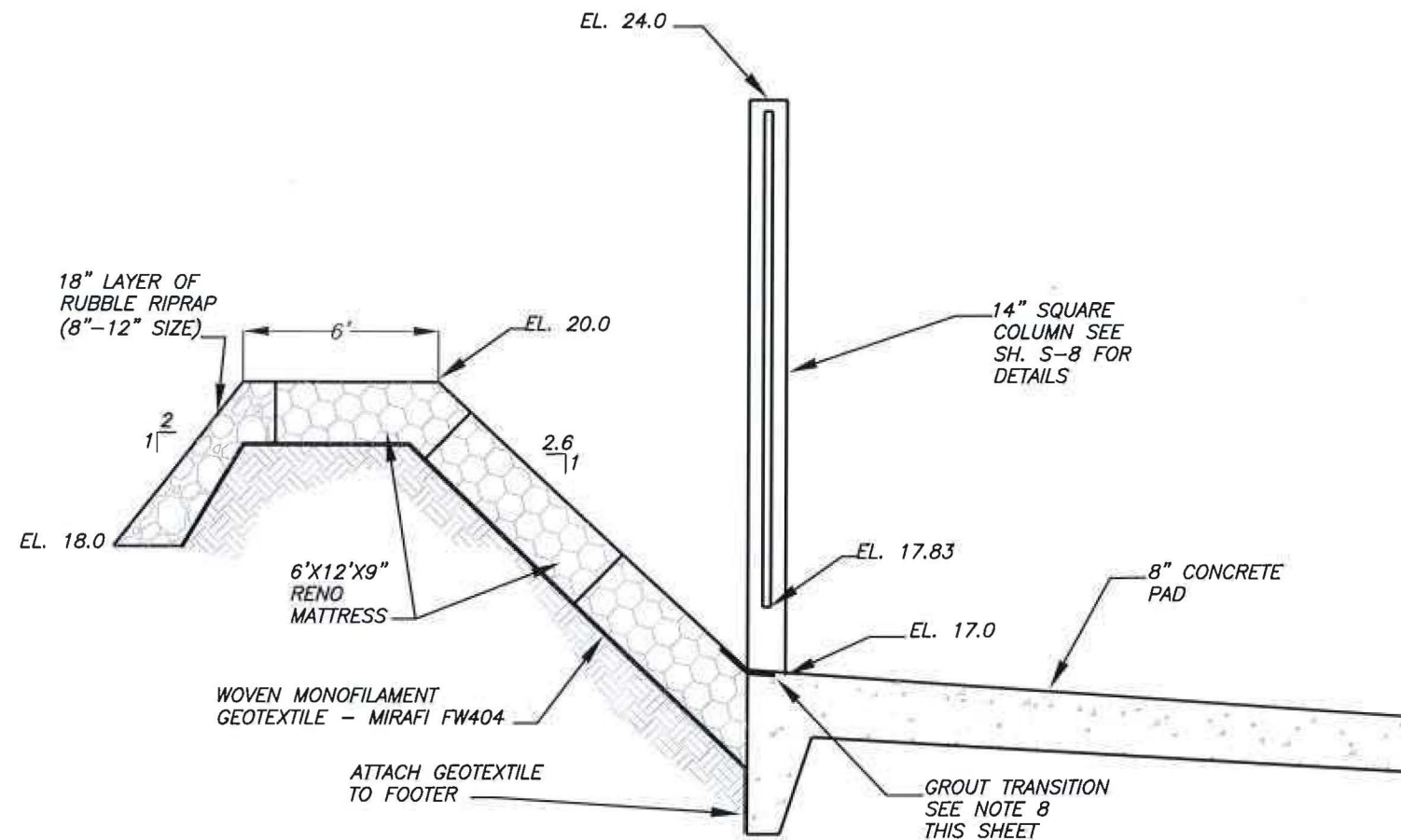
$$\begin{array}{r} 12.34 \text{ TOP OF CURB} \\ - 16.78 \text{ FLOW} \\ \hline \end{array}$$

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	<p align="center">CITY of TAMPA</p> <p align="center">Department of Transportation and Stormwater Services Stormwater Engineering Division</p>	<p align="center">30TH ST. OUTFALL PROJECT</p> <p align="center">PROP. ASPH & DRAINAGE</p>	<p align="center">SHEET 10 OF 13</p>
3			6			DRN: MP			
2			5			CKD: <i>BD</i>			
1			4			DATE: <i>5-13</i>			

SW



No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET
3			6			DRN: ME	Department of Transportation	PROP. ASPH & DRAINAGE PROF.	11
2			5			CKD: <i>ME</i>	and Stormwater Services		OF 13
1			4			DATE: 6-5-18	Stormwater Engineering Division		



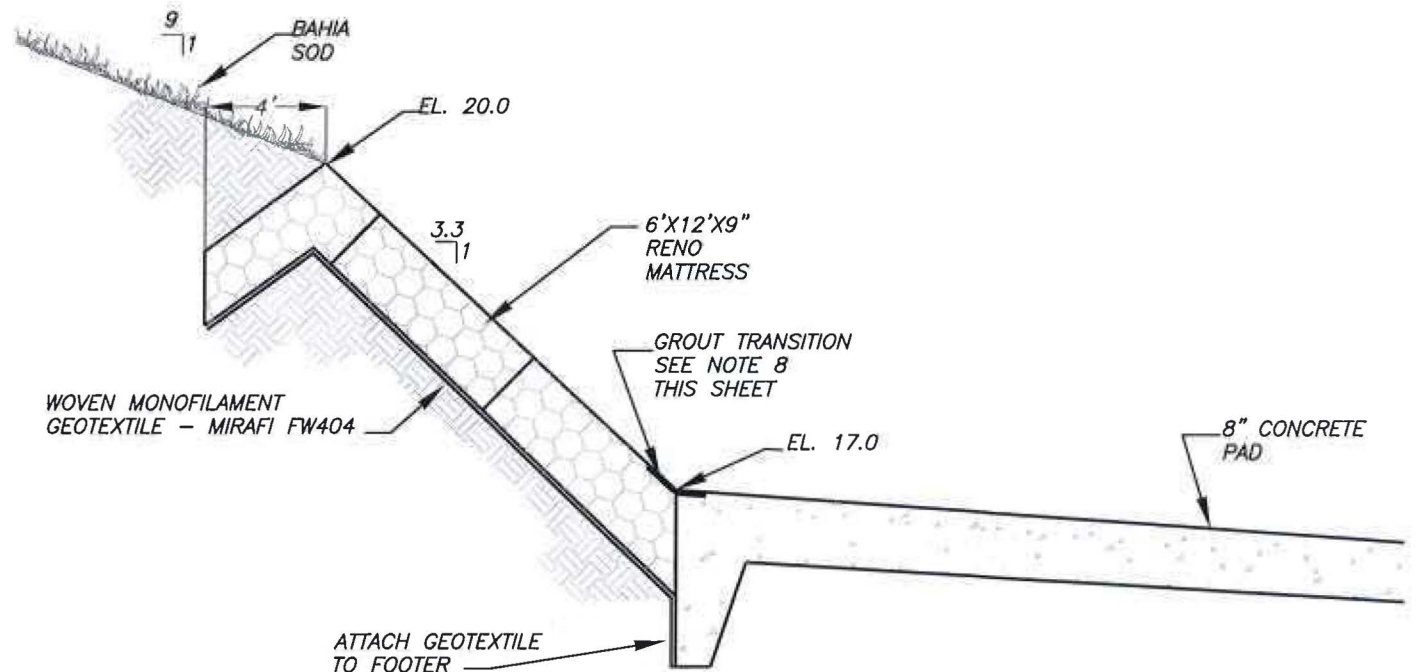
SECTION C-C

RUBBLE RIP-RAP

1. RUBBLE RIP-RAP SHALL BE PLACED ON PROPOSED SLOPE ALONG THE RIVER FROM ELEVATION 20.0 TO APPROXIMATELY ELEVATION 18.0, OR AS DIRECTED BY THE ENGINEER.
2. RIP-RAP SHALL BE SIZED BETWEEN 8 INCHES AND 12 INCHES AND SHALL BE ANGULAR AND DURABLE.
3. RIP-RAP SHALL BE PLACED IN A LAYER 18 INCHES DEEP AND UNDERLAIN WITH A WOVEN GEOTEXTILE SUCH AS MIRAFI FW404.

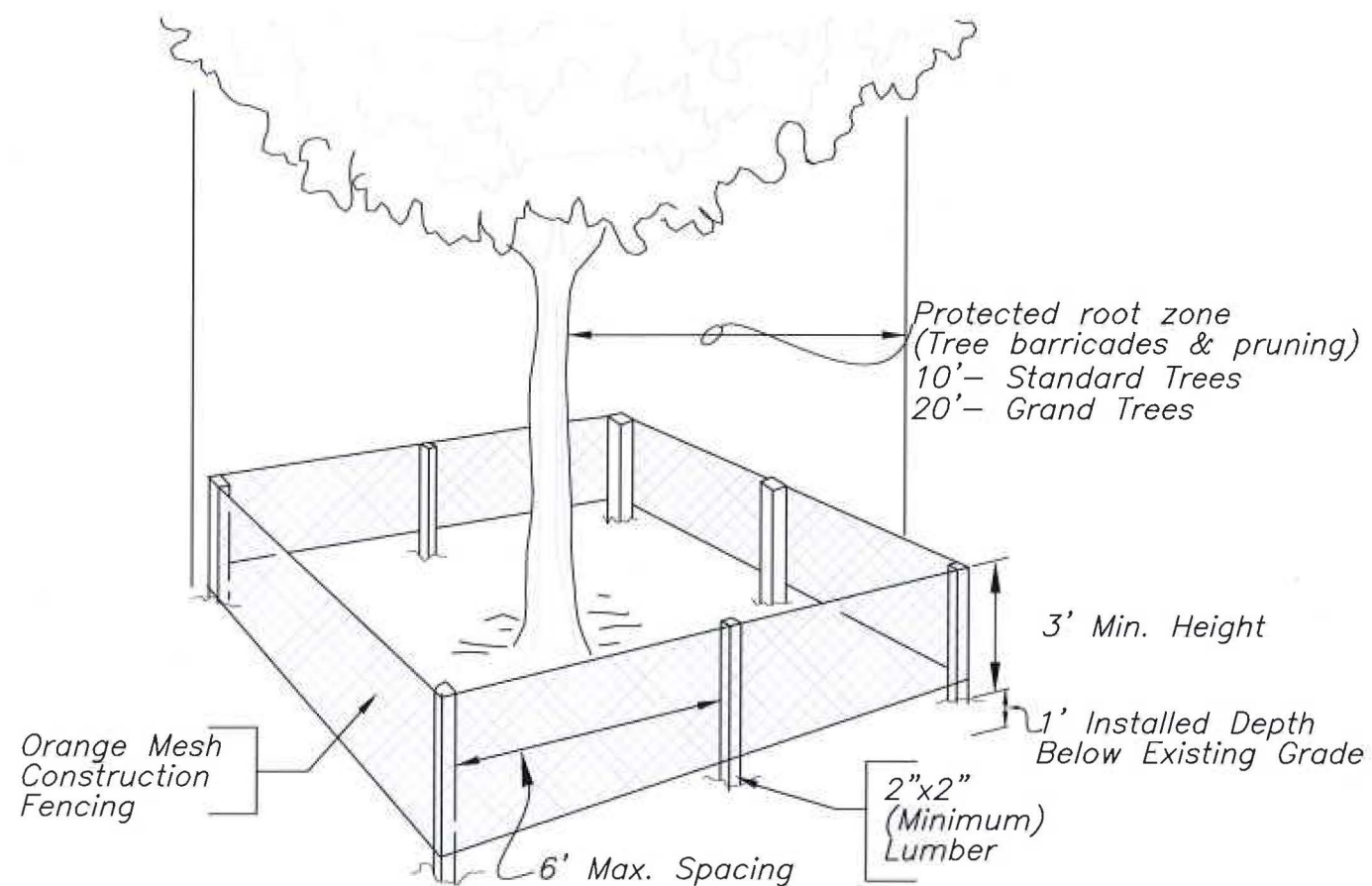
RENO MATTRESS AS MANUFACTURED BY MACCAFERRI

1. ALL MATTRESSES ARE TO BE 12 FEET BY 6 FEET BY 9 INCHES THICK AND HAVE SELVEDGED SEAMS.
2. ALL MATTRESSES TO BE FILLED WITH COARSE AGGREGATE SIZED BETWEEN 3 INCHES AND 5 INCHES AND SHALL BE HARD AND ANGULAR.
3. COARSE AGGREGATE SHALL BE GRANITE OR CRUSHED CONCRETE.
4. MATTRESSES SHALL BE MANUFACTURED WITH WOVEN STEEL WIRE MESH WITH A MAXIMUM TENSILE STRENGTH OF 75,000 PSI PER ASTM A641 AND ELONGATION NOT TO EXCEED 12% IN ACCORDANCE WITH ASTM A370.
5. WIRE MESH TO BE 6 X 8 MESH TYPE GALVANIZED AND PVC COATED WITH NOMINAL THICKNESS OF 0.02 INCHES WITH SELVEDGE SEAMS.
6. LACING WIRE AND SELVEDGE WIRE TO BE GALVANIZED AND PVC COATED TO THE SAME SPECIFICATION AS THE WIRE MESH.
7. MATTRESSES TO BE INSTALLED WITH WIDTH DIMENSION (6 FEET) PERPENDICULAR TO THE FLOW FROM PROPOSED CULVERT.
8. INTERFACE BETWEEN CONCRETE SLAB AND RENO MATTRESS SHALL BE GROUTED WITH A FLOWABLE GROUT EXTENDING AT LEAST 12 INCHES INTO THE MATTRESS TO PREVENT WATER FROM SCOURING UNDER THE MATTRESS.
9. INTERFACE BETWEEN RENO MATTRESS AND RUBBLE RIPRAP WILL NOT NEED ANY SPECIAL ATTENTION.
10. AT THE UPSLOPE INTERFACE BETWEEN RENO MATTRESS AND SOIL, MATTRESS SHALL BE ANGLED DOWN AND EMBEDDED A MINIMUM OF 2 TWO FEET INTO THE SOIL.
11. MATTRESSES SHALL BE UNDERLAIN WITH A WOVEN MONOFILAMENT GEOTEXTILE SUCH AS MIRAFI FILTERWEAVE FW404.
12. MATTRESSES SHALL BE FASTENED TOGETHER WITH LACING WIRE OR STAINLESS STEEL RINGS.
13. THE FIRST LAYER OF AGGREGATE SHALL BE INSTALLED BY HAND TO PREVENT DAMAGE TO THE PVC COATING.



SECTION D-D

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET 12
3			6			DRN: ME	Department of Transportation and Stormwater Services	RENO MATTRESS DETAILS	OF 13
2			5			CKD: BSC	Stormwater Engineering Division		
1			4			DATE: 1-5-18			

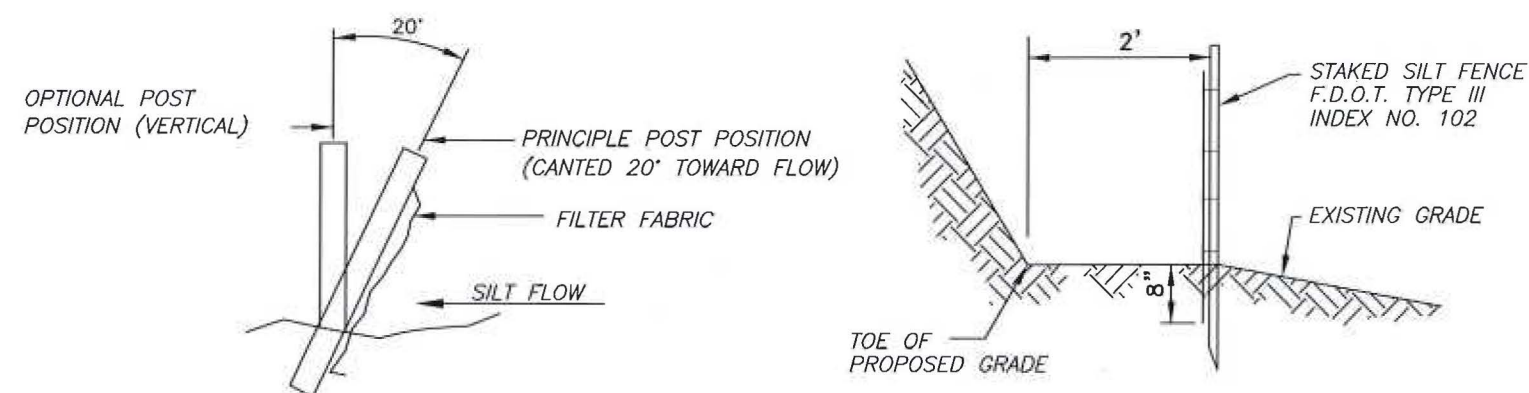


NOTES:

- * PROTECTIVE BARRICADES MAY BE REMOVED ONLY TO PREPARE THE DEVELOPMENT SITE FOR FINAL LANDSCAPING.
- * NO CHANGES TO THE EXISTING CONDITIONS WITHIN THE PROTECTIVE ROOT ZONE DURING THE CONSTRUCTION PROCESS.
- * ALL ROOTS MUST BE SEVERED CLEAN AT THE PROTECTIVE ROOT ZONE OF PROTECTED AND EGRAND TREES TO PREVENT ROOT DAMAGE.
- * NO STORAGE OF MATERIALS OR VEHICLES WITHIN PROTECTIVE ZONE.

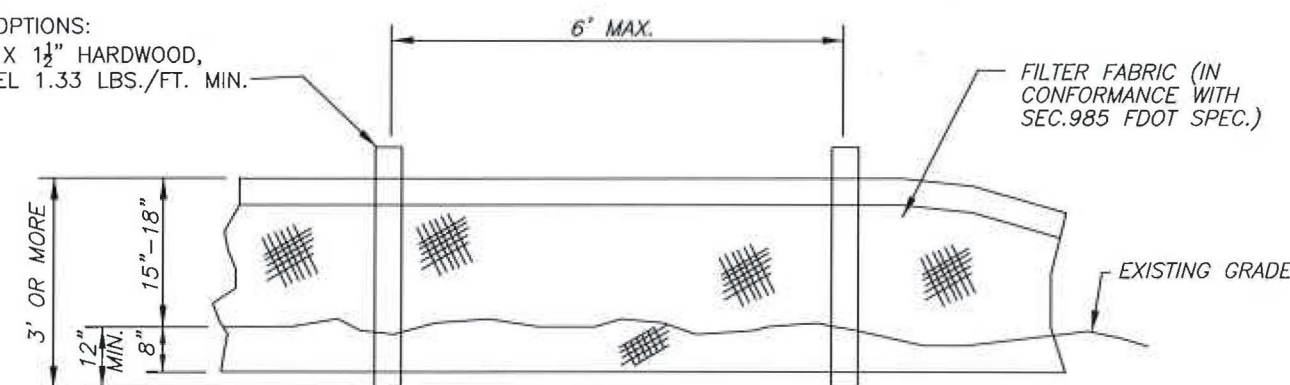
TYPICAL TREE BARRICADE DETAIL

PER CHAPTER 13 OF THE CITY OF TAMPA
TREE AND LANDSCAPE MANUAL



POST OPTIONS:

- 1½" X 1½" HARDWOOD,
- STEEL 1.33 LBS./FT. MIN.



**FDOT TYPE III
SILT FENCE DETAIL**

NTS

No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: MTM	CITY of TAMPA	30TH ST. OUTFALL PROJECT	SHEET
3			6			DRN: MP	Department of Transportation	TREE BARRICADE & SILT FENCE DETAILS	13
2			5			CKD: PSC	and Stormwater Services		OF 13
1			4			DATE: 1-5-18	Stormwater Engineering Division		

User: smaher1 Drawing Name: C:\Users\smaher1\Desktop\Remote\11135717 30th Street Outfall\Tampa - 30th St Outfall - GHD Struc Dwgs.dwg Layout-- Jan 12, 2018 - 10:19am CTB - TampaStorm.ctb

GENERAL STRUCTURAL NOTES:

1. STRUCTURAL DRAWINGS SHALL BE COORDINATED AND USED IN CONJUNCTION WITH OTHER DRAWINGS, CIVIL (SITE), MECHANICAL, AND ELECTRICAL DRAWINGS. ANY APPARENT DISCREPANCIES SHALL BE BROUGHT TO ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO PROCEEDING ON SUCH WORK.
2. NO CHANGES OF THE STRUCTURAL SYSTEM AS INDICATED ON THESE STRUCTURAL DRAWINGS SHALL BE DONE PRIOR TO RECEIVING WRITTEN APPROVAL FROM THE ENGINEER.
3. THESE STRUCTURAL DRAWINGS DO NOT IDENTIFY COMPONENTS REQUIRED FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE RESPONSIBLE TO IDENTIFY AND PROVIDE COMPONENTS REQUIRED FOR CONSTRUCTION SAFETY.
4. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS PRIOR TO STARTING AND CONTINUOUSLY DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARILY BRACING AND MAINTAINING THE STABILITY OF THE STRUCTURES DURING DEMOLITION AND CONSTRUCTION. THE STRUCTURES SHALL BE ASSUMED UNSTABLE UNTIL ALL OF THE WALLS, ROOF (IF APPLICABLE), CONNECTIONS, AND PERMANENT BRACING ARE FULLY INSTALLED.
6. SECTIONS AND DETAILS ON THE STRUCTURAL DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR SIMILAR CONSTRUCTION NOT FULLY DETAILED.
7. CHEMICAL ADHESIVE SYSTEMS SHALL BE USED TO INSTALL ALL COMPONENTS AND ACCESSORIES (BOLTS, DOWELS, ETC.) INTO HARDENED CONCRETE, UNLESS NOTED OTHERWISE.
8. THE NOTES ON THIS SHEET ARE ONLY INTENDED TO SUPPLEMENT THE SPECIFICATIONS. REFER TO THE APPLICABLE SPECIFICATIONS FOR ALL REQUIREMENTS AND ADDITIONAL INFORMATION.

EARTHWORK/FOUNDATION NOTES (REFERENCE DIVISION 2 SPECIFICATIONS):

1. ALL FOUNDATION WORK, INCLUDING (BUT NOT LIMITED TO) SUBGRADE PREPARATION AND PLACEMENT OF FILL MATERIAL, SHALL BE PERFORMED AS DESCRIBED IN DIVISION 2 OF THE SPECIFICATIONS.
2. ALL FOUNDATIONS SHALL BE CONSTRUCTED ON FIRM SUBGRADE, BEDROCK, OR COMPACTED STRUCTURAL FILL.
3. OPEN EXCAVATIONS SHALL BE PROTECTED FROM RAIN AND/OR GROUNDWATER. SUCH EXCAVATIONS MAY BE PROTECTED BY CASTING A MINIMUM 3-INCH THICK CLSM MUD MAT.
4. CONTRACTOR SHALL ALLOW OWNER'S REPRESENTATIVE OR ENGINEER TO VERIFY ALL SUBGRADE CONDITIONS PRIOR TO PLACEMENT OF FOUNDATIONS, BASE SLABS, AND SLABS-ON-GRADE.

SEAL:



Digitally signed by John D Schutz
Location: Tampa, Florida
---Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.---
Date: 2018-02-21 10:08-05:00

No.	DATE	REVISIONS
3		
2		
1	1/12/2018	CHANGED TO FLORIDA BUILDING CODE 6TH EDITION, 2017

CONCRETE NOTES (REFERENCE SPECIFICATION 03001):

1. ALL CONCRETE SHALL BE MIXED, CONVEYED, PLACED, CURED, AND TESTED IN ACCORDANCE WITH ACI 301, ACI 318, ACI 350, AND CHAPTER 19 OF THE BUILDING CODE REFERENCED IN THE "STRUCTURAL DESIGN CRITERIA". REFER TO DIVISION 3 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AIR ENTRAINMENT IS REQUIRED FOR ALL EXTERIOR EXPOSED CONCRETE AND FOR ALL LIQUID CONTAINMENT STRUCTURES.
3. TYPICAL REINFORCING BAR LAP LENGTHS (SPICES) SHALL BE AS SHOWN IN THE "REINFORCEMENT LAP SPLICE LENGTHS" TABLE ON DWG S-6, UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS.
4. APPLY BONDING AGENT PRIOR TO CASTING CONCRETE AGAINST HARDENED CONCRETE.
5. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 3⁄8" BY 3⁄4" CHAMFER (INCLUDING TOP EDGES AND OUTSIDE CORNERS OF WALLS AND SLABS), UNLESS NOTED OTHERWISE.
6. CONTRACTOR SHALL PROPOSE ADDITIONAL CONSTRUCTION JOINTS AS NEEDED TO FACILITATE CONSTRUCTION. ALL PROPOSED CONSTRUCTION JOINTS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTING.
7. CONTRACTOR SHALL COORDINATE ALL OPENINGS AND PENETRATIONS IN CONCRETE WITH ALL OTHER TRADES.
8. ALL CONCRETE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR IN AN APPROVED MANNER.
9. ALL EXISTING AND NEW PENETRATIONS INTO UNDERGROUND STRUCTURES SHALL BE SEALED WATERTIGHT AGAINST INFILTRATION OF GROUNDWATER AND SUBMERGENCE.

ALUMINUM FABRICATIONS:

1. STRUCTURAL ALUMINUM SHAPES SHALL BE IN ACCORDANCE WITH ASTM B308, GRADE 6061-T6. STRUCTURAL SHAPES SHALL BE MEET "ALUMINUM ASSOCIATION" STANDARDS.
2. ALL ALUMINUM TO BE IN CONTACT, CAST-IN OR EMBEDDED INTO MASONRY OR CONCRETE SHALL BE BACKPAINTED WITH A BITUMINOUS COATING.
3. ALL FASTENERS USED TO FASTEN ALUMINUM SHALL BE TYPE 316, STAINLESS STEEL WITH TEFLON WASHERS.

DEBRIS BAFFLE:

1. SEE DRAWINGS FOR LOCATION AND EXTENT OF BAFFLE.
2. BAFFLE SYSTEM SHALL CONSIST OF MARINE-GRADE, PVC-COATED POLYESTER BELTING WITH UV INHIBITORS AND MINIMUM UNIT WEIGHT OF 172-OZ/SQ-YD.
3. BAFFLE FLOATATION PROVIDED BY FOAM-FILLED HEAVY-DUTY POLYESTER SHELLS WITH UV AND MARINE GROWTH INHIBITORS.
4. BAFFLE SYSTEM SHALL BE DESIGNED SO THAT DURING NORMAL FLOATING OPERATION, FABRIC EXTENDS 10" ABOVE WATERLINE, AND EXTENDS 14" BELOW WATERLINE (24" TOTAL BAFFLE HEIGHT).
5. BAFFLE SHALL BE ATTACHED TO CONTRACTOR-PROVIDED BULKHEAD SUPPORTS USING ABASCO "HEAVY-DUTY TIDE RISER" WITH STAINLESS STEEL HARDWARE THAT WILL ALLOW BAFFLE TO FREELY RISE AND FALL WITH CHANGE IN WATER LEVEL. BOTTOM OF CONNECTOR SHALL BE FLUSH WITH BOTTOM OF SKIRT.
6. BAFFLE SHALL BE "SIGMA 24" PERMANENT CONTAINMENT BOOM BY ABASCO OR EQUAL.

No.	DATE	REVISIONS
6		
5		
4		

DES: SHA
DRN: SHA
CKD:
DATE:

STRUCTURAL DESIGN CRITERIA

(FLORIDA BUILDING CODE 6th EDITION, 2017)

LIVE LOADS:

SATURATED SOIL EFFECTIVE PRESSURE 85 (PCF)
TRAFFIC LOAD ON JUNCTION STRUCTURE HS-20

WIND LOAD:

BASIC WIND SPEED, V3s: 140 (MPH)
WIND IMPORTANCE FACTOR, Iw: 1.0
WIND EXPOSURE: D
COMPONENTS AND CLADDING PRESSURE: 45 (PSF)

STRUCTURAL DESIGN CODES:

DESIGN LOADS - ASCE 7
STEEL - AMERICAN INSTITUTE OF STEEL CONSTRUCTION
CONCRETE - AMERICAN CONCRETE INSTITUTE - ACI 318

MATERIAL SYMBOLS

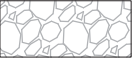
(IN PLAN OR SECTION)



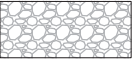
UNDISTURBED EARTH



COMPACTED EARTH



COMPACTED BACKFILL



CRUSHED STONE SUBGRADE



STRUCTURAL CONCRETE



FILL CONCRETE



METAL IN SECTION

LINETYPE LEGEND

EXISTING ITEM

NEW ITEM

HIDDEN ITEM

CENTERLINE

GUARDRAIL

SW

STRUCTURAL ABBREVIATIONS

AB	ANCHOR BOLT	L PT	LOW POINT
ADDL	ADDITIONAL	MATL	MATERIAL
ALUM	ALUMINUM	MAX	MAXIMUM
		MFR	MANUFACTURER
B/	BOTTOM OF	MIN	MINIMUM
BOT	BOTTOM	MISC	MISCELLANEOUS
BP	BASE PLATE	MTL	METAL
CIRC	CIRCLE/CIRCULAR	#	NUMBER
CS JT	CONSTRUCTION JOINT	NOM	NOMINAL
CL	CENTER LINE	NTS	NOT TO SCALE
CLR	CLEAR		
COL	COLUMN	OC	ON CENTERS
CONC	CONCRETE	OD	OUTSIDE DIAMETER
CONN	CONNECTION	OF	OUTSIDE FACE
CONST	CONSTRUCTION	OPNG	OPENING
CONT	CONTINUOUS	OPP	OPPOSITE
CONTR	CONTRACTOR		
COORD	COORDINATE	PCF	POUNDS PER CUBIC FOOT
CTRD	CENTERED	PERP	PERPENDICULAR
		PIL	PILASTER
DIA	DIAMETER	PL	PLATE
Ø	DIAMETER	PLF	POUNDS PER LINEAR FOOT
DIAG	DIAGONAL	PSF	POUNDS PER SQUARE FOOT
DIM	DIMENSION		
DIST	DISTANCE	QTY	QUANTITY
DWG	DRAWING		
DWL	DOWEL		
		RAD	RADIUS
EA	EACH	RCP	REINFORCED CONCRETE PIPE
EF	EACH FACE	REINF	REINFORCING
EL	ELEVATION	REQD	REQUIRED
ENGR	ENGINEER		
EQ	EQUAL	SECT	SECTION
EW	EACH WAY	SF	SQUARE FOOT
EXIST	EXISTING	SIM	SIMILAR
EXT	EXTERIOR/EXTENSION	SPEC	SPECIFICATION
		SQ	SQUARE
		SS	STAINLESS STEEL
FLR	FLOOR	STL	STEEL
FND	FOUNDATION	STRUC	STRUCTURAL / STRUCTURE
FT	FEET		
FTG	FOOTING	T & B	TOP AND BOTTOM
		T	TOP
H PT	HIGH POINT	T/S	TOP OF SLAB
H	HORIZONTAL	T/W	TOP OF WALL
HOR	HORIZONTAL	TYP	TYPICAL
ID	INSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
IF	INSIDE FACE	V	VERTICAL
INT	INTERIOR		
INV	INVERT	W/	WITH
ISO	ISOLATION	W/O	WITHOUT
		WP	WORKING POINT
		WS	WATERSTOP



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Department of Public Works
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30TH ST. OUTFALL PROJECT
STRUCTURAL NOTES & DESIGN CRITERIA

W.O.

SHEET

S-1

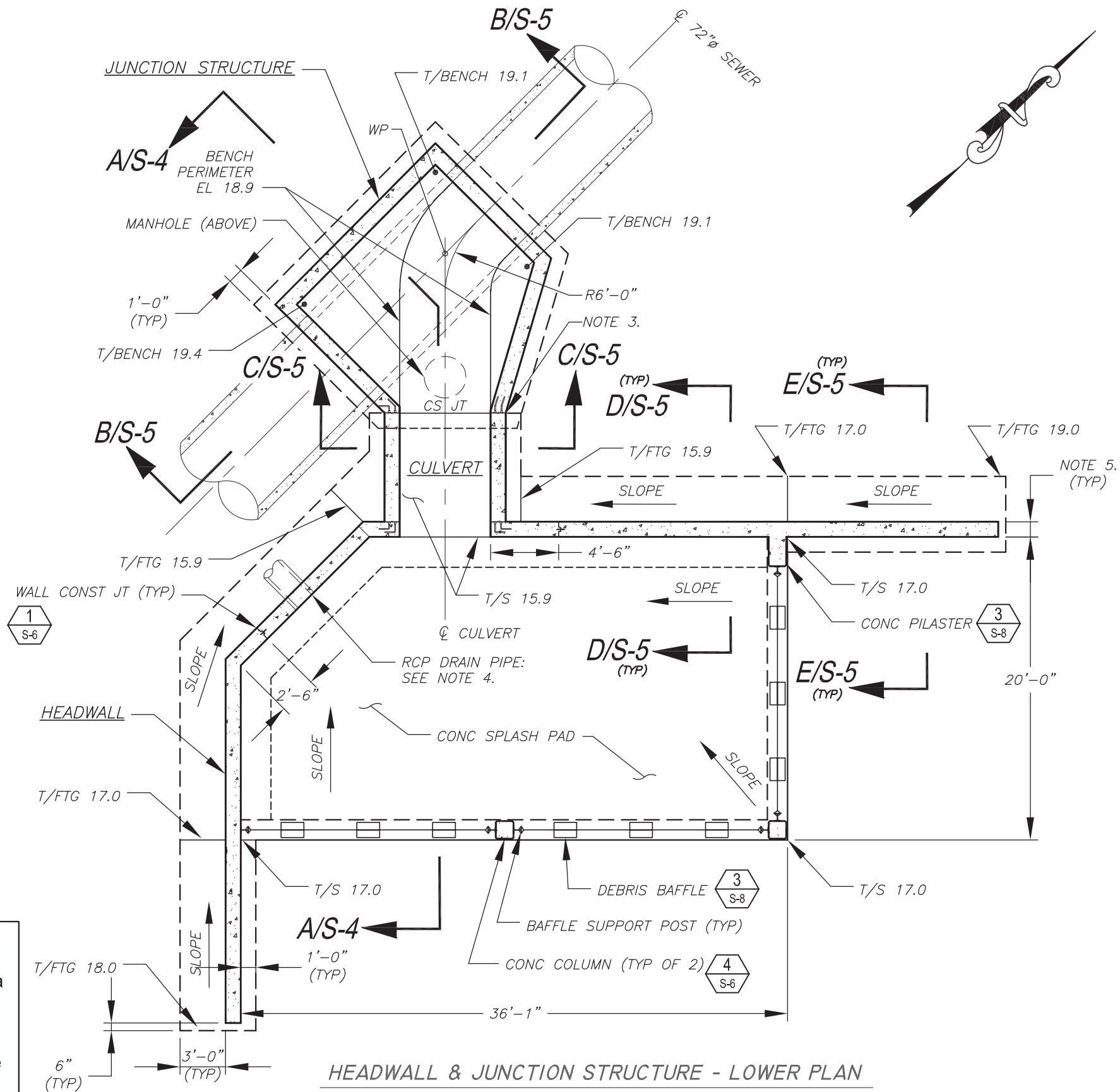
OF

User: smaher1 Drawing Name: C:\Users\smaher1\Desktop\Remote\11135717 30th Street Outfall\Tampa - 30th St Outfall - GHD Struc Dwgs.dwg Layout: Jan 12, 2018 - 10:19am CTB - TampaStorm.ctb

SW

SHEET NOTES:

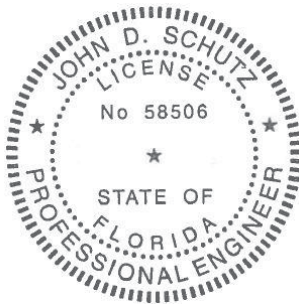
1. FIELD VERIFY ALL EXISTING CONDITIONS AND UTILITIES PRIOR TO FABRICATING ANY ITEMS. EXACT LOCATION OF EXISTING 72" SEWER IS UNKNOWN, SO CONTRACTOR WILL NEED TO ADJUST IN FIELD ACCORDINGLY. IF CONDITIONS ARE OBSERVED THAT DIFFER FROM THOSE SHOWN ON THESE DRAWINGS, CONTRACTOR SHALL NOTIFY ENGINEER FOR RESOLUTION BEFORE PROCEEDING.
2. FOR DIMENSIONS NOT SHOWN, SEE "UPPER PLAN" DWG S-3.
3. CULVERT SECTION BETWEEN JUNCTION STRUCTURE AND HEADWALL TO BE PLACED LAST. PROVIDE CONSTRUCTION JOINT AT WALL AND TOP SLAB AT ENDS OF CULVERT USING DOWEL BAR SUBSTITUTES. REFER SECTION A, SHEET S-4.
4. RCP DRAIN PIPE TO BE EMBEDDED IN HEADWALL. COORDINATE WITH CIVIL DRAWING FOR SIZE AND LOCATION. WRAP PIPE WITH 2 LAYERS BENTONITE - LOCATE 4" FROM EACH FACE OF WALL. PROVIDE ADDITIONAL REINFORCING AROUND OPENING PER DETAIL 1, SHEET S-7.
5. ALL NEW CONCRETE WALL THICKNESSES ARE 12". COLUMN, PILASTER AND SLAB DIMENSIONS ARE SHOWN ON DRAWINGS.



HEADWALL & JUNCTION STRUCTURE - LOWER PLAN

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

SEAL:



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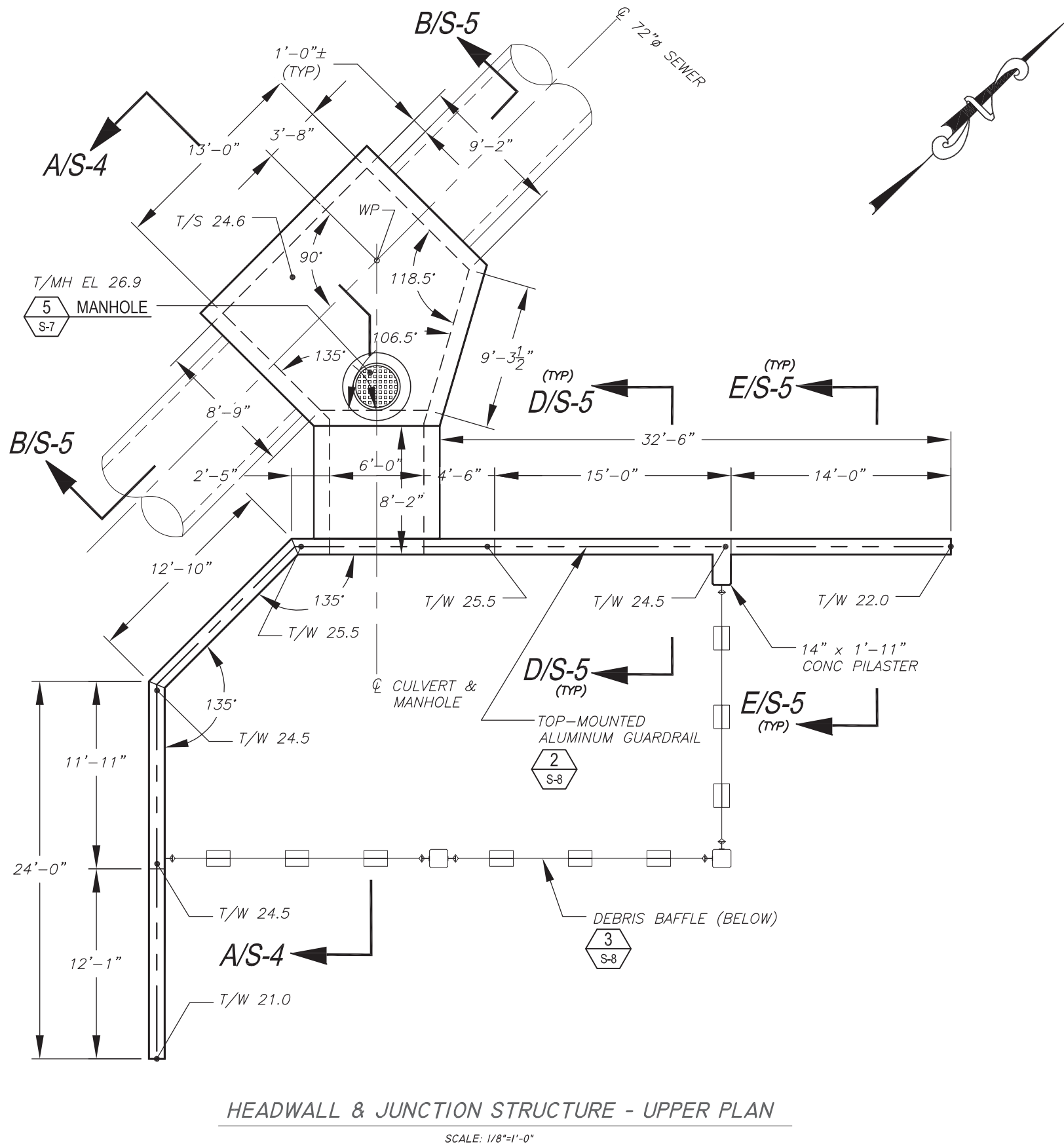
30TH ST. OUTFALL PROJECT
HEADWALL & JUNCTION STRUCTURE - LOWER PLAN

W.O.
SHEET
S-2
OF



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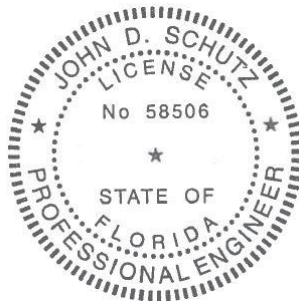


SW

SHEET NOTES:

1. REFER NOTES ON SHEET S-2.
2. SEE CIVIL DRAWINGS FOR SITE GRADING.

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30TH ST. OUTFALL PROJECT
HEADWALL & JUNCTION STRUCTURE - UPPER PLAN

W.O.
SHEET
S-3
OF



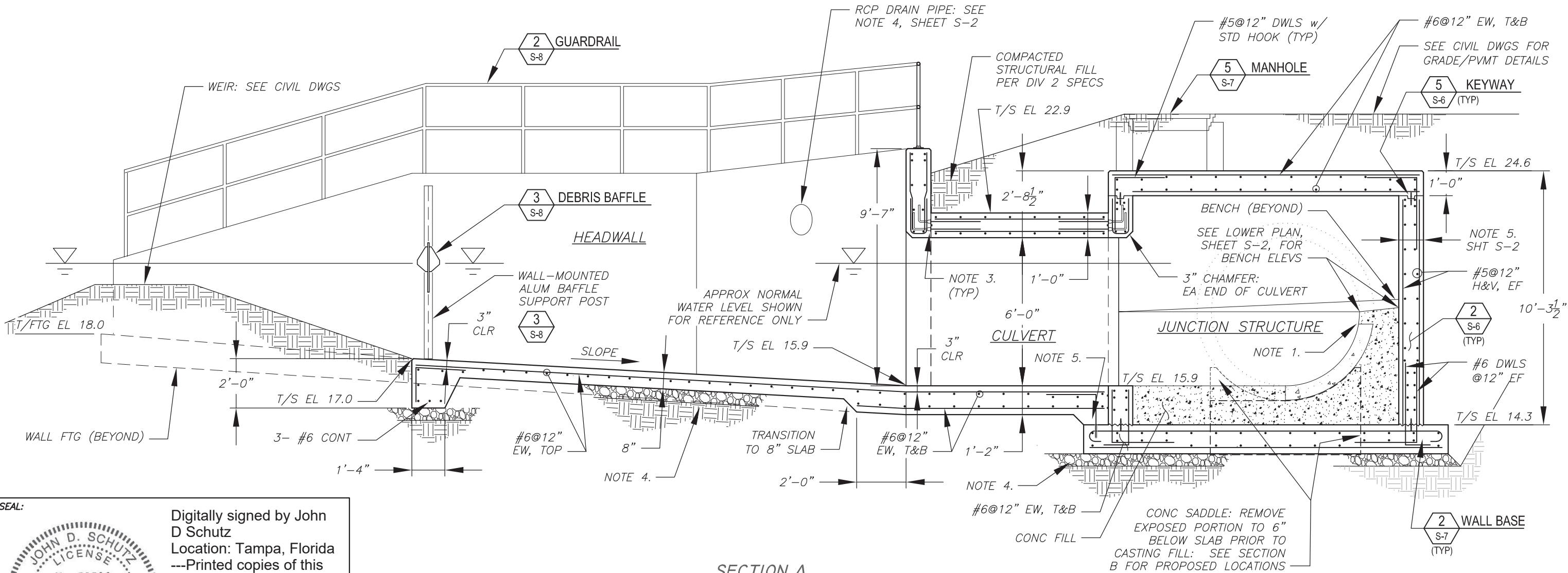
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SHEET NOTES:

- SAWCUT OR CHIP EXISTING SEWER PIPE AS REQUIRED TO FORM FLOW CHANNEL AND BENCH. REMOVE PIPE TO MINIMUM 6" BELOW BENCH ELEVATION.
- SEE UPPER PLAN, SHEET S-3, FOR T/WALL ELEVATIONS NOT SHOWN.
- AT EACH END OF CULVERT, PROVIDE CONSTRUCTION JOINT USING #6 DOWEL BAR SUBSTITUTES WITH BENTONITE WATERSTOP.
- STRUCTURES SHALL BE FOUNDED ON A MINIMUM 6" LAYER OF #57 STONE OVER COMPACTED SUBGRADE.
- DOWEL CULVERT SLAB INTO JUNCTION STRUCTURE BASE SLAB WITH #6@12" ADHESIVE DOWELS WITH 30" HOOK. PROVIDE 2-ROWS BENTONITE WATERSTOPS AT INTERFACE.

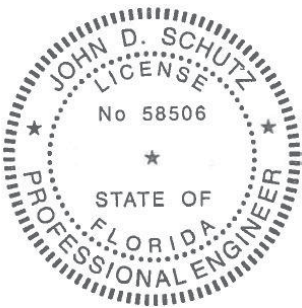
SW



SECTION A

SCALE: 1/4"=1'-0"

SEAL:



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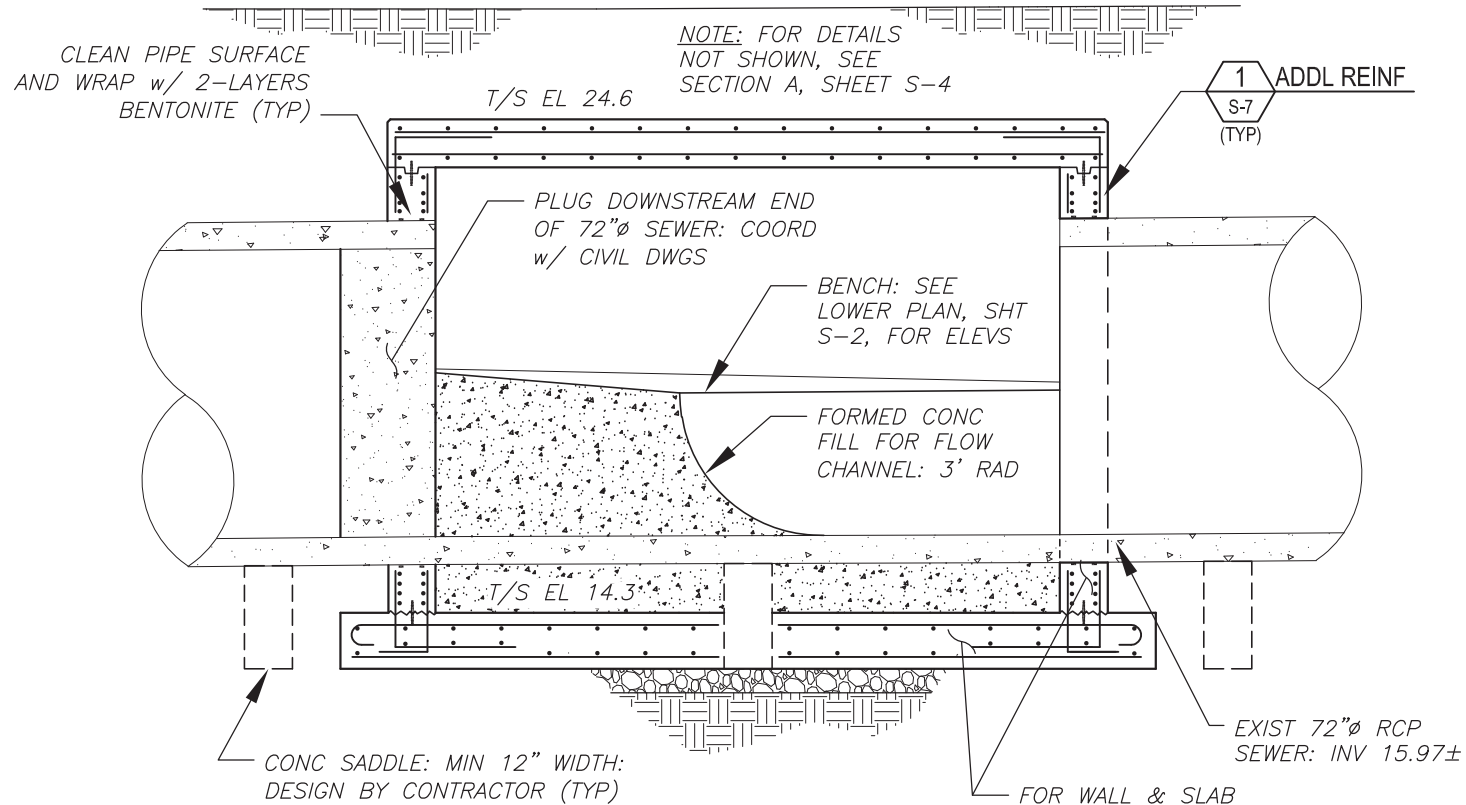
30TH ST. OUTFALL PROJECT
HEADWALL & JUNCTION STRUCTURE - SECTION A

W.O.
SHEET
S-4
OF



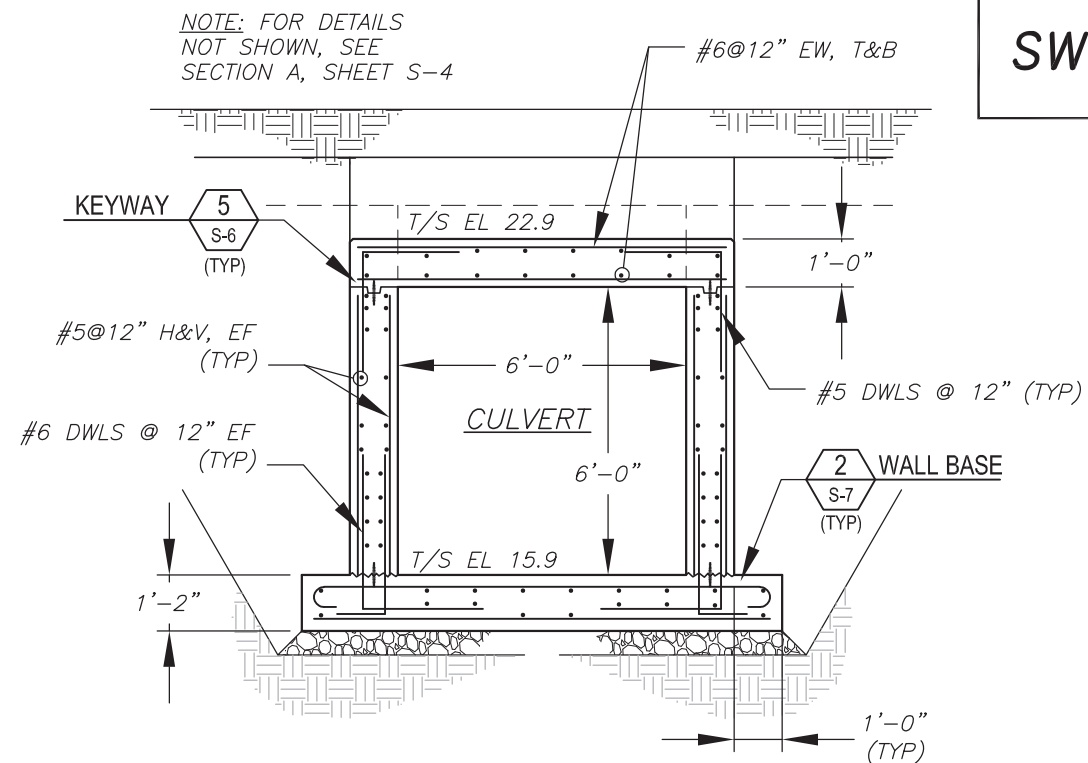
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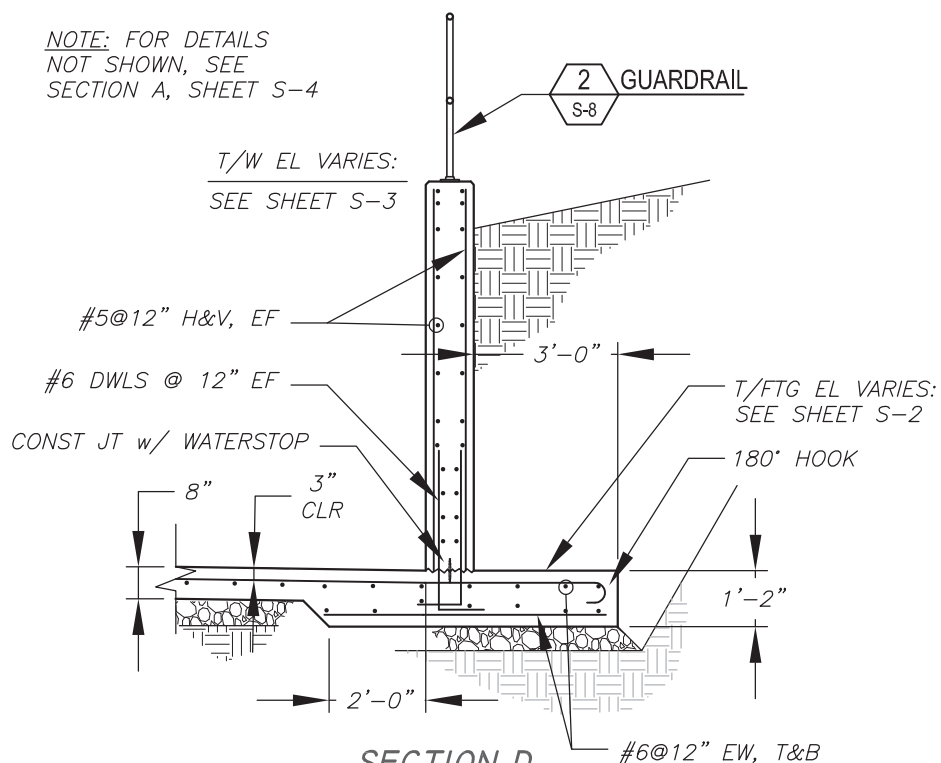
SECTION B

SCALE: 1/4"=1'-0"



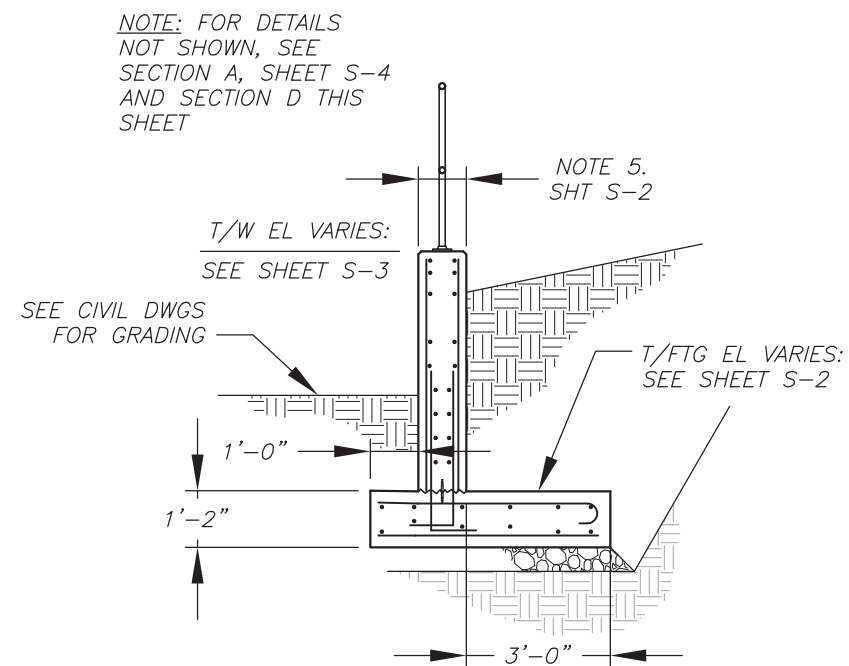
SECTION C

SCALE: 1/4"=1'-0"



SECTION D

SCALE: 1/4"=1'-0"



SECTION E

SCALE: 1/4"=1'-0"

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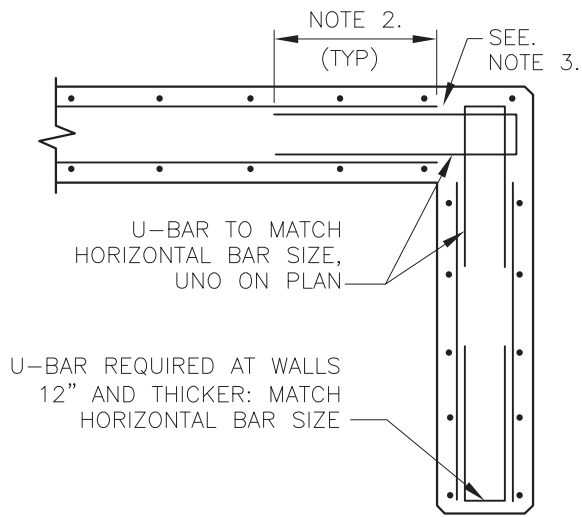
30TH ST. OUTFALL PROJECT
HEADWALL & JUNCTION STRUCTURE - SECTIONS B-E

W.O.
SHEET
S-5
OF

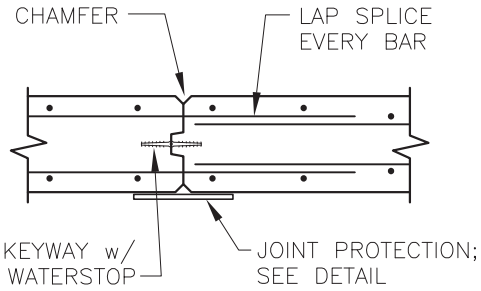


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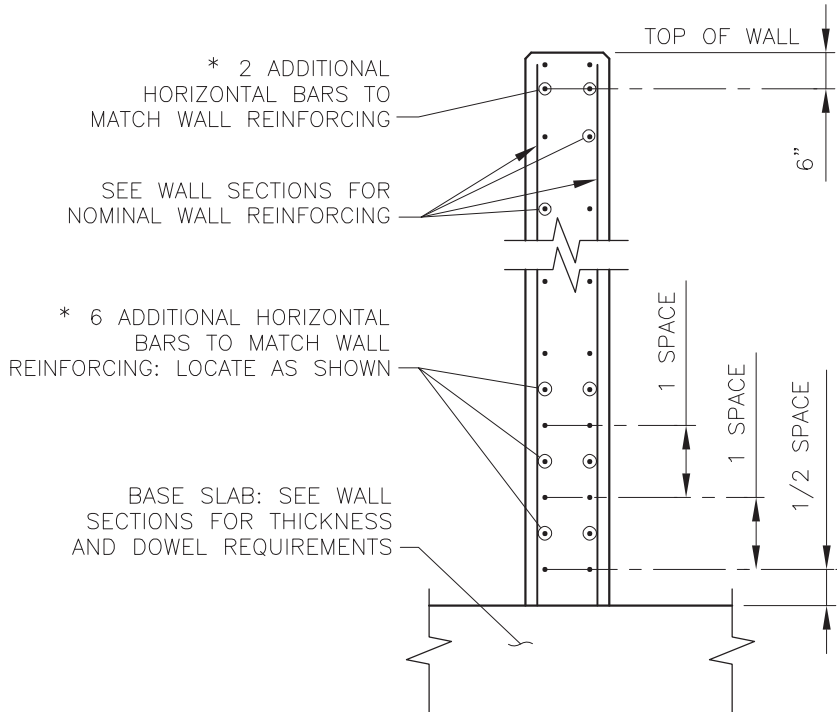
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CORNER/END/OPENINGS

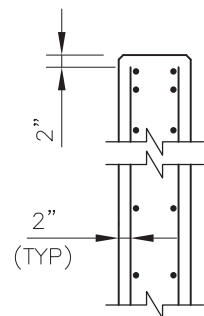


CONSTRUCTION JOINT
(CS JT)

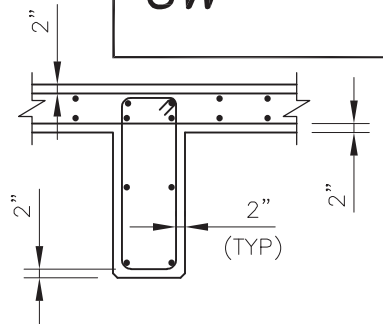


(SECTION VIEW)

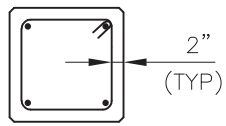
2 WALL REINFORCEMENT
S-6 NOT TO SCALE



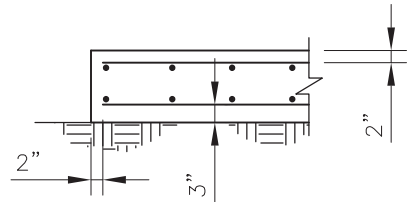
WALLS



BEAMS AND ELEVATED SLABS



COLUMNS



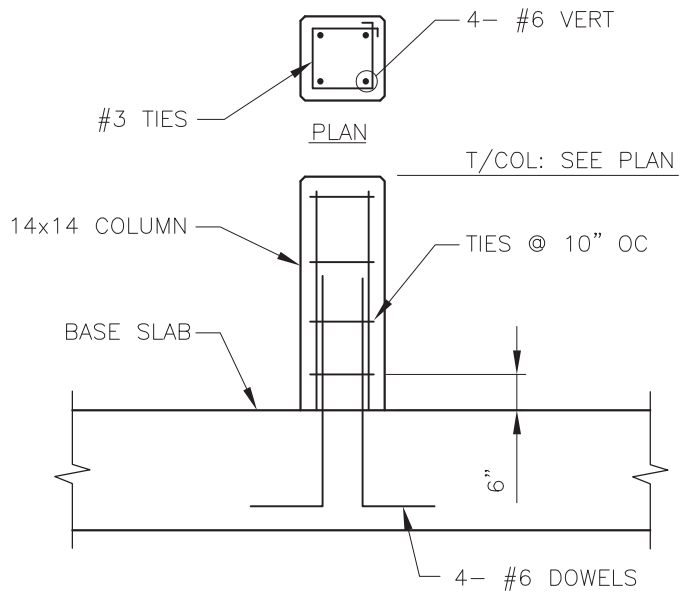
SLABS ON GRADE

3 REBAR CLEARANCE
S-6 NOT TO SCALE

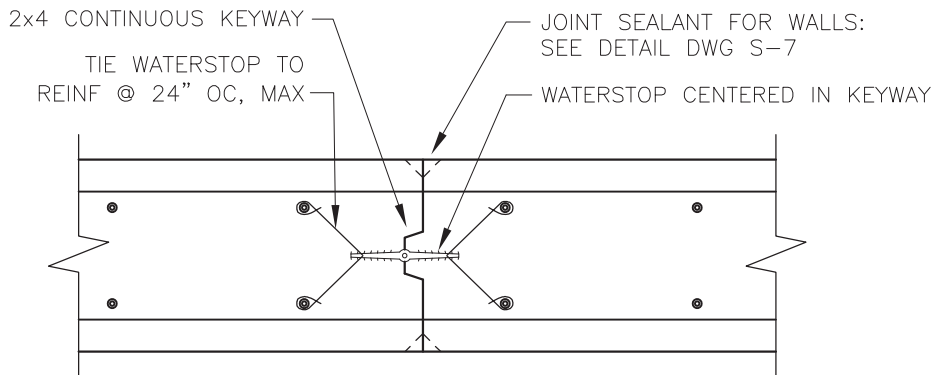
NOTES FOR WALLS:

1. FLUID CONTAINMENT STRUCTURES SHALL USE WATERSTOPS.
2. LAP REINFORCING STEEL PER "REINFORCEMENT LAP SPLICE" TABLE DWG S-6.
3. TERMINATE HORIZONTAL BARS IN LINE WITH INSIDE FACE OF WALL.

1 REINFORCEMENT DETAILS - PLAN VIEW
S-6 NOT TO SCALE



4 CONCRETE COL REINF
S-6 NOT TO SCALE



NOTES:

1. CENTER KEYWAY BETWEEN REINFORCING MATS.
2. STOP KEYWAY (AND WATERSTOP) 3" FROM TOP OF WALL.
3. SEE SECTIONS FOR REINFORCING.

PLAN OR SECTION VIEW

5 KEYWAY DETAIL
S-6 NOT TO SCALE

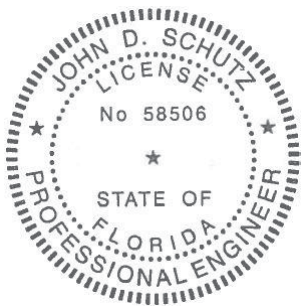
REINFORCEMENT
LAP SPLICE LENGTHS
(FOR DEVELOPMENT AND LAP SPLICES)

SIZE	HORIZONTAL BARS *	OTHER BARS
#4	24" (2'-0")	18" (1'-6")
#5	30" (2'-6")	21" (1'-9")
#6	36" (3'-0")	24" (2'-0")
#7	48" (4'-0")	33" (2'-9")
#8	54" (4'-6")	39" (3'-3")
#9	60" (5'-0")	42" (3'-6")
#10	66" (5'-6")	48" (4'-0")

* HORIZONTAL BARS INCLUDE:

1. HORIZONTAL WALL REINFORCEMENT BARS.
2. REINFORCEMENT BARS FOR SLABS AND FOOTINGS GREATER THAN 12" THICK.

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Department of Public Works
Stormwater Engineering

30TH ST. OUTFALL PROJECT
HEADWALL & JUNCTION STRUCTURE - DETAILS

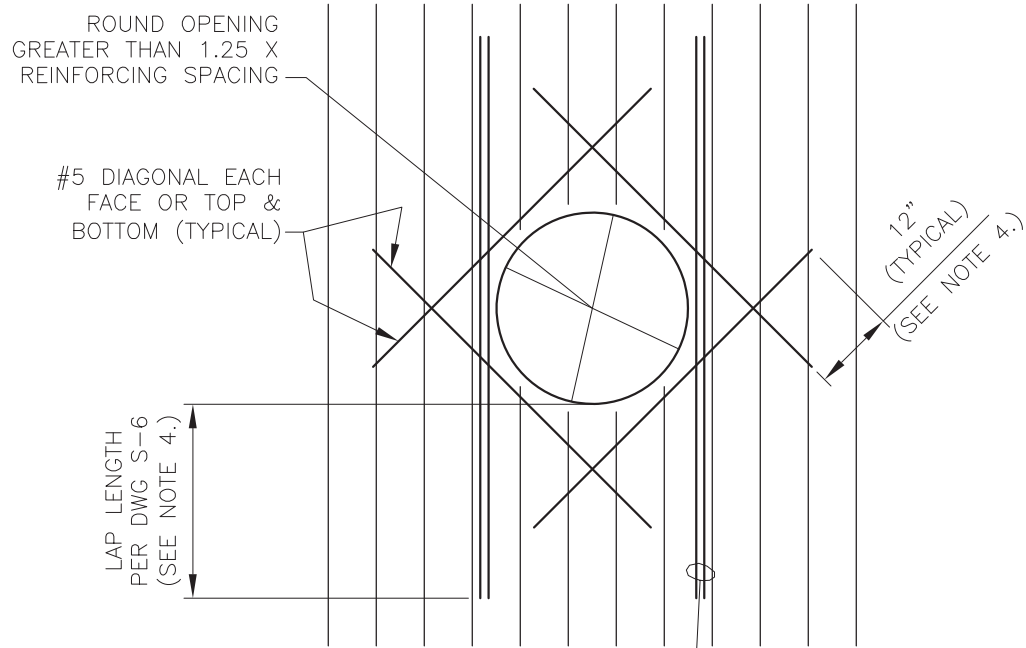
W.O.

SHEET
S-6
OF



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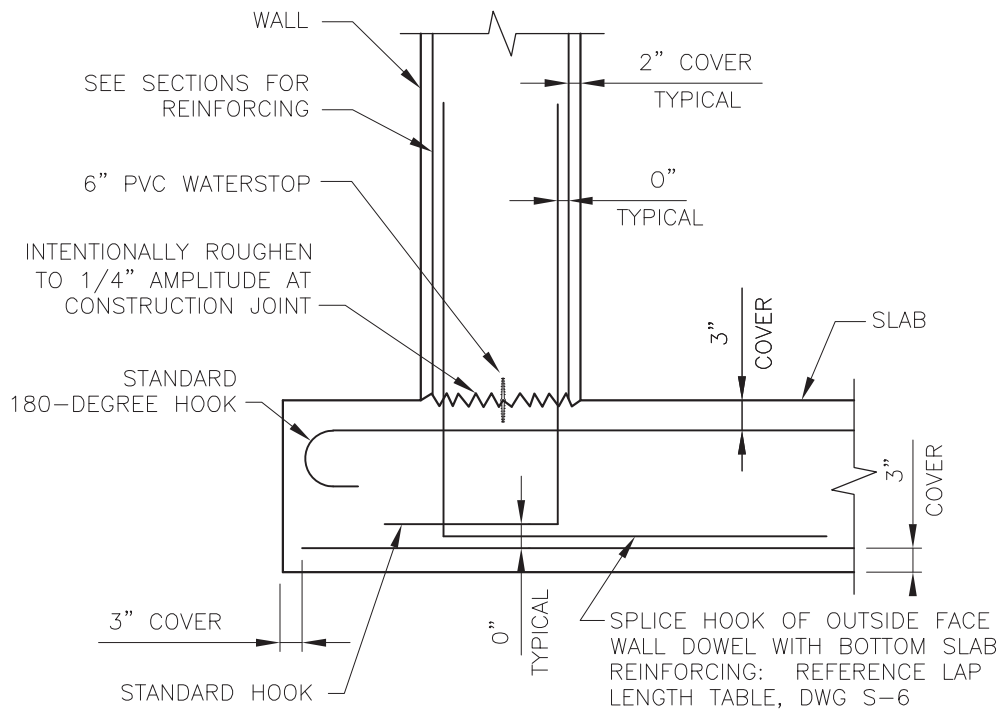
CROWD 1/2 NUMBER OF CUT BARS (MINIMUM CLEAR SPACING OF 1") EACH SIDE OF OPENING, EACH WAY, EACH FACE, OR TOP & BOTTOM

NOTES:

1. BARS SHOWN IN ONE DIRECTION FOR CLARITY. INSTALL BARS IN OTHER DIRECTION IN SAME MANNER.
2. DETAIL TO BE USED AT ALL WALL/SLAB PENETRATIONS MEETING OPENING CRITERIA ABOVE. AT SMALLER OPENINGS, SPREAD REINFORCING AROUND OPENING.
3. CROWDED BARS ARE NOT REQUIRED AT AN OPENING EDGE PARALLEL TO AND WITHIN 6 INCHES OF A WALL OR BEAM.
4. PROVIDE STANDARD HOOK IF FULL DEVELOPMENT LENGTH OR BAR EXTENSION IS NOT POSSIBLE.

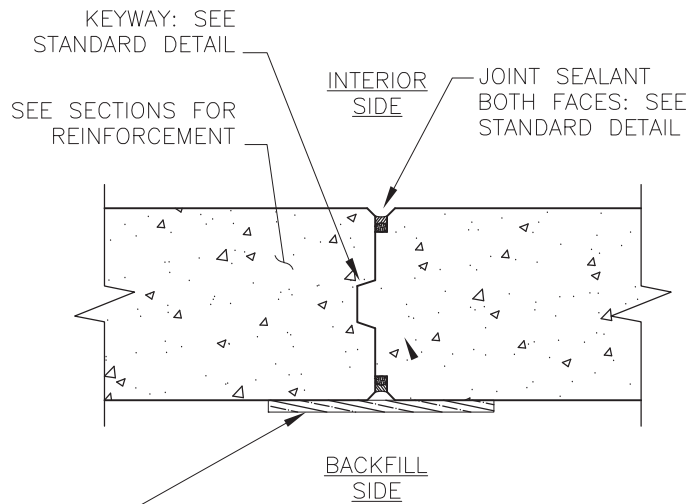
1 ADDITIONAL REINF AT CIRC OPNG

S-7 NOT TO SCALE



2 WALL BASE

S-7 NOT TO SCALE

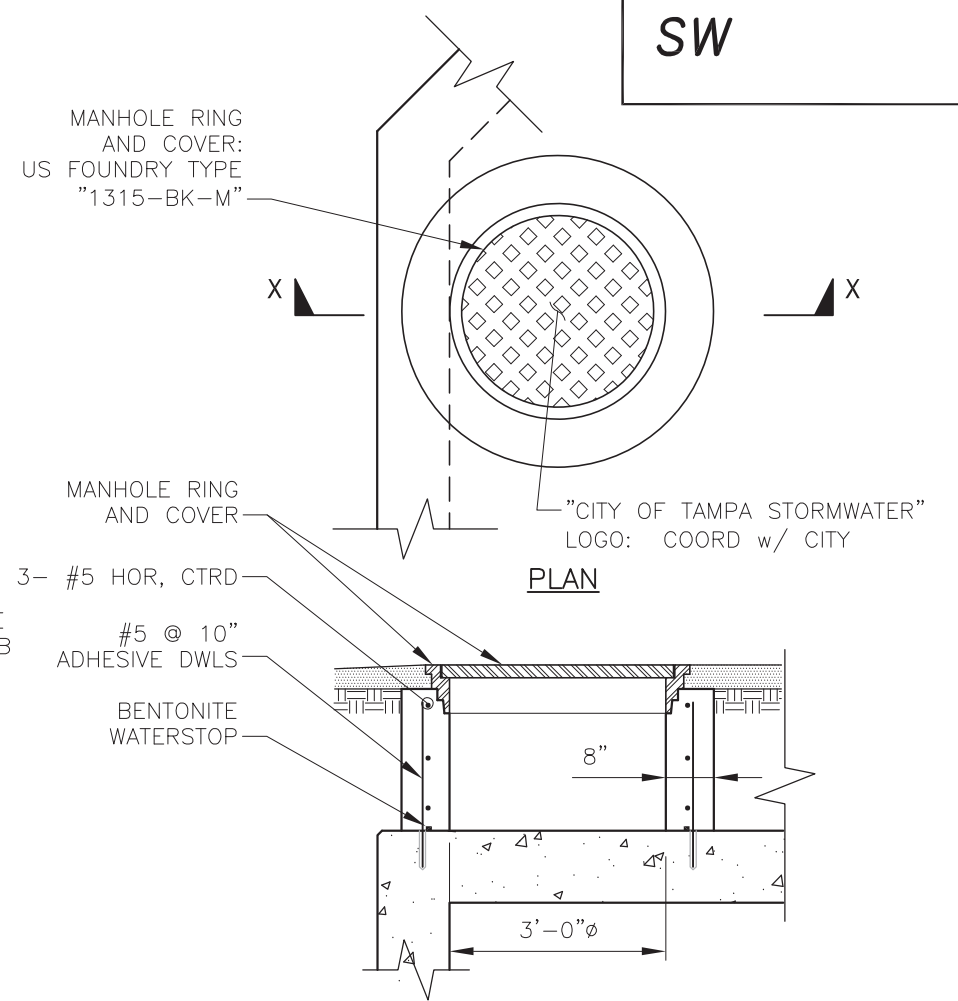


JOINT PROTECTION: MINIMUM 1/2" THICK x 12" WIDE PLYWOOD MECHANICALLY ADHERED TO WALL: INSTALL FROM TOP OF BASE SLAB TO 6" BELOW FINISHED GRADE

PLAN VIEW

3 JOINT PROTECTION

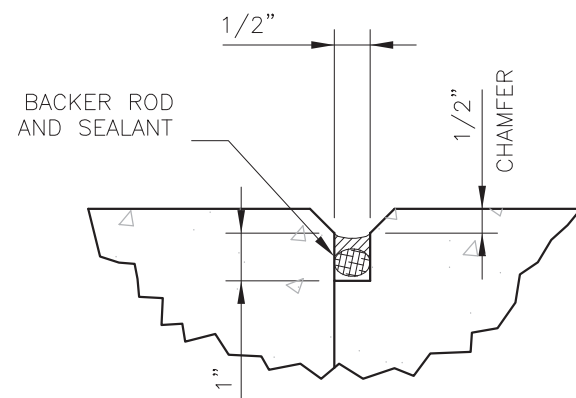
S-7 NOT TO SCALE



SECTION X-X

5 MANHOLE RING & COVER

S-7 SCALE: 3/8"=1'-0"



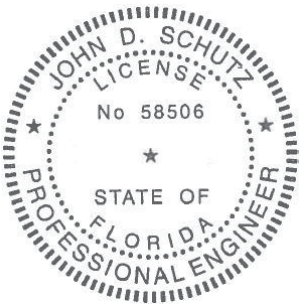
4 JOINT SEALANT

S-7 NOT TO SCALE



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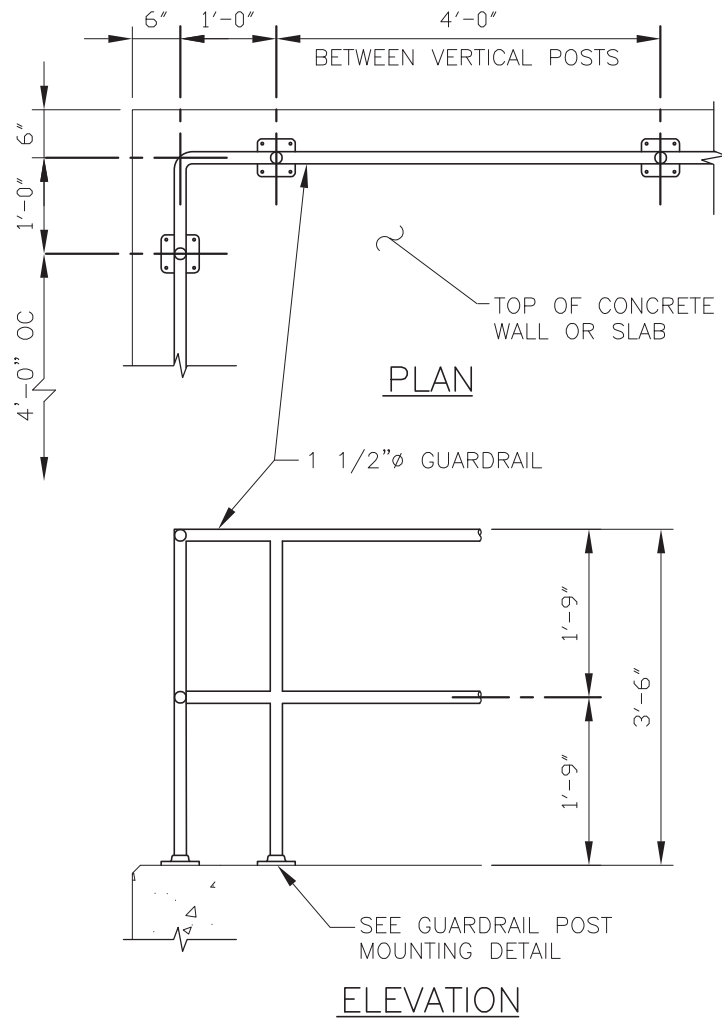
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30TH ST. OUTFALL PROJECT
HEADWALL & JUNCTION STRUCTURE - DETAILS

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SHEET
S-7
OF

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(TOP-MOUNTED ON CONCRETE)

1 TOP-MOUNTED ALUM GUARDRAIL

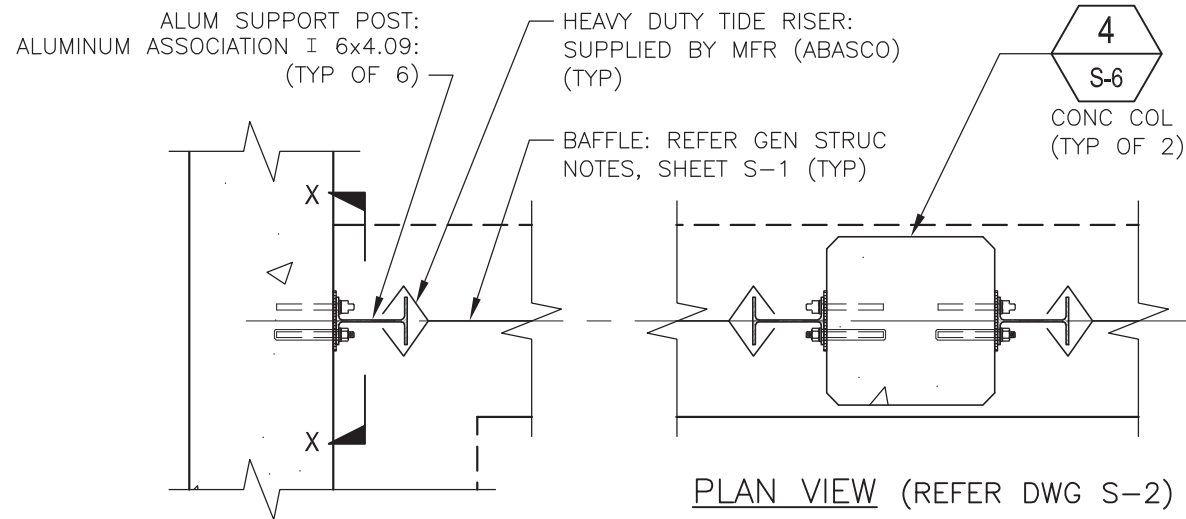
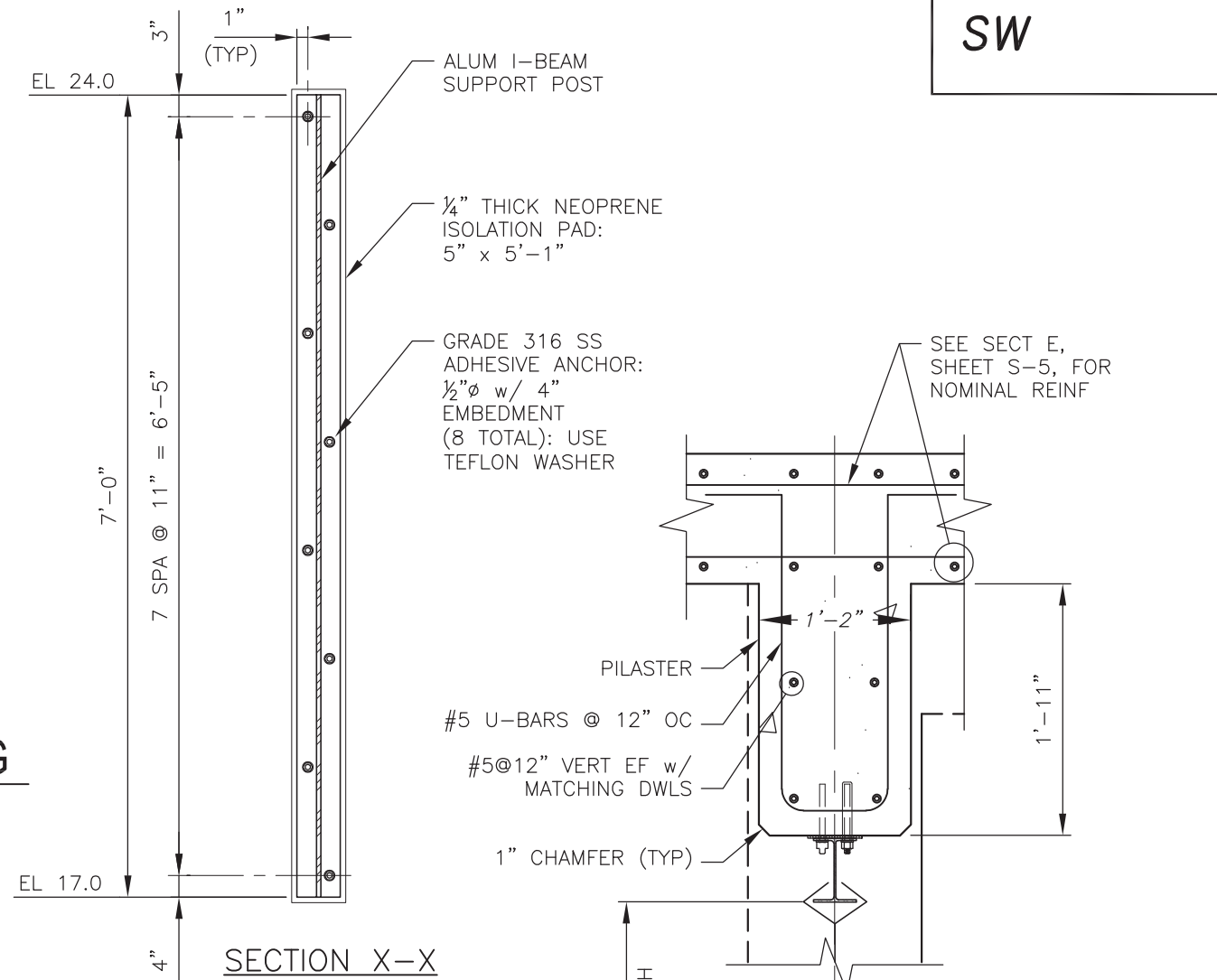
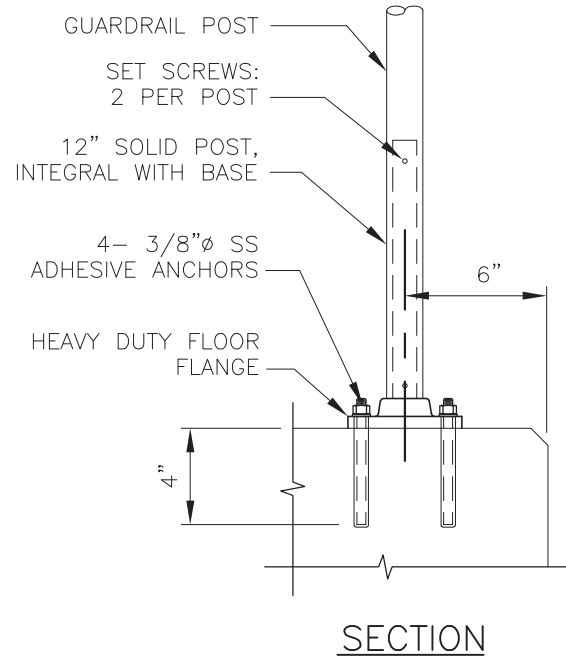
S-8 NOT TO SCALE

NOTE:

WHERE INSTALLED ON SLOPING WALL, POSTS SHALL REMAIN VERTICAL, AND RAILS SHALL BE SLOPED PARALLEL TO TOP OF WALL. REFER SECTION A, SHEET S-4.

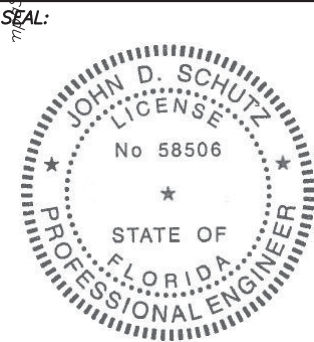
2 GUARDRAIL MOUNTING

S-8 NOT TO SCALE



3 DEBRIS BAFFLE DETAILS

S-8 SCALE: 3/4"=1'-0"



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30TH ST. OUTFALL PROJECT
HEADWALL & JUNCTION STRUCTURE - DETAILS

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S-8
OF



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CONTRACT 18-C-00014; 30th Street Outfall - Pre-Bid Mtg. 3/20/18; 2:00p.m.

E-Mail to Register as a Plan Holder and E-Mail All Questions to; ContractAdministration@tampagov.net

Sign-In Sheet ☐ Please Print

City of Tampa, Contract Administration Department

	Name	Organization	E-Mail OR Phone
1	Jim Greiner, PE	Tampa Contract Administration Dept.	Jim.Greiner@tampagov.net
	Frank Woodruff	COT - CAD	FRANK.WOODRUFF@TAMPAGOV.NET
4	KUNAL SHINDE	KIEWIT INFRASTRUCTURE SOUTH CO.	Kunal.Shinde@Kiewit.com / 972.489.5749
5	Brian Lyles	C+M Dredging	blyles@cmdredging.com
6	GARY JUSTICE	PEPPER CONTRACTING	GARY@PEPPERCONTRACTING.COM
7	Jessica McRory	ARENA Engineering	jmcory@arena.com
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