City of Tampa
Jane Castor, Mayor

Contract Administration
Michael W. Chucran, Director
306 East Jackson Street, 4N
Tampa, FL 33602

Office (813) 274-8116
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ADDENDUM 2
Via E-Mail
DATE: February 22, 2023

Contract: 22-C-00044; Hyde Park Groundwater Diversion Underdrains

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.

1. The bid opening date is hereby changed to March 1, 2023.
2. Replace the Proposal Form, Page P-2, with the attached Proposal Form Page P-2R.
3. In Specification Section "W440-30, Horizontal Directional Drilling with HDPE Pipe", add the following paragraph to the end of Article 2.3 PIPE:

   F. Mechanical Coupling Joints may be approved to connect to corrugated polyethylene underdrain pipe. Couplings shall be shielded Fernco 1070 series flexible couplings or as approved all stainless steel with plain rubber gaskets suitable for stormwater service.

4. In Specification Section "W440-30, Horizontal Directional Drilling with HDPE Pipe", delete Article 3.6 FIELD TESTING in its entirety and replace with the following Article:

3.6 FINAL ACCEPTANCE

A. Upon completion of the installation of any pipe specified to be installed to line and grade, as-built elevations shall be obtained by a licensed surveyor to confirm that the pipe has been installed to the specified tolerance of 2" from true line and grade. Location and invert elevations at each end of the HDD section shall be provided.

B. A video inspection of the entire length of the pipe installed via HDD shall be conducted at the conclusion of the work. Prior to video inspection, the pipe shall be filled with clean water up to the invert of the lowest end of the pipe. The camera shall proceed through the bored section of pipe to the other end. If the bored section of pipe holds water deeper than one-half of the pipe diameter at any location along the length of the bore the contractor will notify Engineer and Engineer may require the contractor to pull back the pipe and redrill to achieve this specified tolerance.

5. In the Contract Items – Water, Section C-2.00 [0010-Open Cut Operations], A) 2.10 [0-Ductile Iron Pipe Installation] & [1-PVC Pipe Installation], delete the first full paragraph on Page CP-4 beginning with "Cover over pipe shall…" and all subsequent paragraphs and text up to and including the final paragraph of that section on Page CP-5 beginning with "The pipe quantities to be paid…" and replace with the following paragraph:

   "Payment for Potable and Reclaimed Water Main Offsets, as detailed in the plans, will be made utilizing the contract pay item for each offset by size and type. Payment shall include all costs for labor, materials and equipment to locate the existing pipe, coordinate shut down of offset location via existing valves or installed linestops (paid for separately), trench excavation and backfill, removal of existing pipe, assembly and installation of offset consisting of new pipes and fittings, restraints on new and existing pipe joints, as required, hydrostatic testing, flushing, disinfection, bacteriological testing and final connection all in accordance with these specifications and Water Department standards."

6. Replace the Plan set with the attached set which contains revisions to Sheet Nos 1-3, 5-6, 8-10, and 12-13.

7. Attached is a collection of responses to questions.

8. Attached is a copy of the Survey.

9. Attached is a copy of the Madrid Geotech Report - Hyde Park Drainage Improvement.

10. Attached are copies of SUE Field Work Sheets.

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

Hyde Park Ground Water Diversion
Contract: 22-C-00044

Item No.	Description	Unit	Est	Unit Price in Words		Unit Price		Total Price
0104-1	Erosion & Sediment Control and Tree Protection	LS	1		$		$	
0105-1	Tree Root Pruning	LF	5000		$		$	
0108-1	Dewatering	LS	1		$		$	
0110-1	Clearing and Grubbing	LS	1		$		$	
0142-1	Imported Select Soil Material - Sand	CY	1000		$		$	
0142-2	Removal of Unsuitable Soil	CY	1000		$		$	
0190-0	Tree Removal, 4" DBH and Larger	EA	14		$		$	
0193-0	Tree Installation, Live Oak	EA	14		$		$	
0193-1	Root Barrier Installation	LF	630		$		$	
0316-10	Pavement Restoration of Roadway	SY	300		$		$	
0350-30	4-Inch Concrete Sidewalk Replacement	SY	4000		$		$	
0350-35	6-Inch Concrete Sidewalk Replacement	SY	600		$		$	
0350-38	Brick Walks/Driveways - Removal and replacement	SY	100		$		$	
0350-40	Concrete ADA Pedestrian Ramps	EA	15		$		$	
0350-45	Preservation of Cartouches in Concrete	EA	13		$		$	
0440-10	8-Inch Underdrain	LF	6500		$		$	
0440-20	8-Inch PVC Cleanout	EA	17		$		$	
0440-30	8" Directional Bore Pipe	LF	497		$		$	
0440-40	Connection to Existing Inlets	EA	9		$		$	
0440-50	18" Inspection Manholes	EA	18		$		$	
0520-10	Concrete Curb Type D	LF	175		$		$	
0520-20	Remove/Reset Granite Curb	LF	50		$		$	
0570-1	Sod Replacement	SY	7000		$		$	
0590-1	Irrigation Repairs	LS	1		$		$	
0010-11	6" Water Main (WM) DIP Offset (all inclusive)	EA	3		$		$	
0060-006	6" Water Main (WM) Line Stop on Exisiting Water Main	EA	6		$		$	
0020-208	6" Reclaimed Water (RCW) DIP Offset (all inclusive)	EA	3		$		$	
0060-006	6" Reclaimed Water (RCW) Line Stop on Exisiting RCW Main	EA	6		$		$	
0100-1	Contingency	LS	1		$	200,000.00	$	200,000.00
0101-1	Mobilization	LS	1		$		$	
0102-1	Maintenance of Traffic	LS	1		$		$	
							Total	

Hyde Park Groundwater Diversion Underdrains
Responses to Bidder Questions
2/22/23

2/8/23

1. Your plan sheets call out "Jack & Bore" (Sheet #3) but you have you have no Jack & Bore Bid items. Are these "Jack & Bore" Locations where you bid item #0440-30 8" HDPE Directional Bore is supposed to go?
Response: Yes

2. For Bid Items 0010-11 Through 0060-002, I can not locate on the provide plan sets.
Response: See "POTABLE & RECLAIMED WATER MAIN RELOCATION" detail on sheet 2 of the construction plans. Offset locations are shown in the profile views of the plan/profile sheets. Line stop locations will be determined during construction.

2/9/23

1. Can you direct me to where the directional boring can be found on the plans? It is listed on Line 18 of the bid tab.
Response: See Addendum No. 2, Items No. 3 and 4. 8" Pipe will be installed by directional bore. Locations are more clearly shown in the revised drawings.

2. Can you explain what RCW water main piping, as listed on Lines 31, 33, 35 of the bid tab, is and clarify?
Response: See Addendum No. 2, Item No. 2. The proposal form has been updated to clarify the RCW abbreviation.

3. Can you confirm there isn't a "Buy America" or "AIS" material requirement?
Response: There are no Buy America provisions

4. Can you provide more detail on the specifications for Line 5 on the bid tab?
Response: See reference to specification Section 2.04 in Contract Item No. 0142-1 in the Contract Items – Stormwater Section.

2/10/23

1. Bid Item 0100-1 (Contingency 10%), is this supposed to be a fixed amount of $200,000.00? The description states 10%, 10% of what?
Response: See Addendum No. 2, Item No. 2. The proposal form has been updated to remove the 10% note.

2. Can a SF item for ADA Tiles be Added? We understand that there are ADA Tiles to be installed in the curb ramps but what about ADA tiles required in the sidewalk?
Response: All costs associated with curb ramps, including ADA tiles, shall be included in Contract Item No. 0350-40. No other ADA tiles are required.

3. Is there a specific specification for the replacement sand?
Response: See reference to specification Section 2.04 in Contract Item No. 0142-1 in the Contract Items – Stormwater Section.

4. Will unsuitable removal and replacement be quantified by truck tickets?
Response: See measurement description in Contract Item No. 0142-1 in the Contract Items – Stormwater Section.

5. Can each road, where work is being performed, be closed to Local Traffic Only?
Response: Yes, to the extent allowed by SP-15, Sequence of Operations and SP-21, Maintenance of Traffic, Specific Provisions Pages SP-3 and SP-5, respectively.

6. Can a detail be provided for connecting the 8" HDPE to the 8" underdrain?
Response: See Addendum No. 2, Item No. 3. Couplings are approved for this connection.

7. Just to confirm, the 8" HDPE will be installed by direct Jack & Bore, there will be no casing pipe?
Response: See Addendum No. 2, Items No. 3 and 4. 8" Pipe will be installed by directional bore. Locations are more clearly shown in the revised drawings.

8. Per the pre-bid meeting, it was stated that Jack & Bores need to be on grade. HDPE is a flexible pipe and will have minor low or high spots within the installed length. Please acknowledge that the City is aware of this. The only way to be on grade is to use DIP or a casing pipe with spacers. Please advise.
Response: See Addendum No. 2, Item No. 4. Tolerances for final acceptance have been specified.

9. The removal of the sidewalk on each of the plan sheets does not account for the Jack & Bore Jacking and Receiving Pits. The jacking pits will need to be large enough to put the machine inside of them which require a larger excavation area which will require additional restoration of sidewalk, curb, road, sod, etc… Will these restoration items be paid for under the unit bid items?
Response: See Addendum No. 2, Items No. 3 and 4. 8" Pipe will be installed by directional bore. Locations are more clearly shown in the revised drawings.

10. Per Section I-1.20 "Apprenticeship Requirements & Reporting Forms" Are apprenticeships required for this project?
Response: Apprenticeship requirements are applicable to this project.

11. Will all base and asphalt, removal, and replacement, that is required for the underdrain installation be paid for under pay item 316-10 Pavement Restoration?
Response: Yes.

12. Does the City have any available yard locations for materials?
Response: No. Storage of materials is the contractor's responsibility in accordance with SP-22, Work in Streets and Highways, and SP-45, Storage of Materials, Specific Provisions Pages SP-6 and SP-11, respectively.

13. Do SWPPP Plans have to be Signed & Sealed?
Response: Contractor shall comply with the requirements of the NPDES Generic Permit.

14. Pay Item 350-40 calls for 35 Concrete ADA Pedestrian Ramps. There are not 35 ramps within this project. Can the quantity be revised to the correct amount?
Response: See Addendum No. 2, Item No. 2. The quantity on the proposal form has been updated.

15. Per Note 2 under the dewatering activities on plans sheet 1, it states that discharge from dewatering shall be 75' from the nearest property boundary, wetland jurisdictional or surface water area. This is impossible due to the location of the project in reference to the homes. The discharge from the dewatering will need to be discharged into existing storm inlets. Is this method acceptable to the City of Tampa if proper dewatering bags are used?
Response: See Addendum No. 2, Item No. 6. The dewatering note has been revised on Sheet 1.

16. On Dakota Ave. there are properties with decorative block walls that are next to the sidewalk. The sidewalk will be removed and the underdrain installed beneath it. How will wall replacement be paid for? Several of these walls have significant structure damage already, are leaning and have multiple cracks. There is no way to protect/stop the walls from continuing to crack/move with an excavation taking place next to them.
Response: It is acknowledged that several private walls exist directly adjacent to the work. It is the intent of contract documents that the Contractor is to protect these walls as directed by Article 3.05, Preservation of Property, of the Agreement, Page A-4, as well as several other locations within the contract documents.

17. Are we to assume that all the existing WM and RCW lines are restrained? If they are not, can a pay item for reverse deadman be added? It would take an excessive amount of restoration, sidewalk, roads, driveways, etc..., to dig up each joint and install bell restraints on the existing mains.
Response: See Addendum No. 2, Item No. 5. Water mains should be assumed to be unrestrained. Required joint restraints on existing adjacent pipe shall be included in the cost of each offset.

18. The EBO has a 21% goal to utilize a combination of U-WMBE/SLBEs. If using a SLBE, do they need to be a BBE to count towards this goal?
Response: All SLBE subcontracts will count toward the goal.

2/13/23

1. Do the water main offsets need to be chlorinated and Bact T samples pulled?

Response: See Addendum No. 2, Item No. 5. Water main offsets shall be hydrostatically tested per S-50.01 "HYDROSTATIC TESTING" and disinfected per S-50.01S-50.02 "DISINFECTION AND BACTORIOLOGICAL TESTING" of the Specific Provisions Water, page SPW-5 and SPW-7, respectively.

2/14/23

1. Could you please provide more explanation or specifications for this line item, including type of material?

Response: See detail titled "18" Inspection Manhole" on Sheet 2 of the plans.

2/21/23

1. Rim elevations and inverts for inspection manholes. I can probably estimate using the profiles for now.
Response: Refer to elevations on the topographic survey for existing elevations which are to be matched in the restored condition and therefore are to be used to establish inspection manhole top elevations.

2. Steel Casing specifications for jack and bores. What nominal size of steel casing and what minimum wall thickness is required?
Response: See Addendum No. 2, Items No. 3 and 4. 8" Pipe will be installed by directional bore. Locations are more clearly shown in the revised drawings.

MADRID CPWG
2030 State Road 60 E
Bartow FL 33830-4268
Ph: (863) 533-9007
Fax: (863) 533-8997

April 6, 2021

City of Tampa Stormwater Division
306 E. Jackson St.
Tampa, FL 33602
Attn: Saad Bakkouri

Re: Madrid Project No. 13378.3
Geotechnical Engineering Report
Hyde Park Drainage Improvement
Tampa, Florida

Dear Mr. Bakkouri:

Madrid Engineering Group, Inc., dba Madrid CPWG, (Madrid) is pleased to submit this Geotechnical Engineering Report summarizing the results of our limited 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 February 9, 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)

JOHN EDWARD DELASHAW
LICENSE No. 48154
STATE OF FLORIDA
PROFESSIONAL ENGINEER
4/5/21

John E Delashaw, P.E.
Vice President
Florida P.E. No. 48154

Thomas B. Anyintuo, EI
Geotech Engineer

Attachment: Geotechnical Engineering Report

Madrid CPWG

Geotechnical Engineering Report

Hyde Park Drainage Support, Lakeland, Florida

Prepared for:

City of Tampa

Prepared by:

MADRID ENGINEERING GROUP, INC., dba MADRID CPWG
2030 State Road 60 East
Bartow, FL 33830
863-533-9007

Project No. 13378.3
April 2021

EXECUTIVE SUMMARY

Project Description

Madrid understands the planned improvements include an underdrain system along portions of Bayshore Blvd and six (6) intersecting streets to promote better subsurface drainage in an effort to prevent seepage upwelling to the surface. Madrid collected geotechnical data and performed a simplified seepage analysis on a generalized but representative cross-section to assist with establishing the design invert and size of the underdrain pipe as well as to estimate a general drawdown profile as presented herein.

Field Activities

- Fourteen (14) hand augers (HA) borings (HA-1 through HA-14) to depths of 5 to 7 feet below ground surface (bgs)a maximum depth of 7 feet in the green (grassed/lawn) areas between pavement and sidewalk
- Two (2) shallow test pits (TP-1 and TP-2) within the grass areas adjacent to HA-6 and HA-11
- Five (5) pavement cores (C-1 through C-5) in the existing residential roads

Findings and Recommendations

Based on the results of the exploration completed at the site and our professional opinion, the proposed drainage improvements should be able to reduce the seepage that persists at the surface long after rain events. Soil conditions include primarily sand with some organic silt. Organic material was mostly encountered within the surficial 12 inches and is not anticipated to be a problem for the proposed underdrain installation. Recommendations for excavation, bedding and backfilling associated with the pipe installation is beyond the scope of this report. However, Madrid recommends that if organic material is encountered at the proposed bedding depth during installation, it should be removed and replaced with more suitable material by over-excavating at least 1-foot below the proposed pipe bed and replacing with select fill. The water table is shallow at this site (as shallow as 8 inches during the soil borings). The water table depth primarily ranged from about 0.6 to 1.5 feet bgs and we estimate the SHWT to range from about 12 inches bgs at the north end of the site to ground surface at the south end with potential for ponding. Permeability in the sandy soil at TP-1 was about 0.2 in/hr (Vert.) and 0.3 in/hr (Hor.) and at TP-2 it was about 1.5 in/hr (Vert.) and 0.9 in/hr (Hor.). The proposed underdrain system should attract seepage water associated with surface water infiltration (usually groundwater but also likely fed by irrigation water) and accelerate drainage from the area. A challenge for this site with a passive underdrain system (passive equals gravity fed with no pumping) is that the low end of the system is only slightly above sea level and the bay is immediately adjacent to the project site. This limits how deep an effective underdrain can be installed at the lower elevations of the study area.

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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 Core Photo Log

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 limited subsurface soil exploration, consistent with the instructions provided by The City of Tampa (Client), and geotechnical engineering evaluation to support proposed drainage improvements in the Hyde Park area in Tampa, Florida. Our conclusions and recommendations are based on the results of our field exploration, laboratory testing, and appropriate engineering analyses.

Madrid understands the planned improvements include an underdrain system along portions of Bayshore Blvd and six (6) intersecting streets to promote better subsurface drainage in an effort to prevent seepage upwelling to the surface. Madrid will provide geotechnical data with a simplified seepage analysis on a generalized but representative cross-section to assist with establishing the design invert and size of the underdrain pipe as well as to estimate a general drawdown profile.

The purpose of the exploration was to collect subsurface soil and groundwater information in order to provide an evaluation of the existing subsurface conditions at the boring/test locations and to provide shallow drainage conditions for the soils encountered to support on the design of the planned improvements. Pavement cores were performed to provide information regarding existing pavement and base conditions along portions of the roads that may be impacted by the planned improvements. Project location and plan drawings with project extents were provided to Madrid, 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, simplified drainage analysis, and providing general geotechnical recommendations including estimated flow in the drainage pipes and drawdown profile for the proposed improvement.

1.2 Site Location and Description

The subject site is generally located about 0.3 miles southeast of the intersection of Selmon Expressway and W. Swann Avenue in Hyde Park, Tampa, Florida as shown on **Figure 1**, **Site Location Map**. The area of interest is generally bounded by Bayshore Blvd. on the south, S. Dakota Ave. on the west, S. Delaware Ave. on the east and W. Inman Ave. on the north sides. Specifically, the site is within Section 26, Township 29 South, and Range 18 East in Hillsborough County, Florida. The proposed sites primarily consist of active residential roads and the associated sidewalks and green areas.

The site is generally gently sloping north to south towards the water (Hillsborough Bay) with elevations estimated at the boring locations ranging between about 3.0 to 19.4 feet. GIS topographic information is provided on **Figure 2, USGS Topographic Map**. Boring/test elevations provided in this report were estimated based on the more accurate survey data provided by the client; 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 **Tavares fine sand- Urban land complex, 0 to 5 percent slopes** (map unit 55) and **Malabar fine sand, 0 to 2 percent slopes** (map unit 27), as shown on **Figure 3, NRCS/USDA Soil Map**. The NRCS provides the following descriptions for the soil units.

Tavares fine sand- Urban land complex, 0 to 5 percent slopes: *According to the NRCS, this soil is nearly level to gently sloping and moderately well drained and of areas of Urban land. Slopes are 0 to 5 percent. Typically, the surface layer of Tavares soil is very dark gray fine sand about 6 inches thick. The upper part of the underlying material, to a depth of about 18 inches, is light yellowish brown fine sand. The middle part, to a depth of about 46 inches, is very pale brown fine sand. The lower part to a depth of about 80 inches is white, mottled fine sand. In some areas, the surface layer is more than 9 inches thick. In places, the lower part of the underlying material is brown or dark brown. In some of the lower parts of the landscape, the soil is somewhat poorly drained. The undrained areas have a seasonal high water table at a depth of 40 to 80 inches for more than 6 months. The high water table recedes to a depth of more than 80 inches during prolonged dry periods.*

Malabar fine sand, 0 to 2 percent slopes: *According to the NRCS, Malabar fine sand is described as a nearly level and poorly drained soil, in low-lying sloughs and shallow depressions on the flatwoods. Slopes are 0 to 2 percent. Typically, the surface layer of the Malabar soil is dark gray fine sand about 4 inches thick. The subsurface layer, to a depth of about 12 inches, is light brownish gray fine sand. The upper part of the subsoil, to a depth of about 30 inches, is brownish yellow fine sand. The next layer, to a depth of about 50 inches, is pale brown fine sand. The lower part, to a depth of about 66 inches, is gray, mottled fine sandy loam. The substratum, to a depth of about 80 inches, is grayish brown fine sand. Under natural conditions, the Malabar fine sand soils have a seasonal high water table that fluctuates from the ground surface to a depth of*

about 10 inches for 2 to 6 months in most years. The available water capacity is very low or low.

Table 1.3: Summary of Soil Map Units

Map Unit	Name	Location	Soil Types by Depth (in.)	Reported SHWT Depth (in.)
55	**Tavares fine sand-Urban land complex, 0 to 5 percent slopes**	Most of the site	Tavares 0-80 Sand	40-80
27	**Malabar fine sand, 0 to 2 percent slopes**	Narrow section along the south boundary	0-50 Sand 50-66 Sandy Loam 66-80 Sand	0-10

2.0 FIELD EXPLORATION

2.1 Test Pits and Undisturbed Sample Collection

Madrid completed two test pits (TP-1 and TP-2) at the locations of HA-6 and HA-11 to a depth of approximately 2 feet below ground surface (bgs). The test pits were performed in order to look for historical indicators of seasonal high groundwater levels and to collect relatively undisturbed samples (Shelby tubes), one vertical and one horizontal, at the base of each test pit for laboratory permeability testing.

2.2 Hand Auger Borings

During the field program, fourteen (14) hand auger borings, HA-1 through HA-14, were completed in the green areas between the pavement and sidewalk, approximately at the locations shown on **Figure 4**. The borings were advanced to depths of 5 to 7 feet bgs using a bucket auger and were completed in general accordance with ASTM D 1452. Hand auger boring logs are included in **Appendix A**.

2.3 Pavement Coring

The pavement coring program was completed on March 4, 2021. Maintenance of traffic consisted of cones around the work area while the coring was being completed. During the coring program, asphalt cores were extracted at five (5) locations, one each, along S Dakota Ave, S Oregon Ave, S Orleans Ave, S Newport Ave, and S Delaware Ave. A hand auger was used to remove the base material so that the thickness of the base layer could be measured. These cores were completed at the approximate locations shown on **Figure 4**, **Boring location Plan**. Photographs of the individual cores are presented in **Appendix C**. **Table 2.3** below indicates the core locations including distance

from edge of pavement (EOP), asphaltic concrete (AC) thickness, base thickness, and base type.

Table 2.3 Core Summary

Core ID	Street	Distance from EOP	AC Thickness (in)	Base Thickness (in)	Base Material
Core 1	S Dakota Ave	5 feet East	5.5	16.0	Limerock
Core 2	S Oregon Ave	3 feet East	5.5	6.0	Sand, Roots, Shells
Core 3	S Orleans Ave	5 feet West	3.4	6.5	Rock Sand Mix
Core 4	S Newport Ave	3 feet West	5.5	9.0	Rock Sand Mix
Core 5	S Delaware Ave	3 feet East	5.0	7.0	Rock Sand Mix

The pavement cores were returned to our laboratory for review and documentation. Upon completion, the cores and boreholes were backfilled and patched in general accordance with industry standards. Soil samples will be stored for a period of 6 months from the date of this report unless other arrangements are made. The core program demonstrated a high degree of variability and thicker than typical structural course thickness for residential side streets. Limerock base was only found at C-1 which also was the only core location above elevation +10 feet. Limerock base does not perform well where there is shallow water table.

3.0 SUBSURFACE CONDITIONS AND LABORATORY TESTING

3.1 Subsurface Soil Conditions

In general, the HA borings (HA-1 to HA-14) primarily encountered sand (SP) with occasional slightly silty sand and some layers of organic silty sand (SM-OL) encountered at variable depths. HA-1, HA-9, HA-10, HA-13 and HA-14 all encountered organic silty sand in the surficial 1 foot. In addition, boring HA-10 encountered deeper organic silty sand between about 2 to 4 feet bgs. No highly organic soil or highly plastic clays were observed in the borings other than the organic rich topsoil seen at several locations.

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 generally gently sloping from north to south towards the water. We note that the water table was primarily encountered in the HA borings at depths ranging from 8 to 24 inches bgs except in HA-3 where the water table was encountered at a depth of 64 inches. HA-3 was at one of the higher elevations and encountered clean well-draining sands throughout its depth of exploration. Seasonal fluctuations in the groundwater level should be anticipated due to variations in rainfall. It is noted the field exploration was completed toward the middle portion of the drier season of the year.

The Soil Survey for Hillsborough County, Florida describes the seasonal high water table (SHWT) for the map units to be between 40 to 80 inches for most of the site but within 10 inches of the surface for a narrow section along the south end (closer to the water body). Based upon the published survey information and our findings during the exploration, Madrid recommends a design high water table level at about 12 inches near the north end and at ground surface near the south end with potential for surface ponding depending on rainfall.

3.3 Laboratory Testing

Laboratory tests for natural water content (ASTM D2216), percent passing the No. 200 sieve (ASTM D1140), and organic content (ASTM D2974) were performed on selected samples retrieved during the field exploration from the HA borings and Test Pits to verify the visual and tactile soil classifications. Laboratory test reports are included in **Appendix B**.

Table 3.3a

Lab Summary	
<#200 Sieve	1.3% - 8.0%
% Moisture	4.8% - 156.2%
% Organic	3.3% - 18.2%

- During the field visit, Madrid obtained two sets of undisturbed soil samples for laboratory permeability analysis. These samples were collected from within the excavated test pits (TP-1 and TP-2), at the locations 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 are summarized in the table below. Detailed **Constant Head Permeability Reports** have been included with this report in **Appendix B**.

Table 3.3b: Shallow Permeability Data

Test Sample Location	Orientation	Average Permeability (in/hr)	Water Table Depth (in)	Estimated SHWT Depth (in)	Existing Ground Elev. (ft)
HA-6 / TP-1	Horizontal	0.2	12	0	~3.6
	Vertical	0.3			
HA-11 / TP-2	Horizontal	1.5	24	0	~3.0
	Vertical	0.9			

NOTE: The permeability rates presented herein are absolute values with no safety factor applied. The designer should choose a conservative rate based on this data and their experience with similar conditions.

4.0 EVALUATION AND GENERAL RECOMMENDATIONS

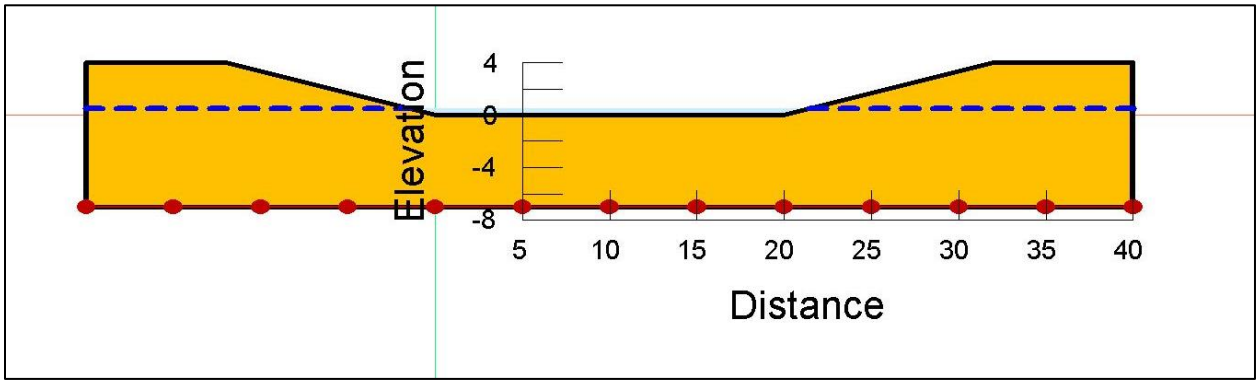
4.1 General Considerations

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 proposed drainage improvements should be able to reduce the seepage that persists at the surface long after rain events. Soil conditions include primarily sand with some organic silt. Organic material was mostly encountered within the surficial 12 inches and is not anticipated to be a problem for the proposed underdrain installation. Recommendations for excavation, bedding and backfilling associated with the pipe installation is beyond the scope of this report. However, Madrid recommends that if organic material is encountered at the proposed bedding depth during installation, it should be removed and replaced with more suitable material by over-excavating at least 1-foot below the proposed pipe bed and replacing with select fill.

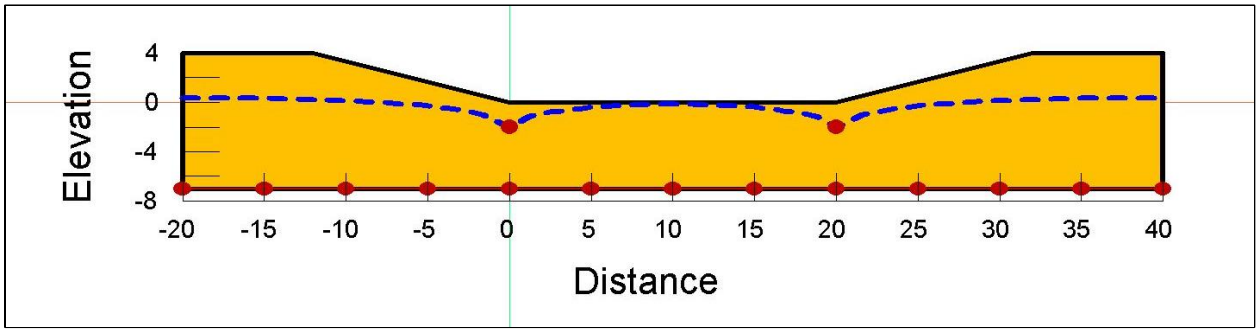
The water table is shallow at this site (as shallow as 8 inches during the soil borings). The water table depth primarily ranged from about 0.6 to 1.5 feet bgs and we estimate the SHWT to range from about 12 inches bgs at the north end of the site to ground surface at the south end with potential for ponding. Permeability in the sandy soil at TP-1 was about 0.2 in/hr (Vert.) and 0.3 in/hr (Hor.) and at TP-2 it was about 1.5 in/hr (Vert.) and 0.9 in/hr (Hor.). The proposed underdrain system should attract seepage water associated with surface water infiltration (usually groundwater but also likely fed by irrigation water) and accelerate drainage from the area. A challenge for this site with a passive underdrain system (passive equals gravity fed with no pumping) is that the low end of the system is only slightly above sea level and the bay is immediately adjacent to the project site. This limits how deep an effective underdrain can be installed at the lower elevations of the study area. Our analysis and evaluation assume all recommendations are implemented during construction.

4.2 Drawdown Profile and drainage analysis

Madrid completed simplified drainage analysis to estimate the drawdown profile that will be created by the proposed drainage pipe as well as to estimate the flow rate in the pipe (this information will be useful in sizing the pipe). An assumed depth of 3 feet bgs was used for the analysis. A generalized section which is representative of anticipated site conditions was analyzed. Based on the results of the drainage analysis, Madrid estimates volumetric flow rate in the pipe to be on the order of 0.01 ft^3/sec per foot of run and the final drawdown surface is as shown on the image below. This equates to a flowrate of ft^3/sec per 100 foot or 45 gallons/min with no safety factor.



Existing water table.



Drawdown profile with drainage pipe installed.

As shown on the modeled cross-section the passive underdrain system does draw the water table down to the underdrain invert but the lateral extent at just 3' depth does not extend much beyond 10 to 15 feet away from the pipe centerline. This should improve the seepage breakouts that are observed near the edge-of-pavement and in the green spaces between the road and sidewalks. It is recommended that an underdrain system be constructed in accordance with a Type II systems as detailed on FDOT Standard Index 440-001. It is noted that the overall effectiveness of the system depends on the ability of the drains to discharge to a water conveyance that routes water away from the area at an elevation at or below the underdrain invert elevation. If this is not feasible consideration of an active system (pumping) may have to be given.

4.3 Shallow Excavations and Dewatering

It is assumed that the pipe will be installed by open trench method. The following general recommendations may be useful for open excavation and dewatering during installation. Open-cut methods appear suitable for shallow excavations, but dewatering will be required, and 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. It is likely that a trench box may prove to be the more cost effective approach to this excavation.

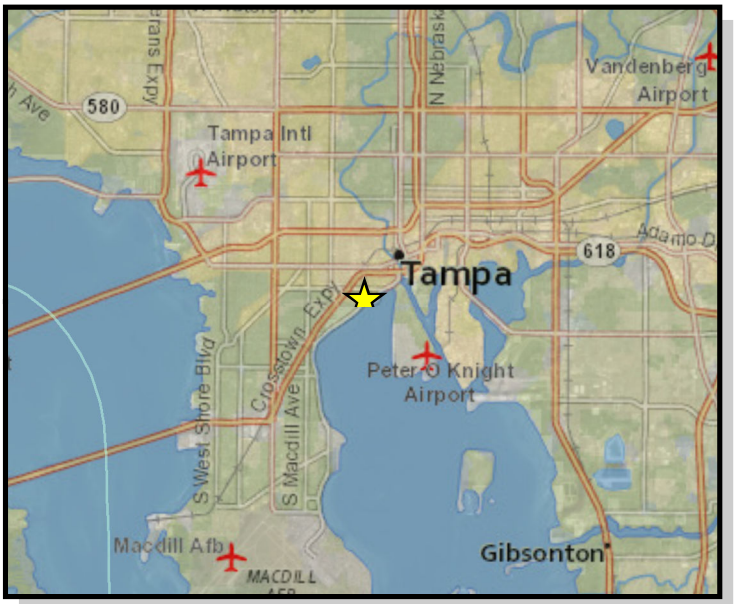
All vertical shoring or prefabricated trench lining systems should be continuous and maintained in place to assure adequate temporary stability during backfilling of the trench as recommended subsequently. Excavated soils should not be stockpiled within 15 feet (horizontally) of the shored excavations 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.

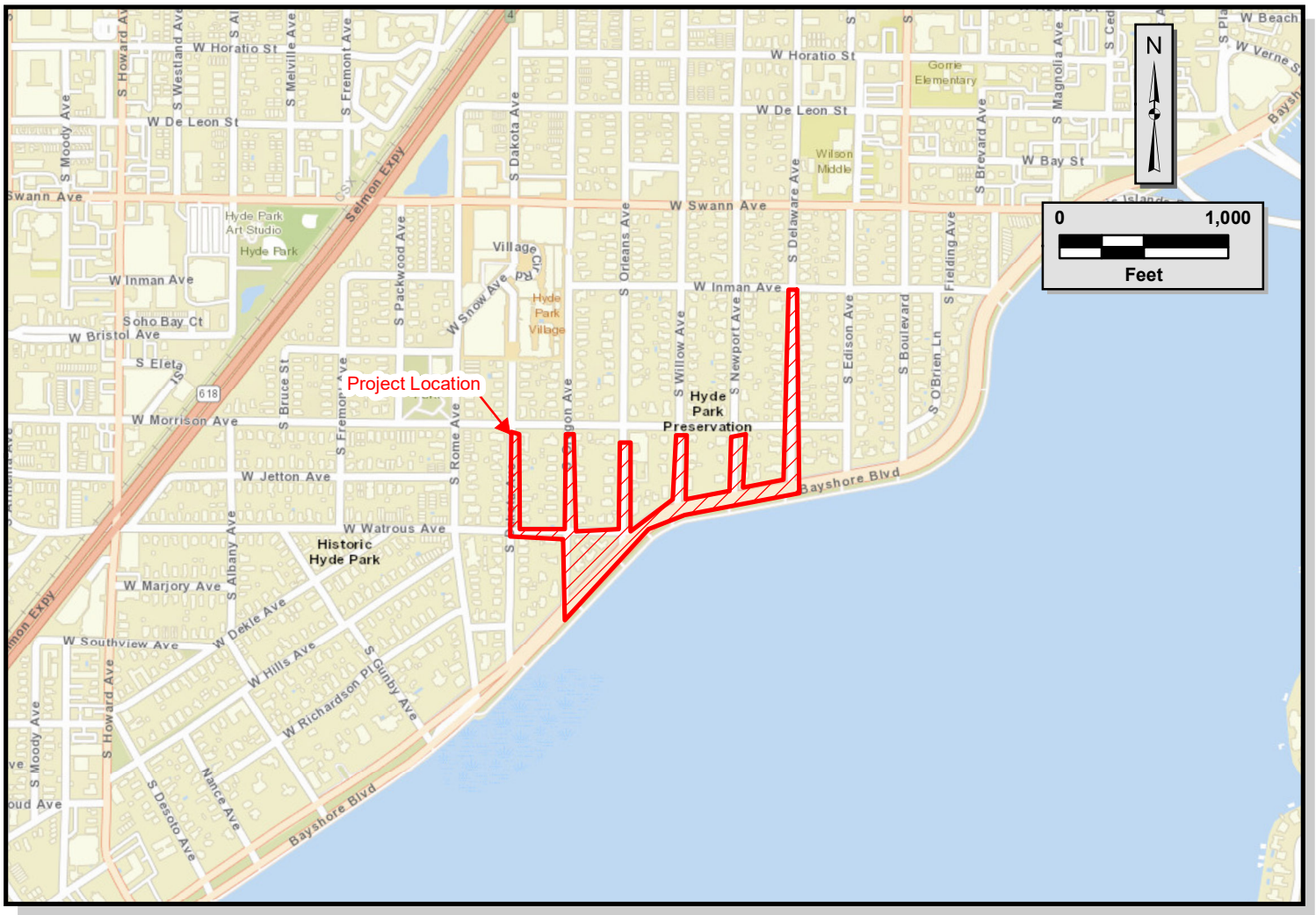
Based upon our recommended design water table and depending upon the time of year, it appears that groundwater should be anticipated for excavations. We recommend that a dewatering system be designed and installed to draw the groundwater table down to a depth sufficient to allow excavation in the dry; this typically requires lowering the water to 2 to 3 feet below the proposed pipe bed. The contractor should employ a registered professional engineer to design all shoring and dewatering systems.

5.0 LIMITATIONS

This report has been prepared for The City of Tampa for the proposed Hyde Park drainage improvement project in Tampa, 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.

FIGURES





Sources: GIS Information (ESRI)

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

City of Tampa

FIGURE 1
Site Location Map
Hyde Park Drainage Improvements
Tampa, Florida

Notes:

Drawn By: MZ

Checked By: JD

Project Number:
13378.3

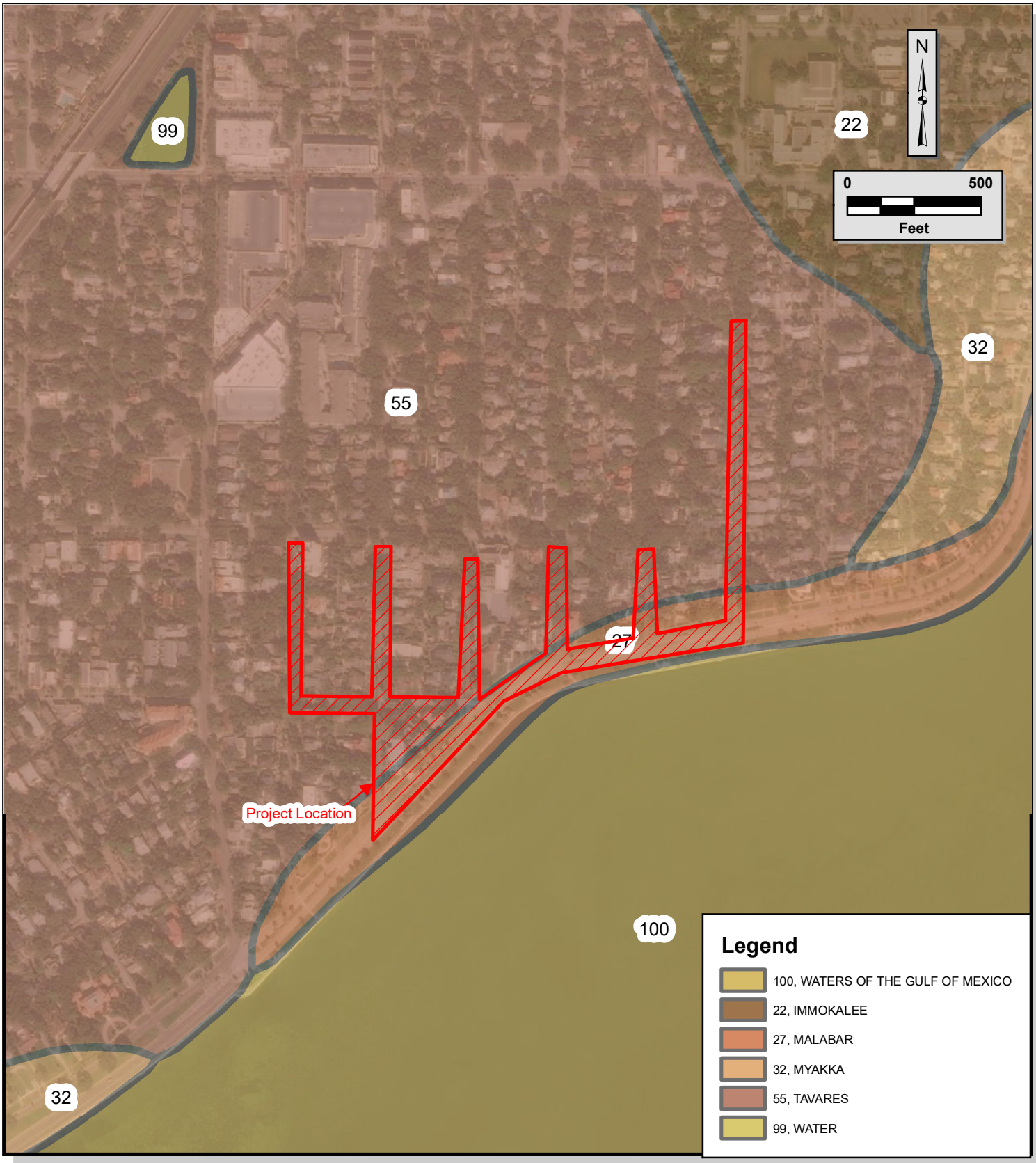
Source: GIS Information (ESRI), Topographic Information (USGS)

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

City of Tampa

FIGURE 2
USGS Topographic Map
Hyde Park Drainage Improvements
Tampa, Florida

Drawn By: MZ	Checked By: JD	Project Number: 13378.3



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

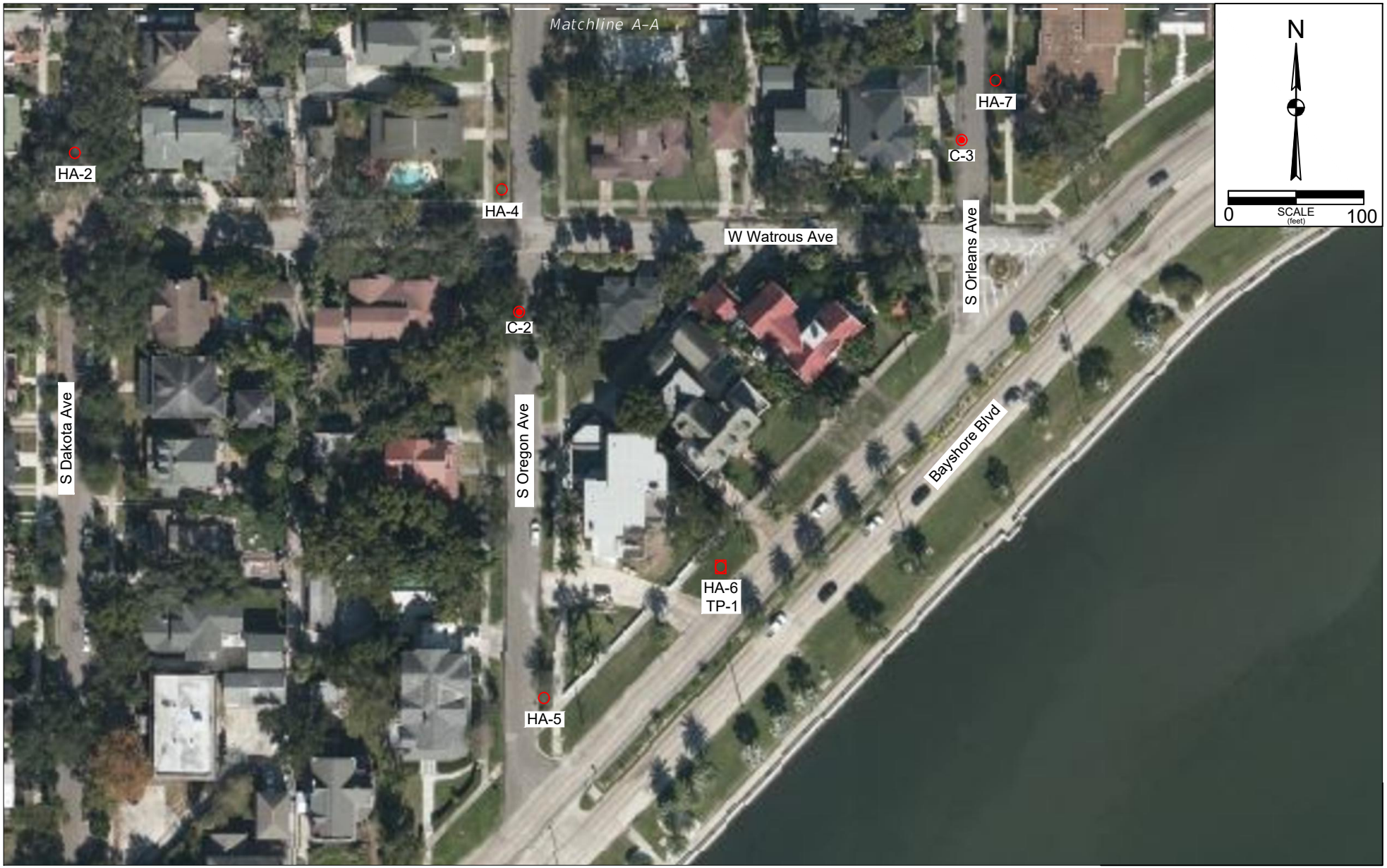
MADRID CPWG
2030 State Road 60 East
Bartow, Florida 33830
863 533-9007 Fax: 863 533-8997
EB-0006509

City of Tampa

FIGURE 3
USGS Topographic Map
Hyde Park Drainage Improvements
Tampa, Florida

Drawn By: MZ | Checked By: JD

Project Number:
13378.3



Aerial Data Source – 2019 Microsoft Corporation, 2019 DigitalGlobe, 2019 CNES Distribution Airbus DS.

Legend		
	Pavement Core	
HA-1	Hand Auger Boring Location	
TP-1	Test Pit Location	

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

Notes: Boring locations are approximate.

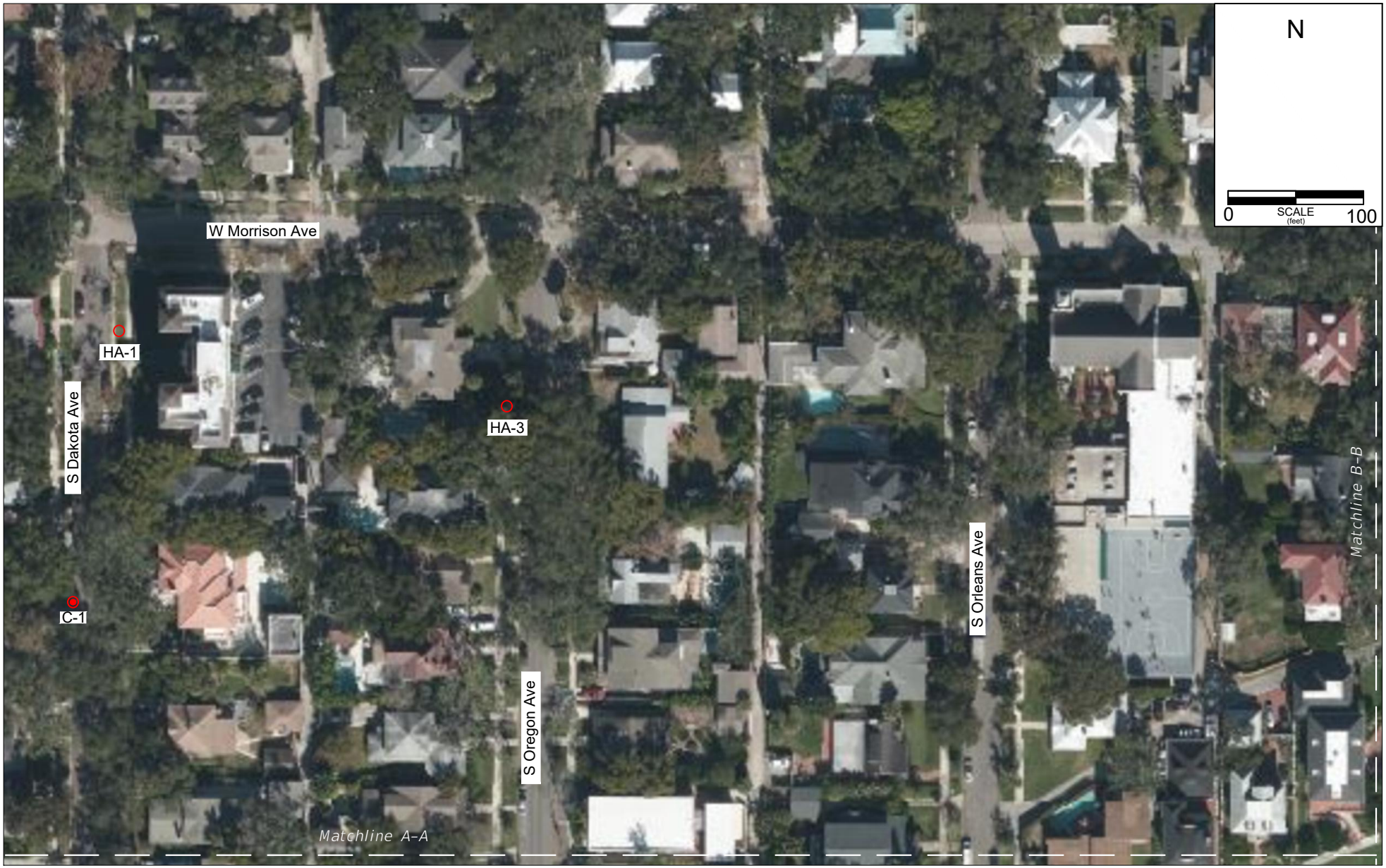
Drawn By: MZ

Checked By: JD

City of Tampa

FIGURE 4A
Boring Location Plan
Hyde Park Drainage Improvements
Tampa, Florida

Project Number:
13378.3



Aerial Data Source – 2019 Microsoft Corporation, 2019 DigitalGlobe, 2019 CNES Distribution Airbus DS.

Legend

C-1	●	**Pavement Core**
HA-1	·	**Hand Auger Boring Location**
TP-1	□	**Test Pit Location**

MADRID CPWG

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

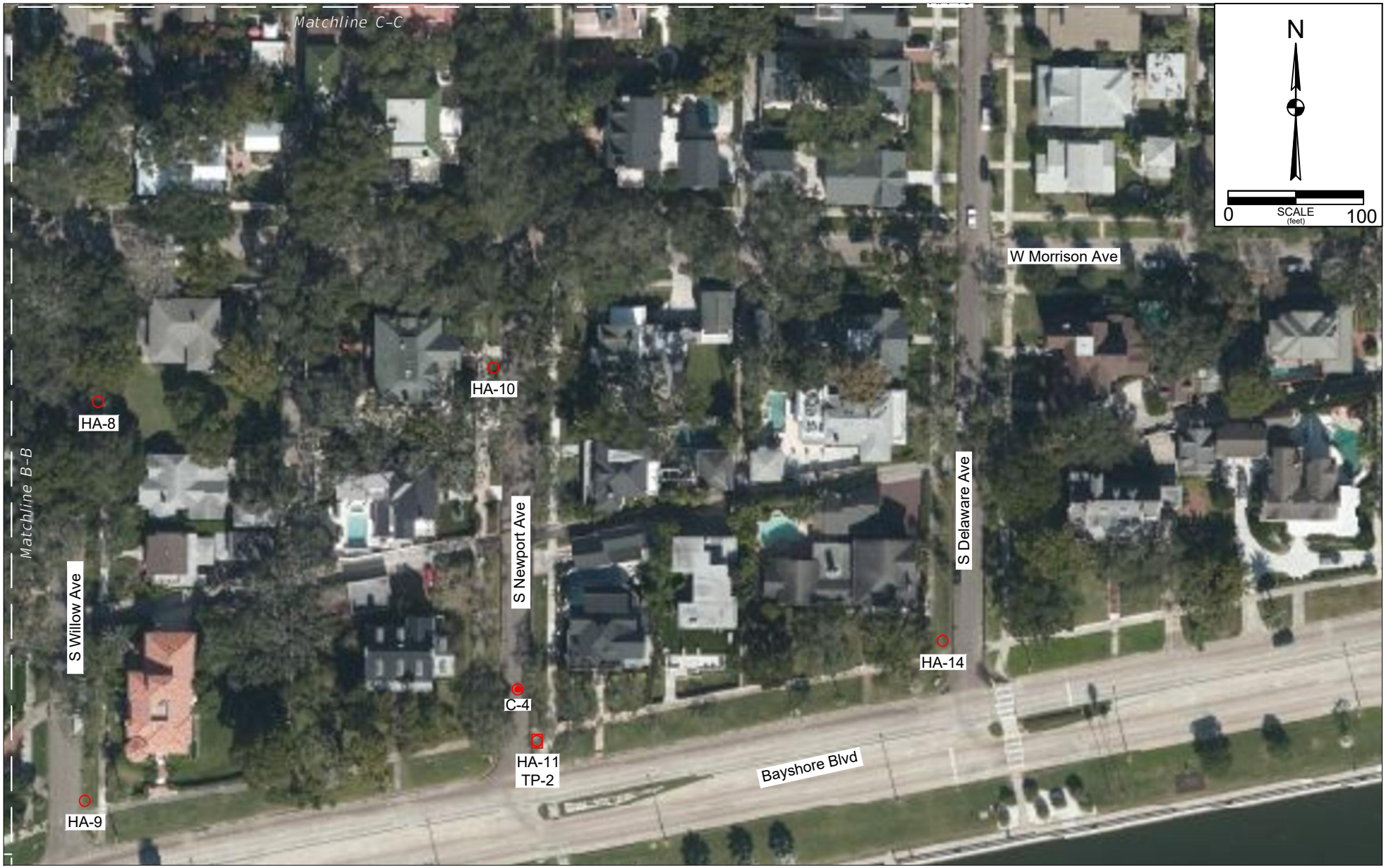
Notes: Boring locations are approximate.

Drawn By: MZ | **Checked By: JD**

City of Tampa

FIGURE 4B
Boring Location Plan
Hyde Park Drainage Improvements
Tampa, Florida

Project Number:
13378.3



Aerial Data Source – 2019 Microsoft Corporation, 2019 DigitalGlobe, 2019 CNES Distribution Airbus DS.

Legend		
C-1	◉	Pavement Core
HA-1	○	Hand Auger Boring Location
TP-1	□	Test Pit Location

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

Notes: Boring locations are approximate.

Drawn By: MZ

Checked By: JD

City of Tampa

FIGURE 4C
Boring Location Plan
Hyde Park Drainage Improvements
Tampa, Florida

Project Number:
13378.3

Aerial Data Source – 2019 Microsoft Corporation, 2019 DigitalGlobe, 2019 CNES Distribution Airbus DS.

Legend

C-1	●	**Pavement Core**
HA-1	·	**Hand Auger Boring Location**
TP-1	□	**Test Pit Location**

MADRID CPWG

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

Notes: Boring locations are approximate.

Drawn By: MZ | **Checked By: JD**

City of Tampa

FIGURE 4D
Boring Location Plan
Hyde Park Drainage Improvements
Tampa, Florida

Project Number:
13378.3

APPENDIX A

BORING NO. HA-01

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 8" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Black organic silty sand (SM-OL) organic content = 12.0%	0				
1	Pale brown sand (SP)					
	<#200 = 2.0%			HA	HA	
	Gray		15			
	Grayish brown	5				
	Brown					

BORING LOCATION: 27.93349°N, 82.47578°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-02

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 8" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Dark gray sand (SP)	0				
			10			
	Light gray					
	Grayish brown <#200 = 1.5%			HA	HA	
		5				

BORING LOCATION: 27.93213°N, 82.47586°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-03

DATE DRILLED 3/4/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 64" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Brown sand (SP)	0				
	Very pale brown <#200 = 3.4%		15			
	Light gray			HA	HA	
	Very pale brown					
	Gray	5	▼			
			10			

BORING LOCATION: 27.93334°N, 82.47489°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-04

DATE DRILLED 3/4/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 11" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0, 10, 20, 30, 40, 60, 80, 100)
	Gray sand (SP)	0				
	Light gray		5			
	Very dark gray			HA	HA	
	Black					
	Dark gray <#200 = 2.2%	5				

BORING LOCATION: 27.93206°N, 82.47488°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-05

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 10" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Dark gray sand (SP)	0				
	Gray <#200 = 2.8%					
	Light gray			HA	HA	
	Gray		0			
		5				

BORING LOCATION: 27.93103°N, 82.47478°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-06

DATE DRILLED 3/4/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 12" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Dark gray sand (SP)	0				
	Gray					
	Light gray <#200 = 3.4%			HA	HA	
			0			
		5				

BORING LOCATION: 27.9313°N, 82.47438°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-07

DATE DRILLED 3/4/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 16" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Dark gray sand (SP)	0				
			5			
	Light gray					
	Dark gray					
	Gray organic content = 3.3%					
	Gray			HA	HA	
	Dark gray <#200 = 2.8%					
	Gray	5				
5.5						

BORING LOCATION: 27.93229°N, 82.47375°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-08

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 18" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Dark gray sand (SP)	0				
	Light brownish gray		10			
	<#200 = 3.2%			HA	HA	
		5				

BORING LOCATION: 27.93335°N, 82.4727°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-09

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 10" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Dark gray organic silty sand (SM-OL) organic content = 11.1%	0				
1	Dark gray sand (SP)					
	Gray					
	Dark gray <#200 = 3.2%		0	HA	HA	
		5				

BORING LOCATION: 27.93254°N, 82.47273°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-10

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 16" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Black silty organic silty sand (SM-OL) organic content = 12.8%	0				
1	Dark gray slightly silty sand (SP-SM) <#200 = 8.0%		5	HA	HA	
4		5				

BORING LOCATION: 27.93343°N, 82.4718°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-11

DATE DRILLED 3/4/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 24" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Gray sand (SP)	0				
	Dark gray					
	Light gray		▼	HA	HA	
	Gray <#200 = 2.2%		0			

BORING LOCATION: 27.93267°N, 82.4717°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-12

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 11" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Black slightly silty sand (SP)	0				
	Gray					
	Light gray					
	<#200 = 3.3%		10	HA	HA	
		5				

BORING LOCATION: 27.93588°N, 82.47074°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-13

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 16" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Very dark gray organic silty sand (SM-OL)	0				
	organic content = 18.2%					
2	Very dark gray sand (SP) <#200 = 2.6%		5	HA	HA	
		5				

BORING LOCATION: 27.93422°N, 82.47076°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

BORING NO. HA-14

DATE DRILLED 3/9/2021
PROJECT NUMBER 13378.3
PROJECT Hyde Park Drainage Improvements

TEST BORING RECORD
Madrid Engineering Group

REMARKS: Water table encountered at 10" bgs.

Depth (ft)	DESCRIPTION	Depth (ft)	Elev. (ft)	Blows	N-Value	● STANDARD PENETRATION TEST (0 10 20 30 40 60 80 100)
	Black organic silty sand (SM-OL)	0				
1	Gray sand (SP) <#200 = 1.3%			HA	HA	

BORING LOCATION: 27.93287°N, 82.47077°W

MEG WITH BLOW COUNTS TOP 13378.3 BORING LOG.GPJ NEW MEG TEMPLATE.GDT 4/5/21

APPENDIX B

2030 State Road 60 East
Bartow, Florida 33830
(863)533-9007

ASTM D1140 MOISTURE / PERCENT < No. 200 SIEVE

Project Number: 13378.3
Project Name: Hyde Park Drainage
Project Location: Tampa, FL
Client: City of Tampa

Date Tested: 3/11/2021
Tested By: BJN

Sample	Cont. Name	W_C+S_W (g)	W_C+S_D (g)	W_C (g)	Solids Content (%)	Moisture Content (%)	W_C+S_R (g)	<#200 (%)
HA-1 2-3'	527	91.61	84.21	7.72	91.2%	9.7%	82.66	2.0%
HA-2 2-3'	521	119.11	97.72	7.76	80.8%	23.8%	96.39	1.5%
HA-5 1-2'	535	116.61	99.40	7.80	84.2%	18.8%	96.84	2.8%
HA-8 2-3'	508	105.56	95.92	7.87	90.1%	10.9%	93.14	3.2%
HA-9 3-4'	502	115.94	97.94	7.91	83.3%	20.0%	95.09	3.2%
HA-10 2-3'	OR	90.25	56.84	7.80	59.5%	68.1%	52.93	8.0%
HA-12 3-4'	Y	124.38	103.30	7.63	81.9%	22.0%	100.18	3.3%
HA-13 5-6'	5	113.90	95.23	7.64	82.4%	21.3%	92.95	2.6%
HA-14 1-2'	11	107.65	88.58	7.69	80.9%	23.6%	87.56	1.3%
TP-1 (Hor) 2-2'	529	130.94	104.84	7.83	78.8%	26.9%	102.49	2.4%
TP-1 (Vert) 2-2.5'	524	101.59	83.45	7.81	80.7%	24.0%	81.66	2.4%
TP-2 (Hor) 2-2'	529	65.61	55.00	7.82	81.6%	22.5%	53.98	2.2%
TP-2 (Vert) 2-2.5'	524	114.68	94.27	7.75	80.9%	23.6%	92.94	1.5%
HA-3 1-2'	11	110.56	105.85	7.75	95.4%	4.8%	102.49	3.4%
HA-4 4.5-5'	12	106.59	88.30	7.66	81.5%	22.7%	86.55	2.2%
HA-6 2-3'	10	109.00	88.68	8.03	79.9%	25.2%	85.94	3.4%
HA-7 4.5-5'	153	113.76	96.28	7.79	83.5%	19.8%	93.83	2.8%
HA-11 3-4'	A	112.53	91.82	7.92	80.2%	24.7%	89.98	2.2%

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

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

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

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

2030 State Road 60 East
Bartow, Florida 33830
(863)533-9007

AASHTO T267 ORGANIC CONTENT

Project Number: 13378.3
Project Name: Hyde Park Drainage
Project Location: Tampa, FL
Client: City of Tampa

Date Tested: 3/11/2021
Technician: BJN

Sample	Container Name	W_C+S_W (g)	W_C+S_D (g)	W_C (g)	Solids Content (%)	Moist-ure Content (%)	Furnace Container Name	$W_{fC}+S_D$ (g)	$W_{fC}+S_{FD}$ (g)	W_{fC} (g)	Organic Content (%)
HA-1 0-1'	O	79.42	57.11	8.01	68.8%	45.4%	4	105.56	99.67	56.44	12.0%
HA-9 0-1'	50	87.81	56.40	8.23	60.5%	65.2%	2	103.64	98.29	55.65	11.1%
HA-10 1-2'	A-3	90.52	55.32	7.94	57.4%	74.3%	6	104.89	98.83	57.59	12.8%
HA-13 1-2'	15	70.07	32.01	7.64	39.0%	156.2%	10	80.62	76.17	56.20	18.2%
HA-7 2.5-3'	508	93.98	72.22	7.99	74.7%	33.9%	10	120.38	118.28	56.22	3.3%

Average Organic Content (%): 11.5%

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} = Weight of Furnace Dried Sample

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

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

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

2030 State Road 60 East
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(863) 533-9007

ASTM D2434-68 CONSTANT HEAD PERMEABILITY

Project Number: 13378.3
Project Name: Hyde Park Drainage
Project Location: Tampa, FL
Client: City of Tampa

Date Tested: 3/11/2021
Tested By: MAG

Boring Number: TP-1 (Hor)
Soil Description: Brown sand

Sample Interval: 2 TO 2'
USCS Code: SP
< #200 sieve: 2.4 %
Post-Test Moisture: 20.6 %
Natural Moisture: 26.9 %

Unit weight determination *(input in yellow)*

Weight in-situ soil + Shelby tube:	1771.58	g
Weight post-test soil + Shelby:	1745.15	g
Weight of Shelby tube	448.31	g
Weight of in-situ soil:	1323.27	g
Weight of post-test (sat.) soil:	1296.84	g
Weight of soil dry:	1042.77	g
Diameter of Permeameter:	7.17	cm
Height of soil in Permeameter:	16.38	cm
Area of soil in Permeameter:	40.38	cm^2
Post-Test Unit Weight of soil:	1.96	g/cm3

Sample Density

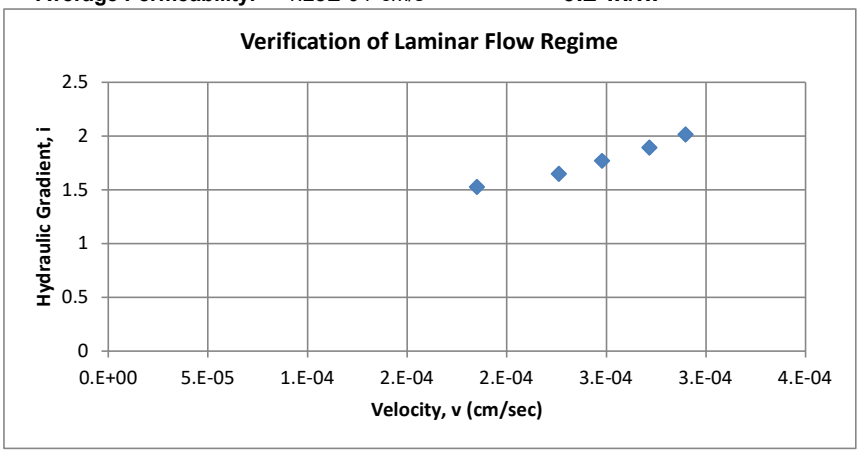
122.4 pcf (post-test)
124.9 pcf (in-situ)
98.4 pcf (dry)

Permeability determination

Length of soil in Permeameter, ***l***:	16.38	cm
Cross sectional Area, ***A***:	40.38	cm^2

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 $\eta_T:\eta_{20°C}$	Hydraulic Gradient, ***i***	Velocity, ***v*** (cm/sec)	Permeability at 20°C, $k_{20°C}$ (cm/s)
1	25	2.24	300	23	1.21E-04	0.9311	1.52625153	1.85E-04	1.13E-04
2	27	2.74	300	23	1.37E-04	0.9311	1.64835165	2.26E-04	1.28E-04
3	29	3	300	23	1.40E-04	0.9311	1.77045177	2.48E-04	1.30E-04
4	31	3.29	300	23	1.44E-04	0.9311	1.89255189	2.72E-04	1.34E-04
5	33	3.51	300	23	1.44E-04	0.9311	2.01465201	2.90E-04	1.34E-04

Average Permeability: 1.28E-04 cm/s **0.2 in/hr**



2030 State Road 60 East
Bartow, Florida 33830
(863) 533-9007

ASTM D2434-68 CONSTANT HEAD PERMEABILITY

Project Number: 13378.3
Project Name: Hyde Park Drainage
Project Location: Tampa, FL
Client: City of Tampa

Date Tested: 3/11/2021
Tested By: MAG

Boring Number: TP-1 (Vert)
Soil Description: Brown sand

Sample Interval: 2 TO 2.5'
USCS Code: SP
< #200 sieve: 2.4 %
Post-Test Moisture: 27.8 %
Natural Moisture: 24.0 %

Unit weight determination *(input in yellow)*

Weight in-situ soil + Shelby tube:	1612.93	g
Weight post-test soil + Shelby:	1768.87	g
Weight of Shelby tube	430.59	g
Weight of in-situ soil:	1182.34	g
Weight of post-test (sat.) soil:	1338.28	g
Weight of soil dry:	953.50	g
Diameter of Permeameter:	7.25	cm
Height of soil in Permeameter:	16.00	cm
Area of soil in Permeameter:	41.28	cm^2
Post-Test Unit Weight of soil:	2.03	g/cm3

Sample Density

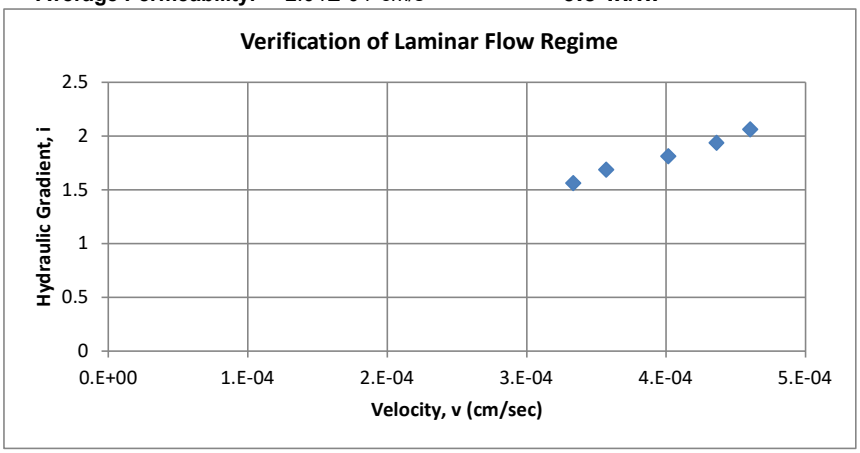
126.5 pcf (post-test)
111.8 pcf (in-situ)
90.1 pcf (dry)

Permeability determination

Length of soil in Permeameter, ***l*** :	16.00	cm
Cross sectional Area, ***A*** :	41.28	cm^2

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, $\eta_T:\eta_{20°C}$	Hydraulic Gradient, ***i***	Velocity, ***v*** (cm/sec)	Permeability at 20°C, $k_{20°C}$ (cm/s)
1	25	4.13	300	23	2.13E-04	0.9311	1.5625	3.33E-04	1.99E-04
2	27	4.42	300	23	2.11E-04	0.9311	1.6875	3.57E-04	1.97E-04
3	29	4.97	300	23	2.21E-04	0.9311	1.8125	4.01E-04	2.06E-04
4	31	5.4	300	23	2.25E-04	0.9311	1.9375	4.36E-04	2.10E-04
5	33	5.7	300	23	2.23E-04	0.9311	2.0625	4.60E-04	2.08E-04

Average Permeability: 2.04E-04 cm/s **0.3 in/hr**



2030 State Road 60 East
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(863) 533-9007

ASTM D2434-68 CONSTANT HEAD PERMEABILITY

Project Number: 13378.3
Project Name: Hyde Park Drainage
Project Location: Tampa, FL
Client: City of Tampa

Date Tested: 3/11/2021
Tested By: MAG

Boring Number: TP-2 (Hor)
Soil Description: Brown sand

Sample Interval: 2 TO 2'
USCS Code: SP
< #200 sieve: 2.4 %
Post-Test Moisture: 19.9 %
Natural Moisture: 22.5 %

Unit weight determination *(input in yellow)*

Weight in-situ soil + Shelby tube:	1893.41	g
Weight post-test soil + Shelby:	1953.50	g
Weight of Shelby tube	455.36	g
Weight of in-situ soil:	1438.05	g
Weight of post-test (sat.) soil:	1498.14	g
Weight of soil dry:	1173.92	g
Diameter of Permeameter:	7.21	cm
Height of soil in Permeameter:	16.40	cm
Area of soil in Permeameter:	40.83	cm^2
Post-Test Unit Weight of soil:	2.24	g/cm3

Sample Density

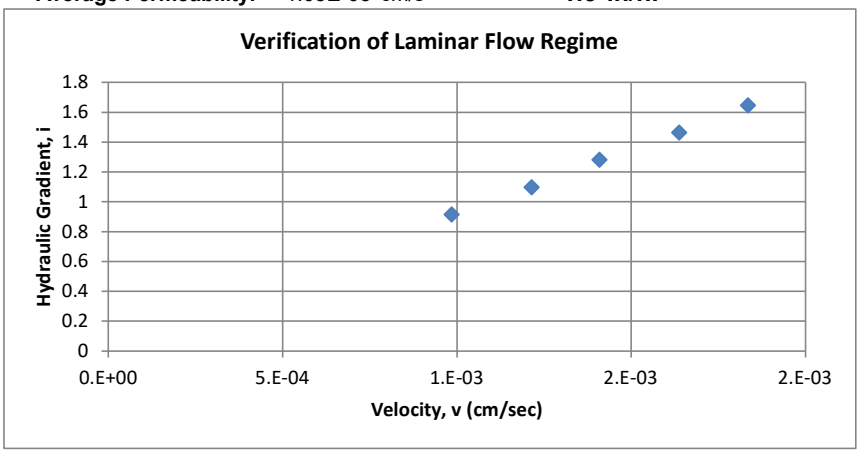
139.7 pcf (post-test)
134.1 pcf (in-situ)
109.5 pcf (dry)

Permeability determination

Length of soil in Permeameter, ***l*** :	16.40	cm
Cross sectional Area, ***A*** :	40.83	cm^2

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 $\eta_T:\eta_{20°C}$	Hydraulic Gradient, ***i***	Velocity, ***v*** (cm/sec)	Permeability at 20°C, $k_{20°C}$ (cm/s)
1	15	4.46	111	22	1.08E-03	0.9531	0.91463415	9.84E-04	1.03E-03
2	18	4.51	91	22	1.11E-03	0.9531	1.09756098	1.21E-03	1.05E-03
3	21	4.14	72	22	1.10E-03	0.9531	1.2804878	1.41E-03	1.05E-03
4	24	4.48	67	22	1.12E-03	0.9531	1.46341463	1.64E-03	1.07E-03
5	27	4.27	57	22	1.11E-03	0.9531	1.64634146	1.83E-03	1.06E-03

Average Permeability: 1.05E-03 cm/s **1.5 in/hr**



2030 State Road 60 East
Bartow, Florida 33830
(863) 533-9007

ASTM D2434-68 CONSTANT HEAD PERMEABILITY

Project Number: 13378.3
Project Name: Hyde Park Drainage
Project Location: Tampa, FL
Client: City of Tampa

Date Tested: 3/11/2021
Tested By: MAG

Boring Number: TP-2 (Vert)
Soil Description: Brown sand

Sample Interval: 2 TO 2.5'
USCS Code: SP
< #200 sieve: 1.5 %
Post-Test Moisture: 21.2 %
Natural Moisture: 23.6 %

Unit weight determination *(input in yellow)*

Weight in-situ soil + Shelby tube:	1810.96	g
Weight post-test soil + Shelby:	1878.85	g
Weight of Shelby tube	445.31	g
Weight of in-situ soil:	1365.65	g
Weight of post-test (sat.) soil:	1433.54	g
Weight of soil dry:	1104.89	g
Diameter of Permeameter:	7.29	cm
Height of soil in Permeameter:	16.35	cm
Area of soil in Permeameter:	41.74	cm^2
Post-Test Unit Weight of soil:	2.10	g/cm3

Sample Density

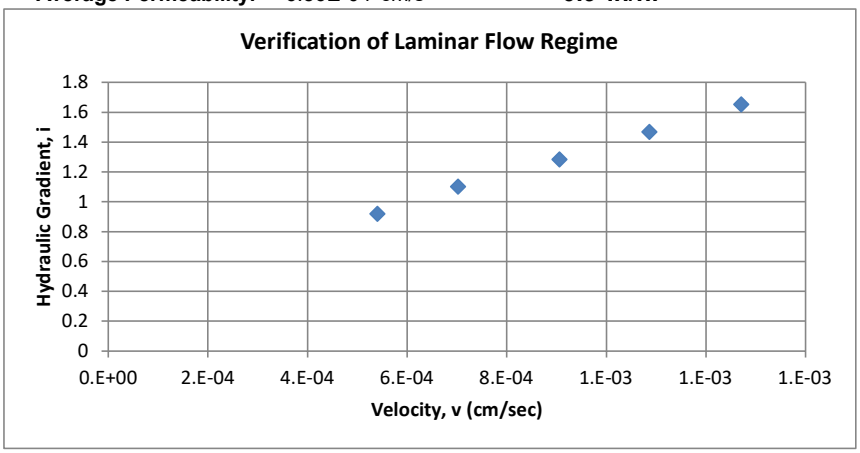
131.1 pcf (post-test)
124.9 pcf (in-situ)
101.1 pcf (dry)

Permeability determination

Length of soil in Permeameter, ***l*** :	16.35	cm
Cross sectional Area, ***A*** :	41.74	cm^2

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, $\eta_T:\eta_{20°C}$	Hydraulic Gradient, ***i***	Velocity, ***v*** (cm/sec)	Permeability at 20°C, $k_{20°C}$ (cm/s)
1	15	6.76	300	22	5.88E-04	0.9531	0.91743119	5.40E-04	5.61E-04
2	18	8.79	300	22	6.38E-04	0.9531	1.10091743	7.02E-04	6.08E-04
3	21	11.34	300	22	7.05E-04	0.9531	1.28440367	9.06E-04	6.72E-04
4	24	13.6	300	22	7.40E-04	0.9531	1.46788991	1.09E-03	7.05E-04
5	27	15.91	300	22	7.69E-04	0.9531	1.65137615	1.27E-03	7.33E-04

Average Permeability: 6.56E-04 cm/s **0.9 in/hr**



APPENDIX C

Pavement Core Photo Log

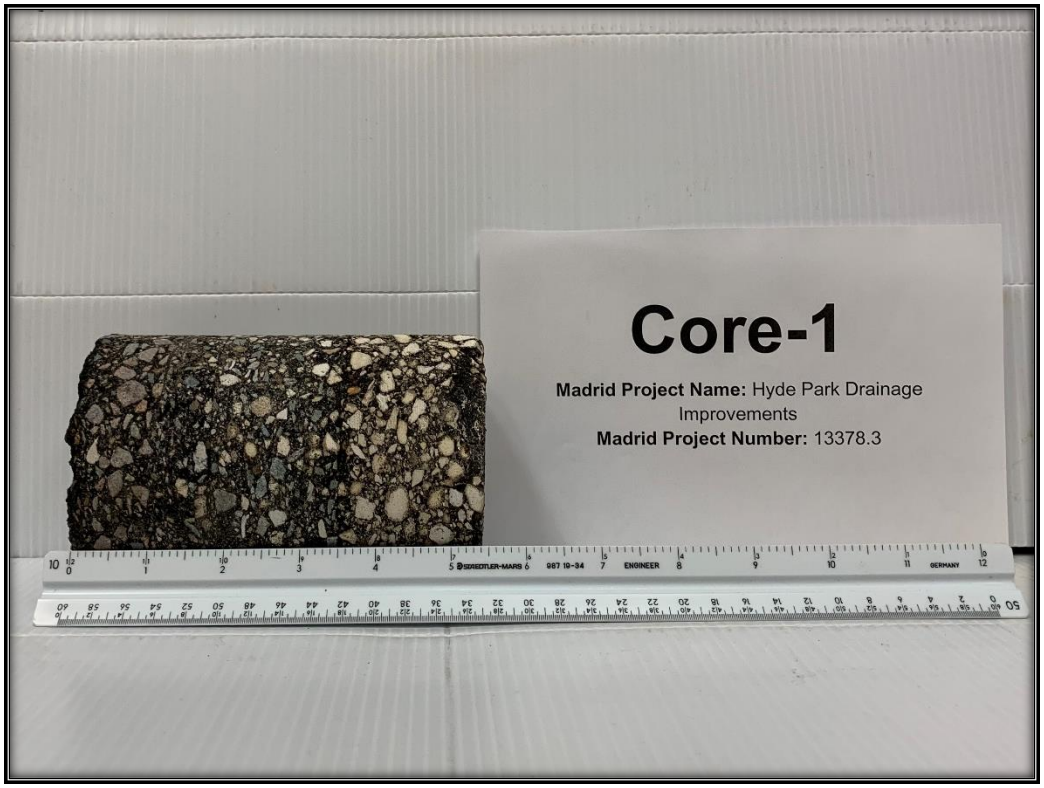


Photo 1: Core 1

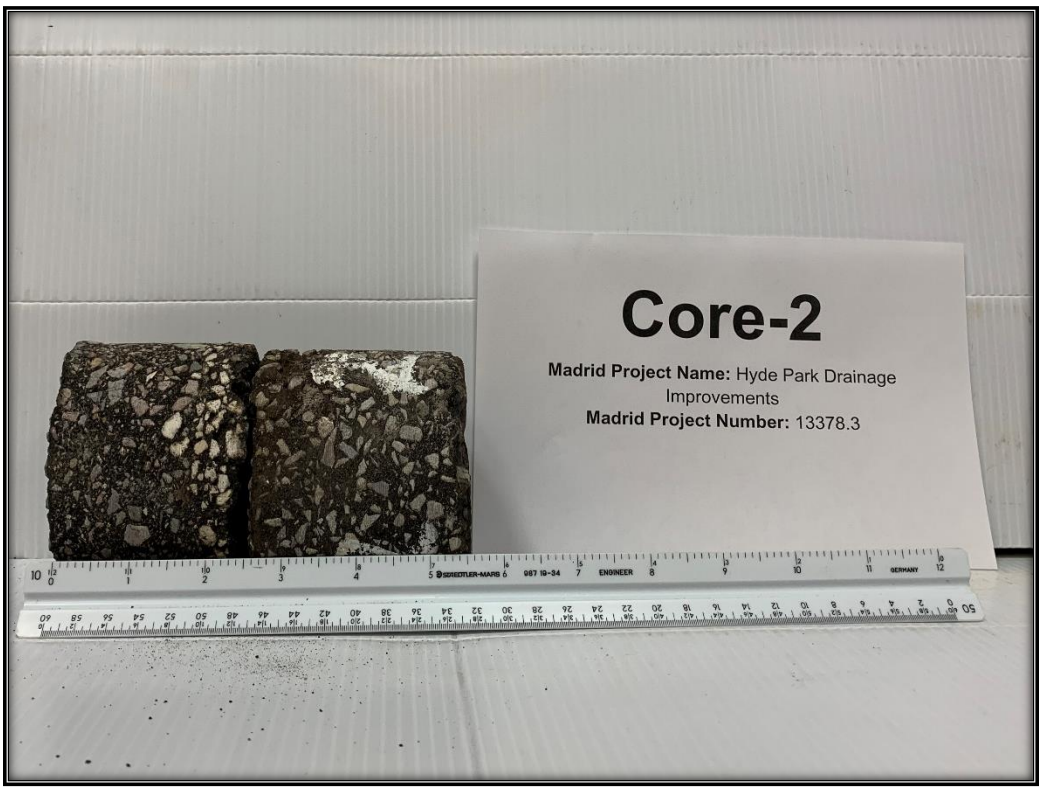


Photo 2: Core 2

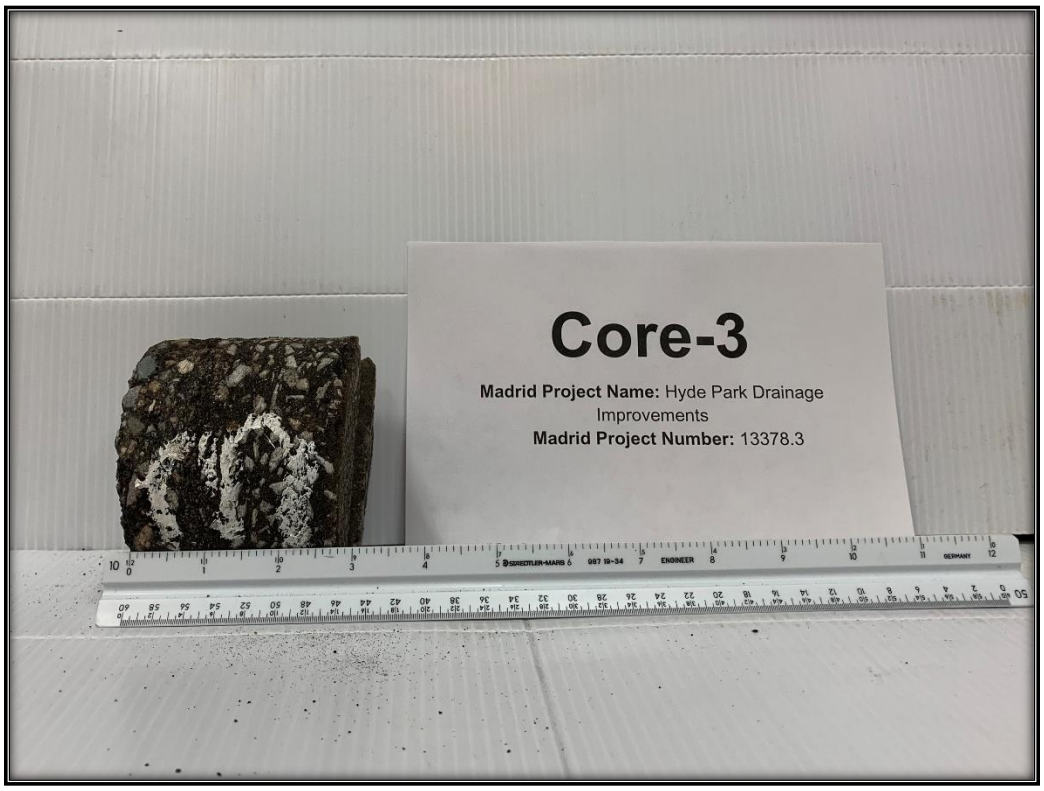


Photo 3: Core 3

Photo 4: Core 4

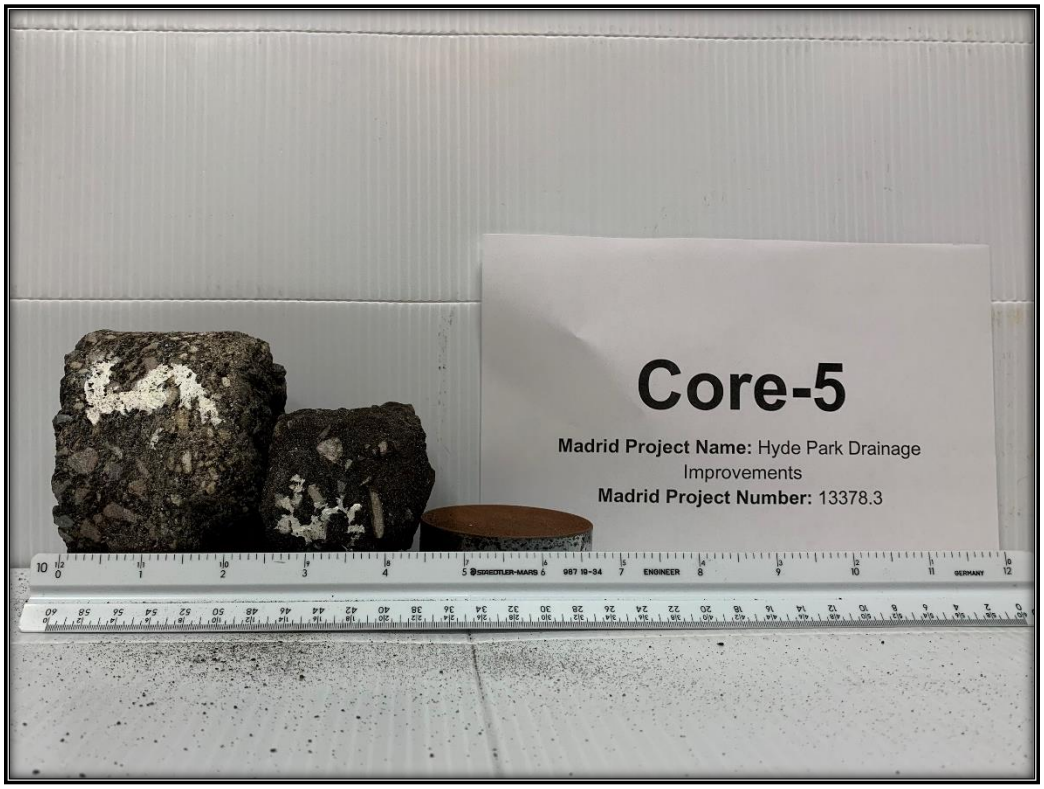
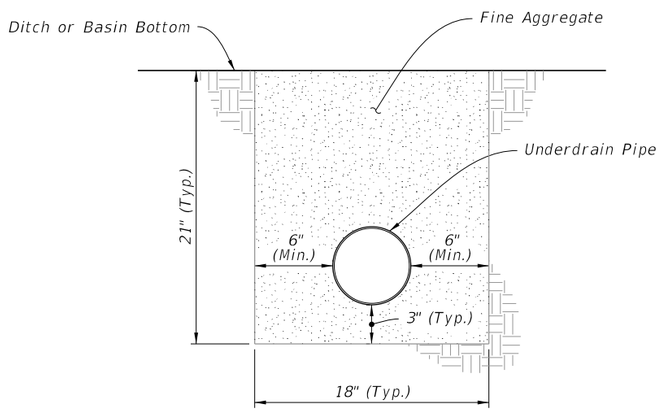


Photo 5: Core 5



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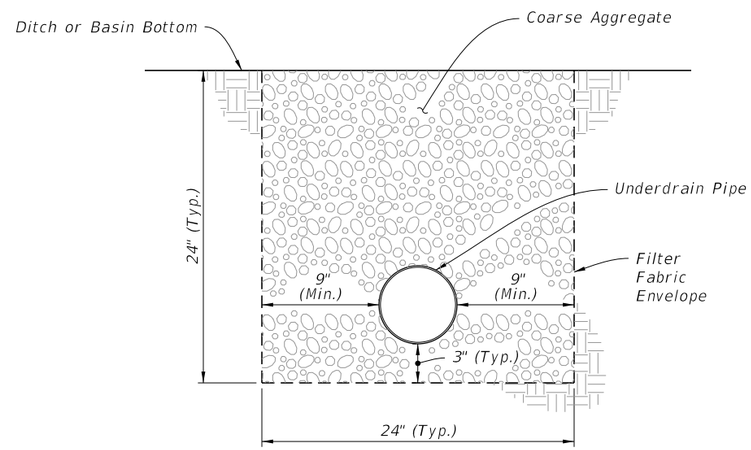
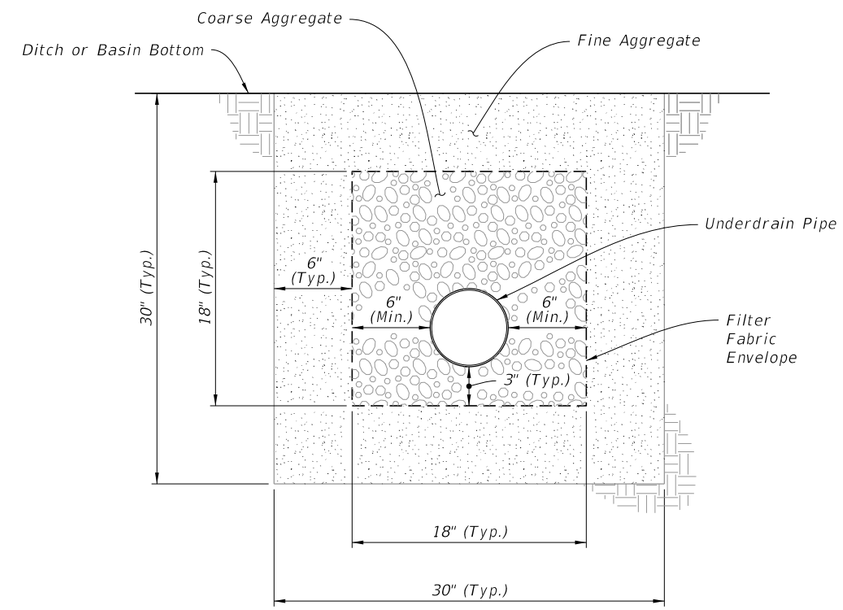


TYPE II



TYPE III

TYPE I, II, AND III

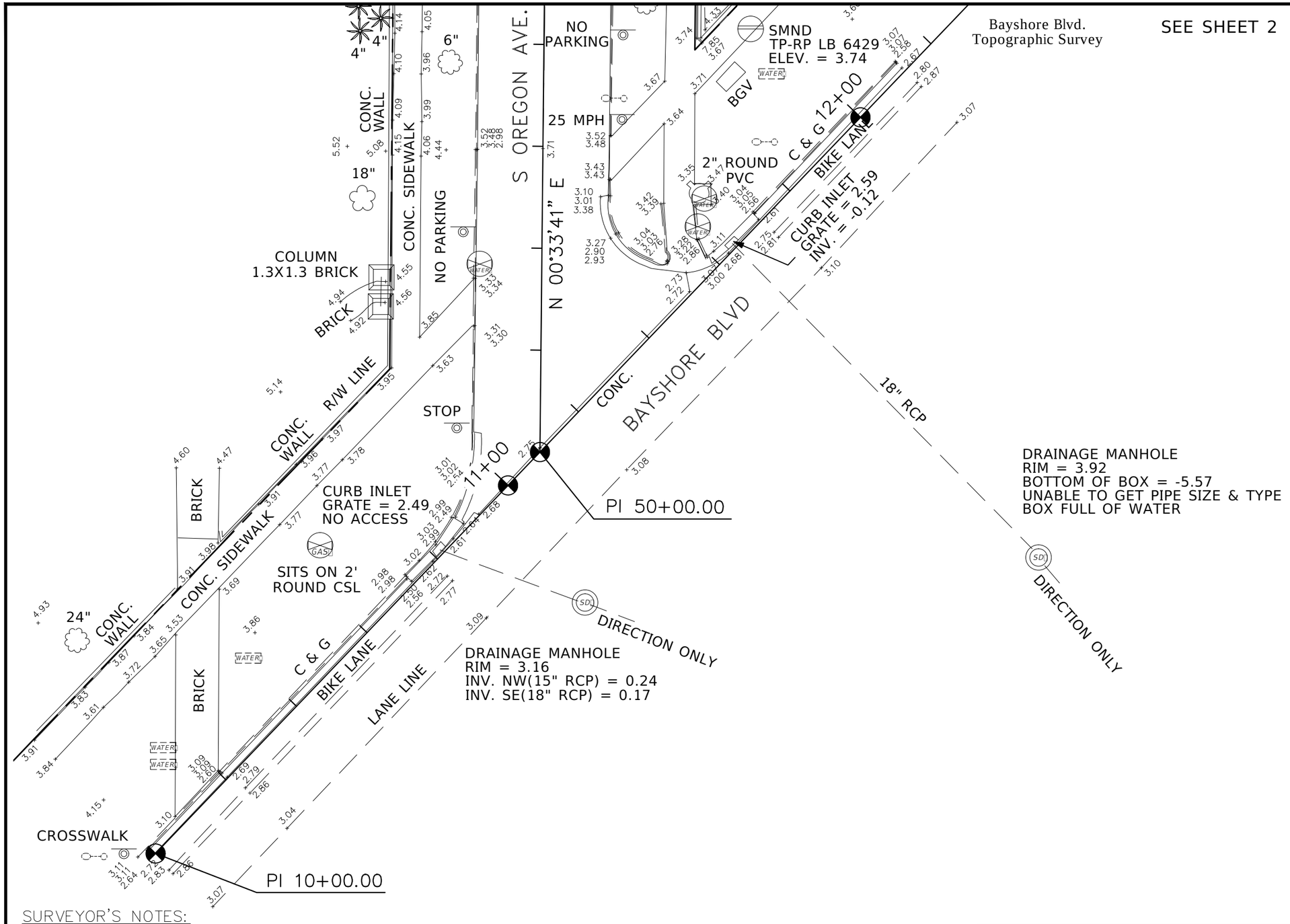
LAST REVISION	REVISION	DESCRIPTION:			INDEX	SHEET
11/01/19			FDOT FY 2020-21 STANDARD PLANS	UNDERDRAIN	440-001	2 of 3

10/29/2019 8:17:01 AM

Bayshore Blvd.
Topographic Survey

SEE SHEET 2

SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST
HILLSBOROUGH COUNTY, FLORIDA



20 10 0 20
SCALE IN FEET

LEGEND

- SPOT GRADE
- OAK TREE
- PALM TREE
- SPOT GRADE
- PINE TREE
- STUMP
- SHRUB
- UTILITY POLE
- SHARED POLE W/ TRANS
- SHARED POLE
- SPRINKLER
- GAS VALVE COVER
- GAS VALVE
- GAS METER
- TELEPHONE PEDESTAL
- BOLLARD
- CLEANOUT
- SANITARY MANHOLE
- CABLE TV SERVICE BOX
- WIRING PULL BOX
- DRILL HOLE
- FENCE
- CONCRETE SLAB
- BACK OF CURB
- EDGE OF PAVEMENT
- FACE OF CURB
- STORM PIPE
- EXIST R/W LINE

AC = AIR CONDITIONING
ASPH. = ASPHALT
BGV = BELOW GROUND VAULT
CONC. = CONCRETE
CSL = CONCRETE SLAB
C&G = CURB AND GUTTER
ELEC = ELECTRIC
ELEV. = ELEVATION
ICV = IRRIGATION CONTROL VALVE
LB = LICENSED BUSINESS
MAG = MAGNOLIA
PVC = POLYVINYL CHLORIDE
RCP = REINFORCED CONCRETE PIPE
RCW = RECLAIMED WATER
R/W = RIGHT OF WAY
SMND = SET MAG NAIL & DISK
TOB = TOP OF BANK
TOS = TOE OF SLOPE
TP-RP = TRAVERSE POINT - REFERENCE POINT
TYP. = TYPICAL
WBF = WOOD BOARD FENCE

- POST
- GUY ANCHOR
- FLOOD LIGHT
- SERVICE CABINET
- SIGN
- FIRE HYDRANT
- WATER VALVE COVER
- WATER METER
- LIGHT POLE
- SET NAIL & TIN TAB

SURVEYOR'S NOTES:

1. TYPE OF SURVEY: TOPOGRAPHIC SURVEY PREPARED FOR DRAINAGE.
2. ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD 1988 VERTICAL DATUM AND BASED ON CITY OF TAMPA BENCH MARK HV-02 170 WITH AN ELEVATION OF 12.83.
3. FIELD WORK WAS COMPLETED ON 2/06/2020 AND WAS RECORDED IN FIELD BOOK # COT 46.
4. ECHEZABAL AND ASSOCIATES, INC. MAKES NO REPRESENTATIONS OR GUARANTEES PERTAINING TO EASEMENTS, RIGHT-OF-WAY, SET BACK LINES, RESERVATIONS, AGREEMENT AND OTHER SIMILAR MATTERS.
5. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND UTILITIES, ENCROACHMENTS, IMPROVEMENTS, STRUCTURES OR FOUNDATIONS.
6. NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA REGISTERED SURVEYOR AND MAPPER.
7. 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.
8. RIGHT OF WAY IS BASED ON RECORD PLATS FROM HILLSBOROUGH COUNTY.
9. ALL BASELINES HAVE BEEN SET AT 100' STATIONS.

This Survey Prepared For: **CITY OF TAMPA**

ECHEZABAL & ASSOCIATES, INC.
Surveying & Mapping LB #6429
108 Country Club Drive
Tampa, Florida 33612
(813) 933-2505
FAX (813) 933-2721

REVISIONS

Drawn: R.T.B.	Checked: S.M.T.	Crew: S.D.	Description	Date	Description	Date
Date: 3/31/20	Dwg: 1803904.DWG	SCALE: 1" = 20'				
File Name C:\Users\Ryan Bouffard\appdata\local\temp\AcPublish_12164\1803904.dwg						
SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST						

SURVEYOR'S CERTIFICATE

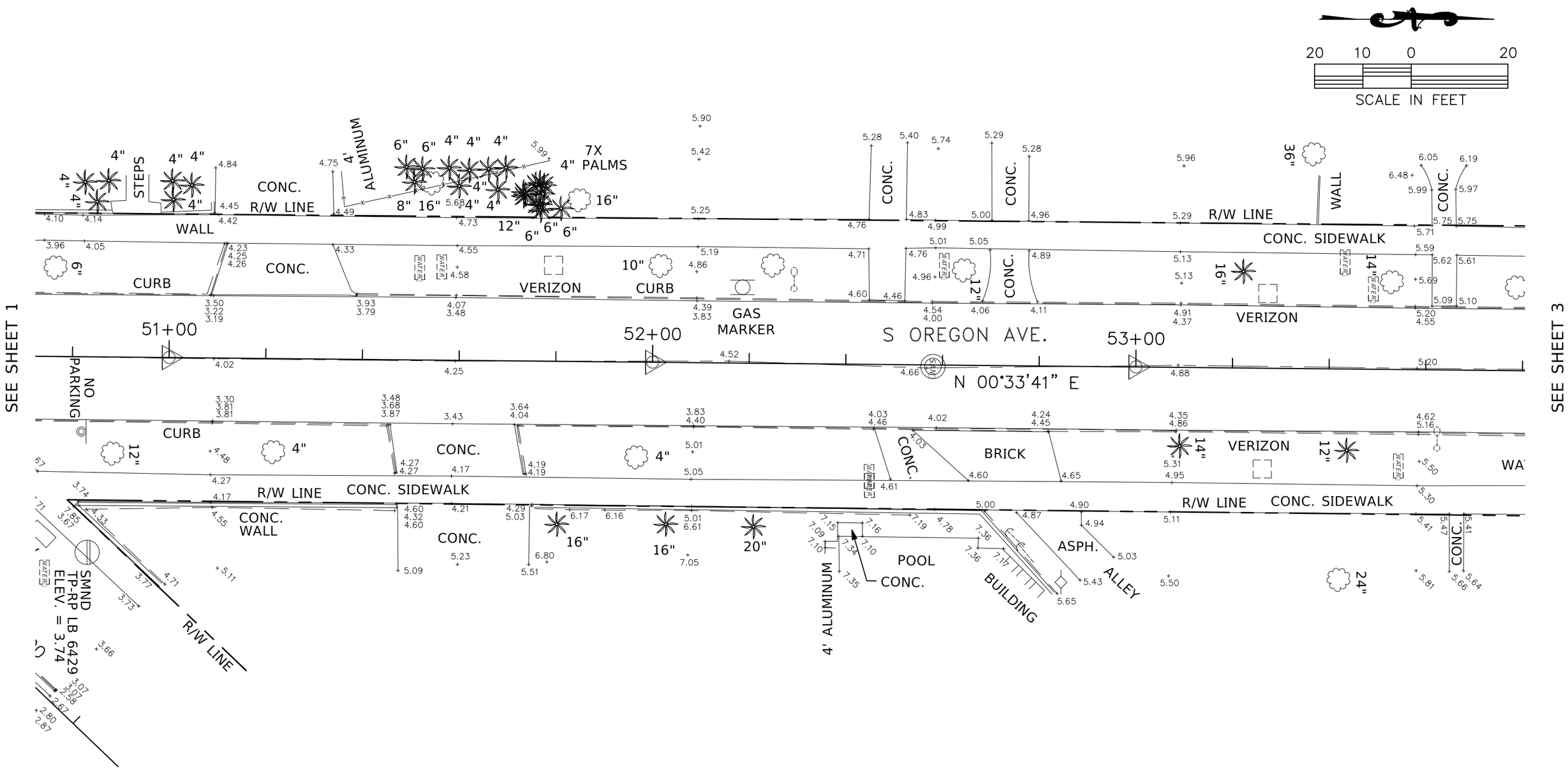
This certifies that a survey of the hereon shown property was made under my supervision and meets the Standards of Practice set forth by the Board of Professional Surveyors and Mappers in Chapter 5J-17, Florida Administrative Code pursuant to Section 472.027, Florida Statutes.

Stephen M. Tate
FLORIDA PROFESSIONAL SURVEYOR AND MAPPER NO. 5242

THIS SURVEY NOT VALID UNLESS IMPRINTED WITH AN EMBOSSED SURVEYOR'S SEAL

Bayshore Blvd.
Topographic Survey

SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST
HILLSBOROUGH COUNTY, FLORIDA



* SEE SHEET 1 FOR LEGEND AND NOTES

This Survey Prepared For: **CITY OF TAMPA**

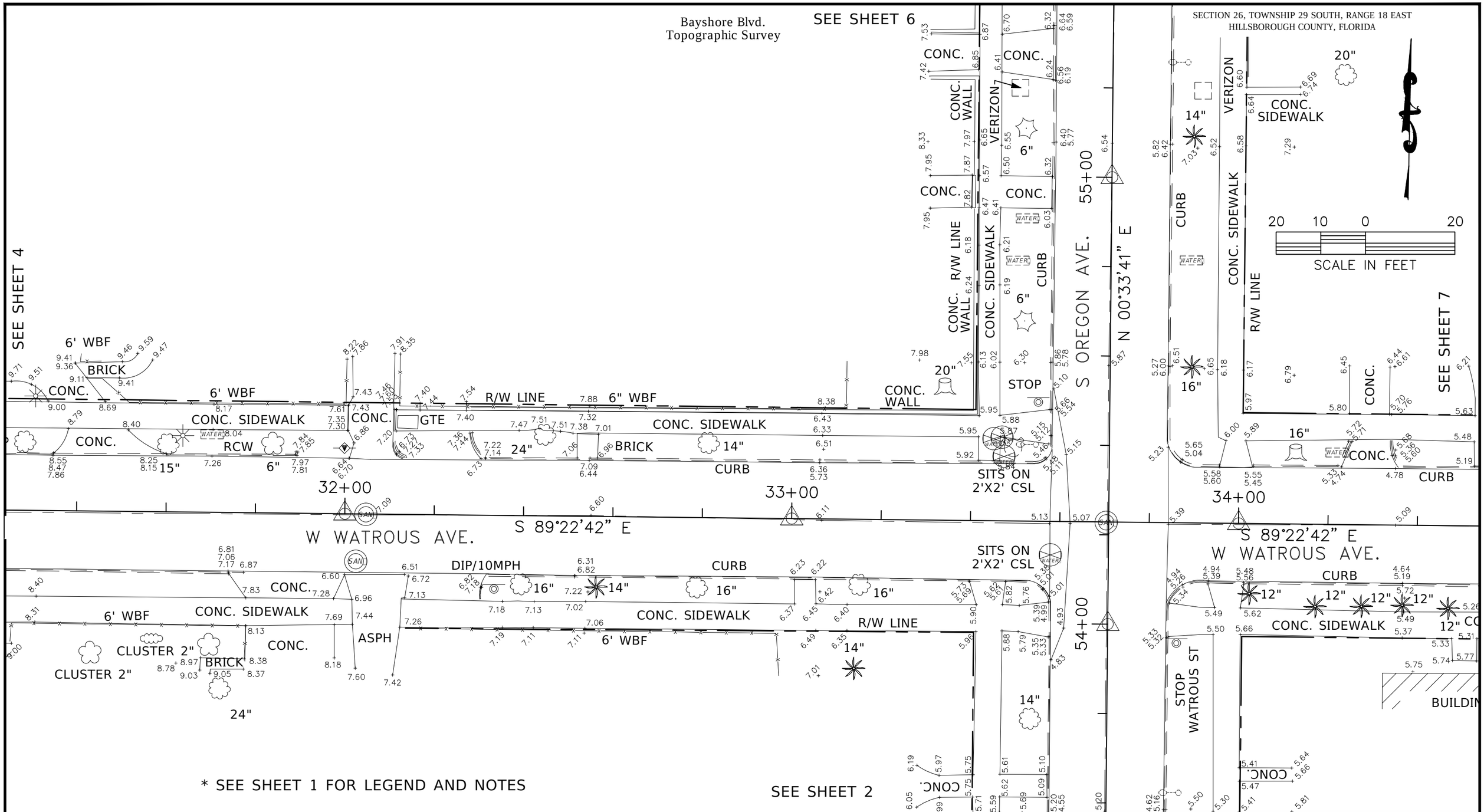
ECHEZABAL & ASSOCIATES, INC.
Surveying & Mapping LB #6429

108 Country Club Drive
Tampa, Florida 33612
(813) 933-2505
FAX (813) 933-2721

			REVISIONS			
Drawn: R.T.B.	Checked: S.M.T.	Crew: S.D.	Description	Date	Description	Date
Date: 3/31/20	Dwg: 1803904.DWG	SCALE: 1" = 20'				
File Name C:\Users\Ryan Bouffard\appdata\local\temp\AcPublish_12164\1803904.dwg						
SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST						

Bayshore Blvd.
Topographic Survey

SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST
HILLSBOROUGH COUNTY, FLORIDA



This Survey Prepared For: **CITY OF TAMPA**

ECHEZABAL & ASSOCIATES, INC.
Surveying & Mapping LB #6429

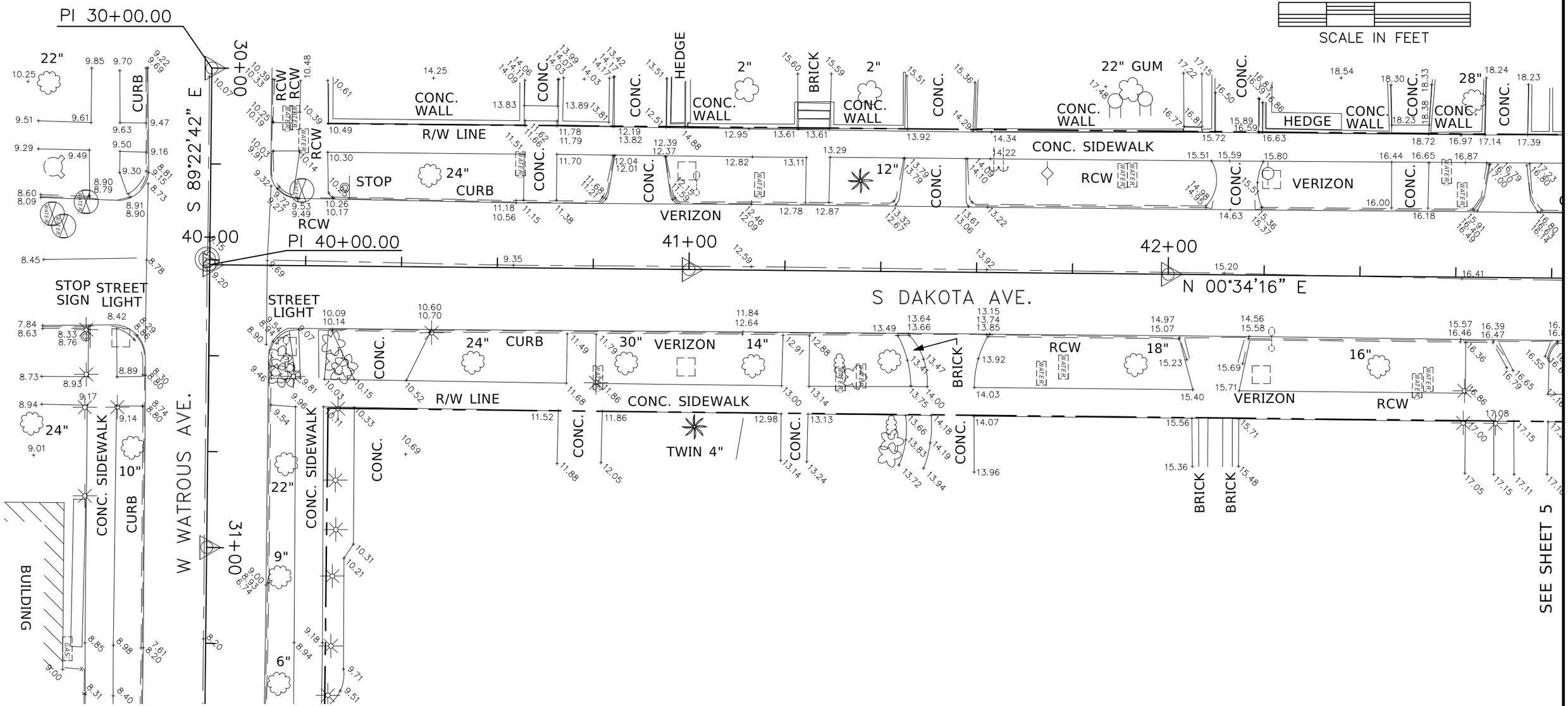
108 Country Club Drive
Tampa, Florida 33612
(813) 933-2505
FAX (813) 933-2721

Drawn: R.T.B.	Checked: S.M.T.	Crew: S.D.	REVISIONS			
Date: 3/31/20	Dwg: 1803904.DWG	SCALE: 1" = 20'	Description	Date	Description	Date
File Name C:\Users\Ryan Bouffard\appdata\local\temp\AcPublish_12164\1803904.dwg						
SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST						

Bayshore Blvd.
Topographic Survey

SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST
HILLSBOROUGH COUNTY, FLORIDA

20 10 0 20
SCALE IN FEET



* SEE SHEET 1 FOR LEGEND AND NOTES

This Survey Prepared For: **CITY OF TAMPA**

ECHEZABAL & ASSOCIATES, INC.
Surveying & Mapping LB #6429

108 Country Club Drive
Tampa, Florida 33612
(813) 933-2505
FAX (813) 933-2721

REVISIONS

Drawn: R.T.B.	Checked: S.M.T.	Crew: S.D.	Description	Date	Description	Date
Date: 3/31/20	Dwg: 1803904.DWG	SCALE: 1" = 20'				
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SECTION 26, TOWNSHIP 29 SOUTH, RANGE 18 EAST						

Bayshore Blvd.
Topographic Survey

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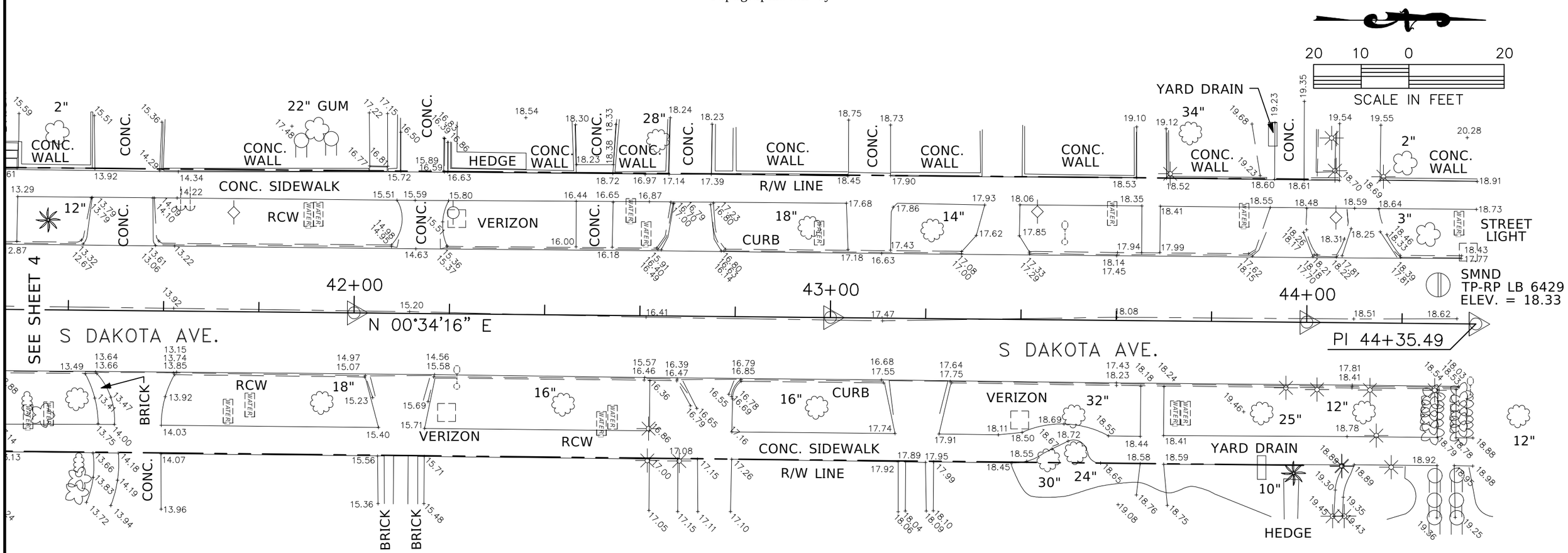
HILLSBOROUGH COUNTY, FLORIDA



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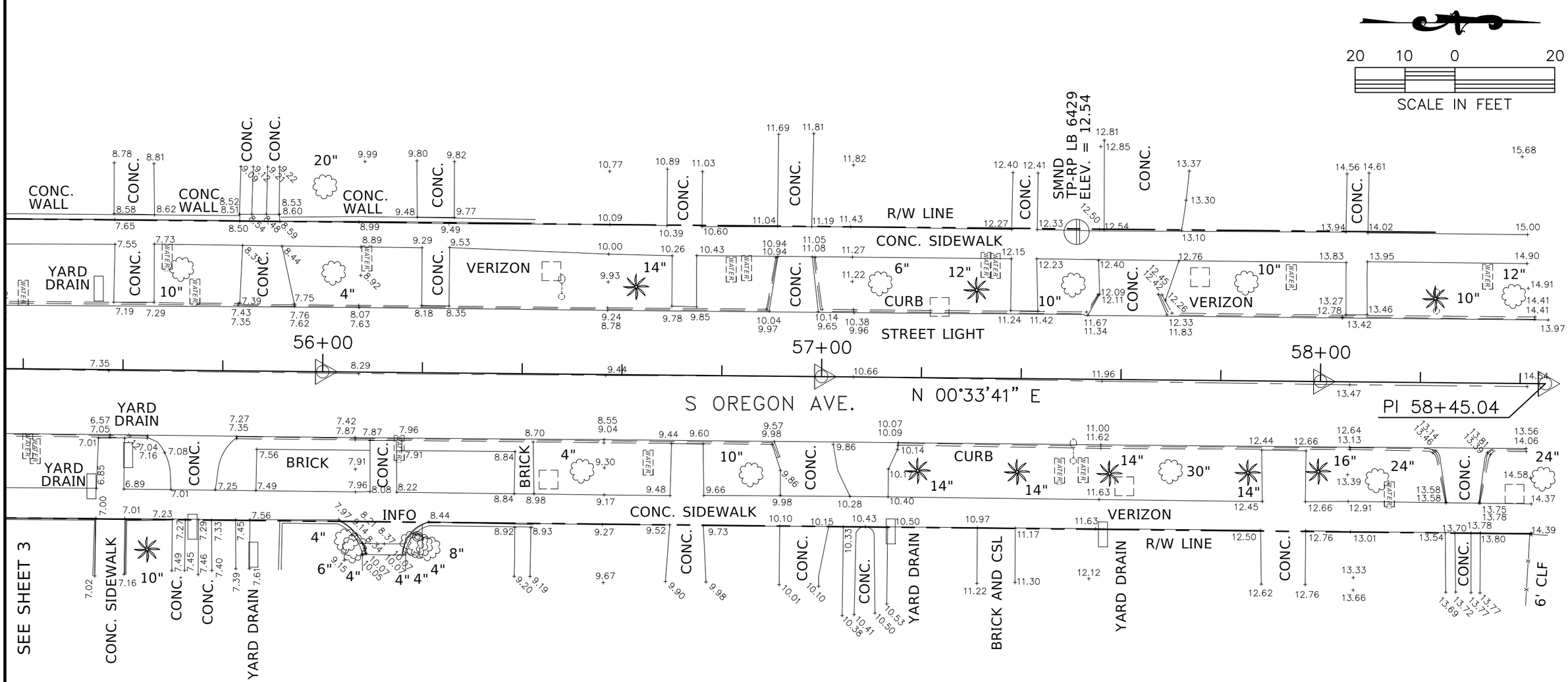

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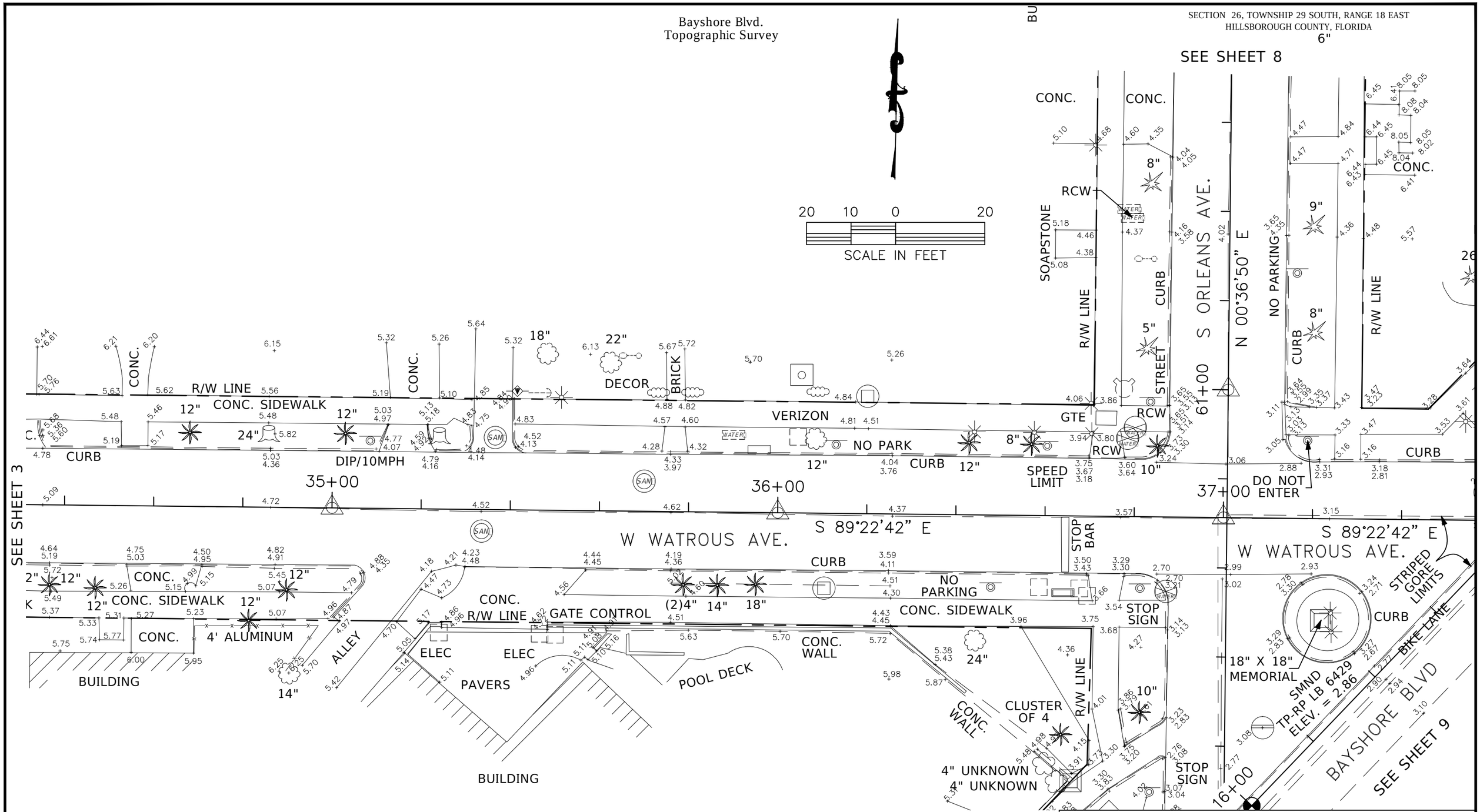

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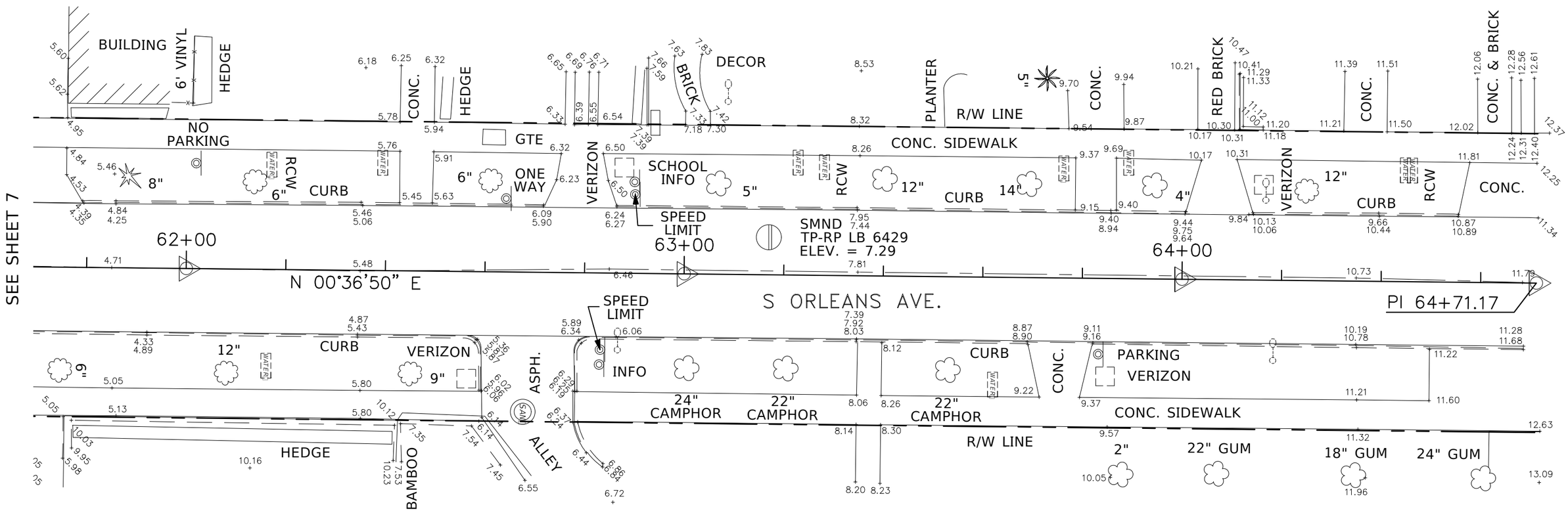
SCALE IN FEET



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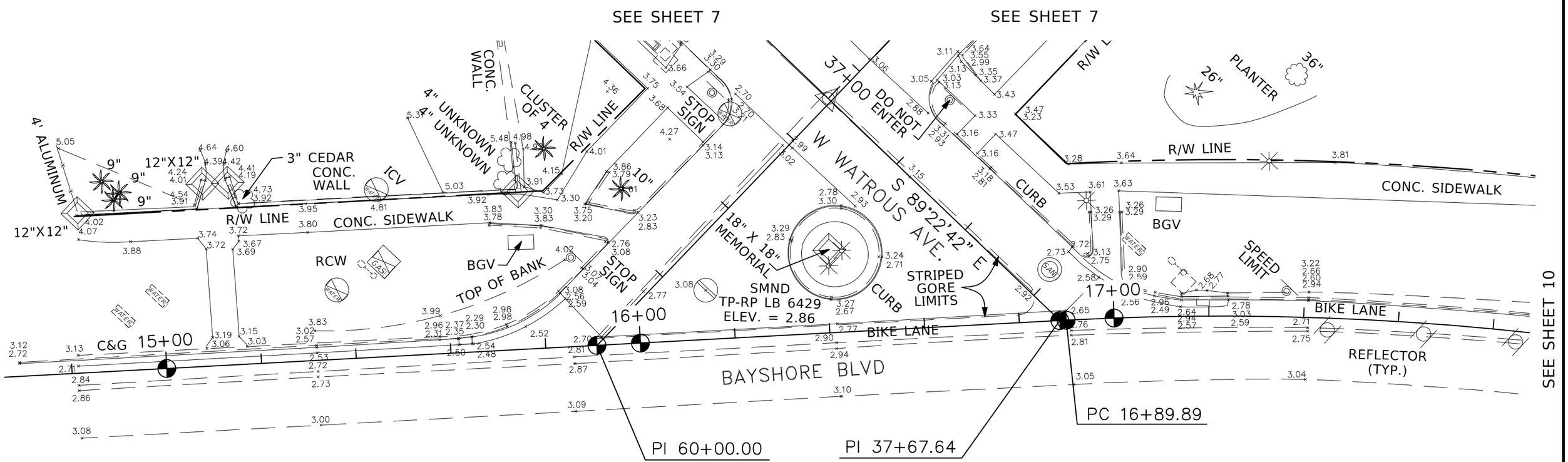

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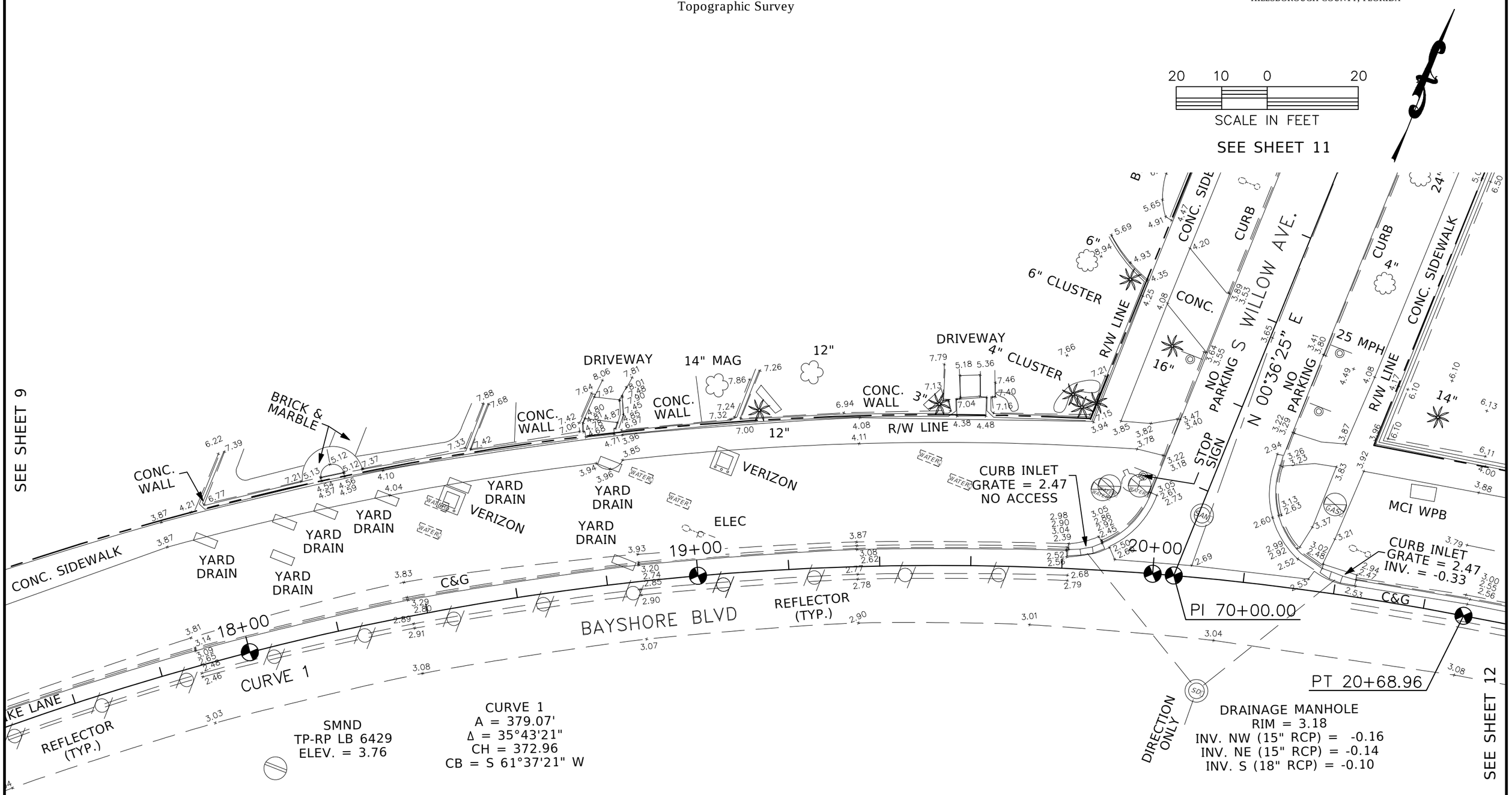

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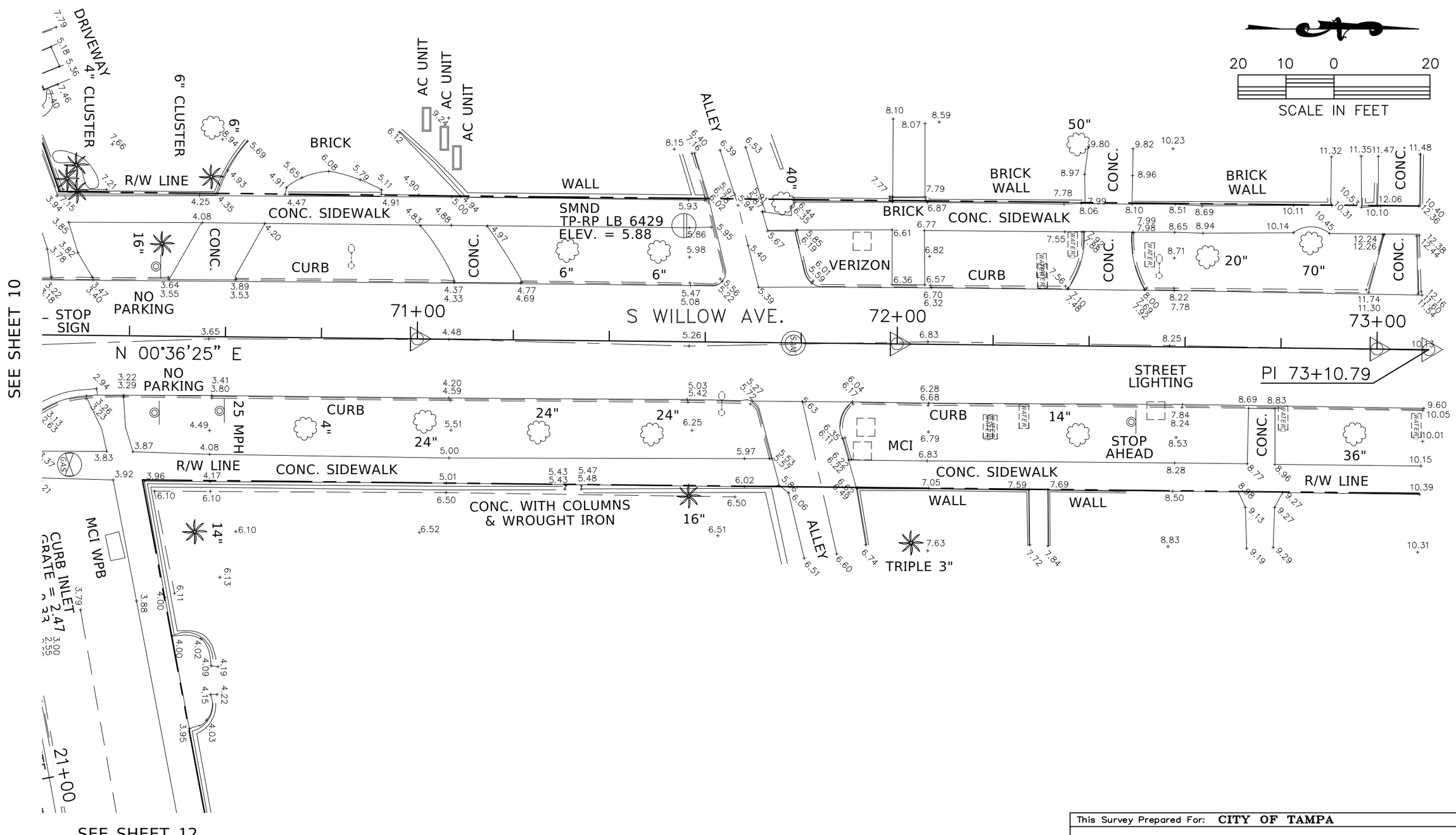

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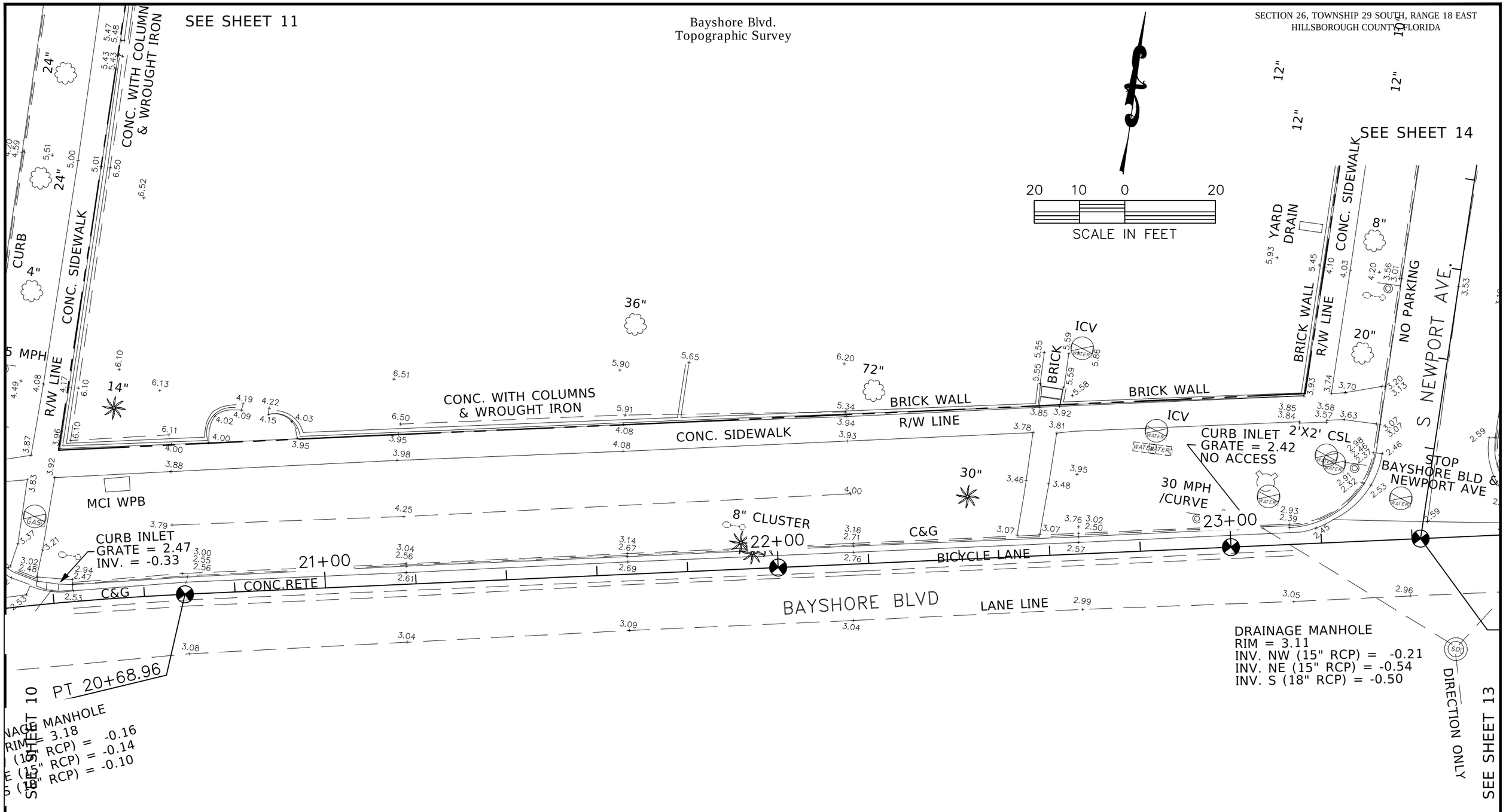

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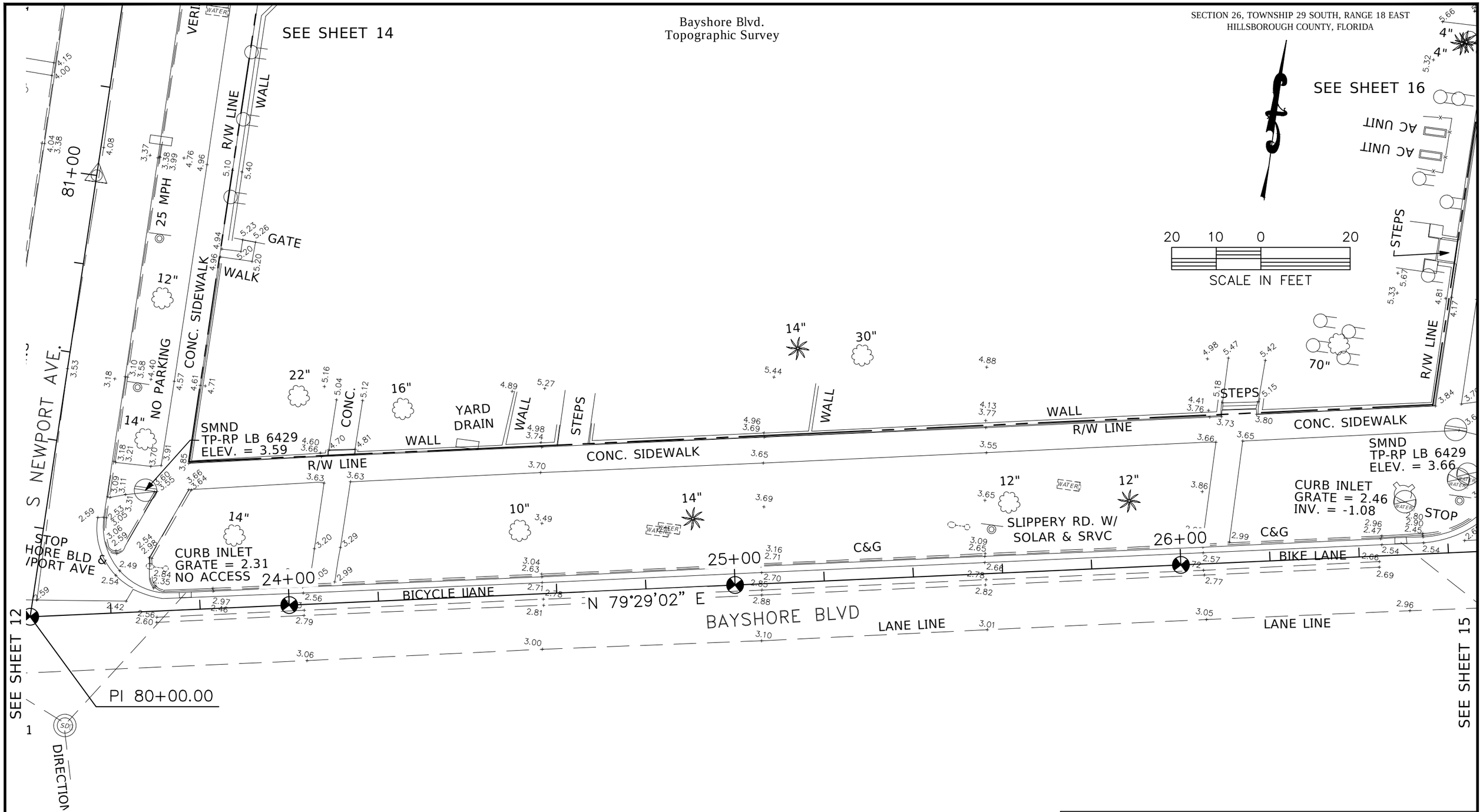

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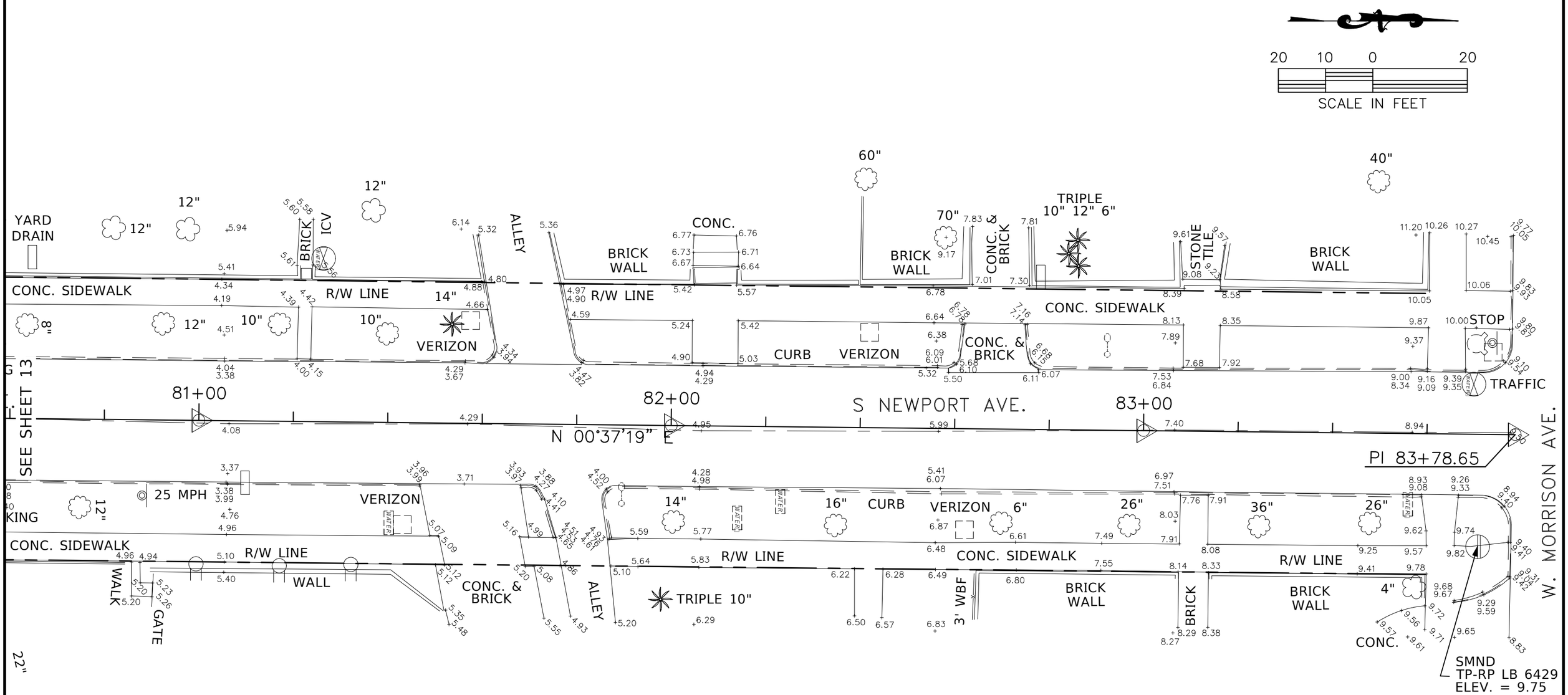

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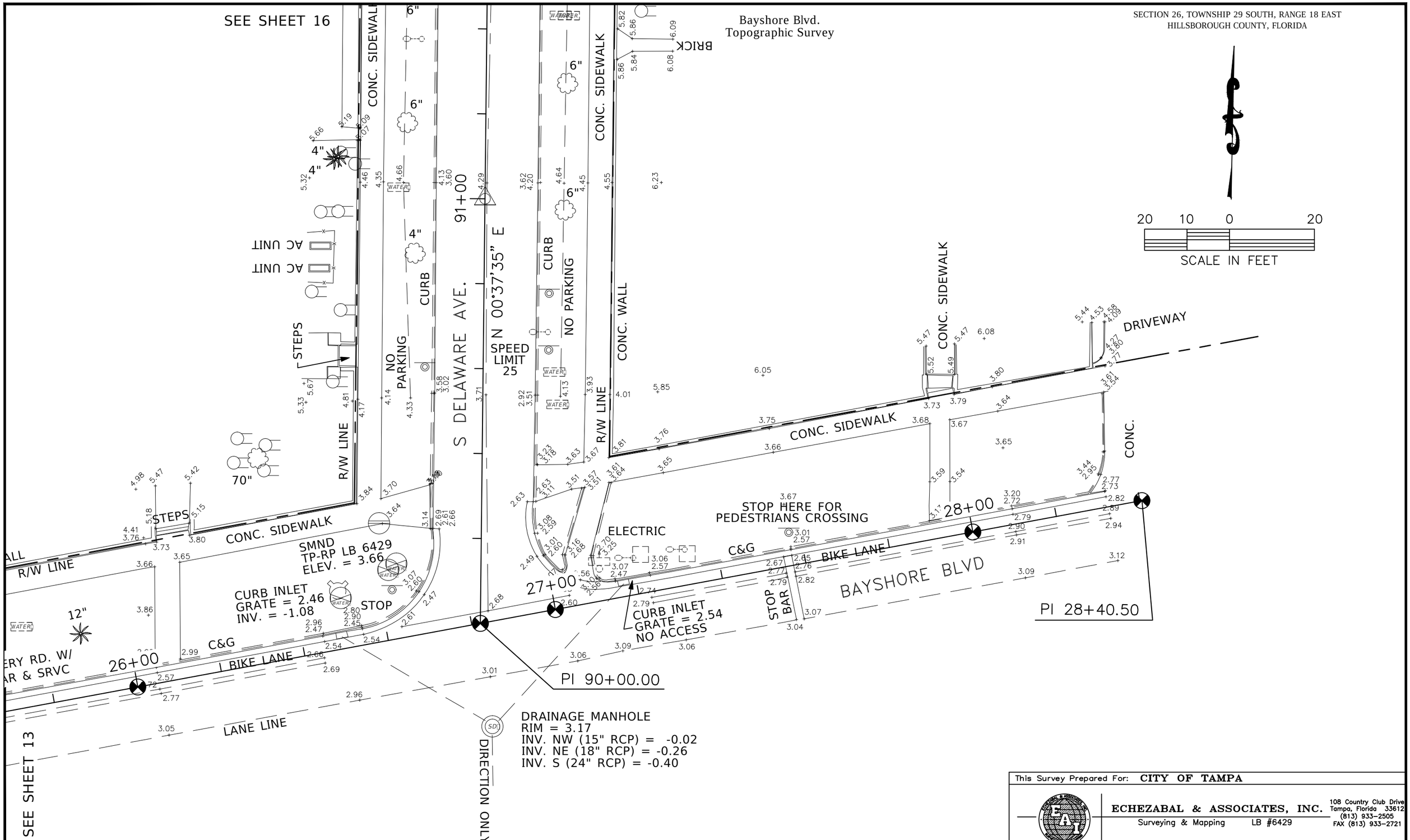

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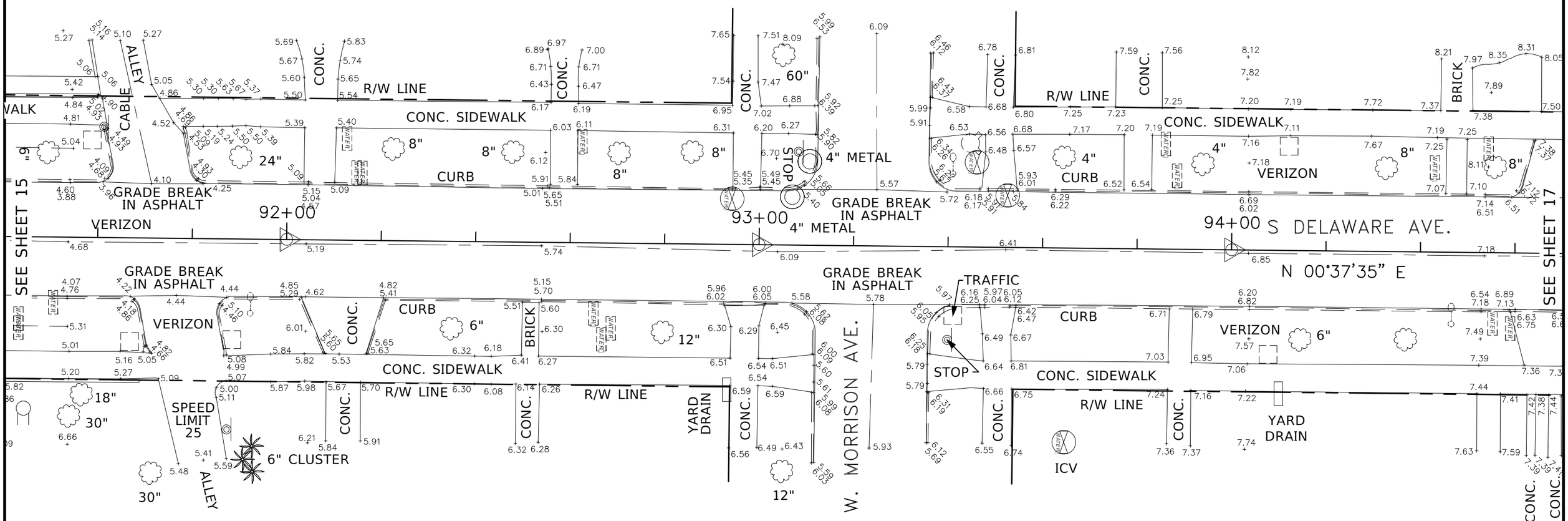

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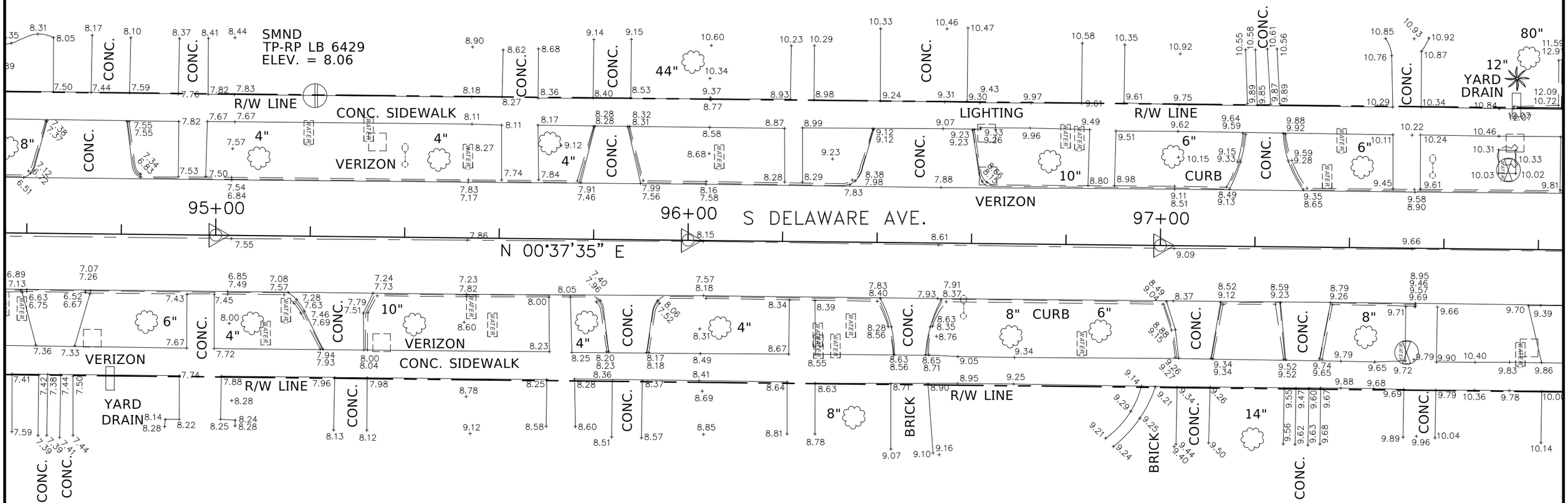

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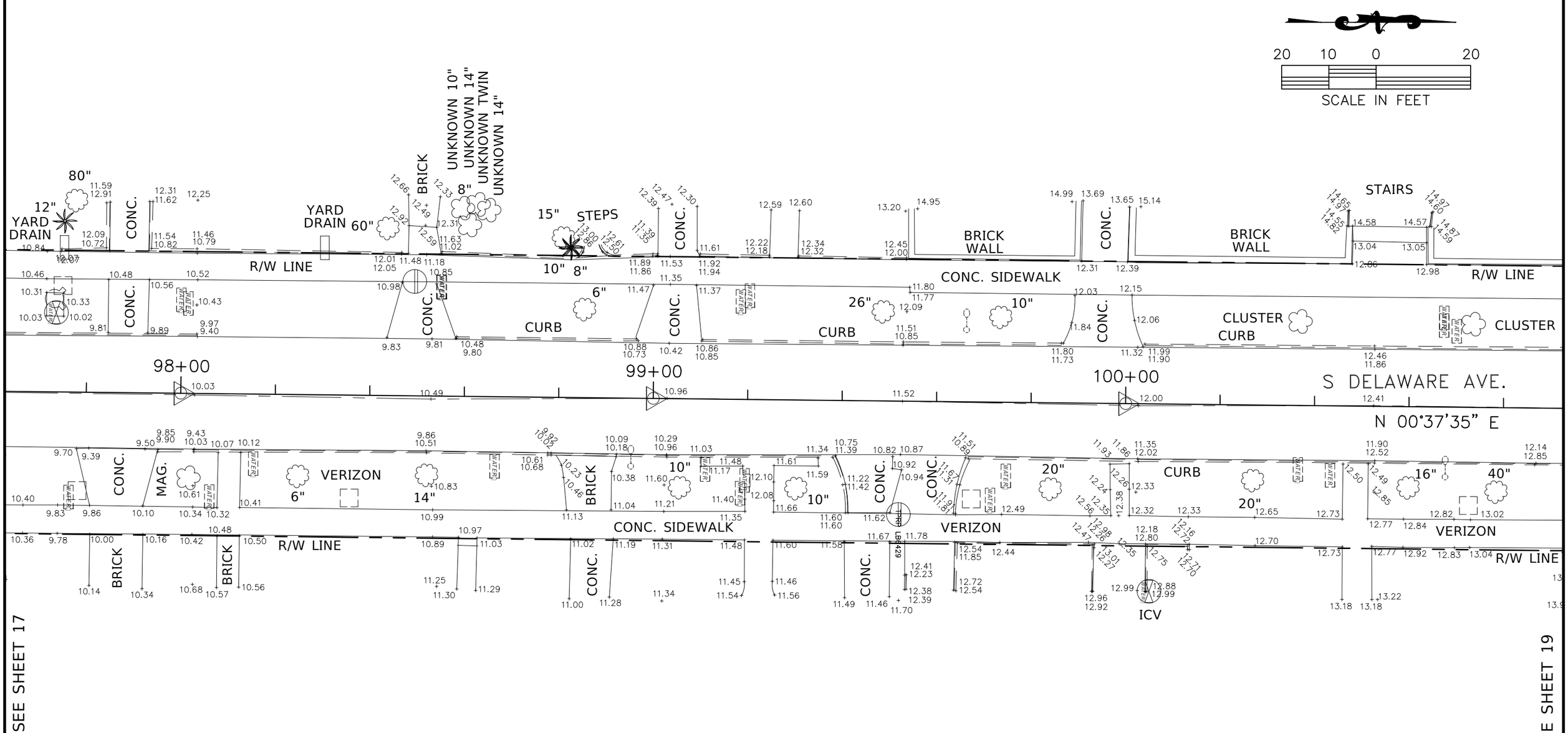

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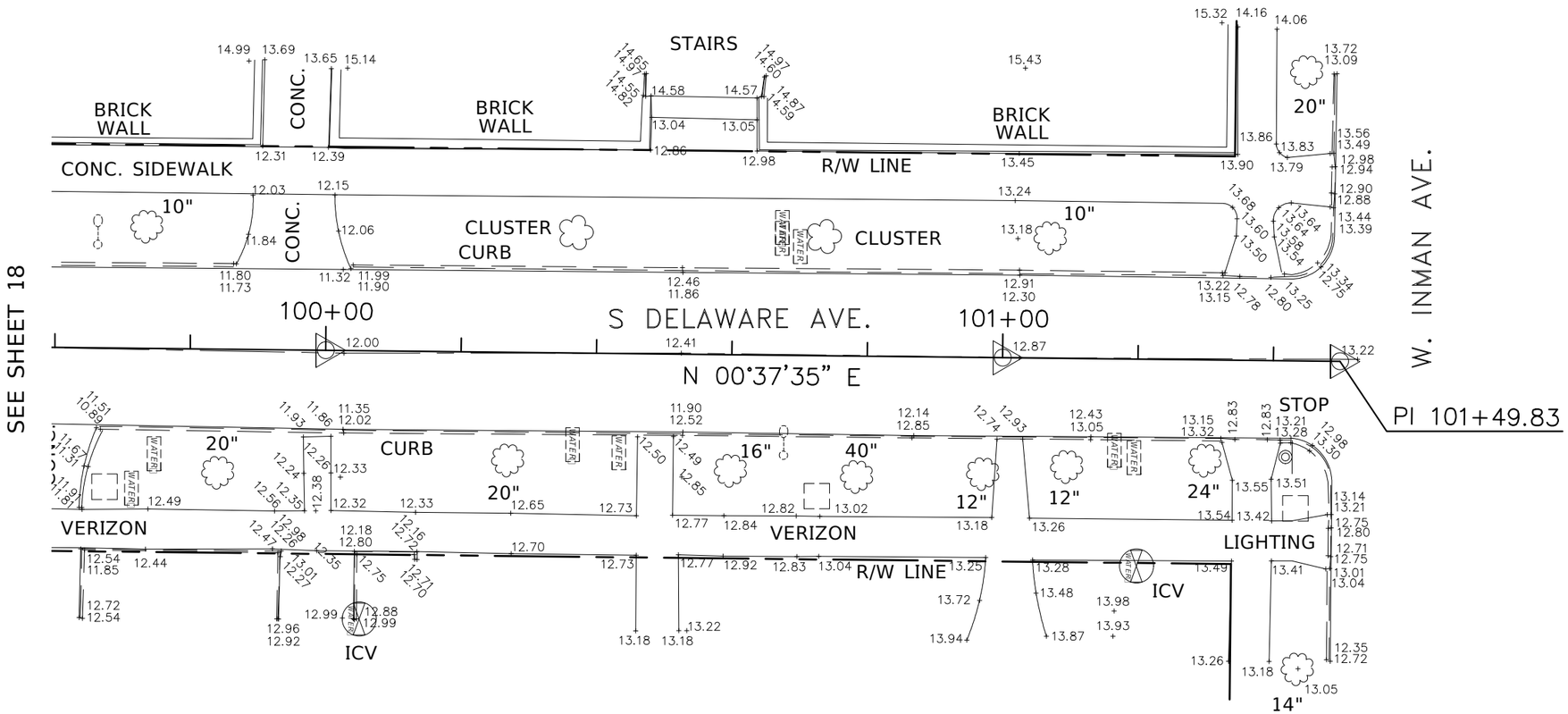

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S.U.E. (Vvh) TEST HOLE - FIELD WORK SHEET

ECHEZABAL & ASSOCIATES, INC. — SURVEYING AND MAPPING

PROJECT: HYDE PARK GROUNDWATER

EAI JOB No.: 21042.03 DATE: 11.9.21

TEST HOLE NUMBER: 1

LOCATE BY: ZW AW SS SURVEY BY: CHECKED BY:

REQUESTED LOCATE: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

LOCATED UTILITY: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MATERIAL FOUND: DBC (DIRECT BURY CABLE) CONC. VCP (DIP) CIP POLY LEAD PVC WRAPPED STEEL EPOXY STEEL CONCRETE STEEL RCP CMP UNKNOWN OTHER

SIZE / TYPE EXPECTED:

SIZE FOUND: 6.90 I.D. (O.D.) NOMINAL SIZE: 6"

COLOR: WHITE GRAY BLUE GREEN PURPLE (BLACK) ORANGE YELLOW PINK PEACH OTHER

UTILITY OWNER:

FIELD REP.: PHONE #:

HOW WAS OWNER DETERMINED?: PAINT MARKS SIGN FIELD REP. NAME ON MH / HAND HOLE / PEDESTAL OTHER

DESIGNATED BY: EAI UTIL. OWNER UNK. OTHER

WAS UTILITY TONABLE?: (YES) NO

TRACER FOUND: PLASTIC TAPE METAL TAPE WIRE (NONE) OTHER

VISUAL CONFIRMATION OF UTILITY: (YES) NO

REASON FOR NO VISUAL CONFIRMATION OF UTILITY: WATER INTRUSION DEPTH SOIL TYPE OTHER

IF NOT VISUAL HOW WAS LOCATION DETERMINED: RADIO DETECTION GPR HAND PROBE WATER PROBE ASPH. PATCH OTHER

SURFACE TYPE: ASPH. CONC. BRICK MANHOLE (GRASS) LIMEROCK DIRT GRAVEL VAULT SHELL PULL BOX OTHER

SOIL CONDITION: HARD SOFT (WET) MOIST DRY SAND CLAY ROCK SOLID ROCK LIMEROCK NOT NOTED

MARKER SET (3/8" ROD) NAIL/FLASHER 60d NAIL HUB PAINT DOT X-CUT OTHER

MEASURED DEPTH: (SURVEY MARKER TO TOP OF UTILITY) 4.34 ft. 1.323 m

NOTES:

(1) 6" BLACK D.I.P. WATER LINE.

* Did catch a glimpse of pipe, ground is really wet did have trench collapse.

CROSS SECTION SKETCH:

DIRECTION FACING: NE

ELEV. SURVEY MARK: 3.69

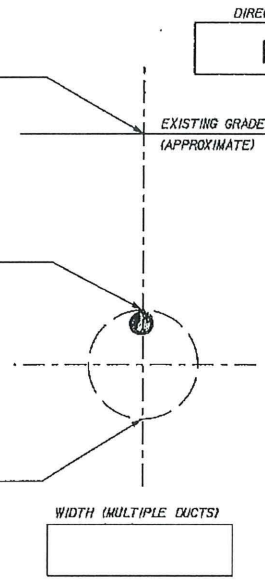
COVER (MEASURED DEPTH): 4.34

ELEV. (TOP OF UTILITY): -0.65

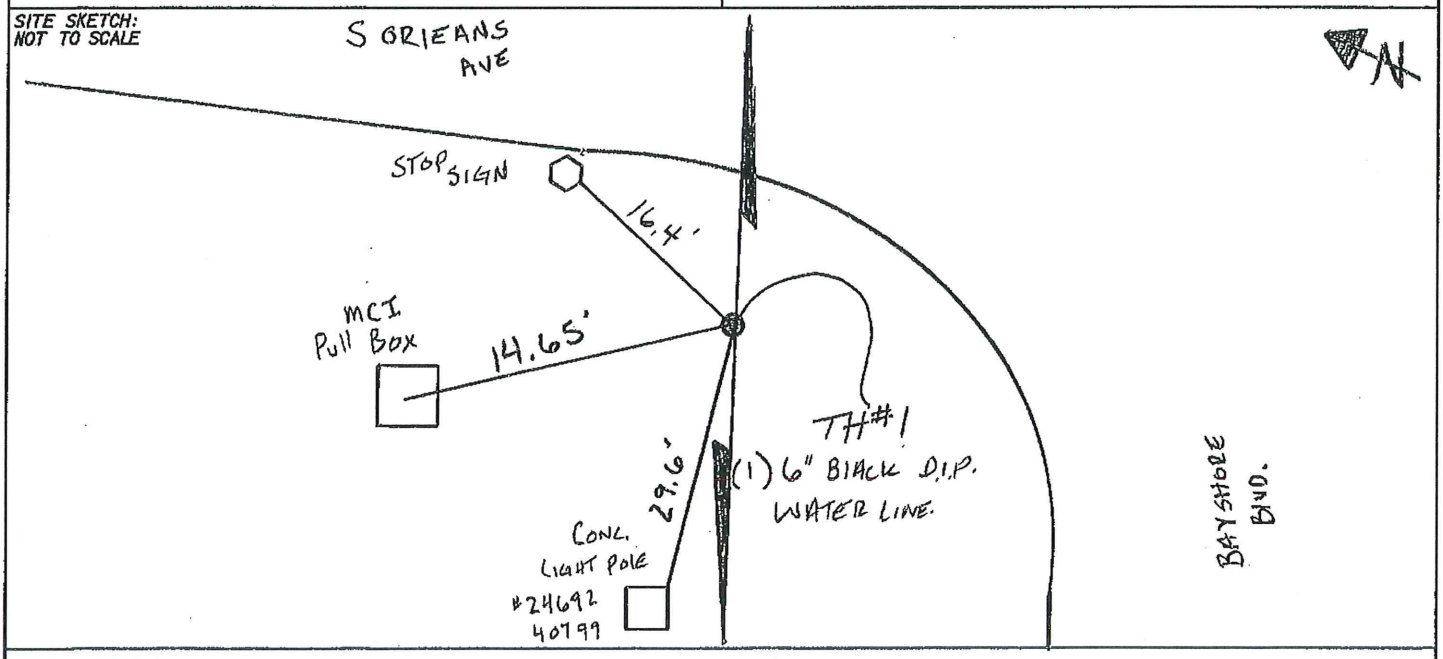
HEIGHT (MULTIPLE DUCTS):

ELEV. (BOTTOM OF UTILITY):

WIDTH (MULTIPLE DUCTS):



SITE SKETCH: NOT TO SCALE



SURVEY DATA: SURVEY PT. # STATION

ROADWAY OFFSET ft. LT. RT.

BASELINE: SURVEY CONSTR. OTHER SURVEY PT. ELEV.

SURVEYED PLAN SCALED

11/5/04

S.U.E. (Vvh) TEST HOLE - FIELD WORK SHEET

ECHEZABAL & ASSOCIATES, INC. — SURVEYING AND MAPPING

PROJECT: HYDE PARK GROUNDWATER
EAI JOB No.: 21042.03 DATE: 11.9.21
TEST HOLE NUMBER: 2
LOCATE BY: ZW, AW, SS SURVEY BY: CHECKED BY:

REQUESTED LOCATE: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

LOCATED UTILITY: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MATERIAL FOUND: DBC (DIRECT BURY CABLE) CONC. VCP (DIP) CIP POLY LEAD PVC WRAPPED STEEL EPOXY STEEL CONCRETE STEEL RCP CMP UNKNOWN OTHER

SIZE / TYPE EXPECTED:
SIZE FOUND: 6.90 I.D. (O.D.) NOMINAL SIZE: 6

COLOR: WHITE GRAY BLUE GREEN PURPLE (BLACK) ORANGE YELLOW PINK PEACH OTHER

UTILITY OWNER:
FIELD REP.: PHONE #:
HOW WAS OWNER DETERMINED?: PAINT MARKS SIGN FIELD REP. NAME ON MH / HAND HOLE / PEDESTAL OTHER

DESIGNATED BY: EAI UTIL. OWNER UNK. OTHER

WAS UTILITY TONABLE?: (YES) NO

TRACER FOUND: PLASTIC TAPE METAL TAPE WIRE (NONE) OTHER

VISUAL CONFIRMATION OF UTILITY: (YES) NO

REASON FOR NO VISUAL CONFIRMATION OF UTILITY: WATER INTRUSION DEPTH SOIL TYPE OTHER

IF NOT VISUAL HOW WAS LOCATION DETERMINED: RADIO DETECTION GPR HAND PROBE WATER PROBE ASPH. PATCH OTHER

SURFACE TYPE: (ASPH.) CONC. BRICK MANHOLE GRASS LIMEROCK DIRT GRAVEL VAULT SHELL PULL BOX OTHER

SOIL CONDITION: HARD SOFT (WET) MOIST DRY SAND CLAY ROCK SOLID ROCK LIMEROCK NOT NOTED

MARKER SET: 3/8" ROD (NAIL/FLASHER) 60d NAIL HUB PAINT DOT X-CUT OTHER

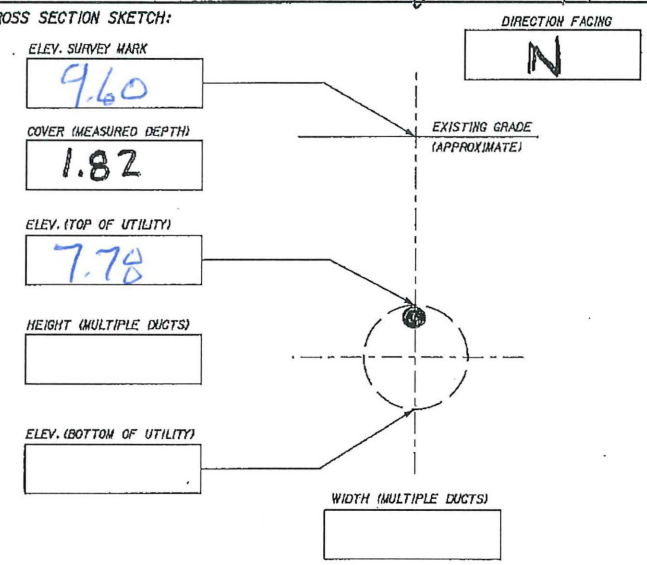
MEASURED DEPTH: (SURVEY MARKER TO TOP OF UTILITY) 1.82 ft. 0.554 m

NOTES:
(1) 6" D.I.P. BLACK, WATER LINE
* Did dig and uncover pipe at the joint from a 12" to a 6", did take pictures, but couldn't verify size due to water intrusion. Did measure down to highest point on pipe.

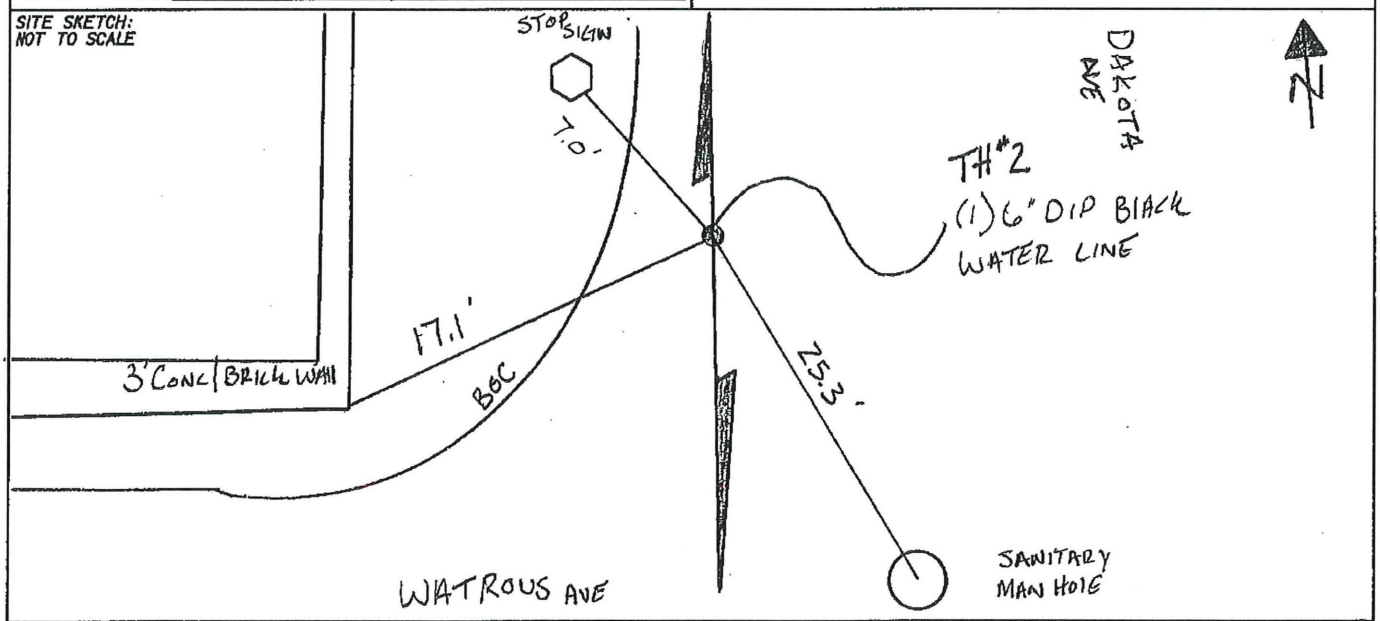
CROSS SECTION SKETCH:

DIRECTION FACING: N

ELEV. SURVEY MARK: 9.60
COVER (MEASURED DEPTH): 1.82
ELEV. (TOP OF UTILITY): 7.78
HEIGHT (MULTIPLE DUCTS):
ELEV. (BOTTOM OF UTILITY):
WIDTH (MULTIPLE DUCTS):



SITE SKETCH: NOT TO SCALE



SURVEY DATA: SURVEY PT. # STATION
ROADWAY OFFSET ft. LT. RT.
BASELINE: SURVEY CONSTR. OTHER SURVEY PT. ELEV.

SURVEYED PLAN SCALED

11/5/14

S.U.E. (Vvh) TEST HOLE - FIELD WORK SHEET

PROJECT: HYDE PARK GROUNDWATER
EAI JOB No.: 21042.03 DATE: 11.11.21
TEST HOLE NUMBER: 3
LOCATE BY: ZW, AW, SS SURVEY BY: CHECKED BY:

REQUESTED LOCATE: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

LOCATED UTILITY: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MATERIAL FOUND: DBC (DIRECT BURY CABLE) CONC. VCP DIP CIP POLY LEAD PVC WRAPPED STEEL EPOXY STEEL CONCRETE STEEL RCP CMP (UNKNOWN) OTHER

SIZE / TYPE EXPECTED:
SIZE FOUND: 6.90 I.D. (O.D.) NOMINAL SIZE: 6"

COLOR: WHITE GRAY BLUE GREEN PURPLE BLACK ORANGE YELLOW PINK PEACH OTHER N/A

UTILITY OWNER:
FIELD REP.: PHONE #:
HOW WAS OWNER DETERMINED?: PAINT MARKS SIGN FIELD REP. NAME ON MH / HAND HOLE / PEDESTAL OTHER

DESIGNATED BY: EAI UTIL. OWNER UNK. (OTHER) KCI

WAS UTILITY TONABLE?: YES NO

TRACER FOUND: PLASTIC TAPE METAL TAPE WIRE (NONE) OTHER

VISUAL CONFIRMATION OF UTILITY: YES (NO)

REASON FOR NO VISUAL CONFIRMATION OF UTILITY: (WATER INTRUSION) DEPTH SOIL TYPE OTHER WET

IF NOT VISUAL HOW WAS LOCATION DETERMINED: RADIO DETECTION GPR HAND PROBE (WATER PROBE) ASPH. PATCH OTHER

SURFACE TYPE: ASPH. CONC. BRICK MANHOLE (GRASS) LIMEROCK DIRT GRAVEL VAULT SHELL PULL BOX OTHER

SOIL CONDITION: HARD (SOFT) (WET) MOIST DRY SAND CLAY ROCK SOLID ROCK LIMEROCK NOT NOTED

MARKER SET: (3/8" ROD) NAIL/FLASHER 60d NAIL HUB PAINT DOT X-CUT OTHER

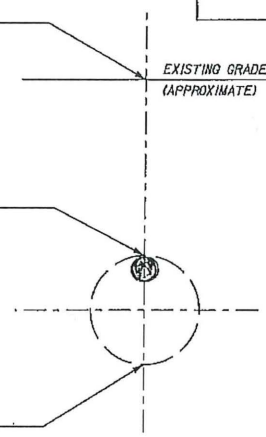
MEASURED DEPTH: (SURVEY MARKER TO TOP OF UTILITY) 2.75 ft. 0.838 m

NOTES:
(1) 6" WATER LINE.
*AREA was too wet to dig, due to saturated soil., WATER probed to find and determind size, couldn't determind material, but sounds metal of some sort.

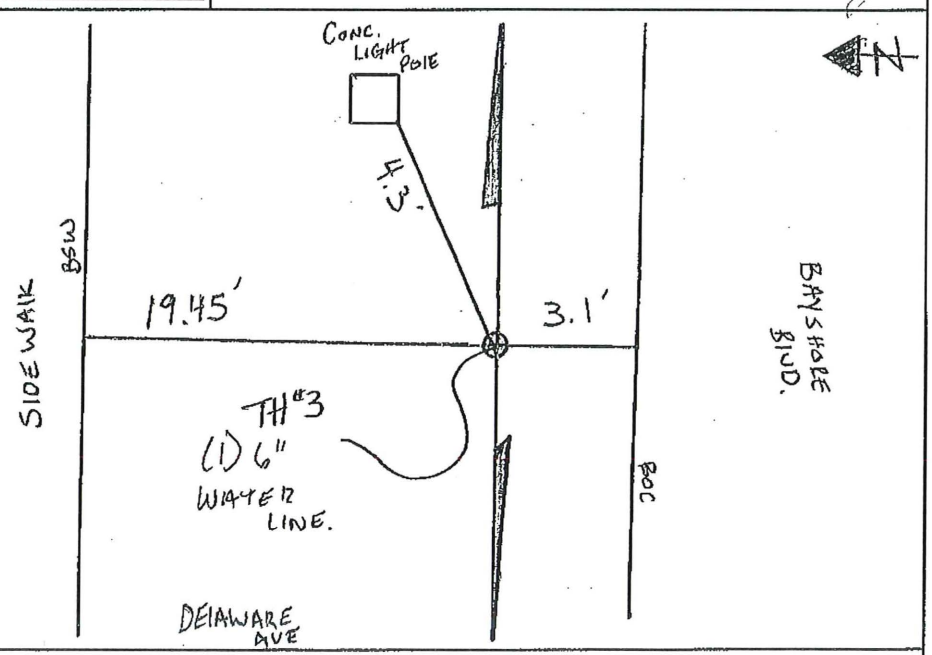
CROSS SECTION SKETCH:

DIRECTION FACING: E

ELEV. SURVEY MARK: 3.82
COVER (MEASURED DEPTH): 2.75
ELEV. (TOP OF UTILITY): 1.07
HEIGHT (MULTIPLE DUCTS):
ELEV. (BOTTOM OF UTILITY):
WIDTH (MULTIPLE DUCTS):



SITE SKETCH:
NOT TO SCALE



SURVEY DATA: SURVEY PT. # STATION
ROADWAY OFFSET ft. LT. RT.
BASELINE: SURVEY CONSTR. OTHER SURVEY PT. ELEV.

SURVEYED
PLAN
SCALED

S.U.E. (Vvh) TEST HOLE - FIELD WORK SHEET

ECHEZABAL & ASSOCIATES INC. — SURVEYING AND MAPPING

PROJECT: HYDE PARK GROUNDWATER
EAI JOB No.: 21042.03 DATE: 11.11.21
TEST HOLE NUMBER: 4
LOCATE BY: ZW, AW, SS SURVEY BY: CHECKED BY:

REQUESTED LOCATE: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MEASURED DEPTH: (SURVEY MARKER TO TOP OF UTILITY) 3.65 ft. 1.113 m

NOTES:
(1) 6" WATER LINE.
* AREA too wet to get to, WATER probed to find pipe,

LOCATED UTILITY: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MATERIAL FOUND: DBC (DIRECT BURY CABLE) CONC. VCP DIP CIP POLY LEAD PVC WRAPPED STEEL EPOXY STEEL CONCRETE STEEL RCP CMP (UNKNOWN) OTHER

SIZE / TYPE EXPECTED:
SIZE FOUND: 6.90 I.D. (O.D.) NOMINAL SIZE: 6"

COLOR: WHITE GRAY BLUE GREEN PURPLE BLACK ORANGE YELLOW PINK PEACH OTHER N/A

UTILITY OWNER:
FIELD REP.: PHONE #:
HOW WAS OWNER DETERMINED?: PAINT MARKS SIGN FIELD REP. NAME ON MH / HAND HOLE / PEDESTAL OTHER

DESIGNATED BY: EAI UTIL. OWNER UNK. (OTHER) KCI

WAS UTILITY TONABLE?: YES NO

TRACER FOUND: PLASTIC TAPE METAL TAPE WIRE (NONE) OTHER

VISUAL CONFIRMATION OF UTILITY: YES (NO)

REASON FOR NO VISUAL CONFIRMATION OF UTILITY: (WATER INTRUSION) DEPTH SOIL TYPE OTHER WET

IF NOT VISUAL HOW WAS LOCATION DETERMINED: RADIO DETECTION GPR HAND PROBE (WATER PROBE) ASPH. PATCH OTHER

SURFACE TYPE: ASPH. CONC. BRICK MANHOLE (GRASS) LIMEROCK DIRT GRAVEL VAULT SHELL PULL BOX OTHER

SOIL CONDITION: HARD (SOFT) (WET) MOIST DRY SAND CLAY ROCK SOLID ROCK LIMEROCK NOT NOTED

MARKER SET: (3/8" ROD) NAIL/FLASHER 60d NAIL HUB PAINT DOT X-CUT OTHER

CROSS SECTION SKETCH:

DIRECTION FACING: W

ELEV. SURVEY MARK: 3.52

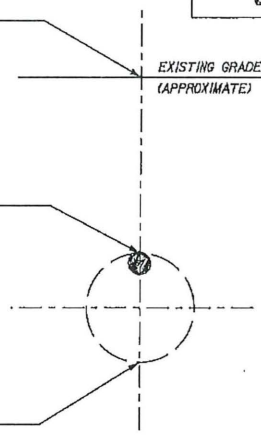
COVER (MEASURED DEPTH): 3.65

ELEV. (TOP OF UTILITY): -0.13

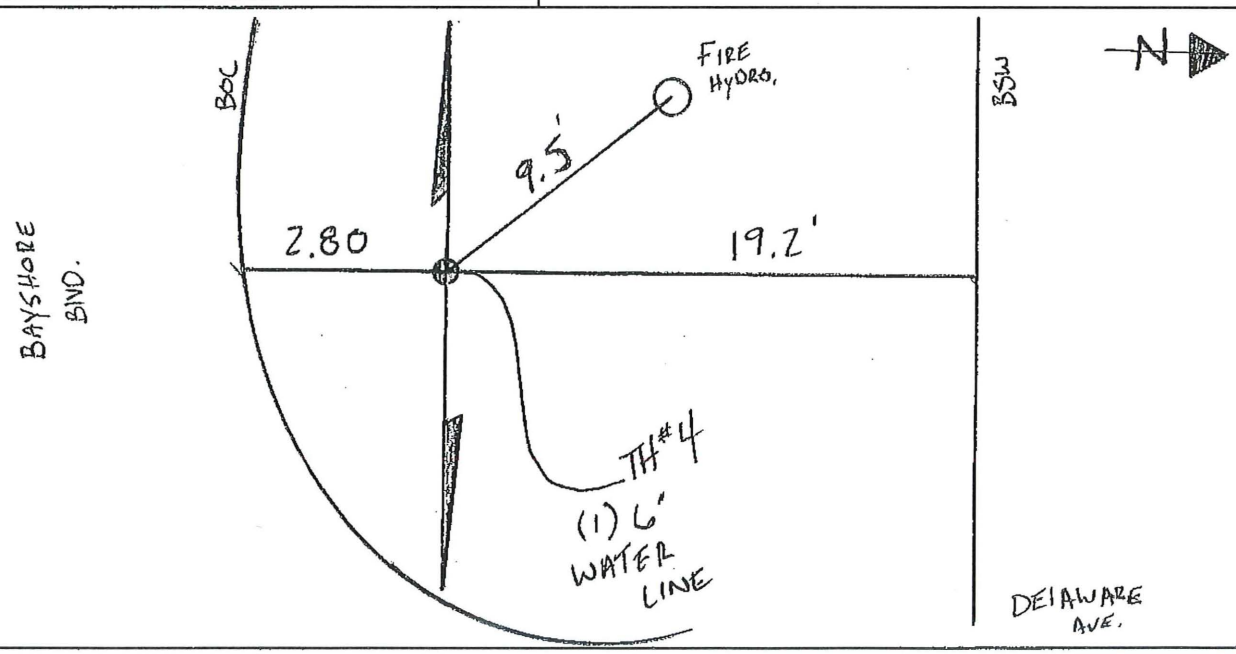
HEIGHT (MULTIPLE DUCTS):

ELEV. (BOTTOM OF UTILITY):

WIDTH (MULTIPLE DUCTS):



SITE SKETCH:
NOT TO SCALE



SURVEY DATA: SURVEY PT. # STATION
ROADWAY OFFSET ft. LT. RT.
BASELINE: SURVEY CONSTR. OTHER SURVEY PT. ELEV.

SURVEYED
PLAN
SCALED

S.U.E. (Vvh) TEST HOLE - FIELD WORK SHEET

ECHEZABAL & ASSOCIATES, INC. — SURVEYING AND MAPPING

PROJECT: HYDE PARK GROUNDWATER
EAI JOB No.: 21042.03 DATE: 11.11.21
TEST HOLE NUMBER: 5
LOCATE BY: ZW, AW, SS SURVEY BY: CHECKED BY:

REQUESTED LOCATE: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

LOCATED UTILITY: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MATERIAL FOUND: DBC (DIRECT BURY CABLE) CONC. VCP DIP CIP POLY LEAD PVC WRAPPED STEEL EPOXY STEEL CONCRETE STEEL RCP CMP (UNKNOWN) OTHER

SIZE / TYPE EXPECTED:
SIZE FOUND: 6.90 I.D. (O.D.) NOMINAL SIZE: 6"

COLOR: WHITE GRAY BLUE GREEN PURPLE BLACK ORANGE YELLOW PINK PEACH OTHER N/A

UTILITY OWNER:
FIELD REP.: PHONE #:
HOW WAS OWNER DETERMINED?: PAINT MARKS SIGN FIELD REP. NAME ON MH / HAND HOLE / PEDESTAL OTHER

DESIGNATED BY: EAI UTIL. OWNER UNK. (OTHER) KCI

WAS UTILITY TONABLE?: YES NO

TRACER FOUND: PLASTIC TAPE METAL TAPE WIRE (NONE) OTHER

VISUAL CONFIRMATION OF UTILITY: YES (NO)

REASON FOR NO VISUAL CONFIRMATION OF UTILITY: (WATER INTRUSION) DEPTH SOIL TYPE OTHER

IF NOT VISUAL HOW WAS LOCATION DETERMINED: RADIO DETECTION GPR HAND PROBE (WATER PROBE) ASPH. PATCH OTHER

SURFACE TYPE: ASPH. CONC. BRICK MANHOLE (GRASS) LIMEROCK DIRT GRAVEL VAULT SHELL PULL BOX OTHER

SOIL CONDITION: HARD (SOFT) (WET) MOIST DRY SAND CLAY ROCK SOLID ROCK LIMEROCK NOT NOTED

MARKER SET: (3/8" ROD) NAIL/FLASHER 60d NAIL HUB PAINT DOT X-CUT OTHER

MEASURED DEPTH: (SURVEY MARKER TO TOP OF UTILITY) 2.68 ft. 0.818 m

NOTES:
(1) 6" WATER LINE
*AREA was too wet, water probed to find pipe.

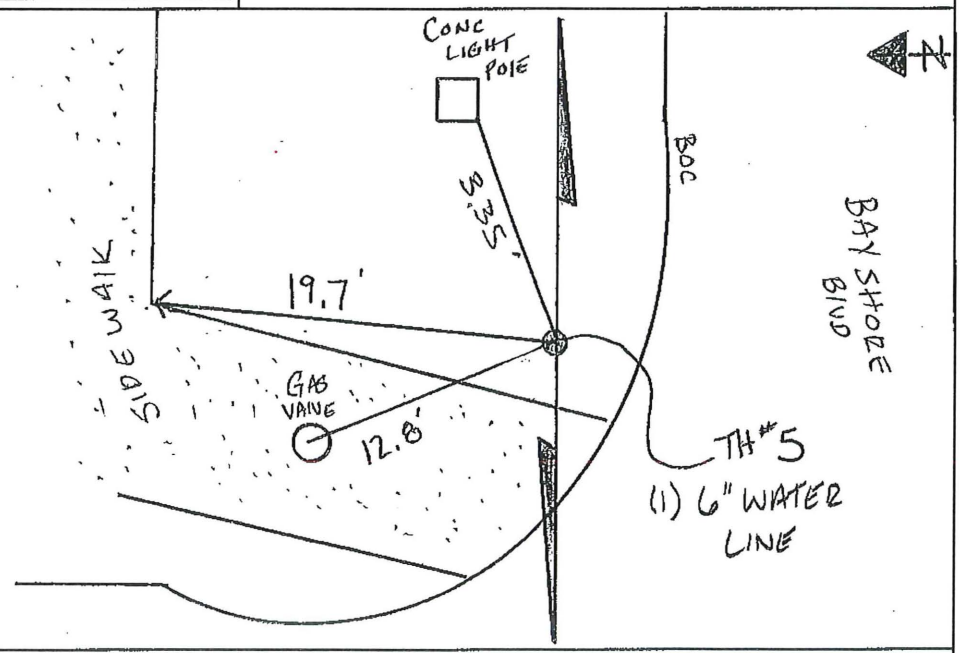
CROSS SECTION SKETCH:

DIRECTION FACING: E

ELEV. SURVEY MARK: 3.81
COVER (MEASURED DEPTH): 2.68
ELEV. (TOP OF UTILITY): 1.13
HEIGHT (MULTIPLE DUCTS):
ELEV. (BOTTOM OF UTILITY):
WIDTH (MULTIPLE DUCTS):

EXISTING GRADE (APPROXIMATE)

SITE SKETCH: NOT TO SCALE



SURVEY DATA: SURVEY PT. # STATION
ROADWAY OFFSET ft. LT. RT.
BASELINE: SURVEY CONSTR. OTHER SURVEY PT. ELEV.

SURVEYED PLAN SCALED

S.U.E. (Vvh) TEST HOLE - FIELD WORK SHEET

ECHEZABAL & ASSOCIATES, INC. — SURVEYING AND MAPPING

PROJECT: HYDE PARK GROUNDWATER
EAI JOB No.: 21042.03 DATE: 11.11.21
LOCATE BY: ZW, AW, SS SURVEY BY: CHECKED BY:

TEST HOLE NUMBER: 6

REQUESTED LOCATE: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

LOCATED UTILITY: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MATERIAL FOUND: DBC (DIRECT BURY CABLE) CONC. VCP DIP CIP POLY LEAD PVC WRAPPED STEEL EPOXY STEEL CONCRETE STEEL RCP CMP (UNKNOWN) OTHER

SIZE / TYPE EXPECTED:
SIZE FOUND: 6.90 I.D. (O.D.) NOMINAL SIZE: 6"

COLOR: WHITE GRAY BLUE GREEN PURPLE BLACK ORANGE YELLOW PINK PEACH OTHER N/A

UTILITY OWNER:
FIELD REP.: PHONE #:
HOW WAS OWNER DETERMINED?: PAINT MARKS SIGN FIELD REP. NAME ON MH / HAND HOLE / PEDESTAL OTHER

DESIGNATED BY: EAI UTIL. OWNER UNK. (OTHER) KCI

WAS UTILITY TONABLE?: YES NO

TRACER FOUND: PLASTIC TAPE METAL TAPE WIRE (NONE) OTHER

VISUAL CONFIRMATION OF UTILITY: YES (NO)

REASON FOR NO VISUAL CONFIRMATION OF UTILITY: (WATER INTRUSION) DEPTH SOIL TYPE OTHER

IF NOT VISUAL HOW WAS LOCATION DETERMINED: RADIO DETECTION GPR HAND PROBE (WATER PROBE) ASPH. PATCH OTHER

SURFACE TYPE: ASPH. CONC. BRICK MANHOLE (GRASS) LIMEROCK DIRT GRAVEL VAULT SHELL PULL BOX OTHER

SOIL CONDITION: HARD (SOFT) (WET) MOIST DRY SAND CLAY ROCK SOLID ROCK LIMEROCK NOT NOTED

MARKER SET: (3/8" ROD) NAIL/FLASHER 60d NAIL HUB PAINT DOT X-CUT OTHER

MEASURED DEPTH: (SURVEY MARKER TO TOP OF UTILITY) 4.10 ft. 1.250 m

NOTES:
(1) 6" WATER LINE
* AREA was too wet, WATER probed to find pipe.

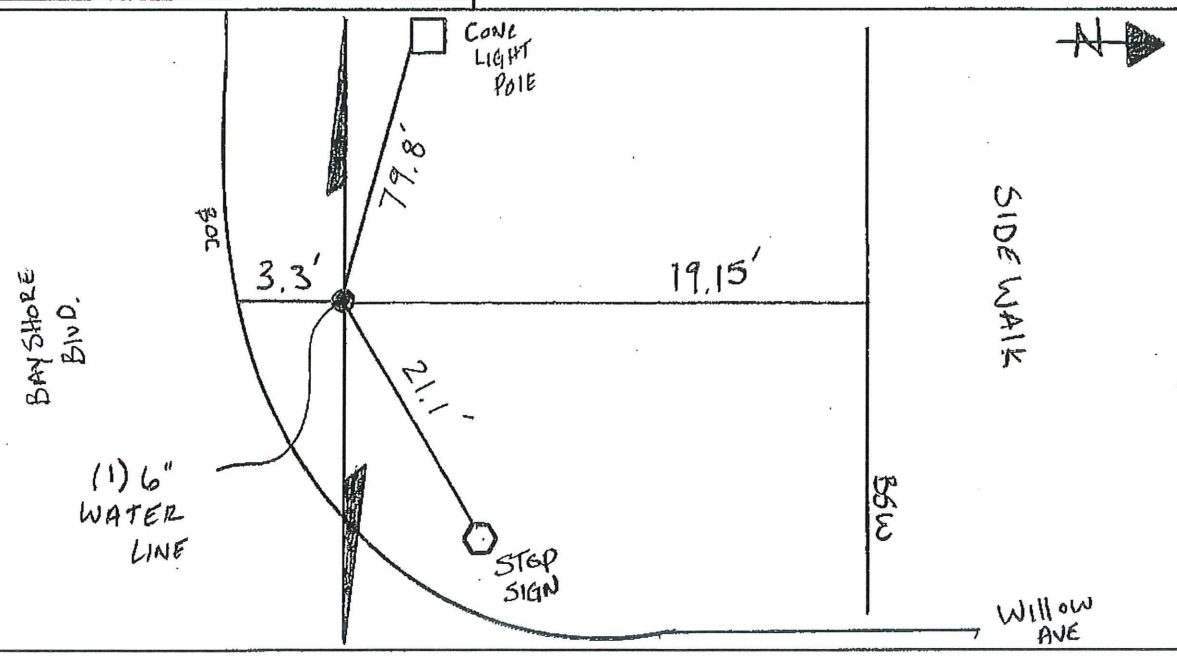
CROSS SECTION SKETCH:

DIRECTION FACING: W

ELEV. SURVEY MARK: 4.02
COVER (MEASURED DEPTH): 4.10
ELEV. (TOP OF UTILITY): -0.08
HEIGHT (MULTIPLE DUCTS):
ELEV. (BOTTOM OF UTILITY):
WIDTH (MULTIPLE DUCTS):

EXISTING GRADE (APPROXIMATE)

SITE SKETCH: NOT TO SCALE



SURVEY DATA: SURVEY PT. # STATION
ROADWAY OFFSET ft. LT. RT.
BASELINE: SURVEY CONSTR. OTHER SURVEY PT. ELEV.

SURVEYED
PLAN
SCALED

S.U.E. (Vvh) TEST HOLE - FIELD WORK SHEET

PROJECT: HYDE PARK GROUNDWATER
EAI JOB No.: 21042.03 DATE: 11.11.21
TEST HOLE NUMBER: 7
LOCATE BY: ZW, AW, SS SURVEY BY: CHECKED BY:

REQUESTED LOCATE: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

LOCATED UTILITY: GAS STORM SANITARY CATV F.O.C. RECLAIMED FORCE MAIN ELEC TELECOM TRAFFIC SIG. (WATER) ST. LIGHTS ITS UNKNOWN OTHER

MATERIAL FOUND: DBC (DIRECT BURY CABLE) CONC. VCP (DIP) CIP POLY LEAD PVC WRAPPED STEEL EPOXY STEEL CONCRETE STEEL RCP CMP (UNKNOWN) OTHER

SIZE / TYPE EXPECTED:
SIZE FOUND: 11.10 I.D. (O.D.) NOMINAL SIZE: 10"

COLOR: WHITE GRAY BLUE GREEN PURPLE (BLACK) ORANGE YELLOW PINK PEACH OTHER

UTILITY OWNER:
FIELD REP.: PHONE #:
HOW WAS OWNER DETERMINED?: PAINT MARKS SIGN FIELD REP. NAME ON MH / HAND HOLE / PEDESTAL OTHER

DESIGNATED BY: EAI UTIL. OWNER UNK. OTHER

WAS UTILITY TONABLE?: (YES) NO

TRACER FOUND: PLASTIC TAPE METAL TAPE WIRE (NONE) OTHER

VISUAL CONFIRMATION OF UTILITY: (YES) NO

REASON FOR NO VISUAL CONFIRMATION OF UTILITY: WATER INTRUSION DEPTH SOIL TYPE OTHER

IF NOT VISUAL HOW WAS LOCATION DETERMINED: RADIO DETECTION GPR HAND PROBE WATER PROBE ASPH. PATCH OTHER

SURFACE TYPE: (ASPH.) CONC. BRICK MANHOLE GRASS LIMEROCK DIRT GRAVEL VAULT SHELL PULL BOX OTHER

SOIL CONDITION: HARD (SOFT) (WET) MOIST DRY SAND CLAY ROCK SOLID ROCK LIMEROCK NOT NOTED

MARKER SET: 3/8" ROD (NAIL/FLASHER) 60d NAIL HUB PAINT DOT X-CUT OTHER

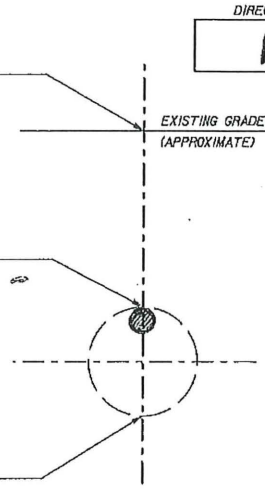
MEASURED DEPTH: (SURVEY MARKER TO TOP OF UTILITY) 1.83 ft. 0.555 m

NOTES:
(1) 10" BLACK D.I.P. WATER LINE

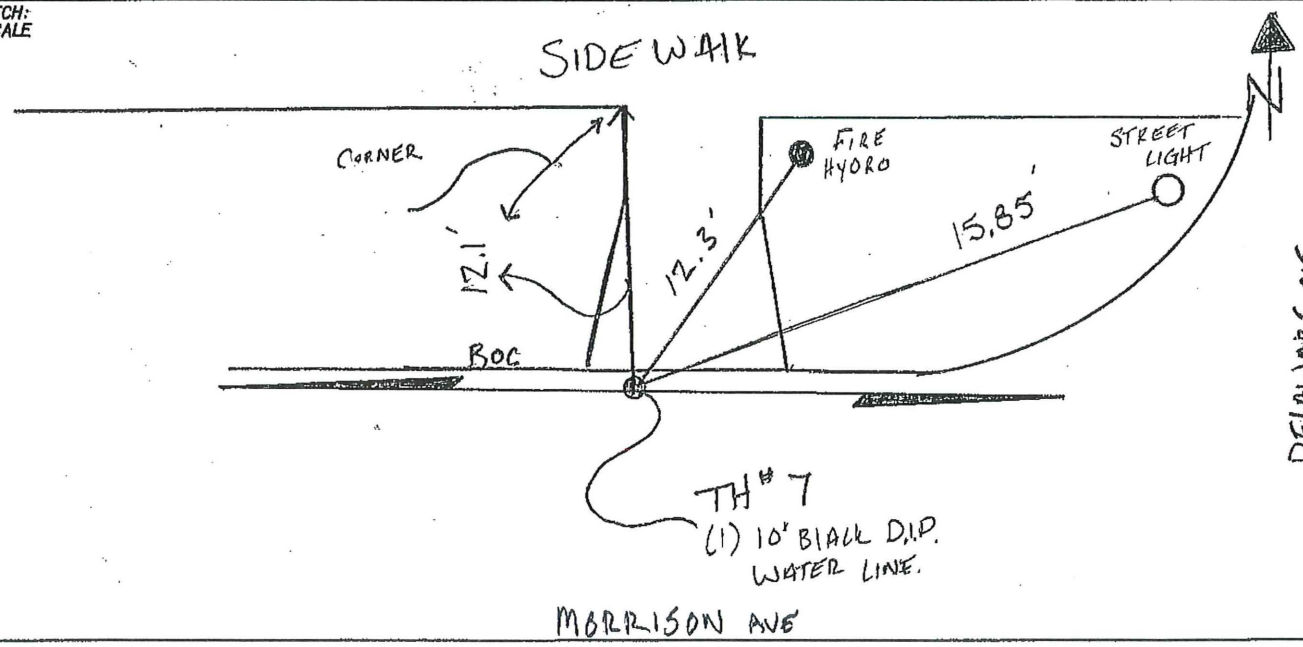
CROSS SECTION SKETCH:

DIRECTION FACING: N

ELEV. SURVEY MARK: 6.04
COVER (MEASURED DEPTH): 1.83
ELEV. (TOP OF UTILITY): 4.21
HEIGHT (MULTIPLE DUCTS):
ELEV. (BOTTOM OF UTILITY):
WIDTH (MULTIPLE DUCTS):



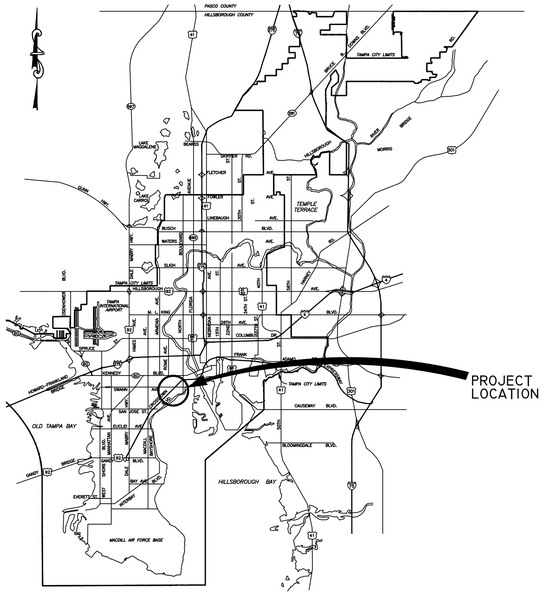
SITE SKETCH: NOT TO SCALE

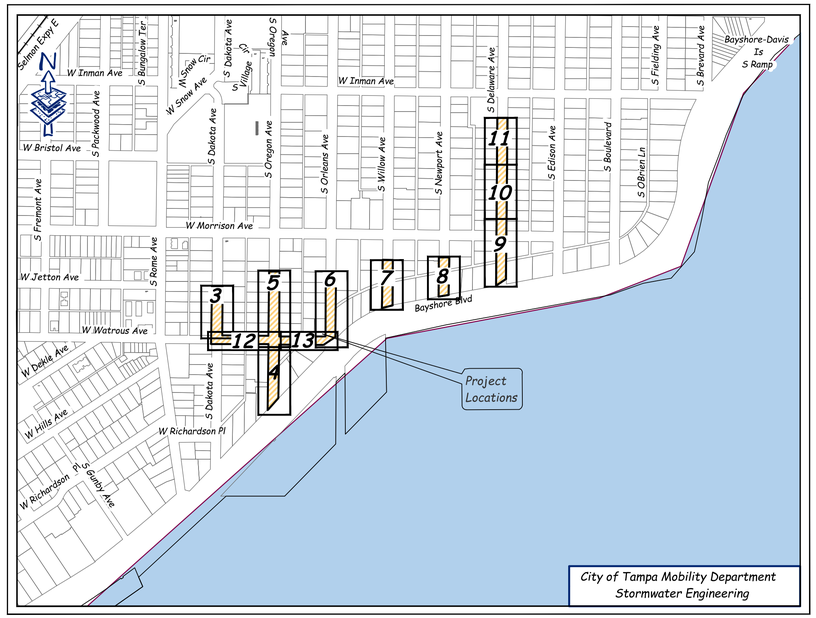


SURVEY DATA: SURVEY PT. # STATION
ROADWAY OFFSET ft. LT. RT.
BASELINE: SURVEY CONSTR. OTHER SURVEY PT. ELEV.

SURVEYED
PLAN
SCALE

SW2022-03





CITY of TAMPA

MOBILITY DEPARTMENT
STORMWATER ENGINEERING DIVISION

PLANS FOR

HYDE PARK GROUNDWATER DIVERSION UNDERDRAINS PHASE II

RICHARD ALFRED HOEL, P.E. #41026
CHIEF ENGINEER

GENERAL NOTES

1. The Contractor shall perform all construction in accordance with the lines and grades shown on the Plans and to tolerances stated herein or in the specifications. Refer to the boundary and/or topographic survey for additional information on existing conditions. An electronic CADD drawing of the existing survey data and of the proposed site improvements is available and may be used for convenience in layout of the work. However, use of this electronic format is at the contractor's sole responsibility as all work must be in accordance with the contract documents for the project. The accuracy of these files shall be checked and verified by the user. Any discrepancies are to brought to the attention of the Engineer prior to use of this information.

2. Contractor shall be responsible for maintaining all horizontal and vertical control markers, right-of-way and property corners (monuments, pipes, etc.) for the duration of construction. Markers shall be continuously flagged and shall be reset immediately by a Florida licensed land surveyor if any should become disturbed.

3. Contractor is to exercise caution when operating near or adjacent to existing public and private utilities. Locations, elevations and dimensions of existing utilities, structures and other features are shown according to the best information available at the time of the preparation of these drawings and do not purport to be absolutely correct. The Contractor shall verify the locations, elevations and dimensions of all existing utilities, structures, etc. affecting his work prior to construction.

4. All utilities shall be kept in operation except with the express written consent of the utility owner. It shall be the Contractor's responsibility to preserve existing utilities and any and all damage to existing utilities as a result of the Contractor's actions shall be repaired at the Contractor's expense.

5. The Contractor shall endeavor to protect all adjacent improvements within the project area and replace all pavement, stabilized earth, driveways, sidewalks, retaining walls, mailboxes, traffic signs, etc. removed or damaged during construction with the same material removed or damaged or as otherwise directed by the Engineer.

6. The Contractor shall contact the Engineer prior to proceeding with any work with which a conflict has arisen during construction of any improvements shown in these documents.

7. All work to be performed on this project shall be constructed according to the best practices of the industry and in accordance with applicable Federal, State, County and/or City codes, ordinances, technical standards and permit conditions.

8. Contractor shall include the cost of sheeting and/or trench box in the linear foot cost of pipe. The contractor shall comply with the requirements of the Florida Trench Safety Act, Chapter 553.

PROJECT NOTES:

1. Reference Survey: Topographic survey prepared by Echezabal & Associates, Inc., dated 3/31/20.

2. Elevations shown hereon are based on the North American Vertical Datum of 1988 (NAVD88) and utilize City of Tampa Bench Mark HV-02 170 with an elevation of 12.83 feet.

3. Bearings and coordinates shown hereon are based on the Florida State Plane Coordinate System, West Zone as referenced to the North American Datum 1983, adjustment of 2011, NAD83(2011) and are shown in US Survey Feet.

4. Underdrain pipes shall be installed in a manner that will achieve line and grade as depicted hereon and to protect adjacent improvements to the greatest extent practical. It is the intent of the design to install underdrains at a distance of 4 feet inside the right-of-way line. Where horizontal deflections are shown to protect trees to remain, adjust alignment by 2 feet with 10' long transitions by use of 11 1/4° or 22 1/2° bends.

ROAD, DRAINAGE AND GRADING CONSTRUCTION NOTES

1. All improvements within public rights-of-way shall be constructed in accordance with the project specifications, and the latest edition of City of Tampa Technical Standards, FDOT Standard Specifications for Road and Bridge Construction, the FDOT Roadway and Traffic Design Standard Indexes, and the FDOT Utility Accommodation Manual or in accordance with the requirements of the State or County having jurisdiction over the right-of-way, as applicable.

2. Pavement and grading shall be sloped to the proposed elevations and/or contours shown on the drawings. Smooth, constant slopes shall be maintained between proposed elevations and contours. Proposed contour elevations, spot elevations and finished grade elevations in non-paved areas refer to finished surface elevations once sodding or seeding is complete and in paved areas refer to finished pavement elevations.

3. Finished grade in lawn areas within the right-of- way shall be between ½" and 1" below sidewalks and shall be no greater than 1" above curb top once sod has been placed. These lawn areas shall be sloped to drain over the curb to the street. Lawn drainage shall be redirected around existing trees to avoid root damage.

7. All areas disturbed during construction (except landscape beds), shall be sodded, to provide a fully grassed site at substantial completion. Contractor is responsible for controlling site erosion and shall provide additional sod and shall fill, level, repair and re-grass all eroded or dead areas as necessary, to achieve an erosion-free site (free from rutting, etc.) to the lines & grades shown herein upon final acceptance. Sod shall be weed-free, required to match existing and shall be installed and maintained in accordance with FDOT Specification Section 570 and 575, as applicable, including the initial rolling to fully seat sod to the subgrade and eliminate irregular surfaces.

8. All potable and reclaimed water service lines, meters and meter boxes shall be protected in place. Service lines shall be hand excavated for location purposes within the construction limits. Underdrain aggregate and geotextile fabric material shall be built around the water service lines in a manner that will not damage or displace the lines.

2

ENVIRONMENTAL PROTECTION NOTES

General:

1. Construction shall proceed such that all stormwater facilities (ponds, retention areas, control structures, storm sewers) to which a construction area drains are in place and operational prior to construction of impervious surfaces within that area.

2. No excavation shall extend below the permitted design depths or elevations shown on the drawings unless additional testing supports such over-excavation and no lower semi-confining unit clayey soil material and/or limestone materials shall be excavated regardless if these materials are encountered within the permitted excavation depths or elevations. If any lower semi-confining unit clayey soil materials or limestone materials are encountered above the permitted depths or elevations, excavation operations shall immediately cease in the general area. Contractor shall notify the Engineer prior to any further excavation in these areas.

Dewatering Activities:

1. Prior to any groundwater dewatering activities, Contractor shall obtain coverage under the FDEP Generic Permit for the Discharge of Produced Groundwater from any Non-Contaminated Site Activity pursuant to Chapter 62-621.300(2), F.A.C.

2. All water collected and pumped during trench dewatering activities shall be disposed of in upland areas into double staked hay bales or other approved methods. Discharge locations shall be a minimum of 75 feet from the nearest wetland jurisdictional or surface water area, to allow for maximum overland filtration of soil particles.

2

Erosion & Sediment Control BMPs:

1. Staked or floating silt screens, hay bales, or other appropriate best management practices (BMPs), shall be utilized as silt barriers and placed in locations shown on the plans and at other locations as required to keep sediment from reaching water bodies, wetland areas, adjacent properties or rights-of-way. These barriers shall be installed prior to commencing construction and shall be considered as limits of construction. Perimeter clearing and grubbing along the limits of construction is allowed, if necessary, to facilitate installation of silt barriers providing that disturbance is the minimum width necessary for such work. Perimeter barriers shall be fully installed, including backfilling if necessary, prior to any additional clearing and grubbing operations within the construction limits.

2. Temporary stockpiles shall not be located adjacent to storm sewer inlets, ditches, undisturbed wetlands or surface water areas where sedimentation from stockpiles may cause damage. Additionally, silt barriers shall continuously and fully encircle all stockpiles which will remain for longer than 24 hours to contain materials within a reasonably confined area.

3. Off-site vehicle tracking of sediment shall be minimized by cleaning vehicle undercarriage areas or other effective methods prior to site departure. Streets, sidewalks and driveways shall be kept free of sediment for duration of construction.

4. All fugitive dust shall be controlled on site. Only areas scheduled for immediate construction shall be cleared or stripped of vegetation. Watering, application of calcium chloride or other prior approved means of dust control shall be employed to prevent the emanation of dust from the site. Permanent grassing, landscaping and other site work shall be incorporated as soon as possible.

5. Contractor shall use other structural BMPs, as necessary, to divert runoff from exposed soils, store runoff and/or sediment on-site, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site.

6. Contractor shall inspect and maintain all sediment and erosion control BMPs to assure proper operation. Inspections shall occur at a minimum interval of once every 7 calendar days and within 24 hours of the end of a storm that is 1/4-inch or greater.

7. Any maintenance operations needed to assure proper operation of all controls, shall be done in a timely manner, but in no case later than 7 calendar days following the inspection in which the need is identified.

8. Temporary or permanent stabilization BMPs shall be used as soon as practicable, but in no case less than 14 days, in portions of the site where construction activities have been temporarily or permanently ceased. Stabilization BMPs may include temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, swale sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures.

9. Once construction is completed and finished grading and final stabilization has been achieved, silt barriers shall be completely removed to the satisfaction of the Engineer and prior to final acceptance.

10. No debris shall be allowed to enter the existing storm or sanitary sewer system.

INDEX

No.	DESCRIPTION
1	COVER SHEET, GENERAL NOTES, LEGEND, INDEX, AND MAP
2	DETAILS SHEET
3–13	UNDERDRAIN CONSTRUCTION PLAN
14	STORMWATER POLLUTION PREVENTION PLAN

LEGEND

SPOT GRADE
OAK TREE
PALM TREE
SPOT GRADE
PINE TREE
STUMP
SHRUB
UTILITY POLE
SHARED POLE W/ TRANS
SHARED POLE
SPRINKLER
GAS VALVE COVER
GAS VALVE
GAS METER
TELEPHONE PEDESTAL
BOLLARD
CLEANOUT
SANITARY MANHOLE
CABLE TV SERVICE BOX
WIRING PULL BOX
DRILL HOLE
POST
GUY ANCHOR
FLOOD LIGHT
SERVICE CABINET

FENCE
CONCRETE SLAB
BACK OF CURB
EDGE OF PAVEMENT
EXIST R/W LINE
STORM PIPE
WASTE WATER PIPE
WATER MAIN
RECLAIMED WATER
GAS MAIN
FIBER OPTIC CABLE
VERIZON

AC = AIR CONDITIONING
ASPH. = ASPHALT
BGV = BELOW GROUND VAULT
Conc. = CONCRETE
CSL = CONCRETE SLAB
C&G = CURB AND GUTTER
ELEC = ELECTRIC
ELEV. = ELEVATION
ICV = IRRIGATION CONTROL VALVE
LB = LICENSED BUSINESS
MAG = MAGNOLIA
PVC = POLYVINYL CHLORIDE
RCP = REINFORCED CONCRETE PIPE
RCW = RECLAIMED WATER
R/W = RIGHT OF WAY
SMND = SET MAG NAIL & DISK
TOB = TOP OF BANK
TOS = TOE OF SLOPE
TP–RP = TRAVERSE POINT – REFERENCE POINT
TYP. = TYPICAL
WBF = WOOD BOARD FENCE

FIRE HYDRANT
WATER VALVE COVER
WATER METER
LIGHT POLE
SET NAIL & TIN TAB
CARTOUCHE
BENCH MARK/SMND
TREE BARRICADE

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

DES: SEB
DRN: AB/JDM
CKD: BG
DATE: 9/22/22

CITY of TAMPA
Mobility Department
Stormwater Engineering Division

HYDE PARK
GROUNDWATER DIVERSION

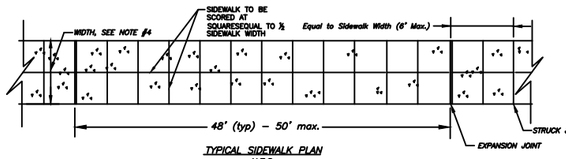
SHEET 1

FINAL REVISIONS

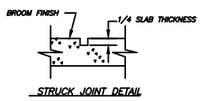
Plot Date: Thursday, February 16, 2023

EXAMPLE OF DRIVEWAY RECONSTRUCTION

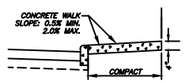
EXAMPLE OF SIDEWALK RECONSTRUCTION



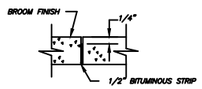
TYPICAL SIDEWALK PLAN
N.T.S.



STRUCK JOINT DETAIL



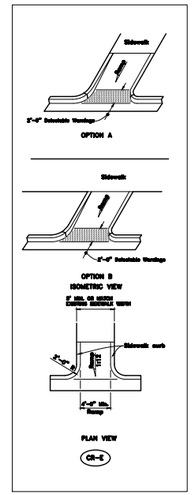
TYPICAL SIDEWALK DETAIL
N.T.S.



EXPANSION JOINT DETAIL

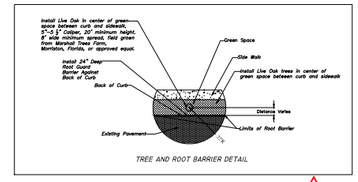
NOTES:
1. SIDEWALKS SHALL HAVE TOOLED EDGES.
2. CONSTRUCTION JOINTS SHALL BE LOCATED AT STRUCK JOINTS OR EXPANSION JOINTS ONLY.
3. EXPANSION JOINTS SHALL BE INSTALLED AS SHOWN ATØ0' MAX. INTERVALS AND ABUTTING CURB & DRIVEWAYS. EXPANSION JOINTS SHALL CONSIST OF CONTINUOUS 1/2" X 4" BITUMINOUS EXPANSION STRIP, AS SHOWN.
4. SIDEWALKS TO MATCH EXISTING WIDTHS. JOINTS IN NEW SIDEWALKS SHALL ALIGN W/JOINTS IN EXISTING SIDEWALKS.
5. CONCRETE SIDEWALK TO BE 4" THICK.
6. CONCRETE DRIVEWAYS TO BE 6" THICK.
7. CONCRETE SIDEWALK WITHIN DRIVEWAYS TO BE 6" THICK.
8. ALL CONCRETE TO BE FDOT CLASS III, 3,000 P.S.I.
9. ALL H.C. RAMPS TO BE REPLACED AND DETECTABLE WARNING STRIPS SHALL BE INSTALLED PER FDOT STANDARD PLANS INDEX 522-002
10. DAMAGED DRIVEWAYS AND SIDEWALKS TO BE RECONSTRUCTED TO THEIR ORIGINAL DIMENSIONS.

CONCRETE SIDEWALK CONSTRUCTION
N.T.S.



FDOT INDEX 522-002
SIDEWALK DETAIL
N.T.S.

NOTES:
1. INSTALL A LINEAR ROOT BARRIER, 24" DEEP AND EXTENDING TO THE LIMITS SHOWN ON THE ROOT BARRIER DETAIL FROM EACH SIDE OF THE CENTER OF THE TREE ALONG THE LENGTH OF THE ADJACENT CURB.
2. TOP OF BARRIER MUST BE BELOW TOP OF CURB.
3. POSITION BARRIER AGAINST THE BACK OF CURB OR AS CLOSE TO STRUCTURE AS POSSIBLE.
4. TRENCH SHALL BE BACKFILLED WITH SELECT NATIVE BACKFILL MATERIAL.
5. CONNECT ROOT BARRIER PANELS PER MANUFACTURER RECOMMENDATIONS.
6. RESTORE THE SITE TO PRE-EXISTING CONDITIONS OR BETTER. DAMAGE CURB SHALL BE REPLACED IN KIND AT NO COST TO THE CITY.
7. TREES FOR THIS PROJECT SHALL BE IDENTIFIED AND TAGGED BY THE PROJECT ARBORIST PRIOR TO SHIPPING.
8. MEASUREMENTS OF THE TREES SHALL BE CONDUCTED IN ACCORDANCE WITH THE CITY OF TAMPA'S TREE ORDINANCE AND TREE AND LANDSCAPE TECHNICAL MANUAL.



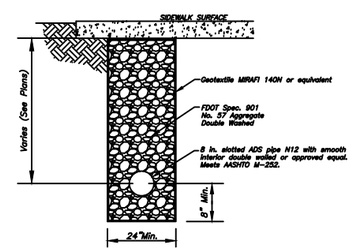
TREE AND ROOT BARRIER DETAIL

2

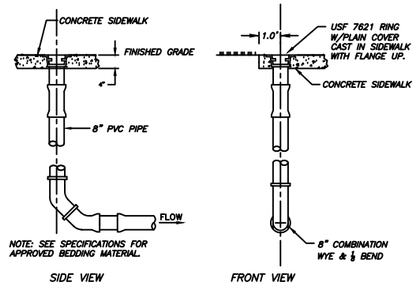
DIRECTIONAL BORING

BORE LOCATION	BEGIN STATION	END STATION	BORE LENGTH
1	40+24	40+68	43
2	40+40	41+03	63
3	42+30	42+60	30
4	95+82	96+22	40
5	30+74	30+98	24
6	32+25	32+65	40
7	32+25	32+93	68
8	35+92	36+24	32
9	91+45	91+65	20
10	80+25	80+78	53

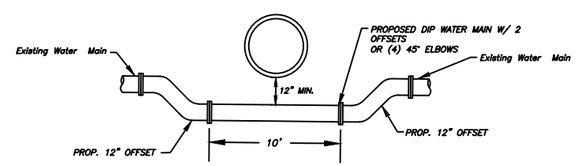
(1) CENTER A FULL JOINT OF WATER PIPE WHEN CROSSING UNDER UNDERDRAIN PIPE.
(2) CHLORINE INJECTION & SAMPLE TAP LOCATION TO BE DETERMINED BY ENGINEER.
(3) ALL WATER PIPE JOINTS TO BE MECHANICALLY RESTRAINED.
(4) COORDINATE ALL WORK WITH C.O.T. WATER DEPT.



UNDERDRAIN DETAIL
N.T.S.



ONE WAY CLEAN-OUT
CLEAN OUT DETAIL
NTS



POTABLE & RECLAIMED
WATER MAIN RELOCATION (TYP.)
NTS

NOTE: SEE PLAN/PROFILE SHEETS FOR LOCATIONS, WATER MAIN DIAMETER & DEPTH OR ELEVATIONS OF WATER MAIN & UNDERDRAIN.

A.2. TREE PROTECTION DETAILS

Protection Standards for Construction Activities proximate to Protective Root Zone (Secs. 27-43, 27-284.2)

Specific Conditions

i. Minimum protection standards shall be met for all protected trees, prior to commencement of any construction activities on a development site and/or private right-of-way, in accordance with the tree protection graphic below.

ii. No changes to the predevelopment conditions within the approved protective root zone during the construction process.

iii. Protective barricades may be removed only to prepare the development site for final landscaping activities. During this activity only non-mechanical techniques may occur within the designated protective root zone. No alteration(s), of any kind, shall be made to any part of the tree (roots, trunk, canopy/crown), other than those that are approved by the Natural Resources Coordinator or designee, as part of the related permit.

iv. No parking or storing of vehicles, equipment, or materials is permitted within the minimum protective area, at any time.

v. No site clearing or grading is permitted within the minimum protective area, other than those changes that are approved by the Natural Resources Coordinator or designee, as part of the related permit.

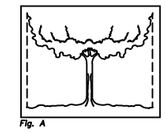


Fig. A

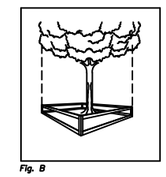


Fig. B

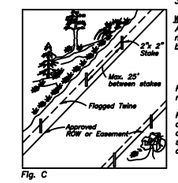


Fig. C

1. TREES – To restrict access into the area within the DRIPLINE of a tree, a physical structure not less than 3 feet in height, comprised of wood or other suitable material, is placed around the tree at the DRIPLINE, except where land alteration or construction activities are approved within the dripline.
2. The DRIPLINE of a tree is the imaginery, verticle line that extends downward from the outermost tips of the tree's branches to the ground. Fig. A.

BARRIER SPECIFICATIONS FOR TREES:
Four corner upright stakes of no less than 2" x 2" lumber connected by horizontal members of no less than 1" x 4" lumber; or upright stakes spaced at 4-5' intervals of no less 2" x 2" lumber connected by SILT FENCING.

3. NATURAL AREAS – To restrict access into areas where land alteration and construction activities are not authorized, a physical structure not less than 3 feet in height is placed along the perimeter of such areas.

BARRIER SPECIFICATIONS FOR NATURAL AREAS:
Upright stakes of no less than 2" x 2" lumber spaced no more than 25' apart and connected by twine flagged with plastic surveying tape at regular intervals of 5-10'. Fig. C. Other methods of demarcation will be considered depending upon the characteristics of the site.

WHY A BARRIER:
1. To protect all above ground portions of trees and other significant vegetation from mechanical damage.
2. To protect root systems from compaction.
3. To provide awareness of protected areas to equipment operators.

WHY IT WORKS:
A tree's chance for survival is greatly enhanced if no construction material, heavy equipment or stockpiling of soil is allowed inside the barrier; only hand labor.

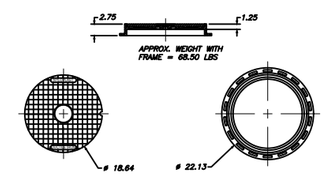
Protective barriers are used during land alteration natural areas to be retained on a site.

Protective barriers must be erected around TREES to construction activities will occur as well as along permitted land alteration and construction activities. land alteration and construction activities are sodding. No ground disturbance must occur within the barracaded area.

PROTECTIVE BARRICADE DETAIL
N.T.S.

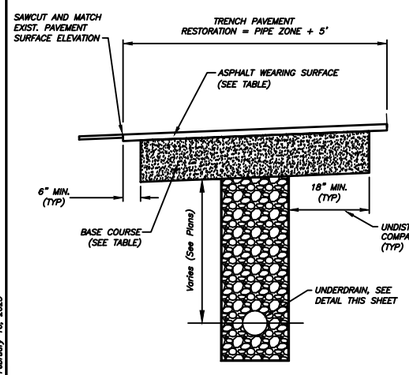
TREE SPECIES

- OAK TREE
- PALM TREE
- TREE
- PINE TREE
- STUMP
- SHRUB



NOTE: 18" DUCTILE IRON SOLID LID(H2O TRAFFIC LOADING) HYLOPLAST MODEL1899 CGC, OR APPROVED EQUAL.

18" SOLID LID
N.T.S.



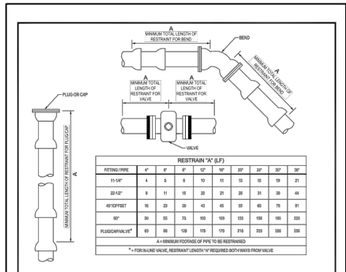
ROAD RESTORATION DETAIL
N.T.S.

PAVEMENT RESTORATION NOTES:
1. OPEN CUT TRENCH FOR UTILITY INSTALLATION.
2. PROVIDE BEDDING AND PIPE BACKFILL WITHIN THE PIPE ZONE AS OTHERWISE REQUIRED.
3. ROAD BASE AND ASPHALT WEARING COURSES SHALL BE CONSTRUCTED IN ACCORDANCE WITH C.O.T. TRANSPORTATION TECHNICAL STANDARDS

PAVEMENT REQUIREMENTS:

STREET CLASSIFICATION	BASE MATERIAL/THICKNESS (IN.)	ASPHALT MATERIAL/THICKNESS (IN.)
ALLEY (A)	CRUSHED CONC. / 6"	1"
RESIDENTIAL (I)	CRUSHED CONC. / 8"	2"
COLLECTOR / ARTERIAL (II)	CRUSHED CONC. / 12"	3"

PAVEMENT RESTORATION DETAIL
N.T.S.



RESTRAIN "A" (LF)

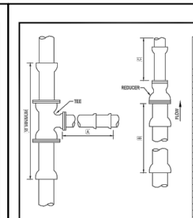
FITTING / PIPE	4"	6"	8"	12"	16"	20"	24"	30"	36"
11-1/4°	4	5	6	10	11	13	15	19	21
22-1/2°	8	11	16	22	21	26	31	38	46
45°/OFFSET	16	23	33	43	45	55	65	79	91
90°	30	83	75	100	109	133	158	193	230
PLUG/CAP/VALVE*	60	86	108	119	113	216	259	336	396

A = MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED

* - FOR IN-LINE VALVE, RESTRAINT LENGTH "A" REQUIRED BOTH WAYS FROM VALVE

NOTES:
1. THIS TABLE IS BASED ON:
   a. MAXIMUM TEST PRESSURE OF 150 PSI
   b. LAYING CONDITION TYPE 2 (SEE DETAILS 2.01 AND 2.02)
   c. POOR SOIL CONDITIONS
   d. USING D.I.P.
   e. 3 FEET OF COVER FOR 12" AND SMALLER MAINS; 4 FEET OF COVER FOR 16" AND LARGER MAINS
   f. HORIZONTAL BENDS ONLY - ENGINEER TO SUBMIT CALCULATIONS FOR VERTICAL RESTRAINTS
2. "RESTRAINED" PIPE SHALL BE MANUFACTURED RESTRAINED JOINT PIPE, PUSH-ON JOINT PIPE RESTRAINED W/GASKET-TYPE "GRIPPER RESTRAINTS", OR MECHANICAL JOINT PIPE RESTRAINED BY MEGALUG (OR APPROVED EQUIVALENT).
3. ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.

City of Tampa Water Department | LAST REVISION: MAY 2021 | RESTRAINED JOINT STANDARD FOR BENDS, PLUGS, CAPS, AND VALVES | 2.11

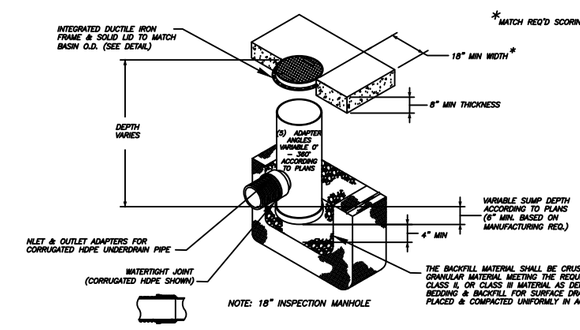


FITTING SIZE	RESTRAIN (LF)		UNRESTRAINED STRAIGHT RUN (LF)
	TEE "A"	REDUCER "B"	REDUCER "C"
4x4	21	*	*
6x4	14	20	19
6x6	42	*	*
8x4	A.T.	31	109
8x6	46	54	75
8x8	92	*	*
12x4	A.T.	160	429
12x6	A.T.	159	268
12x8	71	161	168
12x12	143	*	*
16x4	A.T.	321	461
16x6	91	160	338
16x12	85	79	153
16x16	142	*	*
20x4	A.T.	195	659
20x6	151	160	461
20x12	85	150	233
20x16	139	79	84
20x20	169	*	*
24x4	A.T.	258	871
24x6	A.T.	224	743
24x12	71	160	391
24x16	135	150	218
24x20	165	79	93
24x24	225	*	*
30x4	A.T.	259	1604
30x6	A.T.	265	1130
30x12	85	258	676
30x16	118	219	426
30x20	163	160	283
30x24	215	150	159
30x30	275	*	*
36x4	A.T.	340	2231
36x6	A.T.	335	1565
36x12	85	314	1059
36x16	104	305	698
36x20	155	244	468
36x24	208	195	306
36x30	268	150	159
36x36	336	*	*

A.T. = RESTRAINT REQUIRED AT TEE ONLY. * = NOT APPLICABLE

NOTES:
1. THIS TABLE IS BASED ON:
   a. MAXIMUM TEST PRESSURE OF 150 PSI
   b. LAYING CONDITION TYPE 2 (SEE DETAILS 2.01 AND 2.02)
   c. POOR SOIL CONDITIONS
   d. USING D.I.P.
   e. 3 FEET OF COVER FOR 12" AND SMALLER MAINS; 4 FEET OF COVER FOR 16" AND LARGER MAINS
   f. HORIZONTAL BENDS ONLY - ENGINEER TO SUBMIT CALCULATIONS FOR VERTICAL RESTRAINTS
2. RESTRAINT FOR REDUCERS: IF "C" STRAIGHT RUN OF PIPE DOWNSTREAM OF REDUCER NOT AVAILABLE, THE RESTRAIN "B" UPSTREAM OF REDUCER.
3. "RESTRAINED" PIPE SHALL BE MANUFACTURED RESTRAINED JOINT PIPE, PUSH-ON JOINT PIPE RESTRAINED W/GASKET-TYPE "GRIPPER RESTRAINTS", OR MECHANICAL JOINT PIPE RESTRAINED BY MEGALUG (OR APPROVED EQUIVALENT).
4. ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.

City of Tampa Water Department | LAST REVISION: MAY 2021 | RESTRAINED JOINT STANDARD FOR TEES AND REDUCERS | 2.12A



18" INSPECTION MANHOLE
N.T.S.

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

DES: SEB
DRN: WE/JDM
CKD: BG
DATE: 9/22/22

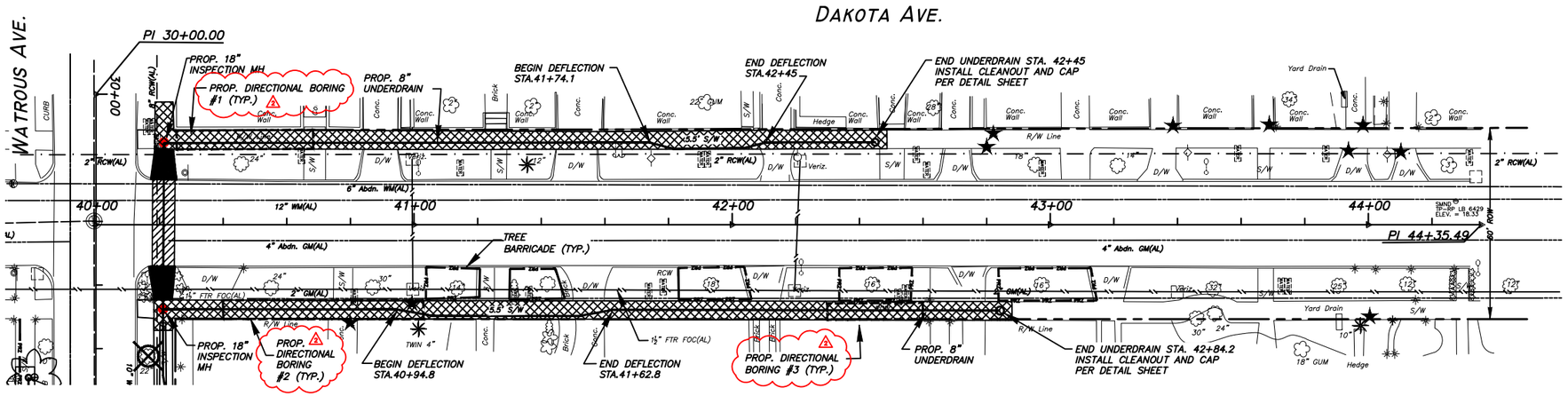
CITY of TAMPA
Mobility Department
Stormwater Engineering Division

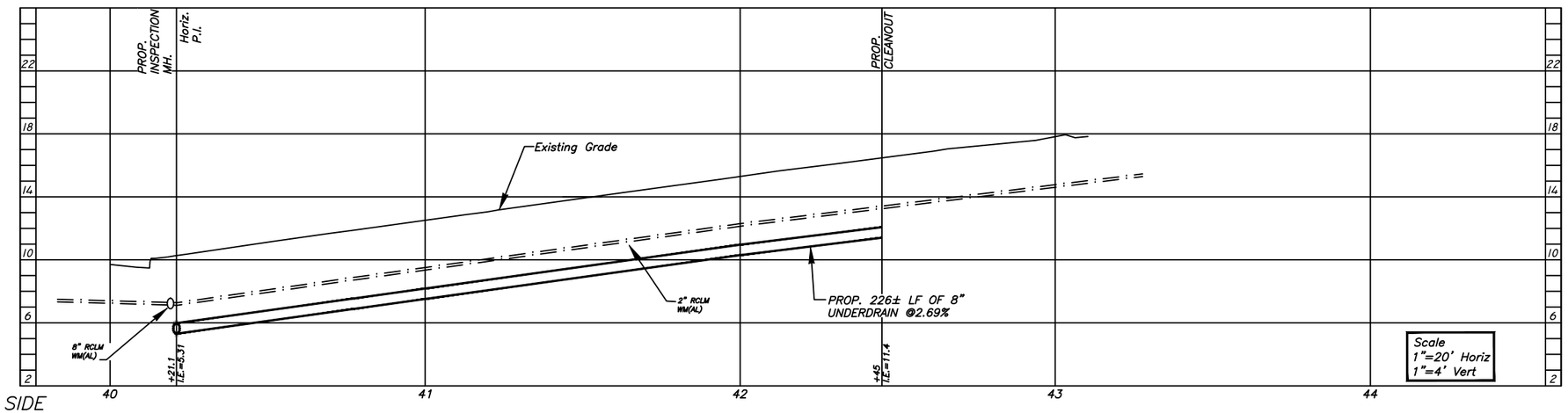
HYDE PARK
GROUNDWATER DIVERSION

SHEET 2 OF 14

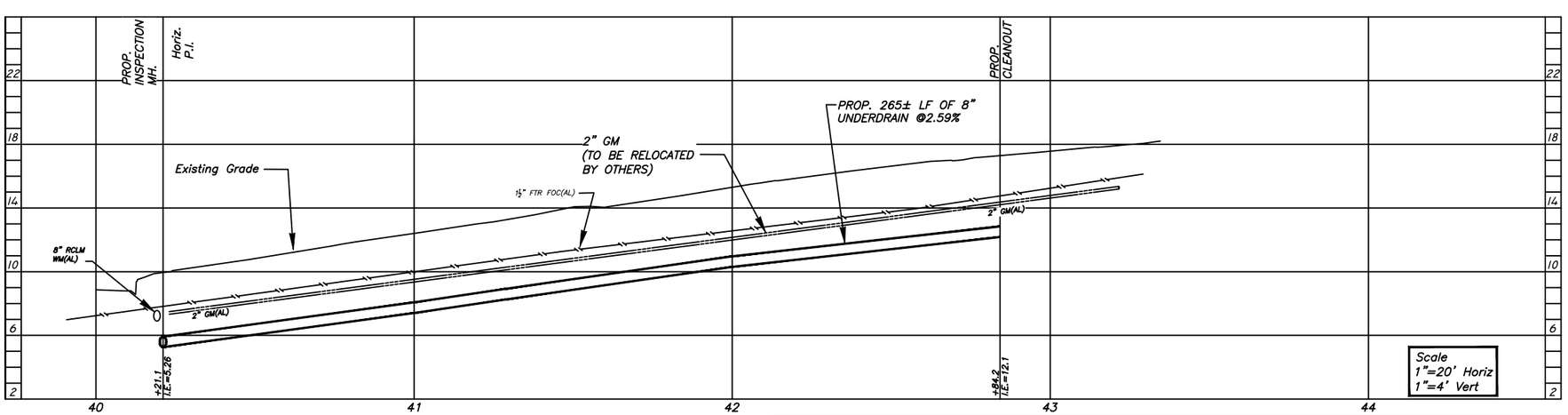
Plot Date: Thursday, February 16, 2023

SW2022-03

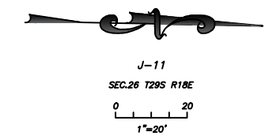




WEST SIDE



EAST SIDE



NOTES:

1. RESTORE DAMAGED OR REMOVED DRIVEWAYS & CURBS TO PRE-CONSTRUCTION CONDITIONS.

2. CAREFULLY REMOVE AND REPLACE ALL CARTOUCHE SIDEWALK PANELS, INCLUDING THE ONES NOT SHOWN ON PLANS.

3. FILL ALL DISTURBED AREAS TO MATCH ADJACENT GRADE AND INSTALL SOD IN KIND.

REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

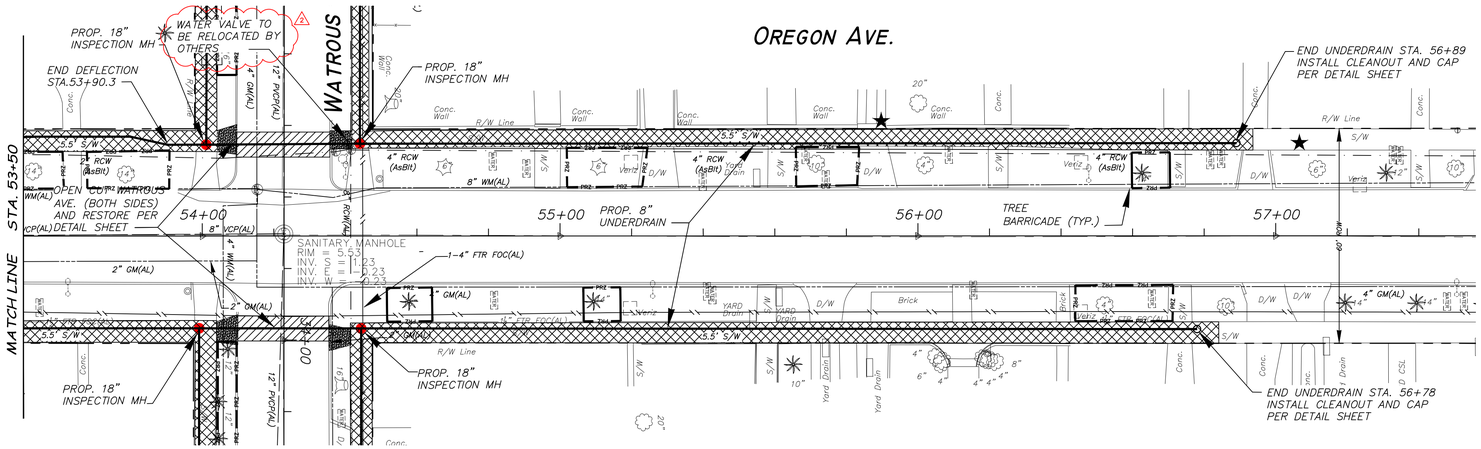
DES: SEB
DRN: WE/JDM
CKD: BG
DATE: 9/22/22

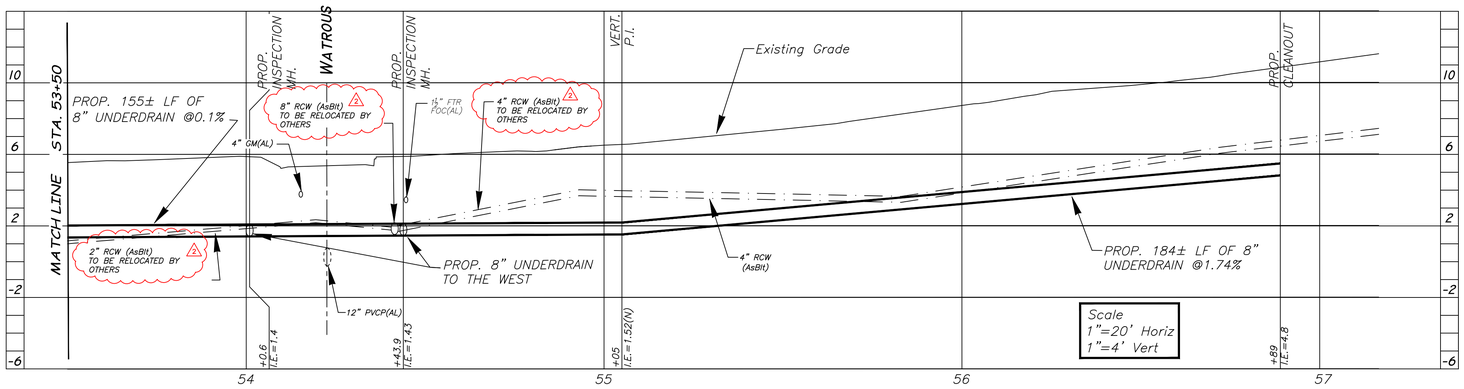
CITY of TAMPA
Mobility Department
Stormwater Engineering Division

HYDE PARK
GROUNDWATER DIVERSION

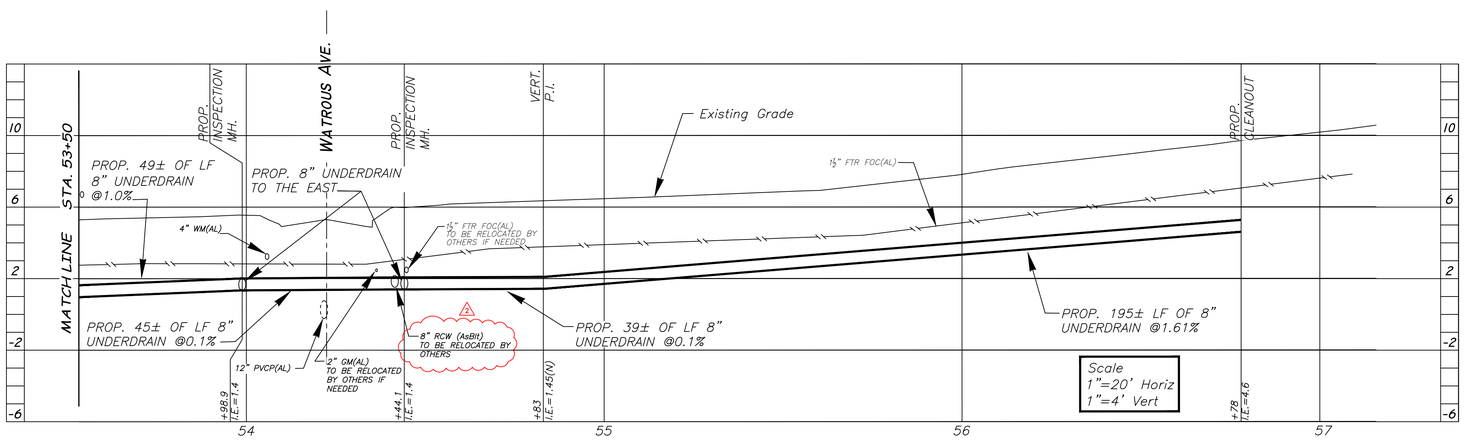
SHEET 3 OF 14

Plot Date: Thursday, February 16, 2023

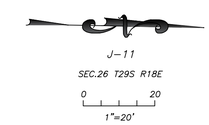




WEST SIDE



EAST SIDE



NOTES:

1. RESTORE DAMAGED OR REMOVED DRIVEWAYS & CURBS TO PRE-CONSTRUCTION CONDITIONS.

2. CAREFULLY REMOVE AND REPLACE ALL CARTOUCHE SIDEWALK PANELS, INCLUDING THE ONES NOT SHOWN ON PLANS.

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REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

DES: SEB
DRN: JDM
CKD: BG
DATE: 9/22/22

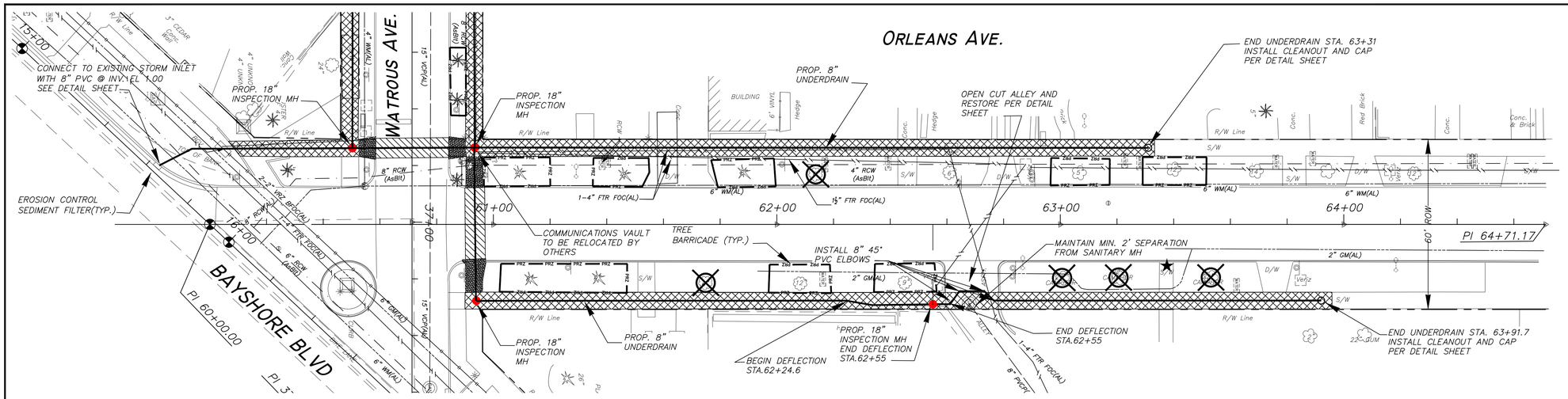
CITY of TAMPA
Mobility Department
Stormwater Engineering Division

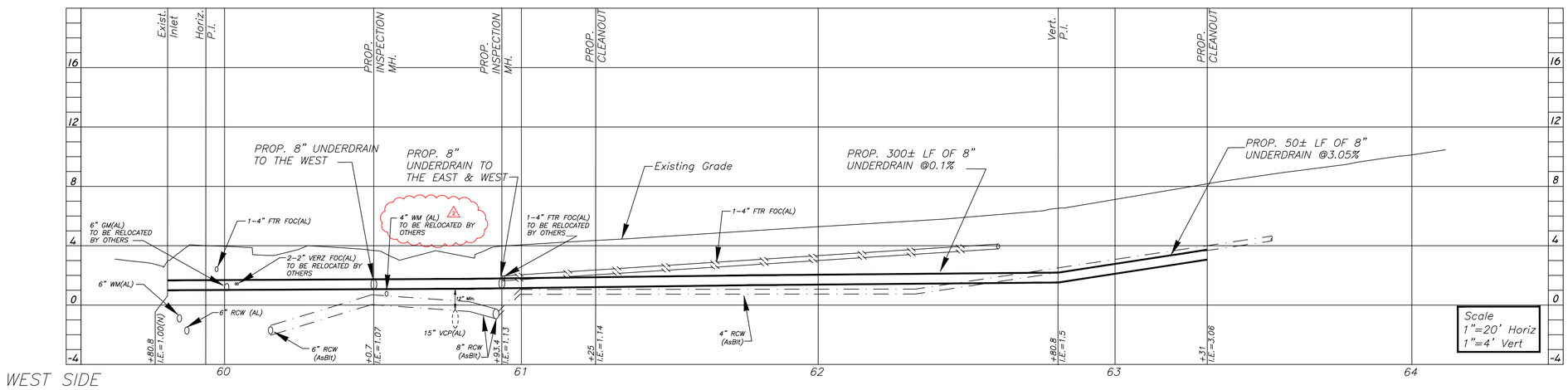
HYDE PARK
GROUNDWATER DIVERSION

SHEET 5 OF 14

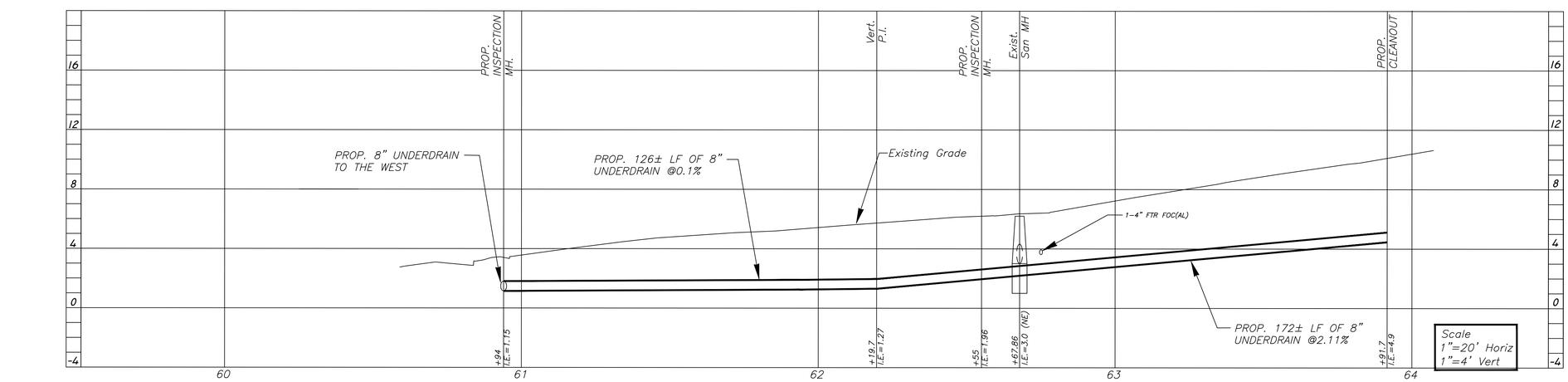
Plot Date: Friday, February 17, 2023

SW2022-03





WEST SIDE



EAST SIDE

J-11

SEC.26 T29S R18E

0 20

1"=20'

NOTES:

1. RESTORE DAMAGED OR REMOVED DRIVEWAYS & CURBS TO PRE-CONSTRUCTION CONDITIONS.

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REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)

REMOVE EXISTING TREES AND REPLACE WITH LIVE OAK TREES PER DETAIL AND SPECIFICATIONS.

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

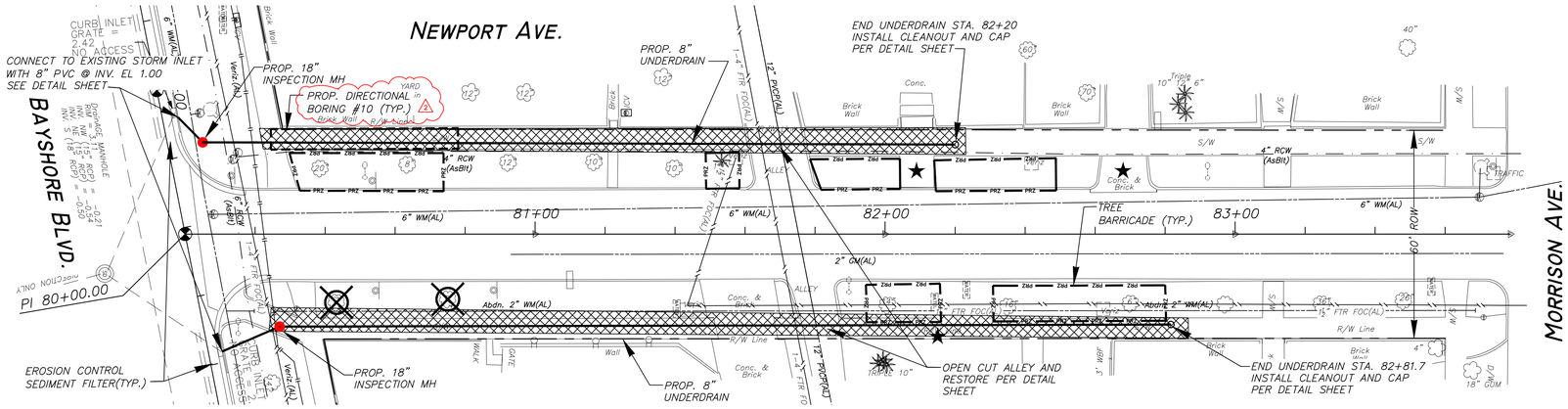
DES: SEB
DRN: HE/JDM
CKD: BG
DATE: 9/22/22

CITY of TAMPA
Mobility Department
Stormwater Engineering Division

HYDE PARK
GROUNDWATER DIVERSION

SHEET 6 OF 14

Plot Date: Thursday, February 16, 2023

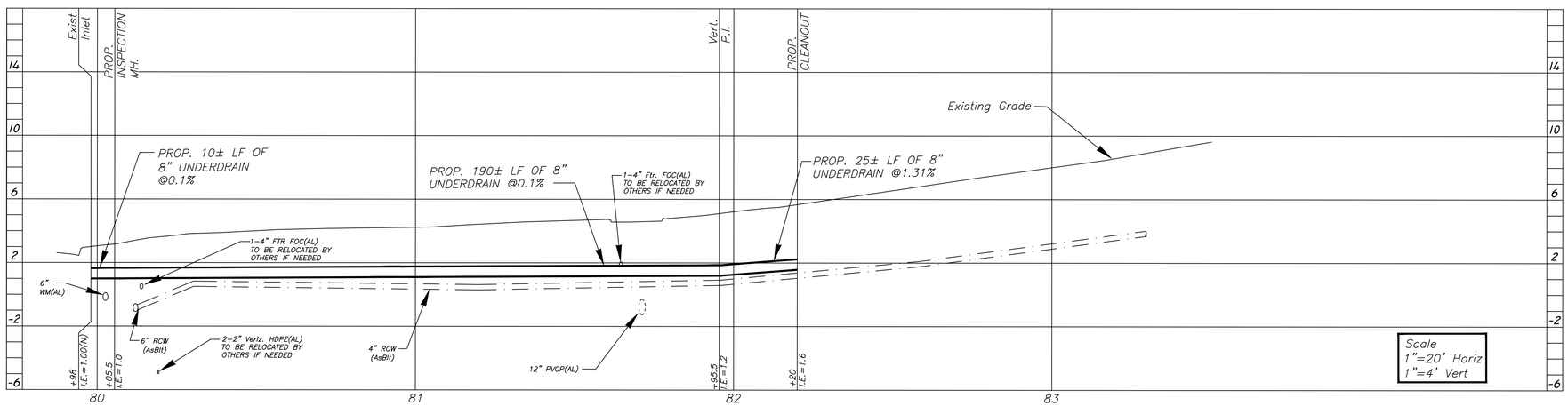


J-11

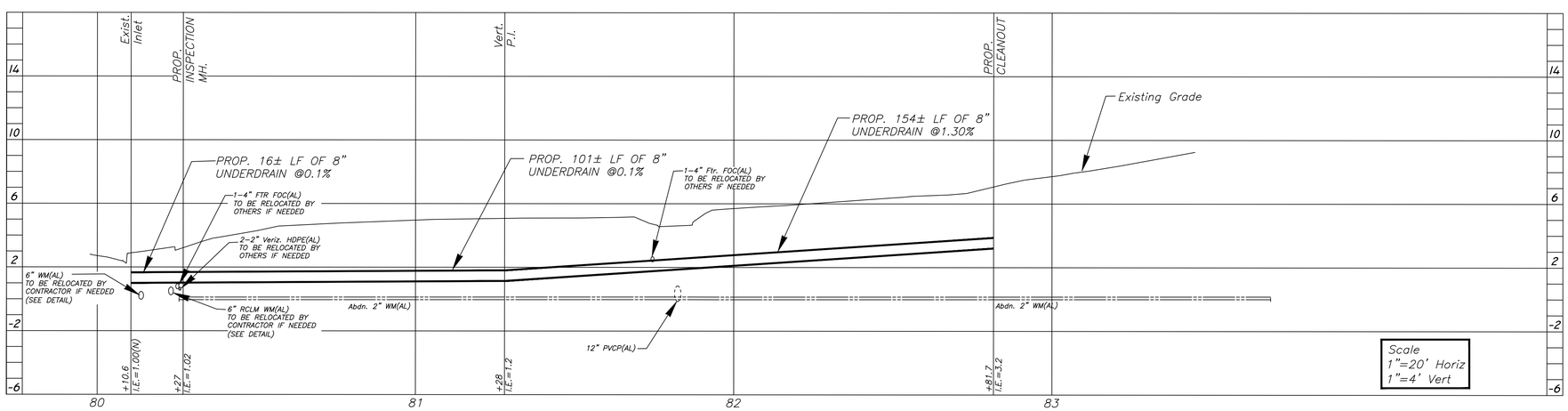
SEC.26 T29S R18E

0 20

1"=20'



WEST SIDE



EAST SIDE

NOTES:

1. RESTORE DAMAGED OR REMOVED DRIVEWAYS & CURBS TO PRE-CONSTRUCTION CONDITIONS.

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REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)

REMOVE EXISTING TREES AND REPLACE WITH LIVE OAK TREES PER DETAIL AND SPECIFICATIONS.

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

DES: SEB
DRN: ME/JDM
CKD: BG
DATE: 9/22/22

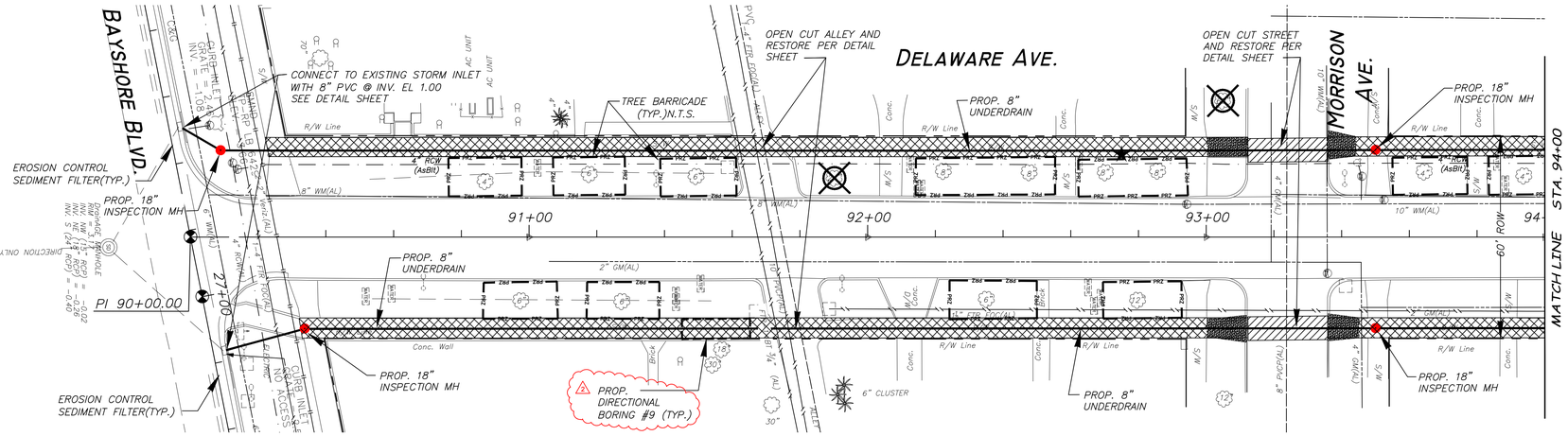
CITY of TAMPA
Mobility Department
Stormwater Engineering Division

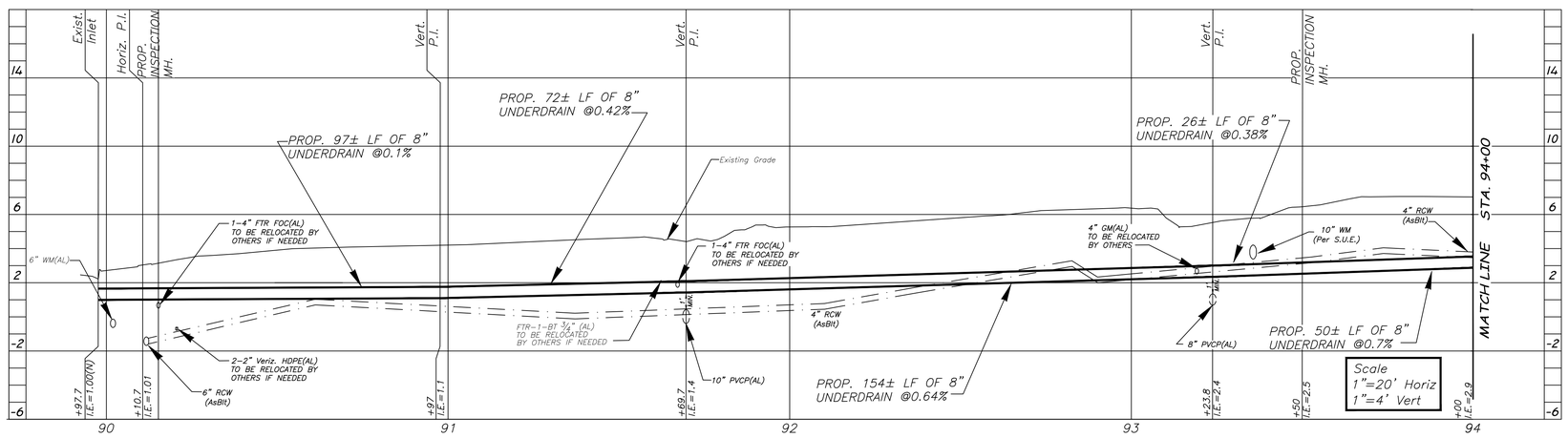
HYDE PARK GROUNDWATER DIVERSION

SHEET 8 OF 14

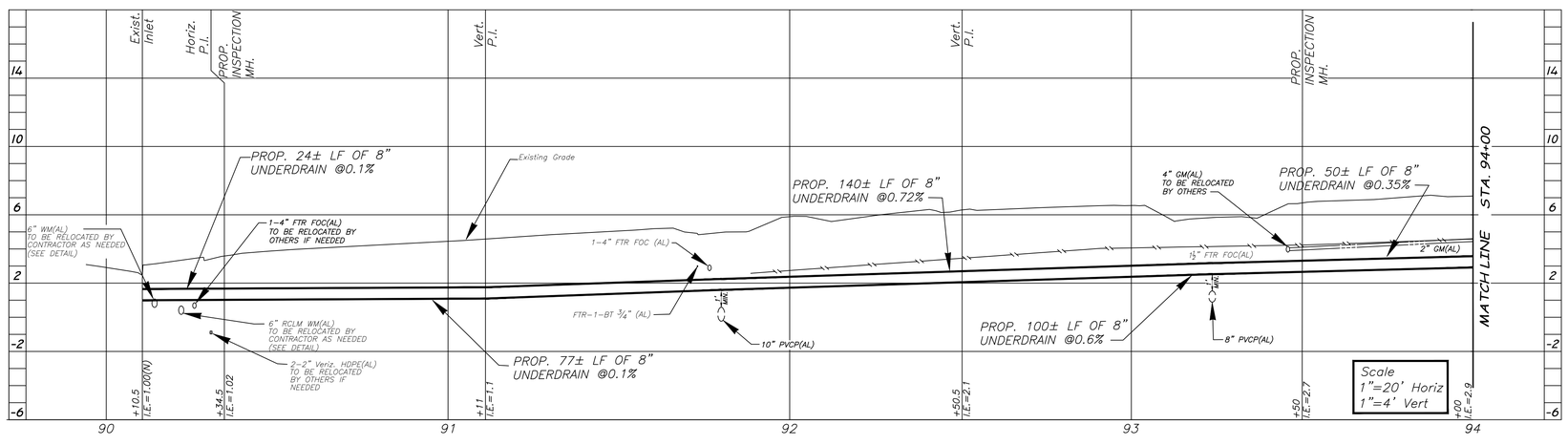
Plot Date: Friday, February 17, 2023

SW2022-03

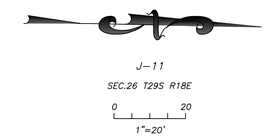




WEST SIDE



EAST SIDE



NOTES:

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REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)

REMOVE EXISTING TREES AND REPLACE WITH LIVE OAK TREES PER DETAIL AND SPECIFICATIONS.

Plot Date: Friday, February 17, 2023

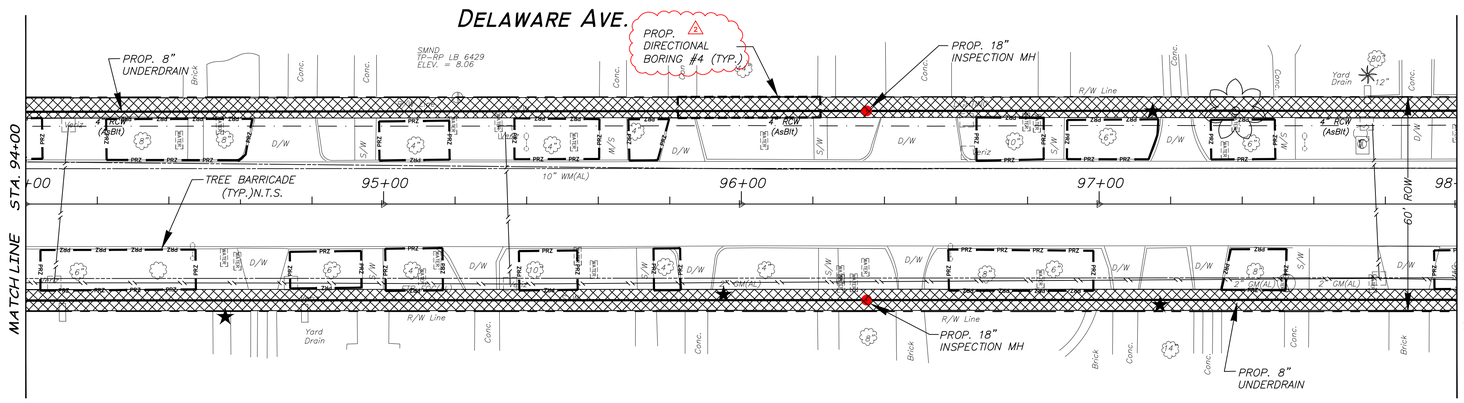
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

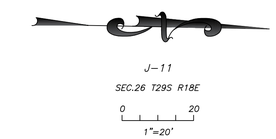
DES: SEB
DRN: ME/JDM
CKD: BG
DATE: 9/22/22

CITY of TAMPA
Mobility Department
Stormwater Engineering Division

HYDE PARK
GROUNDWATER DIVERSION

SHEET 9 OF 14





NOTES:

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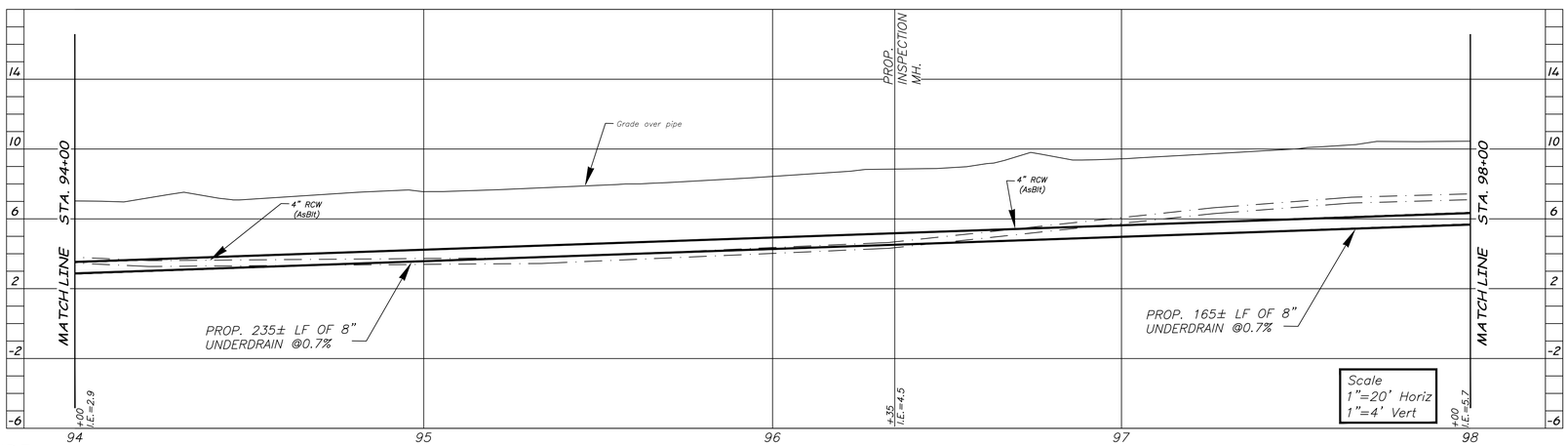
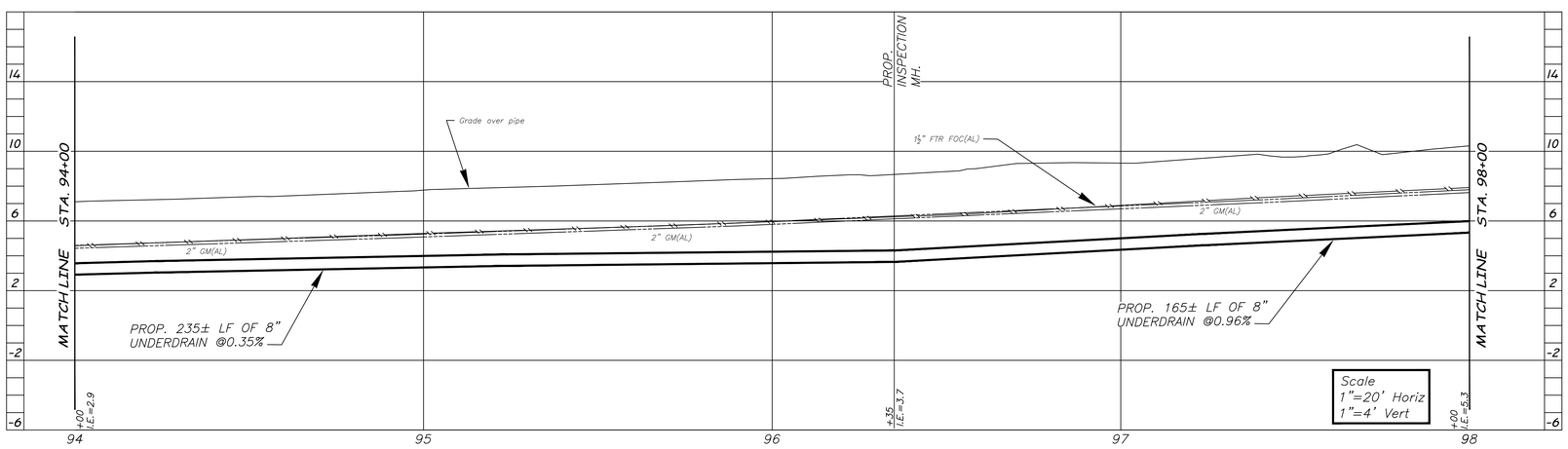
REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)



WEST SIDE



EAST SIDE

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

DES: SEB
DRN: AE/JDM
CKD: BG
DATE: 9/22/22

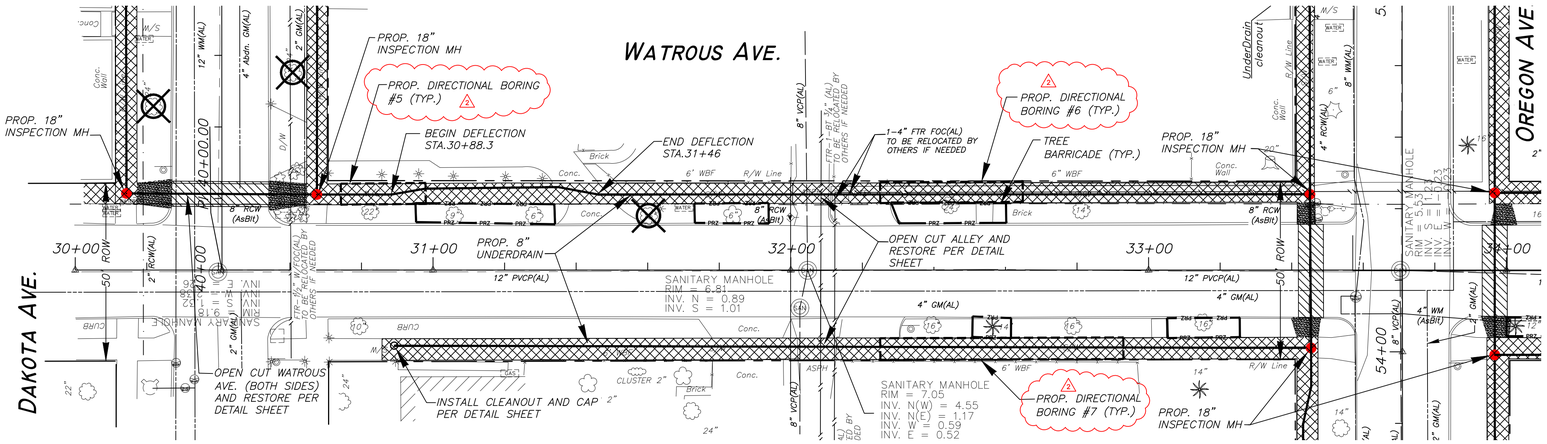
CITY of TAMPA
Mobility Department
Stormwater Engineering Division

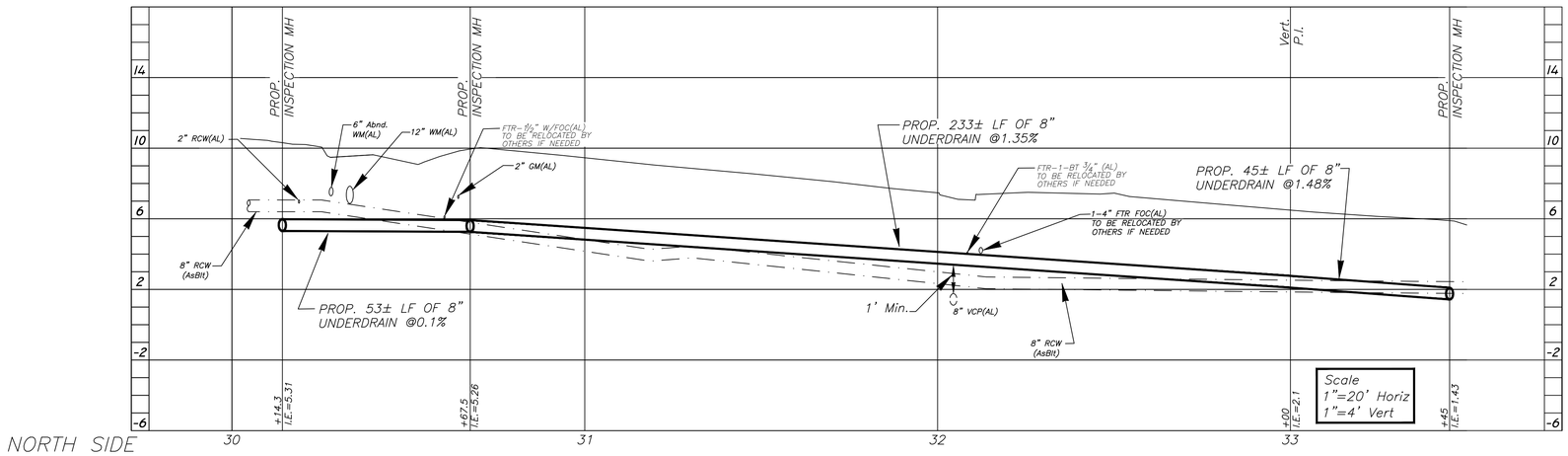
HYDE PARK GROUNDWATER DIVERSION

SHEET 10 OF 14

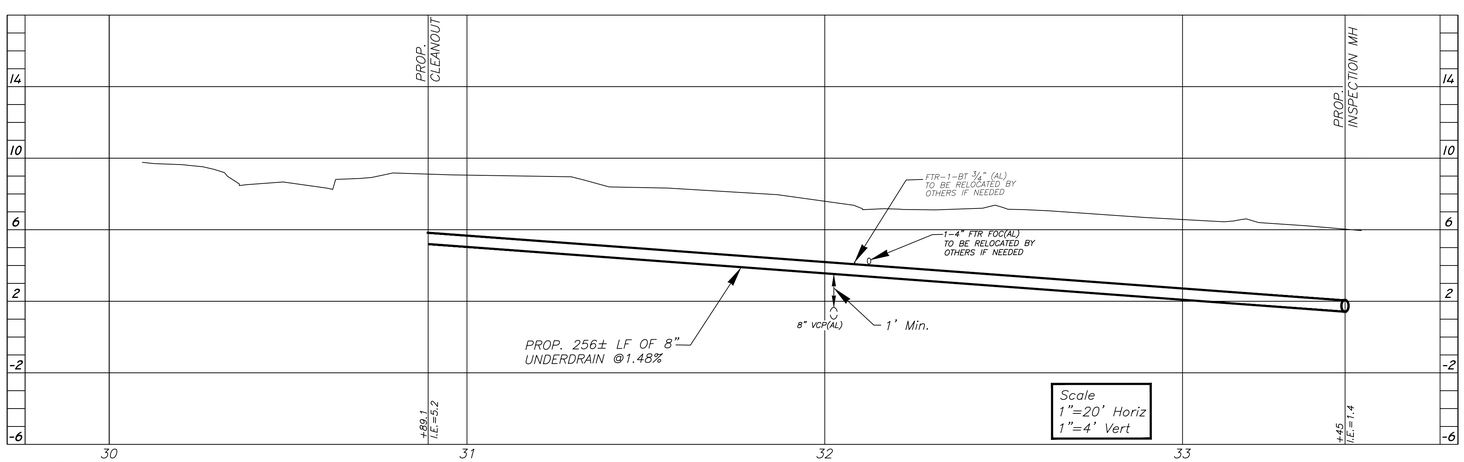
Plot Date: Thursday, February 16, 2023

SW2022-03

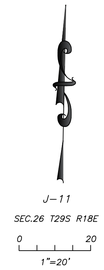




NORTH SIDE



SOUTH SIDE



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REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)

REMOVE EXISTING TREES AND REPLACE WITH LIVE OAK TREES PER DETAIL AND SPECIFICATIONS.

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

DES: SEB
DRN: HE/JDM
CKD: BG
DATE: 9/22/22

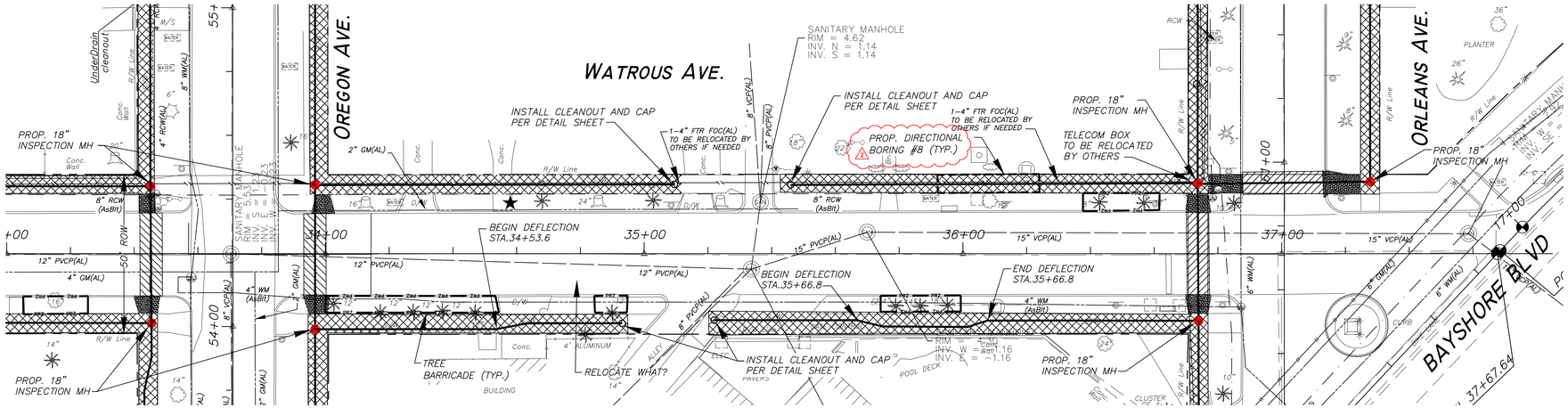
CITY of TAMPA
Mobility Department
Stormwater Engineering Division

HYDE PARK
GROUNDWATER DIVERSION

SHEET 12 of 14

Plot Date: Thursday, February 16, 2023

SW2022-03



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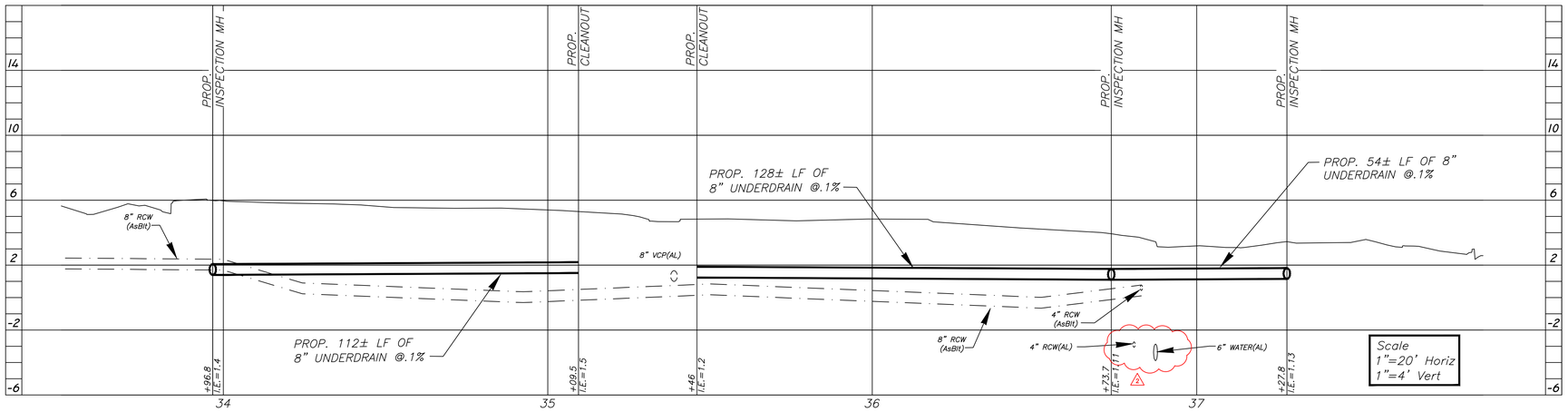
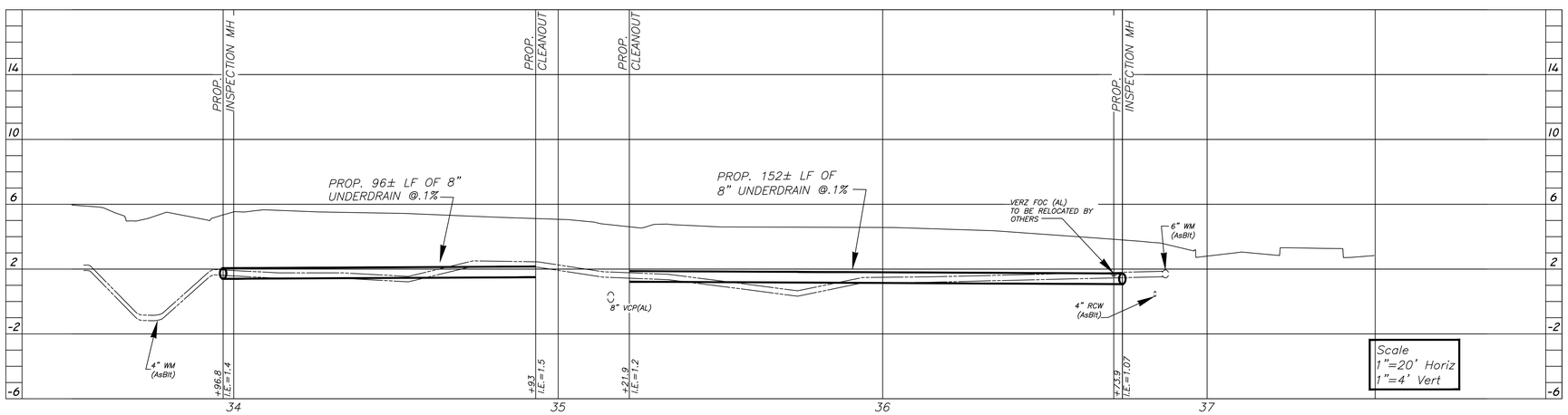


NORTH SIDE



SOUTH SIDE

REMOVE AND REPLACE CONCRETE SIDEWALKS FOR UNDERDRAIN INSTALLATION(TYP.) SEE NOTE 2

CONSTRUCT FDOT TYPE CR-E ADA RAMPS PER FDOT INDEX 522-002

TYPICAL ROAD CROSSING WITH 7' WIDE PAVEMENT RECONSTRUCTION (TYP.)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2	2/14/23	ADDENDUM NO. 2	5		
1	9/8/22	FINAL REVISIONS	4		

DES: SEB
DRN: HE/JDM
CKD: BG
DATE: 9/22/22

CITY of TAMPA
Mobility Department
Stormwater Engineering Division

HYDE PARK GROUNDWATER DIVERSION

SHEET 13 of 14

Plot Date: Friday, February 17, 2023