The Enclosed Document Is Provided For Your Convenience.

Please Email ALL Questions:

MailTo:ContractAdministration@TampaGov.net

City of Tampa
Contract Administration Department
306 E. Jackson St. #280A4N
Tampa, FL 33602
(813)274-8456

CONTRACT 18-C-00032

PRESCOTT PUMP STATION FORCEMAIN

CITY OF TAMPA
WASTEWATER DEPARTMENT
2545 GUY N. VERGER BOULEVARD
TAMPA, FL 33605

VICINITY MAP
Not to Scale
©OpenStreetMap contributors

INDEX TO DRAWINGS

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C0.1	OVERALL PROJECT AREA
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C1.2	STA. 5+43.96 TO 10+24.21
C1.3	STA. 10+24.21 TO 15+04.46
C1.4	STA. 15+04.46 TO 19+84.71
C1.5	STA. 19+84.71 TO 22+44.44
C1.6	STA. 22+44.44 TO 27+24.69
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100% CONSTRUCTION DRAWINGS – 10/11/18

REVISIONS					
BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD – SUITE 300
TAMPA, FLORIDA 33609–3056
TELEPHONE: (813) 876–5869

FOR
CITY OF TAMPA
WASTEWATER DEPARTMENT
2545 GUY N VERGER BLVD.
TAMPA, FLORIDA 33605

DRAWN BY: AS DATE 03/30/18
DESIGN BY: CVL DATE 09/05/18
CHECKED BY: LEM DATE 09/05/18
SCALE: N/A

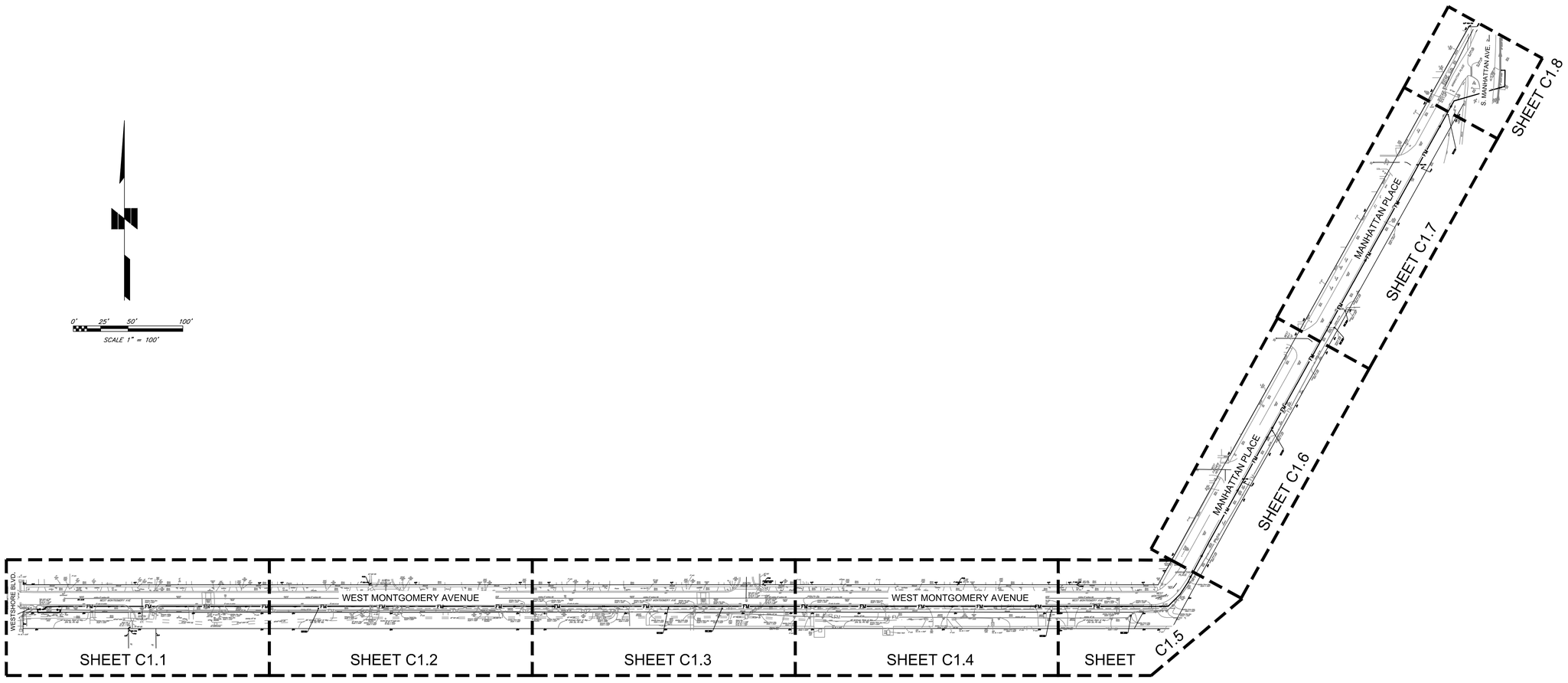
LAWRENCE E. MILLS
P.E. NO. 22324 – P.L.S. NO. 3141
E.B. NO. 3860 – L.B. NO. 3868
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN

COVER SHEET

SHEET
C0.0

JOB NO.
18–003



OVERALL PROJECT AREA

Scale: 1" = 100'

100% CONSTRUCTION DRAWINGS – 10/11/18

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OVERALL PROJECT AREA

SHEET
C0.1

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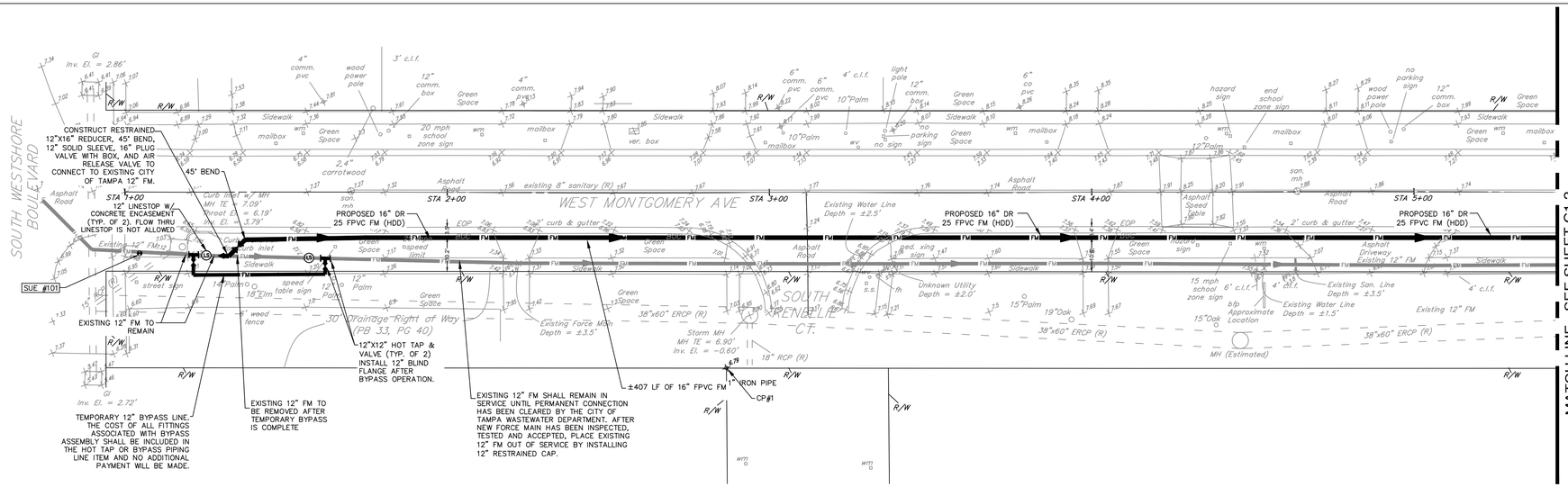
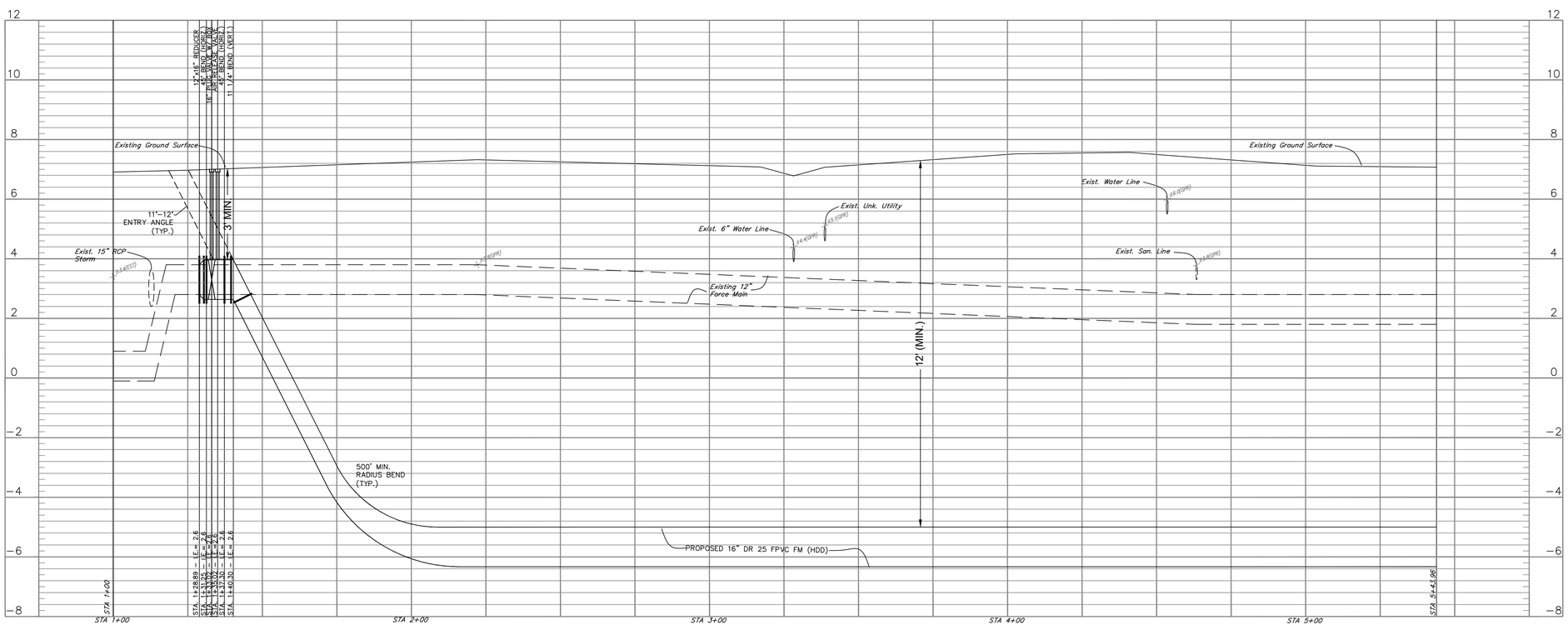
18–003



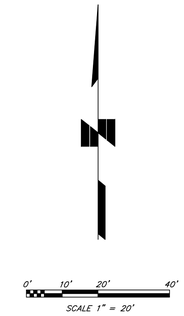
PLAN VIEW

Horizontal Scale: 1" = 20'



PROFILE VIEW

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 2'



LEGEND (As Applicable)

BOC	Back of Curb
BFP	Backflow Preventer
(C)	Calculated
CLF	Chain Link Fence
CMP	Corrugated Metal Pipe
CO	Clean Out
Conc.	Concrete
CP	Control Point
EOP	Edge of Pavement
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H/C	Handicapped Parking Sign
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IE	Invert Elevation
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FH	Fire Hydrant
FIR	Found Iron Rod
LB	Licensed Business
L.P.	Light Pole
(M)	Measured data
MEC	Match Existing Curb
MEP	Match Existing Pavement
MES	Mitered End Section
MH	Manhole
O/A	Overall
OR	Official Records
OHW	Overhead Wires
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Ped. xing	Pedestrian Crossing
PK&D	Parker Kalon Nail & Disk (as noted)
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(R)	Recorded
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R/W	Right of Way
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SCO	Sanitary CO
SF	Square Feet
SIR	Set 5/8" IR with Cap: LB3868
SPT	Standard Penetration Test
S/W	Sidewalk
TBM	Temporary Bench Mark
TC	Top of Curb
TE	Top Elevation
T.O.B.	Top of Bank
(Typ.)	Typical
OHW	Overhead Wires
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WV	Water Valve

NOTES:

1. EXISTING UTILITIES ARE SHOWN FROM THE BEST INFORMATION AVAILABLE. SOME AREAS HAVE BEEN LOCATED BY VACUUM EXCAVATION AND PROVIDED ON THE PLANS. PRIOR TO DIRECTIONAL DRILLING, CONTRACTOR SHAL EXCAVATE AND VERIFY EXISTING HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES VIA VACUUM OF CONVENTIONAL EXCAVATION.
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100% CONSTRUCTION DRAWINGS – 10/11/18

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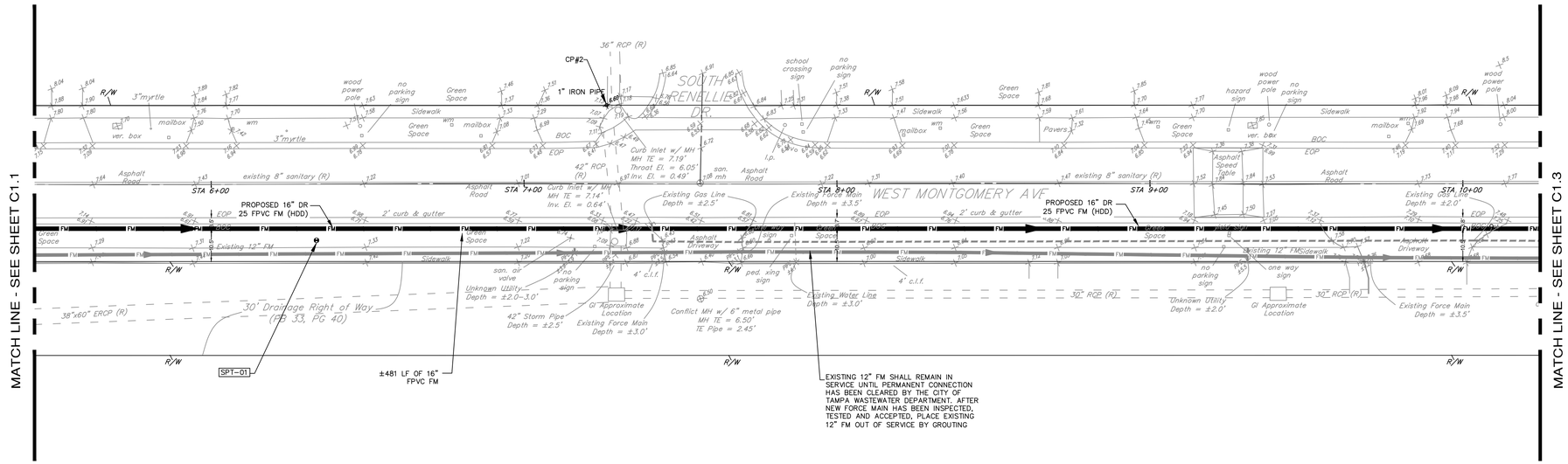
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN
STA. 1+00 TO 5+43.96

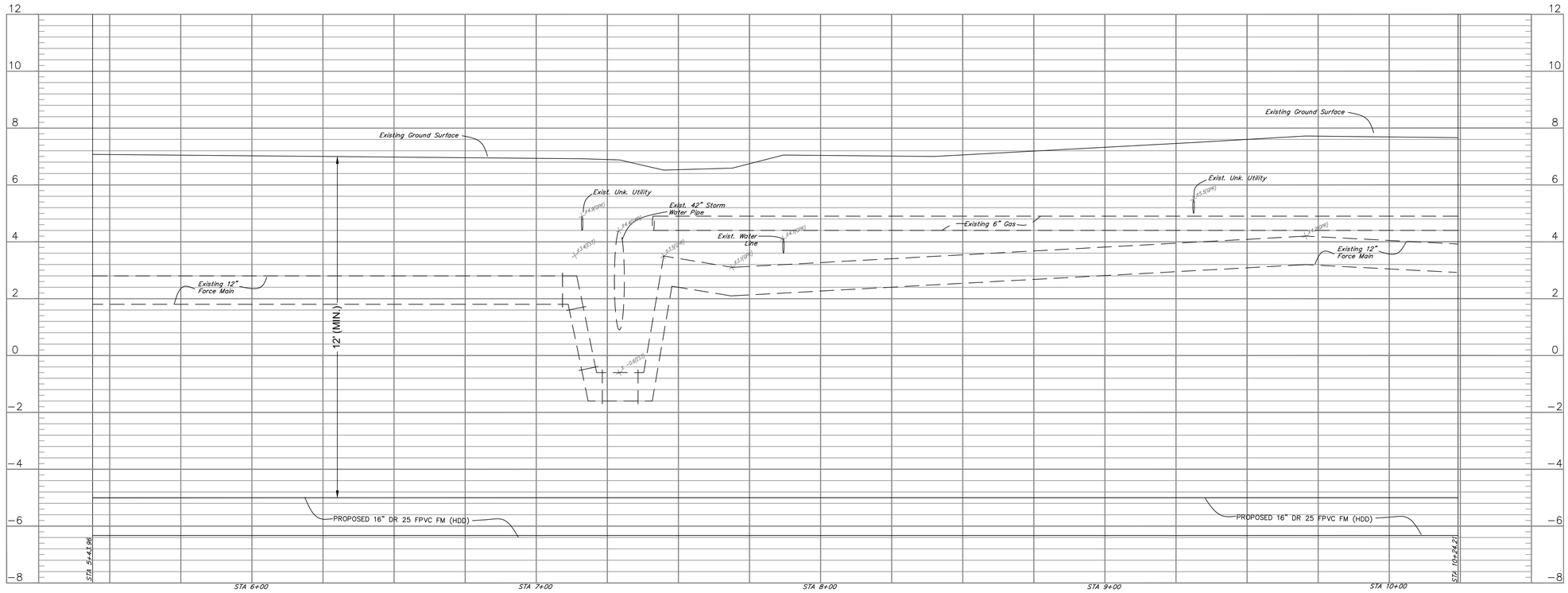
SHEET
C1.1

JOB NO.
18-003



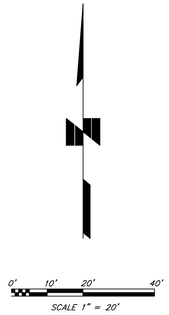
PLAN VIEW

Horizontal Scale: 1" = 20'



PROFILE VIEW

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 2'



LEGEND (As Applicable)

BOC	Back of Curb
BFP	Backflow Preventer
(C)	Calculated
CLF	Chain Link Fence
CMP	Corrugated Metal Pipe
CO	Clean Out
Conc.	Concrete
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Ver.	Verizon
WM	Water Meter
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NOTES:

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100% CONSTRUCTION DRAWINGS – 10/11/18

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FOR

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TAMPA, FLORIDA 33605

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SCALE: 1" = 20'

LAWRENCE E. MILLS
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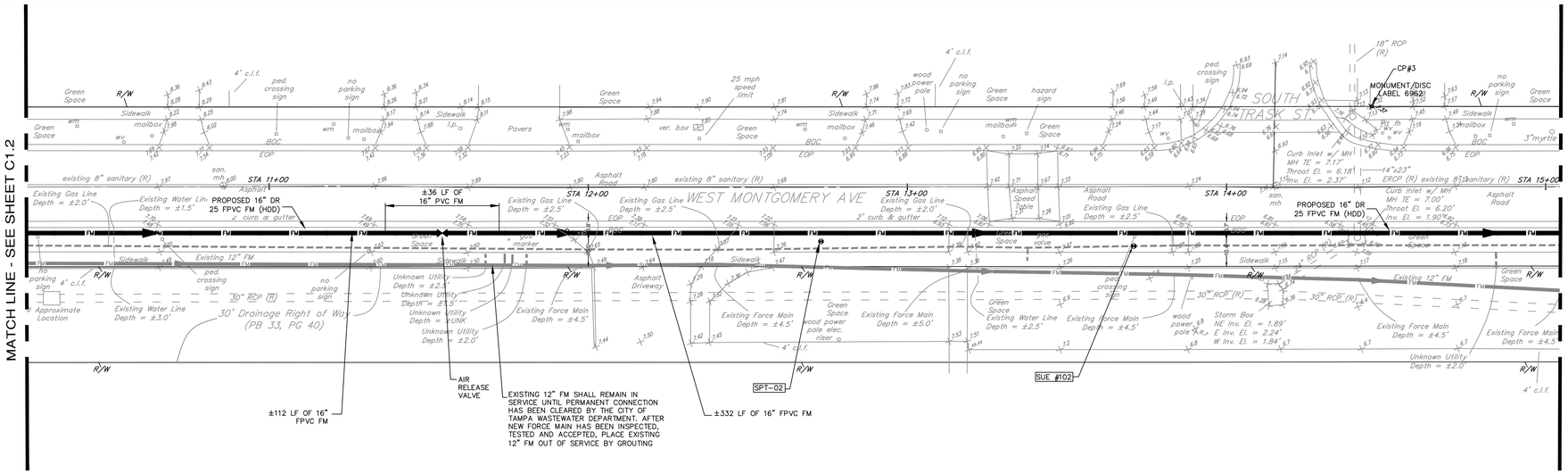
E.B. NO. 3860 – L.B. NO. 3868
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN
STA. 5+43.96 TO 10+24.21

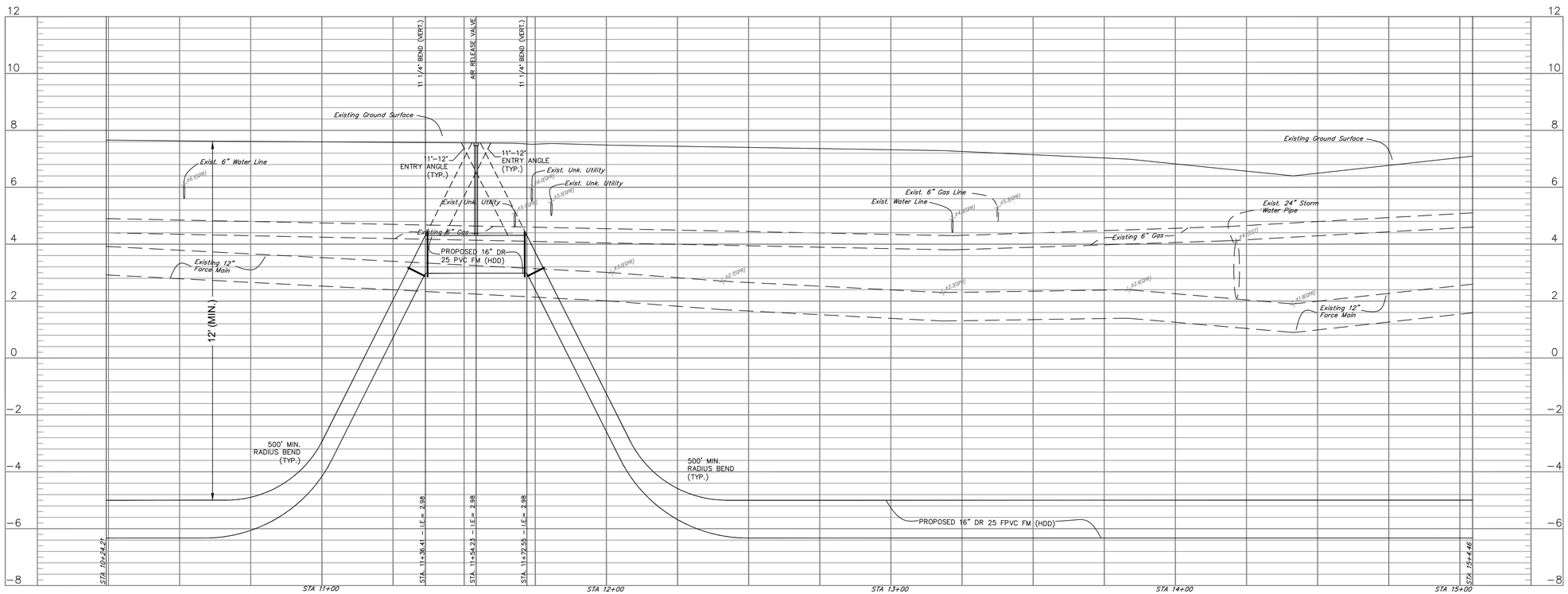
SHEET
C1.2

JOB NO.
18-003



PLAN VIEW

Horizontal Scale: 1" = 20'



PROFILE VIEW

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 2'

0' 10' 20' 40'
SCALE 1" = 20'

LEGEND (As Applicable)

BOC	Back of Curb
BFP	Backflow Preventer
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100% CONSTRUCTION DRAWINGS – 10/11/18

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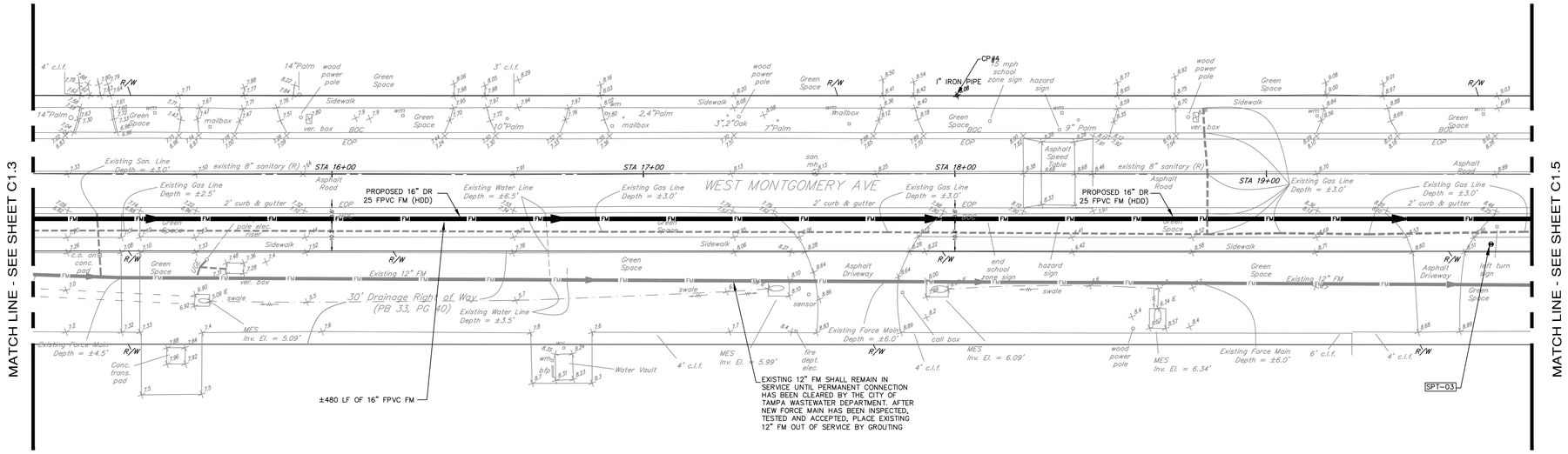
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN
STA. 10+24.21 TO 15+4.46

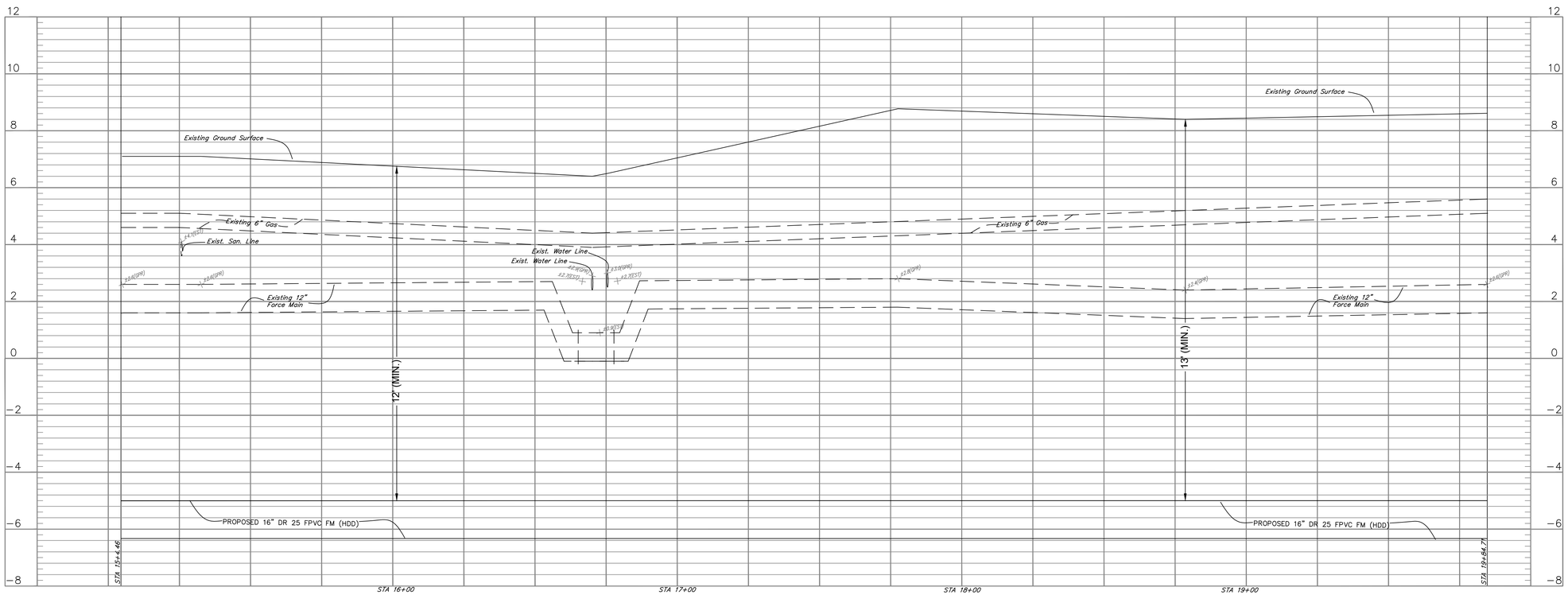
SHEET
C1.3

JOB NO.
18–003



PLAN VIEW

Horizontal Scale: 1" = 20'



PROFILE VIEW

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 2'

SCALE 1" = 20'

LEGEND (As Applicable)

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STA. 15+4.46 TO 19+84.71

SHEET
C1.4

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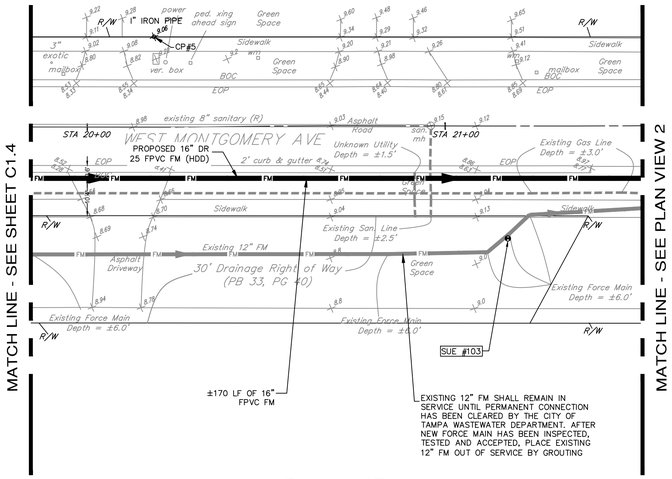
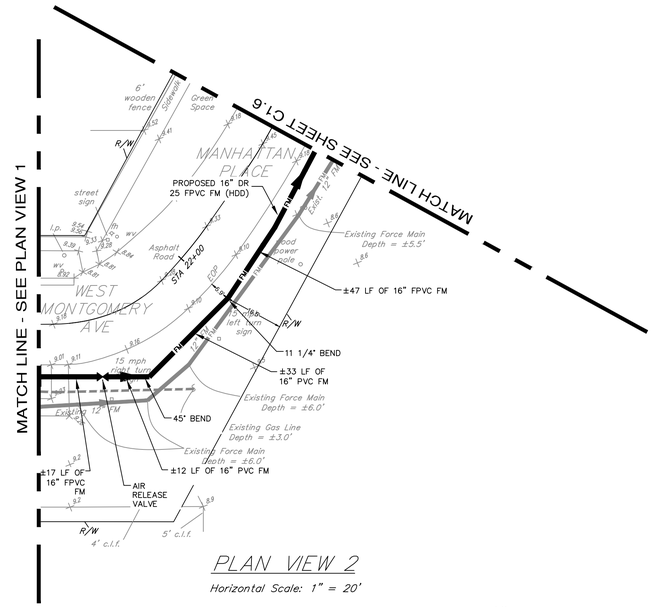


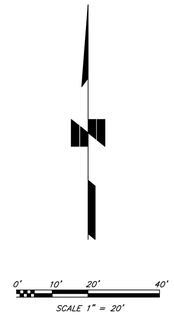
PLAN VIEW 1

Horizontal Scale: 1" = 20'



PLAN VIEW 2

Horizontal Scale: 1" = 20'



LEGEND (As Applicable)

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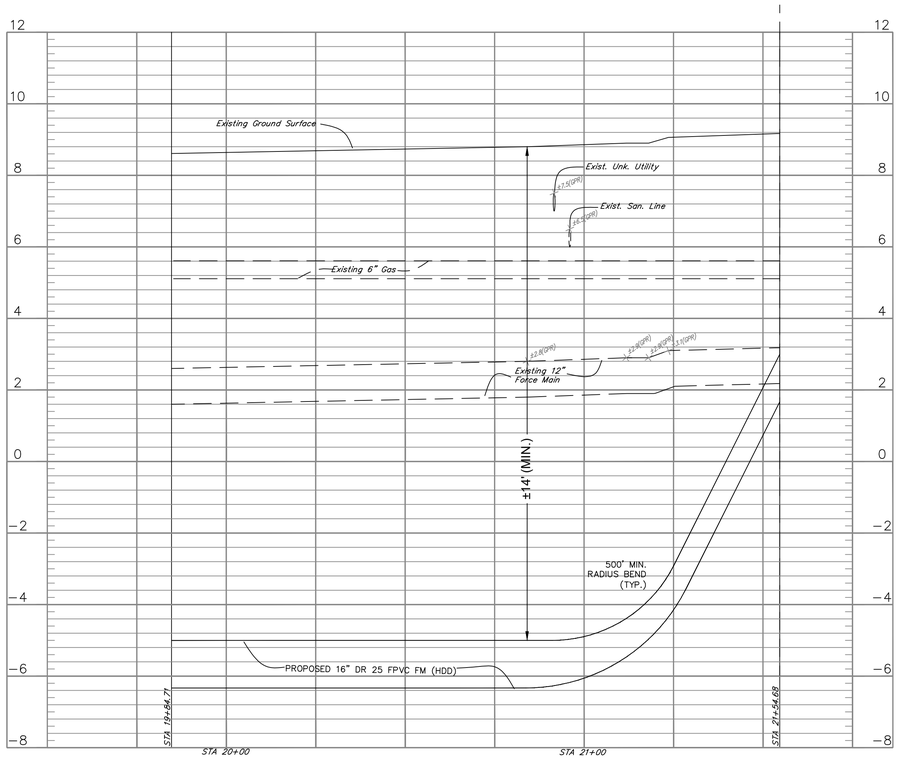

PROFILE VIEW 1

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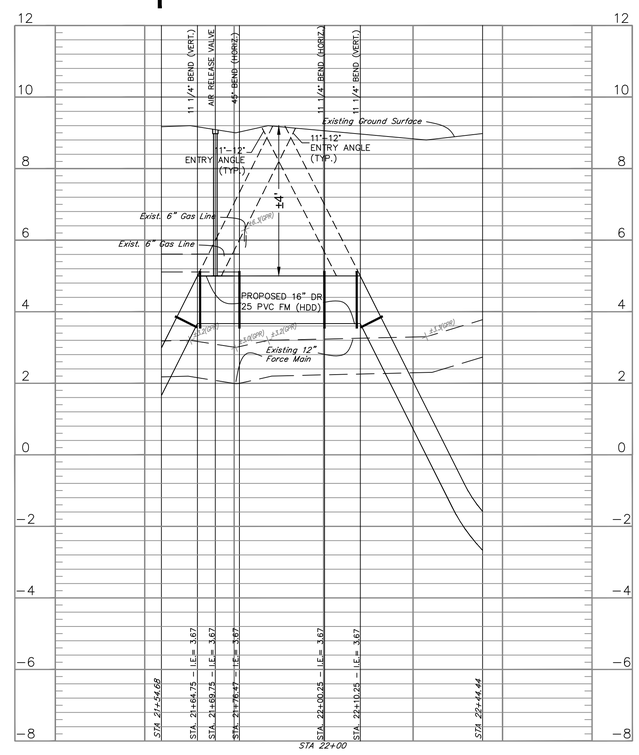
Vertical Scale: 1" = 2'



PROFILE VIEW 2

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3242 HENDERSON BOULEVARD * SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

FOR

CITY OF TAMPA
WASTEWATER DEPARTMENT
2545 GUY N VERGER BLVD.
TAMPA, FLORIDA 33605

DRWN BY: AS DATE 03/30/18
DSGN BY: CVL DATE 09/05/18
CHKD BY: LEM DATE 09/05/18
SCALE: 1"= 20'

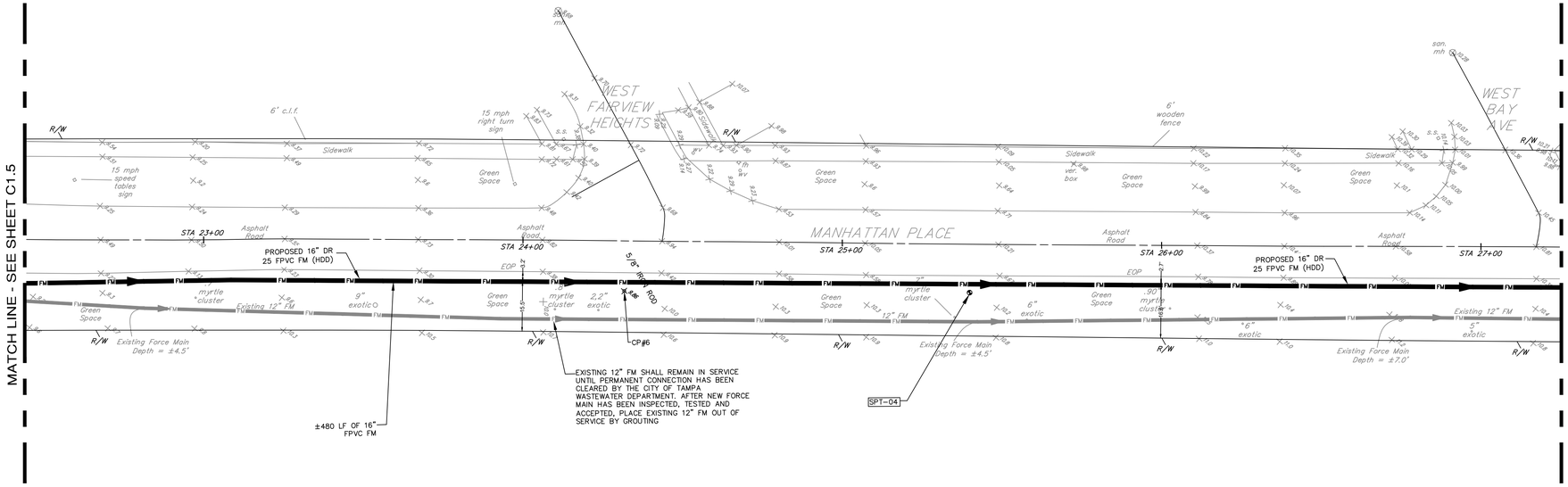
LAWRENCE E. MILLS
P.E. NO. 22324 – P.L.S. NO. 3141
E.B. NO. 3860 – L.B. NO. 3868
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION
FORCEMAIN

STA. 19+84.71 TO 22+44.44

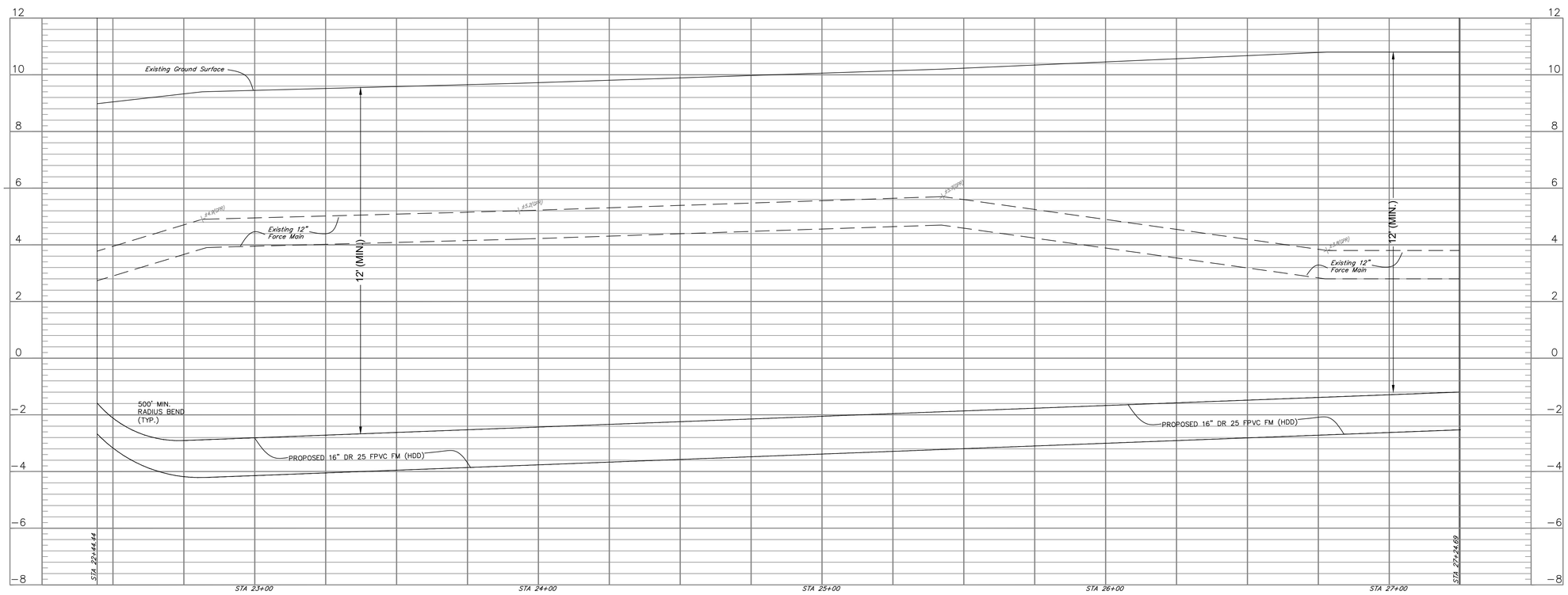
SHEET
C1.5

JOB NO.
18-003



PLAN VIEW

Horizontal Scale: 1" = 20'



PROFILE VIEW

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 2'

SCALE 1" = 20'

LEGEND (As Applicable)

BOC	Back of Curb
BFP	Backflow Preventer
(C)	Calculated
CLF	Chain Link Fence
CMP	Corrugated Metal Pipe
CO	Clean Out
Conc.	Concrete
CP	Control Point
EOP	Edge of Pavement
FDC	Fire Department Connector
FF	Finished Floor Elevation
FL	Flow Line
GI	Grate Inlet
GW	Guy Wire
H/C	Handicapped Parking Sign
HP	High Point
ID	Identification
IE	Invert Elevation
FCIR	Found Capped Iron Rod
FCM	Found Concrete Monument
FH	Fire Hydrant
FIR	Found Iron Rod
LB	Licensed Business
L.P.	Light Pole
(M)	Measured data
MEC	Match Existing Curb
MEP	Match Existing Pavement
MES	Mitered End Section
MH	Manhole
O/A	Overall
OR	Official Records
OHW	Overhead Wires
(P)	Plat data
Ped. xing	Pedestrian Crossing
PK&D	Parker Kalon Nail & Disk (as noted)
PVC	Polyvinyl chloride
(R)	Recorded
RCP	Reinforced Concrete Pipe
R/W	Right of Way
San.	Sanitary
SCO	Sanitary CO
SF	Square Feet
SIR	Set 5/8" IR with Cap: LB3868
SPT	Standard Penetration Test
S/W	Sidewalk
TBM	Temporary Bench Mark
TC	Top of Curb
TE	Top Elevation
T.O.B.	Top of Bank
(Typ)	Typical
OHW	Overhead Wires
OVH	Overhang
UGE	Underground Electric
UP	Utility Pole
Ver.	Verizon
WM	Water Meter
WV	Water Valve

NOTES:

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100% CONSTRUCTION DRAWINGS – 10/11/18

REVISIONS

BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
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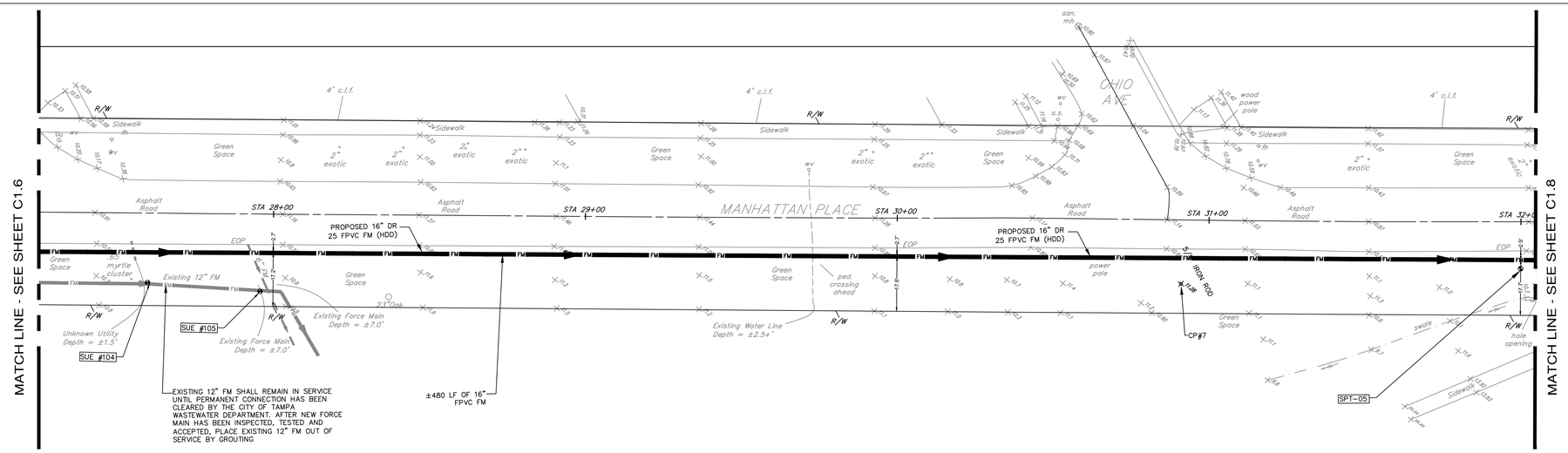
PROJECT
PRESCOTT PUMP STATION FORCEMAIN
STA. 22+44.44 TO 27+24.69

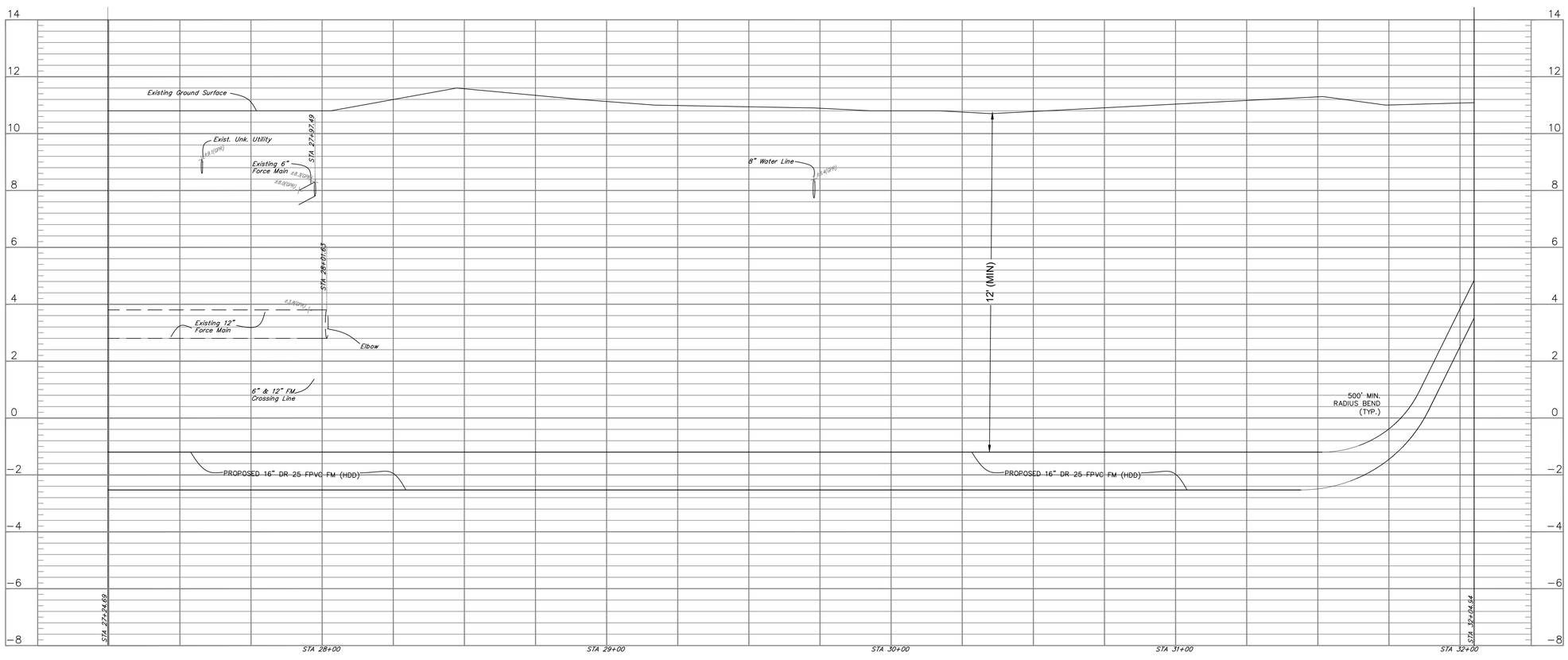
SHEET
C1.6

JOB NO.
18-003



PLAN VIEW

Horizontal Scale: 1" = 20'



PROFILE VIEW

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 2'

0' 10' 20' 40'
SCALE 1" = 20'

LEGEND (As Applicable)

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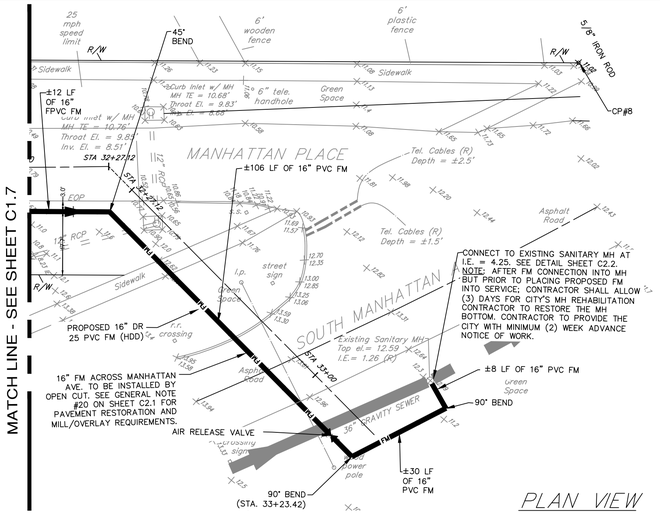
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN
STA. 27+24.69 TO 32+04.94

SHEET
C1.7

JOB NO.
18-003



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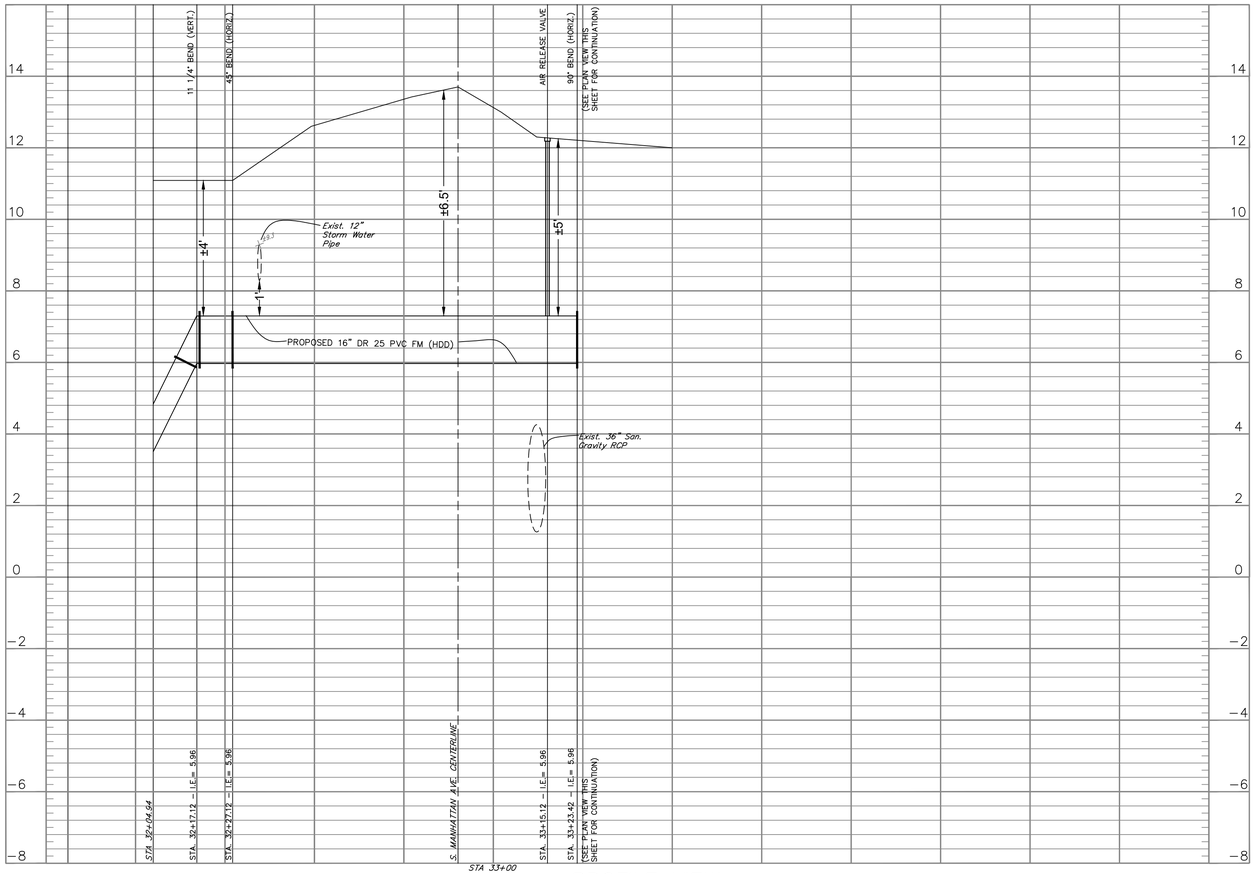

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STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN
STA. 32+04.94 TO 33+23.42

SHEET
C1.8

JOB NO.
18–003

GENERAL NOTES:

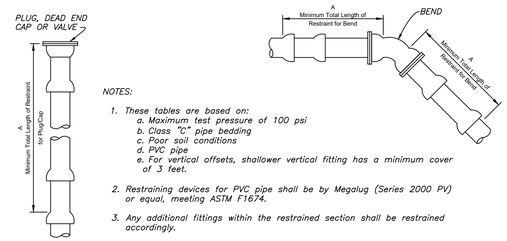
1. ELEVATION INFORMATION SHOWN ON THESE PLANS IS REFERENCED TO N.G.V.D. 1929 UNLESS OTHERWISE STATED.
2. LOCATIONS OF EXISTING UNDERGROUND UTILITIES WERE PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE. VERIFY THE LOCATION AND DEPTH OF ALL PERTINENT UTILITIES PRIOR TO CONSTRUCTION. NOTIFY UTILITY COMPANIES AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION.
3. FORCE MAIN CONNECTION LOCATIONS ARE APPROXIMATE ONLY, BASED ON AS-BUILT PLANS AND/OR VISUAL OBSERVATIONS. CONTRACTOR SHALL EXCAVATE AS NECESSARY TO VERIFY SHOWN LOCATIONS.
4. WHEN CHANGING THE SEWAGE FLOW FROM THE EXISTING FORCE MAIN TO THE NEW FORCE MAIN, THE CONTRACTOR MAY BE REQUIRED TO PERFORM THE WORK DURING LOW-FLOW TIMES AT NIGHT. CONTRACTOR SHALL COORDINATE SUCH WORK WITH CITY STAFF AND THE PROPERTY OWNERS.
5. CONTRACTOR SHALL PROVIDE A BORING LOG TO DOCUMENT THE DEPTH AND HORIZONTAL LOCATION OF THE HDPE PIPE AT A MAXIMUM OF 15 FOOT INTERVALS.
6. THE MINIMUM CLEARANCE BETWEEN THE PROPOSED FORCE MAIN AND ALL CROSSING UTILITIES SHALL BE 18-INCHES, UNLESS NOTED OTHERWISE.
7. THE PROPOSED FORCE MAIN SHALL BE INSTALLED ACCORDING TO THE STATIONS, OFFSETS AND INVERT ELEVATIONS PROVIDED WITH NO INTERMEDIATE HIGH OR LOW POINTS BETWEEN THE SPECIFIED INVERT ELEVATIONS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
8. ALL FITTINGS AND BENDS SHALL BE DUCTILE IRON AWWA C-110 OR C-153. FITTINGS SHALL BE WRAPPED WITH GREEN POLYWRAP. FITTINGS SHALL BE LINED WITH PROTECTO 401 INTERIOR CERAMIC EPOXY.
9. PLUG VALVES SHALL BE DEZURIK 100% PORT PEF.
10. ALL FORCE MAIN VALVES, FITTINGS AND BENDS SHALL HAVE RESTRAINED MECHANICAL JOINTS UNLESS THE JOINTS ARE BUTT FUSED HDPE. ADDITIONALLY, ANY JOINTS WITHIN THE LIMITS TO BE RESTRAINED THAT ARE SHOWN ON THE PLANS SHALL ALSO BE RESTRAINED. RESTRAINING DEVICES SHALL BE "MEGA-LUG" AS MANUFACTURED BY EBAA IRON OR APPROVED EQUAL.
11. ALL PROPOSED FORCE MAIN PIPE SHALL HAVE 2 LOCATING WIRES IN ACCORDANCE WITH THE PIPE LOCATING WIRE DETAIL. THE WIRES SHALL BE RAISED AND TERMINATED AT ALL PLUG VALVES, AIR RELEASE VALVES AND TERMINAL MANHOLES, SIMILAR TO THAT SHOWN ON THE AIR RELEASE VALVE DETAIL.
12. AIR RELEASE BOXES SHALL BE INSTALLED IN GRASSED AREAS AND NOT IN PAVEMENT OR SIDEWALKS. FINAL LOCATIONS OF BOXES WILL DE DETERMINED IN THE FIELD AT HIGH POINTS.
13. CONTRACTOR SHALL ENSURE THAT WHEN PLANNING HIS LAYOUT FOR BORING ENTRANCE AND EXIT LOCATIONS, THAT HE DOES NOT BLOCK A SOLE DRIVEWAY TO THE FRONTING PROPERTY OWNER WITHOUT PROVIDING AN ALTERNATE ACCESS.
14. CONNECTIONS BETWEEN HDPE AND PVC OR DIP SHALL BE IN ACCORDANCE WITH THE HDPE TRANSITION DETAIL.
15. DURING THE M.O.T., THE CONTRACTOR SHALL MAINTAIN ALL PEDESTRIAN WALKWAYS AT ALL TIMES, INCLUDING, BUT NOT LIMITED TO, SIDEWALKS, PEDESTRIAN RAMPS, CROSSWALKS AND BUS STOPS WHEN WORK IS BEING PERFORMED ON OR IN THE VICINITY OF A SIDEWALK, CROSSWALK, BUS STOPS OR OTHER PEDESTRIAN WAY. THE CONTRACTOR SHALL RELOCATE THE PEDESTRIAN WAY TEMPORARILY OR PROVIDE PEDESTRIANS WITH A SIGNED, SAFE PASSAGE AROUND THE WORK ZONE. PEDESTRIAN DETOURS SHALL BE IN ACCORDANCE WITH FDOT INDEX 660.
16. PLUG VALVES SHALL BE DEZURIK OR APPROVED EQUAL
17. INSTALL AIR RELEASE VALVE (ARV) AT HIGH POINTS IN ACCORDANCE WITH STANDARD DETAILS AND AS DIRECTED BY THE CITY'S INSPECTOR. ARV BOX SHALL BE RATED FOR H-20 LOADING. FINAL LOCATION OF ARV SHALL BE IN GRASSED AREAS AND NOT IN SIDEWALK OR PAVEMENT. MARK FINAL LOCATION OF ARVs ON THE AS-BUILT DRAWINGS.
18. THE CONTRACTOR SHALL PROTECT ALL TREES IN THE VICINITY OF THE PROPOSED CONSTRUCTION IN ACCORDANCE WITH CHAPTER 13 OF THE CITY OF TAMPA CODE. NO TREES SHALL BE PRUNED WITHOUT PRIOR APPROVAL FROM THE CITY OF TAMPA PARKS & RECREATION DEPARTMENT, NATURAL RESOURCE DIVISION, AND SHALL BE COMPLETED BY A CERTIFIED ARBORIST. ROOT PRUNING MAY BE REQUIRED AT CERTAIN LOCATIONS AND SHALL BE COMPLETED IN ACCORDANCE WITH CHAPTER 13 TECHNICAL MANUAL SPECIFICATIONS.
19. CONTRACTOR SHALL OBTAIN A RIGHT-OF-WAY CLOSURE PERMIT FROM THE CITY OF TAMPA RIGHT-OF-WAY DEPARTMENT.
20. PAVEMENT RESTORATION SHALL CONSIST OF 8-INCH CRUSHED CONCRETE BASE, AND 2-INCH ASPHALT (SUPERPAVE SP-9.5) AT TRENCH. MILL AND OVERLAY 1" OF ASPHALT 10' ON EITHER SIDE OF TRENCH.
21. THE CONTRACTOR SHALL LIMIT CURVATURE IN ANY DIRECTION TO REDUCE FORCE ON THE PIPE DURING PULL-BACK. THE BEND RADII FOR FUSIBLE POLYVINYL CHLORIDE (PVC) PIPE SHALL NOT BE LESS THAN 500' FOR 16-INCH PIPE.
22. CONTRACTOR IS REQUIRED TO DEVELOP MOT DRAWINGS FOR THE MANHATTAN ROAD CLOSURE SHOWING DETOUR ROUTES, VARIABLE MESSAGE BOARDS, AND SIGNAGE. THE MOT MUST BE SIGNED AND SEALED BY AN ENGINEER AND SUBMITTED TO THE CITY'S PERMITTING OFFICE THROUGH ACCELA.
23. BID ITEM FOR THE DIRECTIONAL DRILL PIPE IS 16"FPVC (DR-25). CONTRACTOR CAN USE 18"HDPE (DR-11) PIPE IN LIEU OF THE 16"FPVC. IF CONTRACTOR ELECTS TO USE THE 18"HDPE, THE ENTIRE PROPOSED FM SHALL REMAIN 18"DIAMETER INCLUDING THE MH CONNECTION. ALL 18"BID ITEMS WILL BE PAID BY THE CORRESPONDING 16"BID ITEMS IN THE PROPOSAL AND THERE WILL BE NO ADDITIONAL COSTS TO THE CITY FOR THIS CHANGE IN THE PROPOSAL. FOR EXAMPLE, IF THE CONTRACTOR ELECTS TO USED 18"HDPE, HE WILL NEED TO INSTALL A 12"X18"REDUCER TO CONNECT TO THE EXISTING FM. THIS REDUCER WILL BE PAID BY THE 12"X16"REDUCER BID ITEM WITH NO ADDITIONAL COMPENSATION.

SUE DATA TABLE

POINT #	DESCRIPTION	MEASURED DEPTH (FT)
#101	12" DIP SANITARY FM (CITY OF TAMPA)	4.88
#102	6" POLY. GM (TECO)	3.10
#103	12" DIP SANITARY FM (CITY OF TAMPA)	4.32
#104	6" DIP SANITARY FM (CITY OF TAMPA)	3.14
#105	12" DIP SANITARY FM (CITY OF TAMPA)	6.80

TEMPORARY CONTROL POINTS AND BENCHMARKS

POINT #	DESCRIPTION
CP#1	1" IRON PIPE LOCATED 26' W. C/L SOUTH RENELLIE CT. & 39' S. OF S. BOC WEST MONTGOMERY AVE., ELEV. 6.79
CP#2	1" IRON PIPE LOCATED 31' W. C/L SOUTH RENELLIE DR. & 12' N. OF N. BOC WEST MONTGOMERY AVE., ELEV. 6.60
CP#3	CONCRETE MONUMENT & DISC LOCATED 31' E. C/L SOUTH TRASK ST. & 11' N. OF N. BOC WEST MONTGOMERY AVE., ELEV. 7.37
CP#4	1" IRON PIPE LOCATED 386' E. C/L SOUTH TRASK ST. & 12' N. OF N. BOC WEST MONTGOMERY AVE., ELEV. 8.08
CP#5	1" IRON PIPE LOCATED 604' E. C/L SOUTH TRASK ST. & 12' N. OF N. BOC WEST MONTGOMERY AVE., ELEV. 9.06
CP#6	5/8" IRON ROD LOCATED 24' S. C/L WEST FAIRVIEW HEIGHTS & 7' E. OF E. EOP MANHATTAN PL., ELEV. 9.85
CP#7	5/8" IRON ROD LOCATED 11' S. C/L OHIO AVE. & 13' E. OF E. EOP MANHATTAN PL., ELEV. 11.28
CP#8	5/8" IRON ROD LOCATED 117' N. OF CURB INLET ON W. SIDE EOP MANHATTAN PL. & 16' W. OF W. EOP MANHATTAN PL., ELEV. 11.02



NOTES:

1. These tables are based on:
   a. Maximum test pressure of 100 psi
   b. Class "C" pipe bedding
   c. Poor soil conditions
   d. PVC pipe
   e. For vertical offsets, shallower vertical fitting has a minimum cover of 3 feet.
2. Restraining devices for PVC pipe shall be by Megalug (Series 2000 PV) or equal, meeting ASTM F1674.
3. Any additional fittings within the restrained section shall be restrained accordingly.
4. One standard length of PVC pipe (20 feet) shall be laid on either side of the fitting where possible.

HORIZONTAL OFFSET:

RESTRAIN "A" (LF)*

FITTING TYPE	4"	6"	8"	10"	12"	16"	18"	20"	24"
11-1/4°	1*	2*	2*	2*	3*	3*	3*	4*	4*
22-1/2°	2*	3*	3*	4*	5*	6*	6*	7*	8*
45°	4*	5*	7*	8*	9*	11*	13*	14*	16*
90°	9*	12*	15*	18*	21	27	29	32	37
PLUG / CAP / ISOLATION VALVE	26	36	47	56	66	85	94	102	119

A = MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED

* MINIMUM ONE PIPE JOINT UPSTREAM AND DOWNSTREAM OF EACH FITTING SHALL BE RESTRAINED

VERTICAL OFFSET:

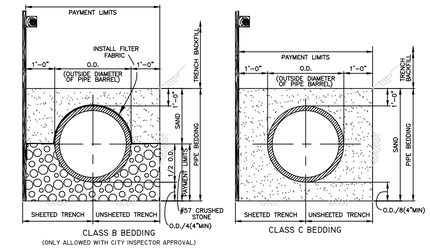
RESTRAIN "A" (LF)*

FITTING TYPE	4"	6"	8"	10"	12"	16"	18"	20"	24"
11-1/4°	3*	4*	5*	6*	7*	9*	10*	11*	12*
22-1/2°	5*	8*	10*	12*	14*	17*	19*	21	24
45°	11*	15*	20	23	28	35	39	43	50

A = MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED

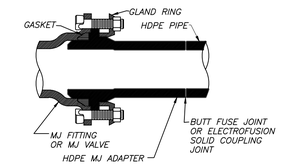
* MINIMUM ONE PIPE JOINT UPSTREAM AND DOWNSTREAM OF EACH FITTING SHALL BE RESTRAINED

FITTING RESTRAINT DETAIL



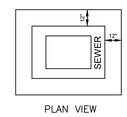
CLASS B BEDDING
(ONLY ALLOWED WITH CITY INSPECTOR APPROVAL)

CLASS C BEDDING

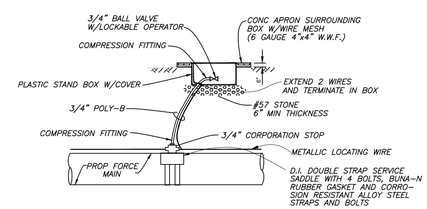


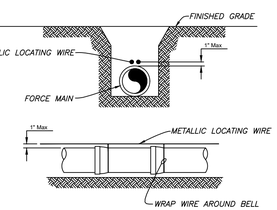
HDPE TRANSITION DETAIL
Not To Scale

NOTE:
Schematic shown for standard MJ fitting and plug valves.



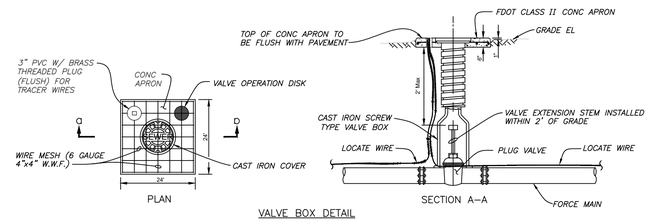
PLAN VIEW





NOTES:

1. Pipe shall require 2 green insulated metallic locating wires capable of detection by a cable locator and shall be buried directly above the centerline of the pipe. Use duct tape as necessary to hold wire directly on top of pipe.
2. Direct bury pipe shall have (2) 12 gauge insulated solid copper wires. Directional drilled pipe shall have (2) 8 gauge insulated solid copper wires or (2) 10 gauge insulated copper clad steel wires. For directional drilled HDPE pipe a 1" conduit may be pulled back with the locating wires to ease installation and to prevent the wires from breaking.
3. Wire insulation must be suitable for buried service. HDPE or HMWPE are acceptable insulation materials. Nylon insulation is not acceptable.
4. Wires must be spliced together with wire connectors suitable for buried service. Connectors shall be corrosion and moisture proof such as DBR Kit by 3M, Snakebite by Copperhead Industries or equal. Twisting the wires and sealing with electrical tape alone is not acceptable.
5. All tracer wires must pass a continuity test in the presence of a City inspector. No pipe will be accepted by the City until a continuity test passes.
6. Locating wire shall terminate at the top of each valve box and air release valve. Wire shall be capable of extending 24" above top of box in such a manner so as not to interfere with valve operation.



VALVE BOX DETAIL

NOT TO SCALE

IMPORTANT - FOR EACH OPERABLE VALVE:
PROVIDE A BRASS IDENTIFICATION TAG ANCHORED TO THE CONCRETE APRON THAT IS A MINIMUM 2" IN DIAMETER AND 1/8-INCH THICK.
THE TAG SHALL BE ENGRAVED WITH "SEWER", SIZE OF VALVE, TYPE OF VALVE, AND DIRECTION AND NUMBER OF TURNS TO OPEN.

FOR EXAMPLE, A 4-INCH PLUG VALVE ON A WASTEWATER FORCE MAIN THAT REQUIRES 1/4 TURNS TO THE LEFT(COUNTERCLOCKWISE) TO BE FULLY OPEN WOULD REQUIRE THE FOLLOWING ON AN IDENTIFICATION TAG:

SEWER
4" P.V.
1/4 T.O.L.

VALVE OPERATION DISK

100% CONSTRUCTION DRAWINGS – 10/11/18

REVISIONS

BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD * SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

FOR
CITY OF TAMPA
WASTEWATER DEPARTMENT
2545 GUY N VERGER BLVD.
TAMPA, FLORIDA 33605

DRWN BY: AS DATE 03/30/18
DSGN BY: CVL DATE 09/05/18
CHKD BY: LEM DATE 09/05/18
SCALE: 1"= 20'

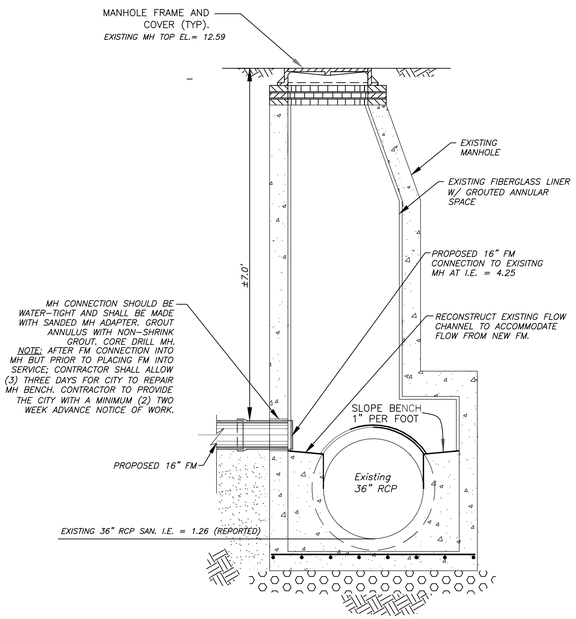
LAWRENCE E. MILLS
P.E. NO. 22324 – P.L.S. NO. 3141
E.B. NO. 3860 – L.B. NO. 3868
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN

DETAILS AND NOTES

SHEET
C2.1

JOB NO.
18-003



FORCE MAIN CONNECTION TO EXISTING MANHOLE DETAIL
NOT TO SCALE

100% CONSTRUCTION DRAWINGS – 10/11/18

REVISIONS					
BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD * SUITE 300
TAMPA, FLORIDA 33609-3056
TELEPHONE: (813) 876-5869

FOR
CITY OF TAMPA
WASTEWATER DEPARTMENT
2545 GUY N VERGER BLVD.
TAMPA, FLORIDA 33605

DRWN BY: AS DATE 03/30/18
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CHKD BY: LEM DATE 09/05/18
SCALE: 1"= 20'

LAWRENCE E. MILLS
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STATE OF FLORIDA

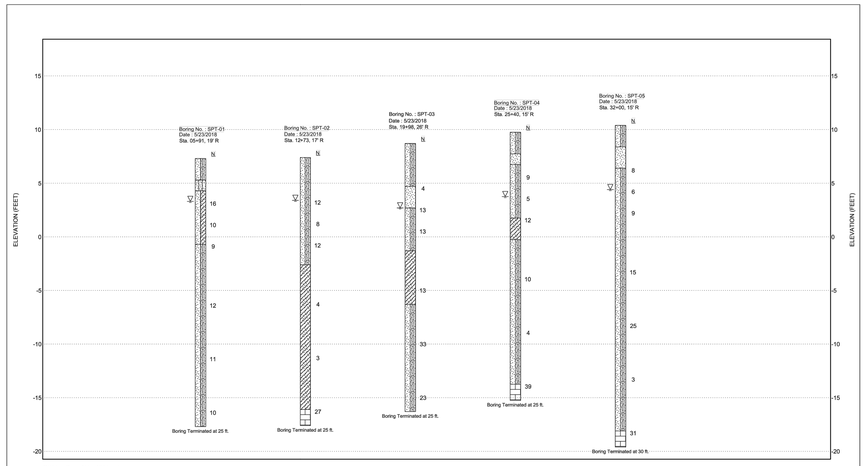
PROJECT
PRESCOTT PUMP STATION FORCEMAIN

DETAILS AND NOTES

SHEET
C2.2

JOB NO.
18-003

*GEOTECHNICAL INFORMATION THIS SHEET OBTAINED FROM GEOTECHNICAL REPORT FOR PRESCOTT PUMP STATION FORCE MAIN IMPROVEMENTS PREPARED BY MC SQUARED, INC. (DATED 06/11/18)



*N Values Drawn At Top Of Interval

DATE	NAME	REVISION	APPROVED BY

MC SQUARED, INC. Geotechnical Consultants
5808-A Breckenridge Parkway
Tampa, FL 33610
Ph : 813-623-3399 Fax : 813-623-6636

FLORIDA ENGINEERING CERTIFICATE OF AUTHORIZATION No. 8181
Jeffery L. Hooks, P. E.
FLORIDA LICENSE No. 67992

	NAME	DATE
DESIGNED BY:	TC	11/27/17
DRAWN BY:	KH	6/6/2018
CHECKED BY:	JH	6/6/2018
SUPERVISED BY:	WS	

SUBSURFACE BORING PROFILES: Prescott Pump Station Force Main Improvements, Tampa, Hillsborough County, Florida

MC² PROJ. NO.: T041816.079

SHEET NO.: 4

LEGEND

- Top Soil
- Asphalt
- Concrete
- (GAB) Graded Aggregate Base
- Limerock Base
- No. 57 Stone
- Soil Cement
- (SP) Poorly Graded Sand
- (SP-SM) Poorly Graded Sand With Silt
- (SP-SC) Poorly Graded Sand With Clay
- (SM) Silty Sand
- (SC) Clayey Sand
- (MH) Elastic Silt
- (ML) Silt
- (CL-ML) Silty Clay
- (CH) Fat Clay
- (CL) Lean Clay
- (OH) Organic Clay
- (OL) Organic Silt
- Peat
- Fill
- Bedrock
- Limestone
- (WLS) Weathered Limestone
- (PWR) Partially Weathered Rock
- Granite
- Gneiss
- Schist

NOTES:

∇	Water Table At Time Of Drilling
∇	Water Table After 24 Hours
GNE	Groundwater Not Encountered
GNA	Groundwater Not Apparent
GNM	Groundwater Not Measured
CL	Center Line
RT	Right Of Center Line
LT	Left of Center Line
BGS	Below Ground Surface
HA	Hand Auger
PA	Power Auger
NMC	Natural Moisture Content (%)
-200	Fines Passing A No. 200 Sieve (%)
PI	Plasticity Index
NP	Non Plastic
LL	Liquid Limit
OC	Organic Content (%)
N	SPT N-Value
WOH	Weight-Of-Hammer
WOR	Weight-Of-Rod
CPT	Cone Penetrometer Test
SPT	Standard Penetration Test
DT	Dilatometer Test
LOC	Loss Of Circulation
ROC	Regain Of Circulation
REC	Rock Core Recovery(%)
RQD	Rock Quality Designation
ST	Shelby Tube Sample
q_u	Unconfined Compressive Strength From Pocket Penetrometer In tsf

GRANULAR MATERIALS- RELATIVE DENSITY	SPT (BLOWS/FT)
VERY LOOSE	≤ 4
LOOSE	5-10
MEDIUM	11-30
DENSE	31-50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	**SPT (BLOWS/FT)**
VERY SOFT	≤ 2
SOFT	3-4
FIRM	5-8
STIFF	9-15
VERY STIFF	16-30
HARD	30-50
VERY HARD	GREATER THAN 50

SPT Spoon Inside Diameter 1 3/8"
SPT Spoon Outside Diameter 2"
ASTM Standard Drop Safety Hammer
Average Hammer Drop Height 30"
Hammer Weight 140 lbs

DATE	NAME	REVISION	APPROVED BY:

MC SQUARED, INC. Geotechnical Consultants
5808-A Breckenridge Parkway
Tampa, FL 33610
Ph:813-623-3399 Fax:813-623-6636

FLORIDA ENGINEERING CERTIFICATE OF AUTHORIZATION No. 8181
Jeffery L. Hooks, P. E.
FLORIDA LICENSE No. 67992

	NAME	DATE
DESIGNED BY:	TC	11/01/2017
DRAWN BY:	KH	05/31/2018
CHECKED BY:	JH	6/6/2018
SUPERVISED BY:	WS	

USCS Legend: Prescott Pump Station Force Main Improvements, Tampa, Hillsborough County, Florida

MC² PROJ. NO.: T041816.079

SHEET NO.: 5

Soil Profile — BORING ID: SPT-01

CLIENT City of Tampa
PROJECT NAME Prescott Pump Station Force Main Improvements
PROJECT NUMBER T041816.079
PROJECT LOCATION Tampa, Hillsborough County, Florida
DATE STARTED 5/23/18 COMPLETED 5/23/18
GROUND ELEVATION 7.3 ft HOLE SIZE 4 inches
DRILLING CONTRACTOR Standard Drilling
GROUND WATER LEVELS:
DRILLING METHOD Wet Rotary
∇ AT TIME OF DRILLING 4.0 ft / Elev 3.3 ft
LOGGED BY S. Gomez CHECKED BY J. Hooks
AT END OF DRILLING ---
NOTES Sta. 05+91, 19' R
AFTER DRILLING ---

DEPTH (ft)	ELEV (ft)	USCS Group Symbol	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)
0	6	SP-SM	Pale brown to brown, poorly-graded fine SAND with silt			
	4	SM	Dark grayish brown, silty fine SAND	HA 1		
	2	SP-SC	Loose to medium dense, pale brown to brown, poorly-graded fine SAND with clay	SS 2	5-8-8-4 (16)	
	0			SS 3	3-5-5-5 (10)	
	-2	SP-SM	Loose to medium dense, gray to light gray, pale brown to brown, poorly-graded fine SAND with silt	SS 4	5-4-5-6 (9)	
	-4					
	-6			SS 5	5-5-7 (12)	
	-8					
	-10			SS 6	4-4-7 (11)	
	-12					
	-14					
	-16			SS 7	3-3-7 (10)	
	-18		Bottom of hole at 25.0 feet.			
	-20					
	-22					

● SPT N VALUE ●
⊕ ORGANIC CONTENT % ⊕ (PL MC LL)
☐ FINES CONTENT (%) ☐ (20 40 60 80)

MC2 REPORT W ELEV - T18.079 PRESCOTT PS FM.GPJ MC2.GDT 6/6/18

Soil Profile — BORING ID: SPT-02

CLIENT City of Tampa
PROJECT NAME Prescott Pump Station Force Main Improvements
PROJECT NUMBER T041816.079
PROJECT LOCATION Tampa, Hillsborough County, Florida
DATE STARTED 5/23/18 COMPLETED 5/23/18
GROUND ELEVATION 7.4 ft HOLE SIZE 4 inches
DRILLING CONTRACTOR Standard Drilling
GROUND WATER LEVELS:
DRILLING METHOD Wet Rotary
∇ AT TIME OF DRILLING 4.0 ft / Elev 3.4 ft
LOGGED BY S. Gomez CHECKED BY J. Hooks
AT END OF DRILLING ---
NOTES Sta. 12+73, 17' R
AFTER DRILLING ---

DEPTH (ft)	ELEV (ft)	USCS Group Symbol	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)
0	6	SP-SM	Loose to medium dense, very pale to grayish brown, poorly- graded fine SAND with silt	HA 1		
	4					
	2			SS 2	4-5-7-6 (12)	
	0			SS 3	4-4-4-4 (8)	
	-2			SS 4	5-5-7-9 (12)	
	-4	SC	Very loose, brown to very dark brown, clayey fine SAND with shell fragments and some organics			
	-6					
	-8			SS 5	4-2-2 (4)	
	-10					
	-12			SS 6	6-3-0 (3)	
	-14					
	-16					
	-18	LS	Competent LIMESTONE	SS 7	19-12-15 (27)	
	-20		Bottom of hole at 25.0 feet.			
	-22					

● SPT N VALUE ●
⊕ ORGANIC CONTENT % ⊕ (PL MC LL)
☐ FINES CONTENT (%) ☐ (20 40 60 80)

MC2 REPORT W ELEV - T18.079 PRESCOTT PS FM.GPJ MC2.GDT 6/6/18

Soil Profile — BORING ID: SPT-03

CLIENT City of Tampa
PROJECT NAME Prescott Pump Station Force Main Improvements
PROJECT NUMBER T041816.079
PROJECT LOCATION Tampa, Hillsborough County, Florida
DATE STARTED 5/23/18 COMPLETED 5/23/18
GROUND ELEVATION 8.7 ft HOLE SIZE 4 inches
DRILLING CONTRACTOR Standard Drilling
GROUND WATER LEVELS:
DRILLING METHOD Wet Rotary
∇ AT TIME OF DRILLING 6.0 ft / Elev 2.7 ft
LOGGED BY S. Gomez CHECKED BY J. Hooks
AT END OF DRILLING ---
NOTES Sta. 19+98, 26' R
AFTER DRILLING ---

DEPTH (ft)	ELEV (ft)	USCS Group Symbol	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)
0	8	SP-SM	Brown to grayish brown, poorly-graded fine SAND with silt	HA 1		
	6					
	4	SP	Very loose, dark brown, poorly-graded fine SAND	SS 2	2-2-2-4 (4)	
	2	SP-SM	Medium dense, dark gray to gray, poorly-graded fine SAND with silt	SS 3	2-5-8-9 (13)	
	0			SS 4	4-5-8-8 (13)	
	-2	SC	Medium dense, brown, clayey fine SAND			
	-4					
	-6			SS 5	6-7-6 (13)	
	-8	SP-SM	Medium dense to dense, brown, poorly-graded fine SAND with silt			
	-10					
	-12			SS 6	15-17-16 (33)	
	-14					
	-16			SS 7	6-10-13 (23)	
	-18		Bottom of hole at 25.0 feet.			
	-20					

● SPT N VALUE ●
⊕ ORGANIC CONTENT % ⊕ (PL MC LL)
☐ FINES CONTENT (%) ☐ (20 40 60 80)

MC2 REPORT W ELEV - T18.079 PRESCOTT PS FM.GPJ MC2.GDT 6/6/18

Soil Profile — BORING ID: SPT-04

CLIENT City of Tampa
PROJECT NAME Prescott Pump Station Force Main Improvements
PROJECT NUMBER T041816.079
PROJECT LOCATION Tampa, Hillsborough County, Florida
DATE STARTED 5/23/18 COMPLETED 5/23/18
GROUND ELEVATION 9.75 ft HOLE SIZE 4 inches
DRILLING CONTRACTOR Standard Drilling
GROUND WATER LEVELS:
DRILLING METHOD Wet Rotary
∇ AT TIME OF DRILLING 6.0 ft / Elev 3.8 ft
LOGGED BY S. Gomez CHECKED BY J. Hooks
AT END OF DRILLING ---
NOTES Sta. 25+40, 15' R
AFTER DRILLING ---

DEPTH (ft)	ELEV (ft)	USCS Group Symbol	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)
0	8	SP-SM	Gray, poorly-graded fine SAND with silt	HA 1		
	6	SP	Brown, poorly-graded fine SAND			
	4	SP-SM	Loose to medium dense, brown to pale brown, poorly-graded fine SAND with silt	SS 2	4-5-4-4 (9)	
	2			SS 3	3-3-2-3 (5)	
	0	SC	Medium dense, pale brown, clayey fine SAND	SS 4	3-5-7-9 (12)	
	-2	SP-SM	Very loose to loose, grayish brown to brown, poorly-graded fine SAND with silt			
	-4					
	-6			SS 5	2-2-8 (10)	
	-8					
	-10			SS 6	3-1-3 (4)	
	-12					
	-14	LS	Competent LIMESTONE	SS 7	24-15-24 (39)	
	-16		Bottom of hole at 25.0 feet.			
	-18					
	-20					

● SPT N VALUE ●
⊕ ORGANIC CONTENT % ⊕ (PL MC LL)
☐ FINES CONTENT (%) ☐ (20 40 60 80)

MC2 REPORT W ELEV - T18.079 PRESCOTT PS FM.GPJ MC2.GDT 6/6/18

Soil Profile — BORING ID: SPT-05

CLIENT City of Tampa
PROJECT NAME Prescott Pump Station Force Main Improvements
PROJECT NUMBER T041816.079
PROJECT LOCATION Tampa, Hillsborough County, Florida
DATE STARTED 5/23/18 COMPLETED 5/23/18
GROUND ELEVATION 10.4 ft HOLE SIZE 4 inches
DRILLING CONTRACTOR Standard Drilling
GROUND WATER LEVELS:
DRILLING METHOD Wet Rotary
∇ AT TIME OF DRILLING 6.0 ft / Elev 4.4 ft
LOGGED BY S. Gomez CHECKED BY J. Hooks
AT END OF DRILLING ---
NOTES Sta. 32+00, 15' R
AFTER DRILLING ---

DEPTH (ft)	ELEV (ft)	USCS Group Symbol	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	RECOVERY % (RQD)
0	10	SP-SM	Light gray to gray, poorly-graded fine SAND with silt	HA 1		
	8	SP	Gray to dark brown, poorly-graded fine SAND			
	6	SP-SM	Very loose to medium dense, pale to very dark brown, very light gray to gray, poorly-graded fine SAND with silt	SS 2	3-4-4-4 (8)	
	4			SS 3	2-3-5-4 (8)	
	2			SS 4	3-4-5-6 (9)	
	0					
	-2					
	-4			SS 5	7-8-7 (15)	
	-6					
	-8					
	-10			SS 6	10-12-13 (25)	
	-12					
	-14					
	-16			SS 7	2-1-2 (3)	
	-18					
	-20	LS	Competent LIMESTONE	SS 8	19-22-9 (31)	
	-30		Bottom of hole at 30.0 feet.			

● SPT N VALUE ●
⊕ ORGANIC CONTENT % ⊕ (PL MC LL)
☐ FINES CONTENT (%) ☐ (20 40 60 80)

MC2 REPORT W ELEV - T18.079 PRESCOTT PS FM.GPJ MC2.GDT 6/6/18

*REFER TO GEOTECHNICAL REPORT FOR PRESCOTT PUMP STATION FORCE MAIN IMPROVEMENTS PREPARED BY MC SQUARED, INC. (DATED 06/11/18) FOR ADDITIONAL GEOTECHNICAL INFORMATION

100% CONSTRUCTION DRAWINGS – 10/11/18

REVISIONS					
BY	DATE	DESCRIPTION	BY	DATE	DESCRIPTION

MILLS and ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
3242 HENDERSON BOULEVARD – SUITE 300
TAMPA, FLORIDA 33609–3056
TELEPHONE: (813) 876–5869

FOR
CITY OF TAMPA
WASTEWATER DEPARTMENT
2545 GUY N VERGER BLVD.
TAMPA, FLORIDA 33605

DRAWN BY: AS DATE 03/30/18
DESIGN BY: CVL DATE 09/05/18
CHECKED BY: LEM DATE 09/05/18
SCALE: N/A

LAWRENCE E. MILLS
P.E. NO. 22324 – P.L.S. NO. 3141
E.B. NO. 3860 – L.B. NO. 3868
STATE OF FLORIDA

PROJECT
PRESCOTT PUMP STATION FORCEMAIN

SPT BORING DATA

SHEET C2.3

JOB NO. 18–003