

CONTRACT DOCUMENTS
FOR THE CONSTRUCTION OF

LIFT STATION 9A REHABILITATION AND FORCE MAIN REPLACEMENT



PROJECT TEAM

MICHELLE COLLINS, PROJECT MANAGER
RICH MORRISON, CIVIL ENGINEER
CYRUS SAHARKHIZ, I&C ENGINEER
CLEMENT ANSON, STRUCTURAL ENGINEER
TAO FU, PROCESS MECHANICAL ENGINEER
DAVID NICHOLSON, ELECTRICAL ENGINEER

PREPARED FOR

**MANATEE COUNTY UTILITIES
BRADENTON, FL**

**VOLUME 2 OF 2
DRAWINGS**

UTILITY AGENCY/OWNERS

COMPANY	CONTACT	TELEPHONE
FPL DISTRIBUTION	GREG COKER	941-723-4430
FPL TRANSMISSION	GARY PETERSON	561-904-3665
TECO PEOPLES GAS	DAN SHANAHAN	941-342-4006
MANATEE COUNTY	SCOTT MAY	941-708-7450
BRIGHT HOUSE	ALEX FLEMING	941-748-3816 EXT. 24051
VERIZON	DENISE HUTTON	941-906-6722
CROWN CASTLE	BRYANT LOWE	724-416-2193
LOCKHEED MARTIN	PAUL CALLIGAN	240-676-5392

For information regarding this project, contact:

MICHELLE COLLINS
5401 WEST KENNEDY BLVD.
SUITE 300
TAMPA, FL 33609

JACOBS®

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FL 32601

MANATEE COUNTY PROJECT No: 6074081

JACOBS PROJECT No: D3480400

AUGUST 2022

BID DOCUMENTS

GENERAL NOTES

- 1. CONDUIT, WIRE AND EQUIPMENT SIZES AND LOCATIONS SHOWN ARE FOR BID BASIS ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL WORK WITH APPROVED SHOP DRAWINGS, WITH THE REQUIREMENTS OF EQUIPMENT PROVIDED FOR INSTALLATION BY CONTRACTOR AND WITH REQUIREMENTS OF OTHER DIVISIONS OF THE CONTRACT AS NECESSARY TO PROVIDE COMPLETE AND WORKING SYSTEMS COMPLYING WITH THE CONTRACT DOCUMENTS. ALL PROPOSED DEVIATIONS FROM CONTRACT DOCUMENTS SHALL BE SUBMITTED AND APPROVED BY ENGINEER BEFORE EXECUTION OF THE AFFECTED WORK.
2. THE TERMS RACEWAY AND CONDUIT ARE USED IN THESE DOCUMENTS TO DENOTE NOT ONLY THE RACEWAY OR CONDUIT ITSELF BUT ALSO ALL JUNCTION BOXES, PULL BOXES, CONDULETS, FITTINGS, CLAMPS, SUPPORTS AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE AND WORKING SYSTEM COMPLYING WITH THE CONTRACT DOCUMENTS.
3. NOTES INDICATED AS "REF", "REFERENCE" OR "REFER TO" ARE PROVIDED TO ASSIST IN LOCATING RELATED CONTRACTUAL REQUIREMENTS BUT ARE NOT CONTRACTUAL INSTRUCTIONS THEMSELVES. MISSING, INCORRECT OR INCOMPLETE REFERENCES SHALL HAVE NO EFFECT ON THE REQUIREMENTS OF THE CONTRACT.
4. ITEMS MARKED MSC (MANUFACTURER SUPPLIED OR SPECIFIED CABLE); CONTRACTOR SHALL DETERMINE REQUIREMENTS FOR, AND PROVIDE, CONDUIT AND CABLE AS REQUIRED BY MANUFACTURER AND IN COMPLIANCE WITH CONTRACT DOCUMENTS.
5. EXCEPT AS NOTED BELOW, ALL WIRE AND CABLE, INCLUDING GROUNDED CONDUCTORS ABOVE GRADE AND FIBER OPTIC CABLE, SHALL BE INSTALLED IN RACEWAY AND ENCLOSURES. EXCEPTIONS ARE EQUIPMENT CABLES PROVIDED BY EQUIPMENT MANUFACTURERS AND UL LISTED FOR INSTALLATION OUTSIDE OF CONDUIT, INCLUDING FLOAT SWITCH AND SUBMERSIBLE PUMP CABLES.
6. SPARE RUNS OF CONDUCTORS SHALL BE INSULATED OR TERMINATED AND LABELED AT BOTH ENDS. SPARE RUNS OF FIBER OPTIC STRANDS SHALL BE LABELED AND TERMINATED AT BOTH ENDS. ALL CONDUCTORS AND FIBERS SHALL BE TESTED AFTER INSTALLATION AND TEST REPORTS SHALL BE SUBMITTED. REPLACE ALL DEFECTIVE MATERIAL; DO NOT SUBMIT TEST REPORTS SHOWING DEFECTS.
7. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AS NOTED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS.
8. ALL CONDUITS SHALL HAVE AN EQUIPMENT GROUND CONDUCTOR SIZED PER TABLE 250.122 OF THE NEC, UNLESS OTHERWISE NOTED.
9. ALL EXISTING INFORMATION SHOWN MUST BE FIELD VERIFIED. ACCURACY OF EXISTING WIRING IS NOT GUARANTEED.
10. REFER TO SPECIFICATION SECTION 26 41 00, FOR LIGHTNING PROTECTION SYSTEM REQUIREMENTS.
11. REFER TO SPECIFICATION SECTION 26 05 70 FOR SHORT CIRCUIT, PROTECTIVE DEVICE COORDINATION, AND ARC FLASH STUDY REQUIREMENTS.
12. CONDUCTIVE ENCLOSURES AND OTHER EXTERIOR METAL COMPONENTS OF INSTRUMENTS AND CONTROLS WHICH ARE NOT NORMALLY ENERGIZED SHALL BE CONNECTED TO FACILITY GROUNDING ELECTRODE SYSTEM (GROUND RING) WITH #6 MINIMUM TINNED SOLID COPPER CONDUCTOR.
13. PROVIDE #10 WIRE INSTEAD OF #12 WIRE FOR ALL 20 AMPERE 120 VOLT OR 208 VOLT CIRCUITS EXCEEDING 150 FEET CONDUIT LENGTH.
14. WHERE THE NUMBER OR SIZE OF CONDUCTORS SHOWN TO BE CONNECTED ARE IN EXCESS OF THE CAPACITY OF THE STANDARD TERMINALS OF THE CONNECTED EQUIPMENT, PROVIDE ADDITIONAL TERMINALS, ENCLOSURES, JUNCTION BOXES, PULL SECTIONS, WIRES, CONDUITS AND ALL OTHER MATERIALS AND LABOR AS NECESSARY TO MAKE THE CONNECTIONS SHOWN IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
15. ALL MATERIALS AND EQUIPMENT PROPOSED FOR USE SHALL BE NEW, UN-USE, UNLESS NOTED OTHERWISE, AND BE FULLY RATED AS SPECIFIED AND SCHEDULED IN THE CONTRACT DOCUMENTS AT THE PROJECT ALTITUDE AND MAXIMUM AMBIENT TEMPERATURE.
16. PROVIDE ARC FLASH WARNING AND OTHER SIGNS ON ALL SWITCHGEAR PANELBOARDS, MOTOR CONTROL CENTERS, MOTOR CONTROLLERS, CONTROL PANELS, AND OTHER EQUIPMENT PROVIDED OR MODIFIED UNDER THIS CONTRACT AND REQUIRED TO BE LABELED BY NEC INCLUDING BUT NOT LIMITED TO PARAGRAPH 110.16 FLASH PROTECTION.
17. COORDINATE SIZE AND INSTALLATION OF ALL EQUIPMENT WITH EXISTING CONDITIONS AND WORK IN OTHER DIVISIONS OF CONTRACT TO ENSURE COMPLIANCE WITH THE NEC, INCLUDING BUT NOT LIMITED TO PARAGRAPH 110.26 SPACES ABOUT ELECTRICAL EQUIPMENT.
18. STANDARD DETAILS INCLUDED IN THESE DOCUMENTS SHALL BE USED WHERE APPLICABLE WHETHER SPECIFICALLY CALLED OUT ON THE PLANS OR NOT. PRACTICES CUSTOMARY TO THE TRADE MAY BE USED ONLY WHERE NO APPLICABLE STANDARD DETAIL CAN BE FOUND IN THESE DOCUMENTS AND WHERE THE CUSTOMARY PRACTICE WILL RESULT IN A COMPLETE AND WORKING SYSTEM IN COMPLIANCE WITH THESE DOCUMENTS.

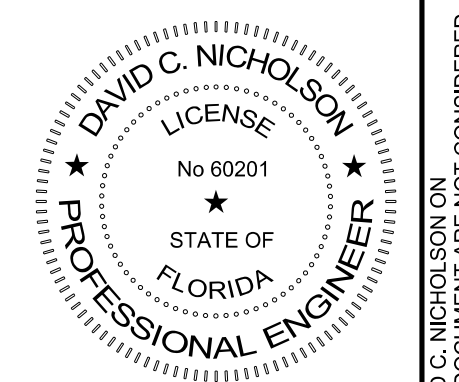
- 19. ALL TERMINATIONS OF RIGID METAL CONDUIT IN WALLS OF ENCLOSURES WITHOUT CAST-IN-PLACE THREADED CONDUIT CONNECTIONS, AND WHICH ARE LOCATED OUTDOORS OR IN WET OR DAMP LOCATIONS, SHALL BE MADE USING MYERS HUBBS.
20. REFER TO DOCUMENTS OF OTHER DIVISIONS OF CONTRACT, INCLUDING BUT NOT LIMITED TO PROCESS MECHANICAL, AND INSTRUMENTATION AND CONTROL FOR LOCATIONS OF PROCESS, INSTRUMENTATION, CONTROL, AND OTHER EQUIPMENT REQUIRING ELECTRICAL, FIBER OPTIC OR RACEWAY-ONLY CONNECTIONS TO BE PROVIDED UNDER THIS DIVISION OF CONTRACT. ALL EQUIPMENT LOCATIONS SHOWN ON DRAWINGS IN THIS DIVISION ARE APPROXIMATE ONLY UNLESS DIMENSIONED.
21. COORDINATE EARTH WORK AND INSTALLATION OF ELECTRICAL ITEMS WITH INTERFERENCES SHOWN ON DOCUMENTS OF ALL DIVISIONS OF CONTRACT, INCLUDING CIVIL AND YARD PIPING. REPORT ALL DAMAGE AT ONCE TO OWNER AND ENGINEER AND REPAIR AS DIRECTED AT CONTRACTOR'S SOLE EXPENSE.
22. DO NOT INSTALL ANY CONDUITS, DUCT BANKS, PULL BOXES, MANHOLES, HANDHOLES, LIGHT POLES, CONTROL PANELS, ETC., IN AREAS DESIGNATED FOR FUTURE STRUCTURES.
23. REFER TO SPECIFICATIONS SECTION 28 31 00 FOR FIRE DETECTION AND ALARM SYSTEM REQUIREMENTS.
24. PROVIDE REINFORCED CONCRETE ENCASEMENT OF ALL DIRECT BURIED CONDUITS AND DUCT BANK UNDER ROADWAYS AND 10 FEET BEYOND ON EACH SIDE OF THE ROADWAY.

HAZARDOUS LOCATION NOTES:

- 1. PER NFPA 820 (2016), TABLE 4.2.2, ROW 16a, THE AREA OF THE WASTE WATER LIFT STATION IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:
a) THE AREA INSIDE THE WET WELL IS CONSIDERED CLASS 1, DIV I LOCATION.
b) THE AREA WITHIN A 3FT ENVELOPE AROUND THE VENT IS CONSIDERED CLASS 1, DIV I LOCATION.
c) THE AREA WITHIN A 5 FT ENVELOPE AROUND THE VENT IS CONSIDERED CLASS 1, DIV 2 LOCATION.
d) THE AREA WITHIN AN ENVELOPE 18 INCHES ABOVE AND 3FT BEYOND EACH HATCH IS CONSIDERED A CLASS 1, DIV 2 LOCATION.
e) THE AREA BEYOND THE ENVELOPE IS UNCLASSIFIED.
f) COMBUSTIBLE GAS DETECTION IS NOT REQUIRED BECAUSE THE WET WELL IS NOT MECHANICALLY VENTILATED BASED ON CHANGE PER NFPA 820 (2016).
2. THE AREA OF THE ODOR-CONTROL SYSTEM IS CLASSIFIED AS A HAZARDOUS LOCATION AS FOLLOWS:
a) THE AREAS WITHIN 3FT OF LEAKAGE SOURCES IS CONSIDERED CLASS 1, DIV 2 LOCATION.
b) THE AREA BEYOND THE ENVELOPE IS UNCLASSIFIED.
3. PROVIDE SUITABLE WIRING METHODS AND MATERIALS FOR HAZARDOUS LOCATIONS PER NFPA 70 (NEC).

GENERAL CIRCUIT CONDUCTOR AND CONDUIT IDENTIFICATION

Table with columns for POWER CIRCUIT CALLOUTS, POWER CABLE CIRCUIT CALLOUTS, EMPTY CONDUIT CALLOUT, CONTROL CABLE CIRCUIT CALLOUTS, ANALOG CIRCUIT CALLOUTS, CONTROL CIRCUIT CALLOUTS, AFD POWER CABLE ALLOUTS, and DATA HIGHWAY CABLE CIRCUIT CALLOUTS. Includes callout codes like [P1], [P2], [PC1], [CC5], [A1], [C1], [PV1] and their corresponding specifications.



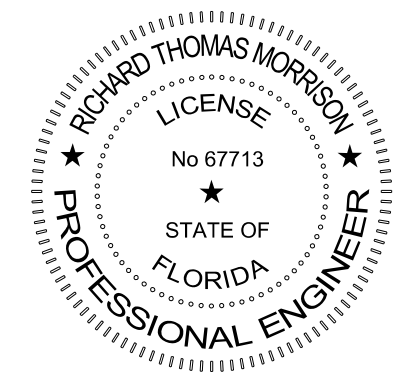
Revision table with columns: NO., DATE, DSGN, DR, T, TWIST, REVISION, CHK, APVD, BY, APVD.

643 SW 4TH AVE, SUITE 400 GAINESVILLE, FLORIDA 32601 EB2622 DAVID C. NICHOLSON PE 60201 LIFT STATION BA REHAB AND FORCE MAIN REPLACEMENT MANATEE COUNTY BRADENTON, FLORIDA 34205 MANATEE COUNTY PROJECT NO. 6074081

JACOBS GENERAL ELECTRICAL LEGEND 3

NTS VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. DATE AUGUST 2022 PROJ D3480400 DWG G-007 SHEET 8 of 46

BID DOCUMENTS



NO.	DATE	DR	CHK	REVISION	BY	APVD
		R. MORRISON	C. CHILDRESS			R. MORRISON
			A. MALONE			

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822

RICHARD THOMAS MORRISON, PE 67713

LIFT STATION 9A REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

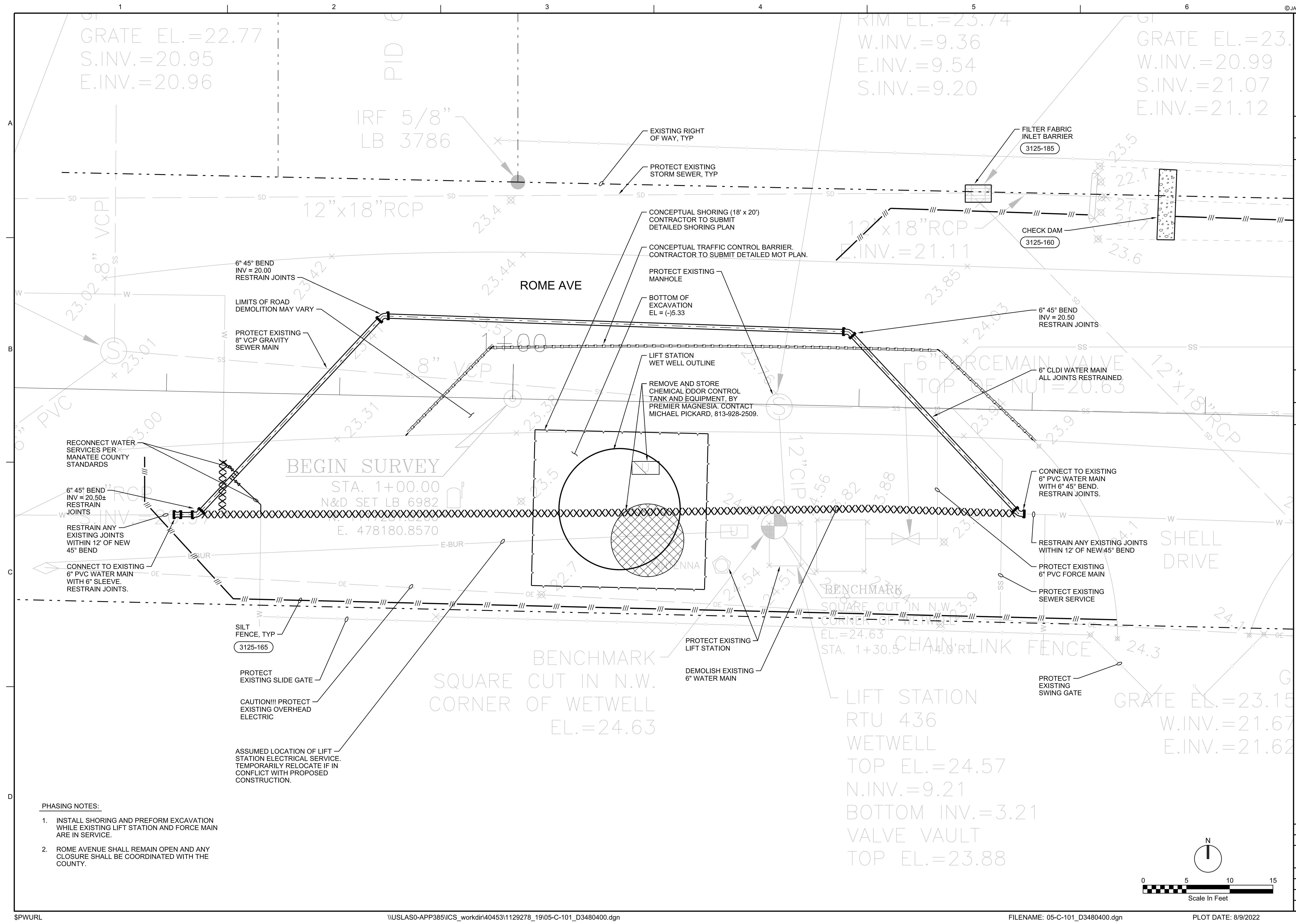
JACOBS

CIVIL

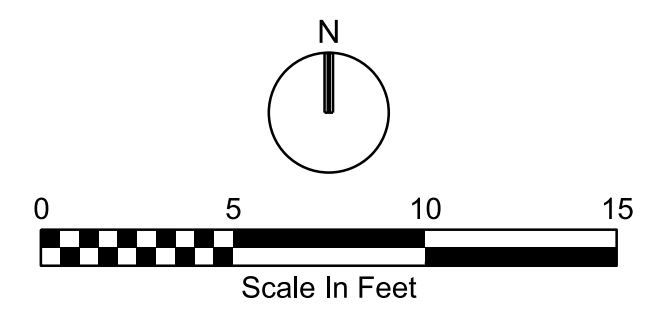
**LIFT STATION PHASE 1
CONCEPTUAL EXCAVATION AND
EROSION CONTROL PLAN**

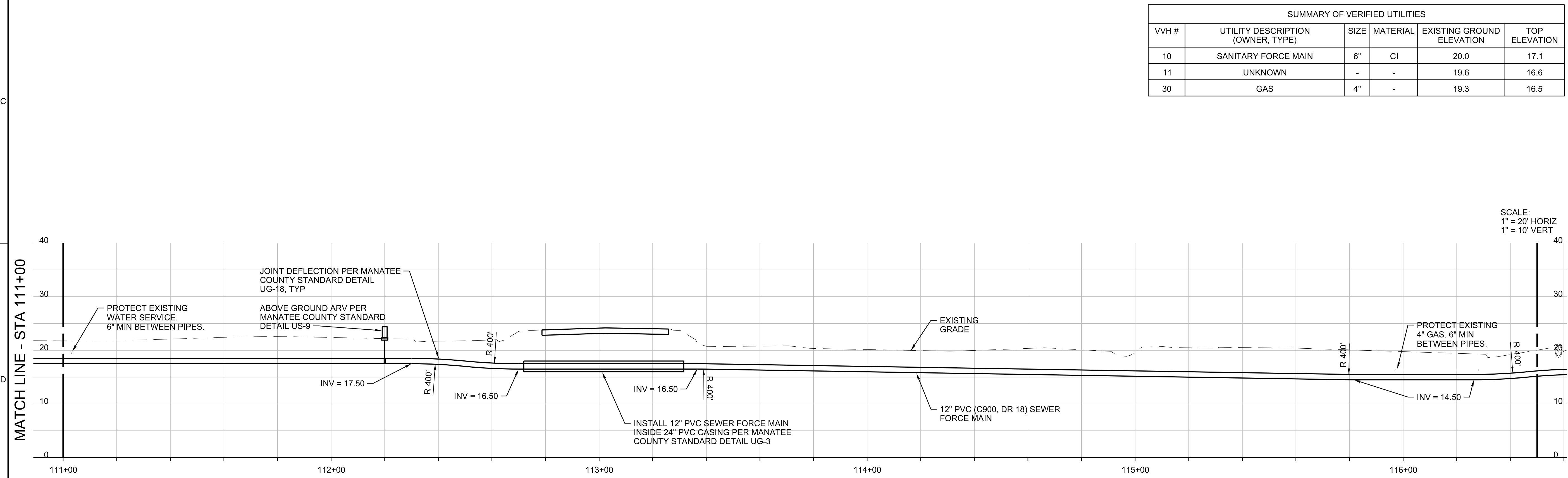
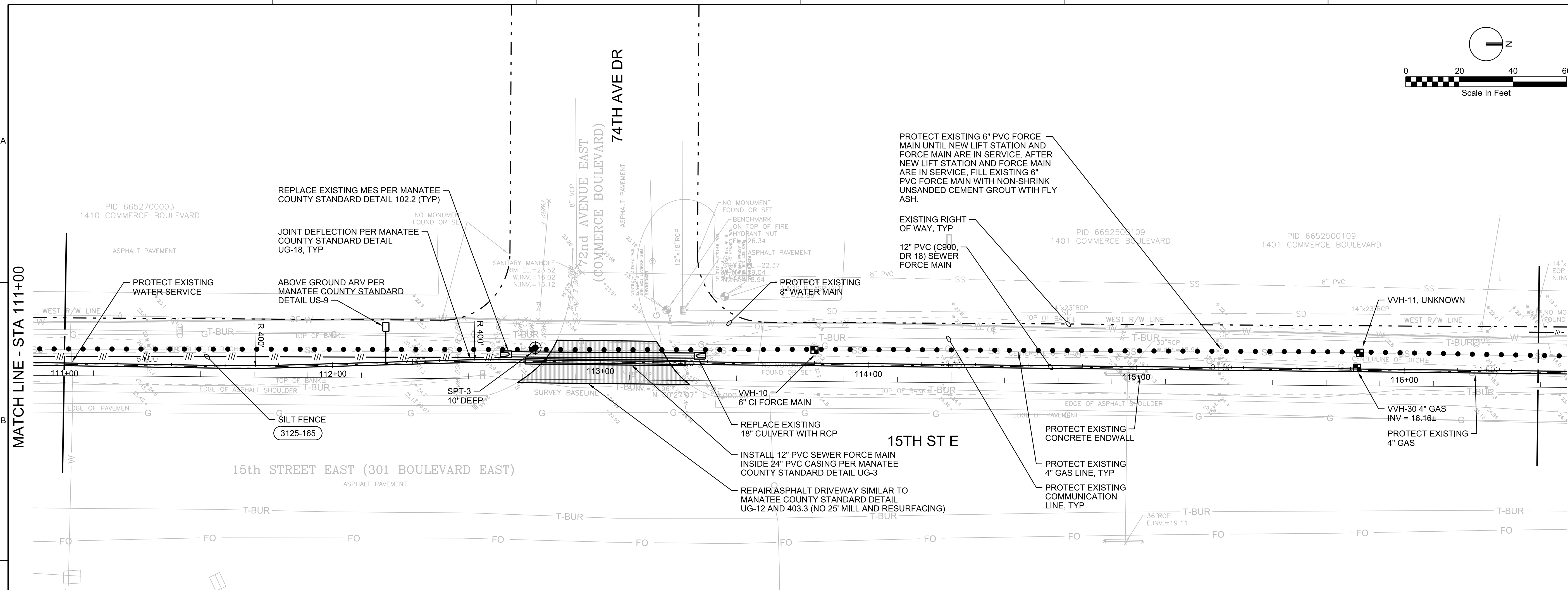
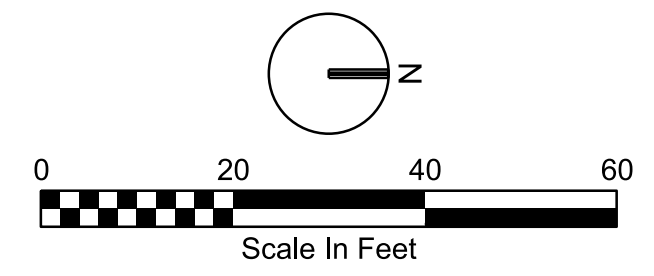
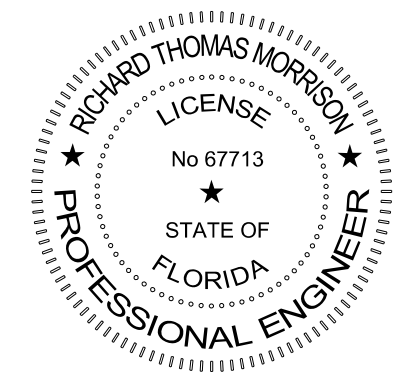
VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	AUGUST 2022
PROJ	D3480400
DWG	C-101
SHEET	12 of 46

BID DOCUMENTS



- PHASING NOTES:**
1. INSTALL SHORING AND PREFORM EXCAVATION WHILE EXISTING LIFT STATION AND FORCE MAIN ARE IN SERVICE.
 2. ROME AVENUE SHALL REMAIN OPEN AND ANY CLOSURE SHALL BE COORDINATED WITH THE COUNTY.





SUMMARY OF VERIFIED UTILITIES					
VVH #	UTILITY DESCRIPTION (OWNER, TYPE)	SIZE	MATERIAL	EXISTING GROUND ELEVATION	TOP ELEVATION
10	SANITARY FORCE MAIN	6"	CI	20.0	17.1
11	UNKNOWN	-	-	19.6	16.6
30	GAS	4"	-	19.3	16.5

NO.

DATE

DR

CHK

REVISION

BY

APVD

R. MORRISON

A. MALONE

C. CHILDRESS

R. MORRISON

THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822

RICHARD THOMAS MORRISON PE 67713

LIFT STATION BA REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

JACOBS

CIVIL

**FORCE MAIN
PLAN AND PROFILE**

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.

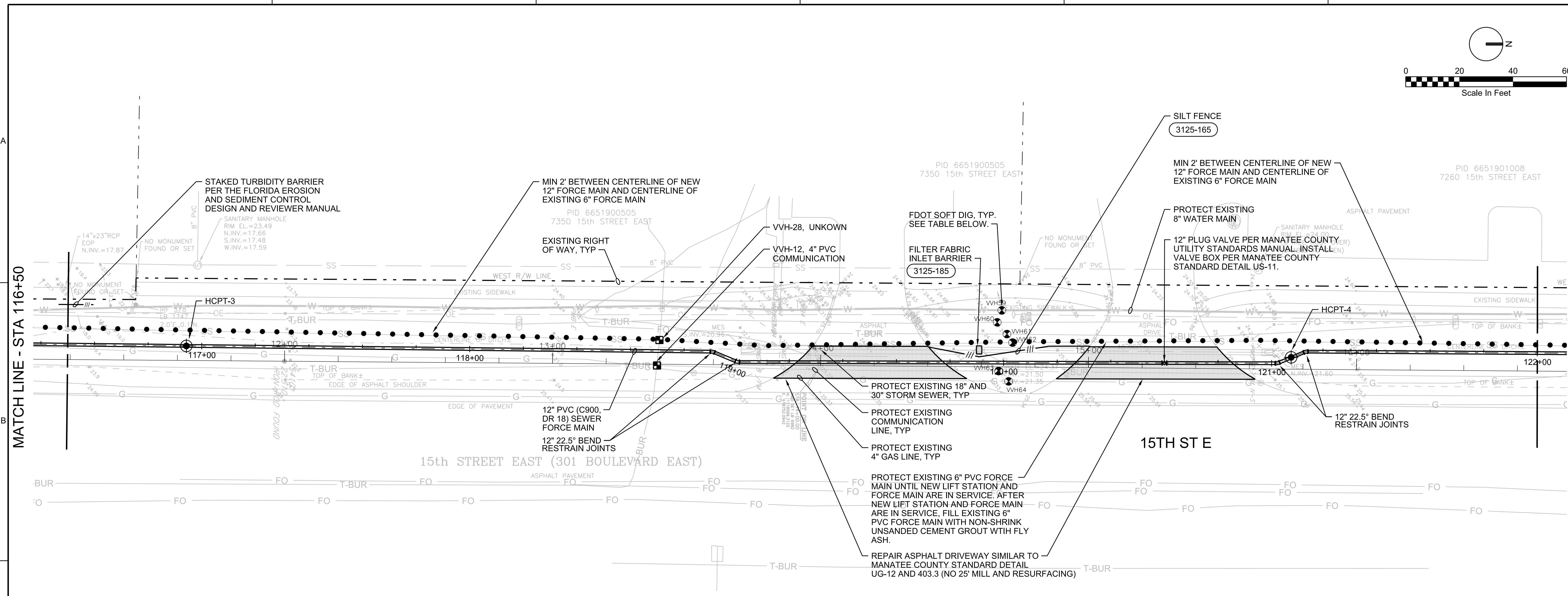
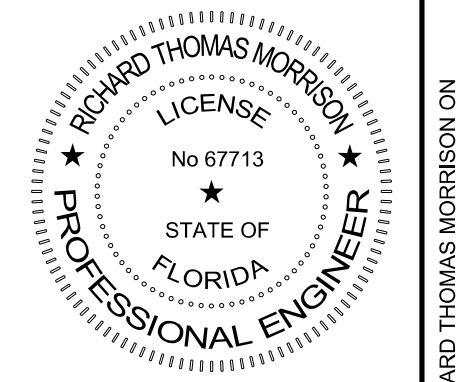
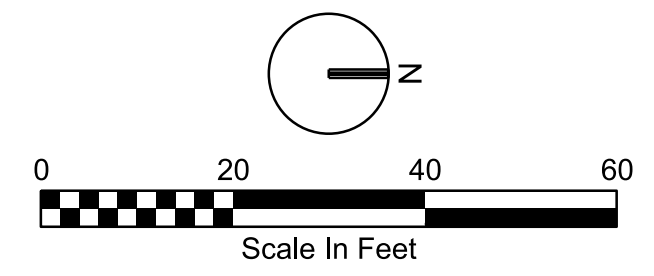
DATE AUGUST 2022

PROJ D3480400

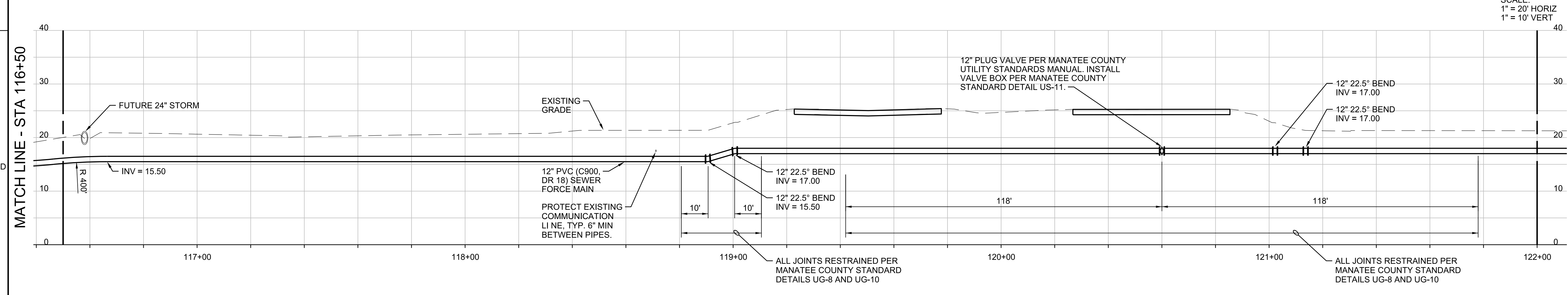
DWG C-204

SHEET 19 of 46

SCALE:
1" = 20' HORIZ
1" = 10' VERT



SUMMARY OF VERIFIED UTILITIES					
VH #	UTILITY DESCRIPTION (OWNER, TYPE)	SIZE	MATERIAL	EXISTING GROUND ELEVATION	TOP ELEVATION
12	COMMUNICATION	4"	PVC	22.5	21.5
28	UNKNOWN	-	-	21.1	17.7
59	MANATEE CO. WATER MAIN	12"	PVC	24.31	21.93
60	UNKNOWN/COMMUNICATIONS	4"	HDPE	24.22	20.82
61	UNKNOWN/COMMUNICATIONS	1"	DBC	24.50	22.00
62	MANATEE CO. SANITARY FORCE MAIN	N/A	N/A	24.71	17.31
63	UNKNOWN/COMMUNICATIONS	4"	PVC	24.95	21.70
64	TECO GAS MAIN	4"	HDPE	25.33	22.28



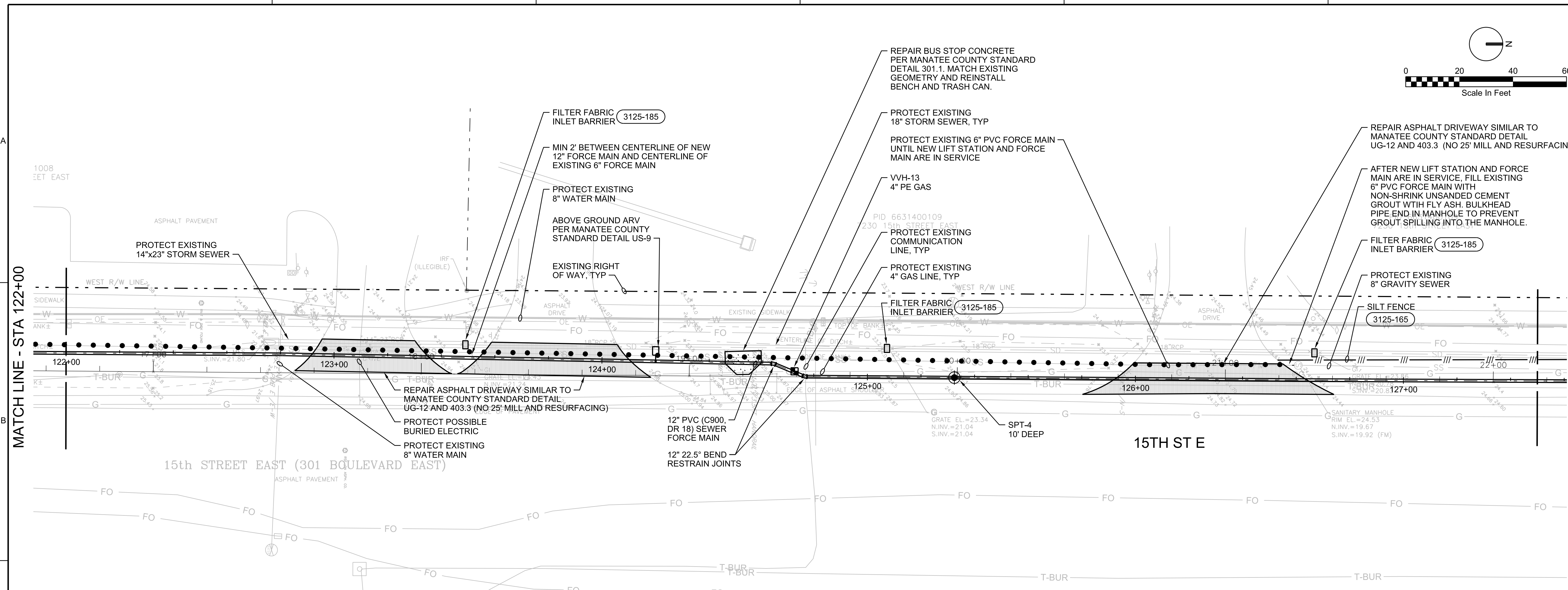
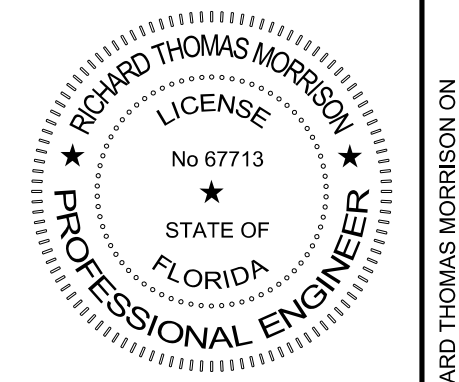
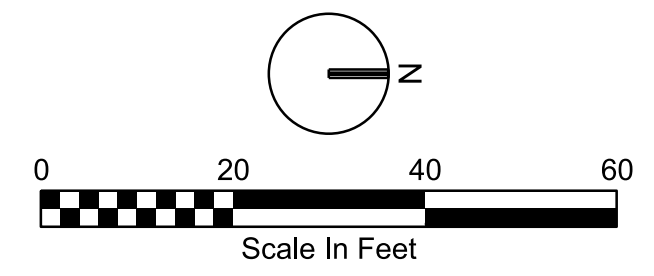
NO.	DATE	DR	CHK	REVISION	BY	APVD

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822
RICHARD THOMAS MORRISON PE 67713
LIFT STATION 9A REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

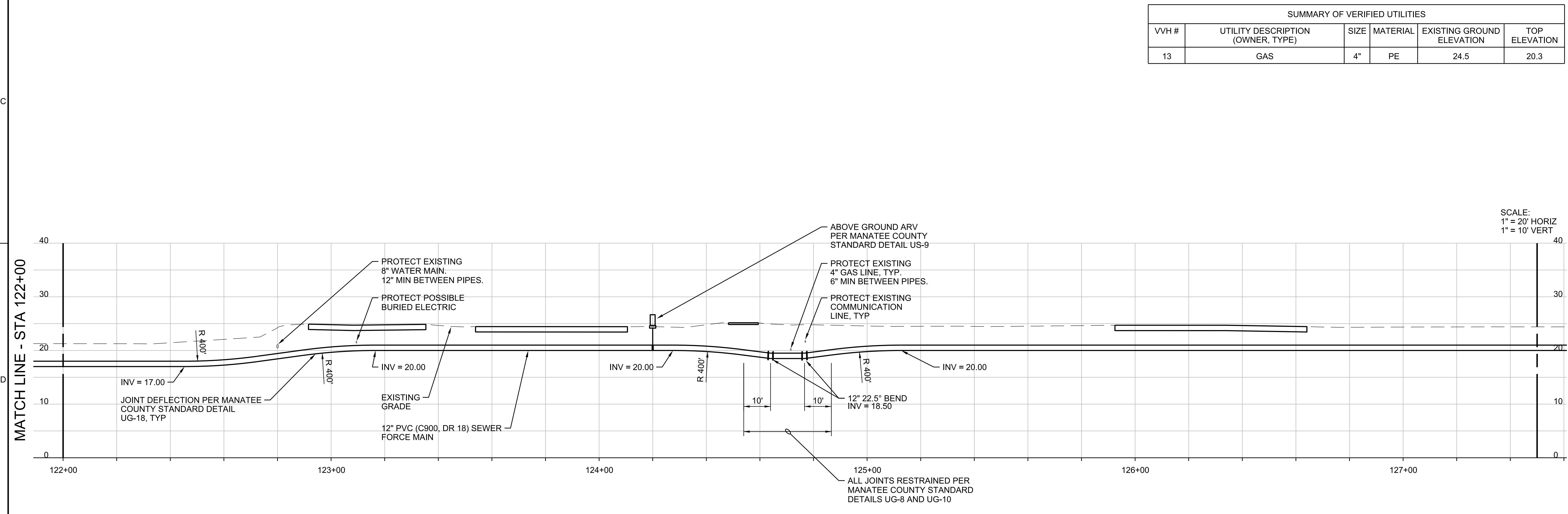
JACOBS
CIVIL
**FORCE MAIN
PLAN AND PROFILE**

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	AUGUST 2022
PROJ	D3480400
DWG	C-205
SHEET	20 of 46

THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



SUMMARY OF VERIFIED UTILITIES					
VVH #	UTILITY DESCRIPTION (OWNER, TYPE)	SIZE	MATERIAL	EXISTING GROUND ELEVATION	TOP ELEVATION
13	GAS	4"	PE	24.5	20.3



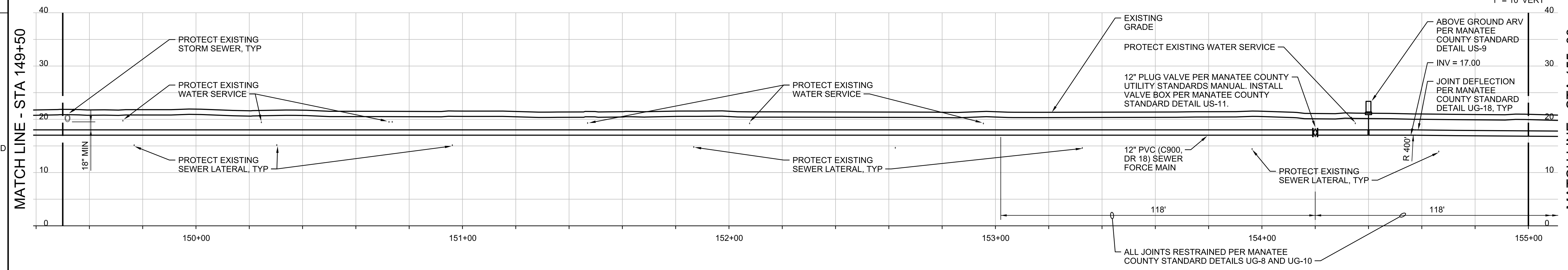
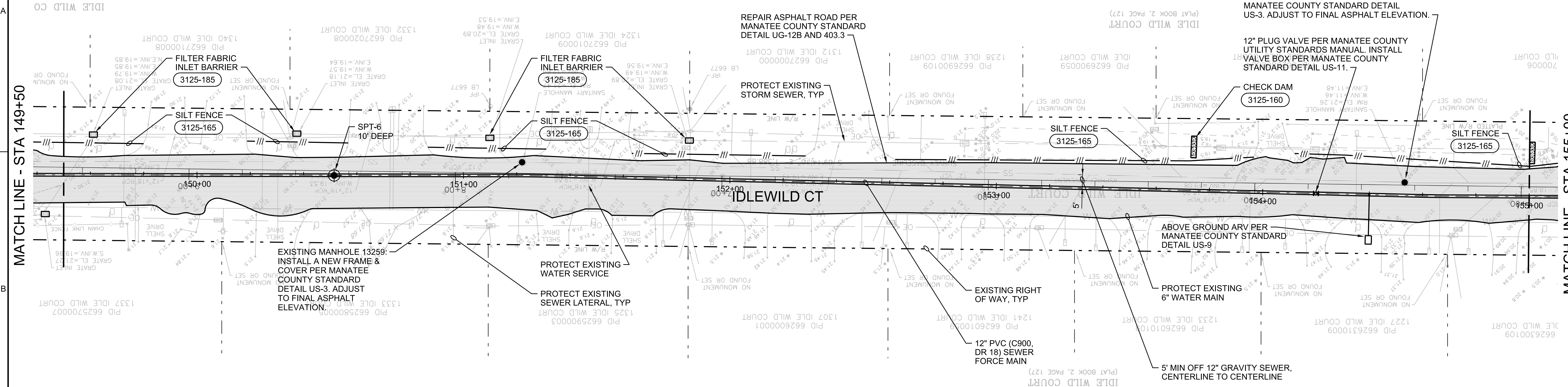
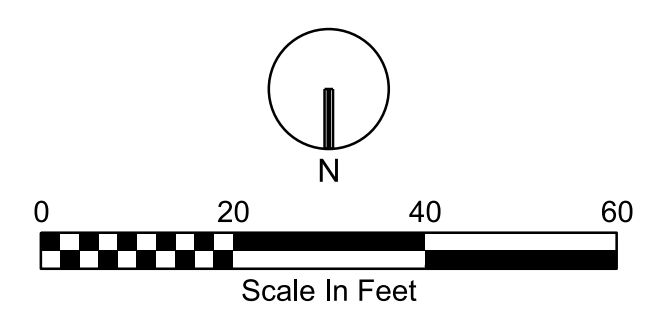
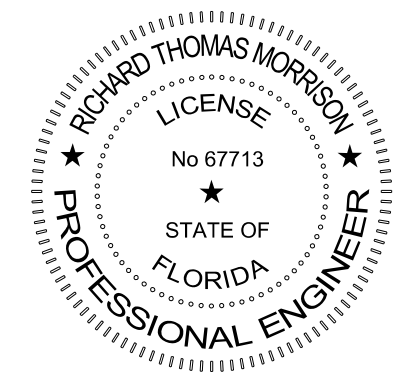
NO.	DATE	DR	CHK	REVISION	BY	APVD

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822
RICHARD THOMAS MORRISON PE 67713
LIFT STATION 9A REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

JACOBS
CIVIL
**FORCE MAIN
PLAN AND PROFILE**

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	AUGUST 2022
PROJ	D3480400
DWG	C-206
SHEET	21 of 46

BID DOCUMENTS



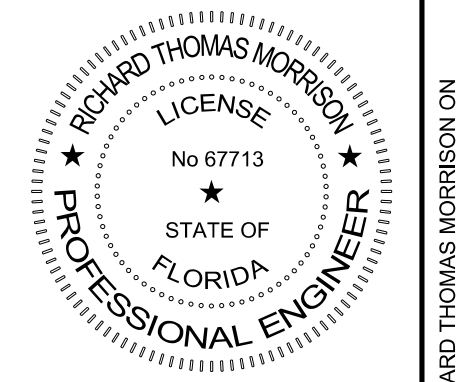
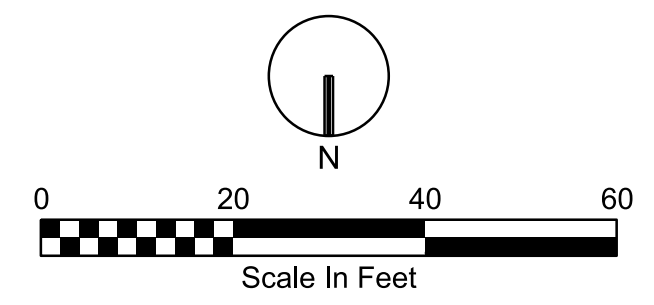
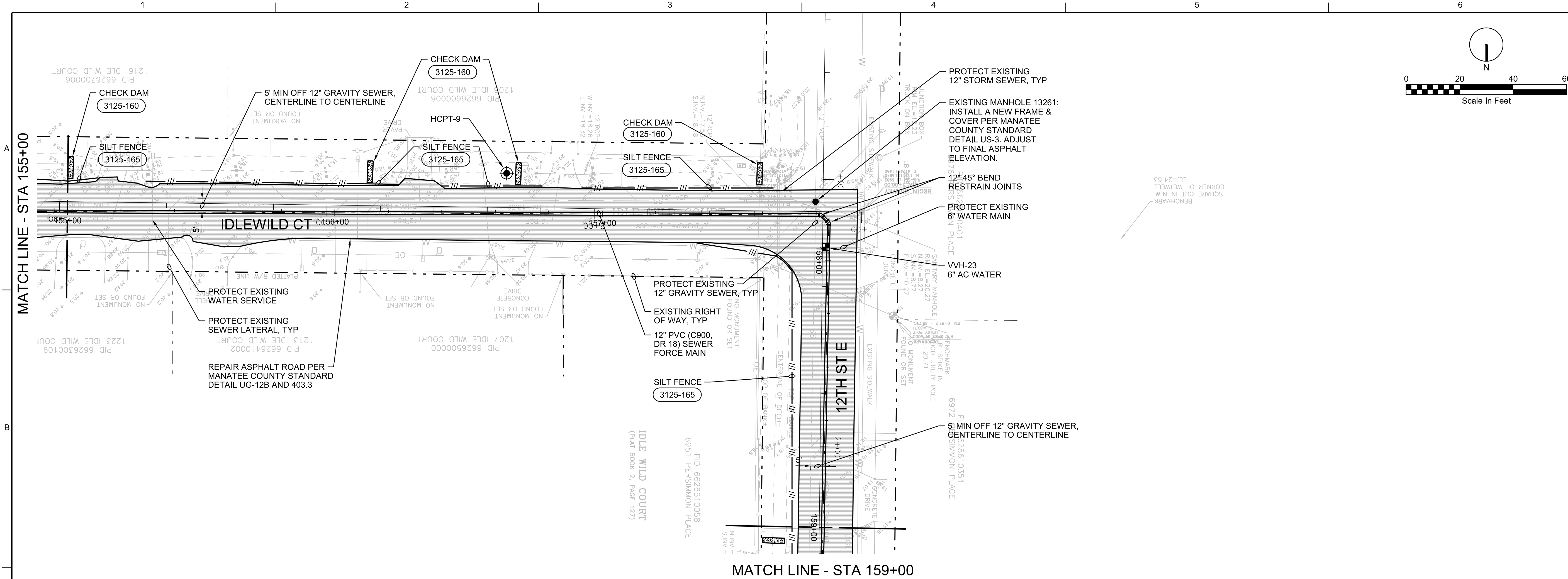
643 SW 4TH AVE, SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822
RICHARD THOMAS MORRISON PE 67713
LIFT STATION 9A REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081



CIVIL
FORCE MAIN
PLAN AND PROFILE

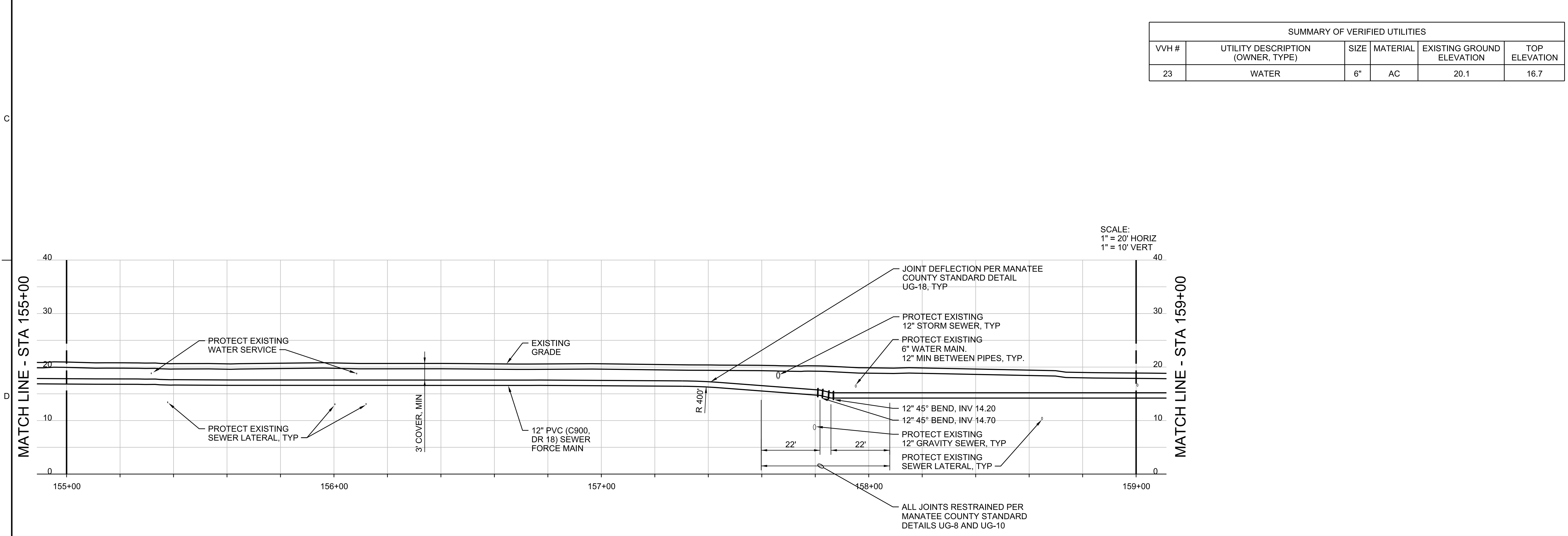
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE AUGUST 2022
PROJ D3480400
DWG C-211
SHEET 26 of 46

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.
R. MORRISON
C. CHILDRESS
A. MALONE
R. MORRISON
NO. DATE DSGN DR REVISION BY APVD
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RICHARD THOMAS MORRISON ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



NO.	DATE	DR	REVISION	BY	APVD
		R. MORRISON	C. CHILDRESS	A. MALONE	R. MORRISON

VVH #	UTILITY DESCRIPTION (OWNER, TYPE)	SIZE	MATERIAL	EXISTING GROUND ELEVATION	TOP ELEVATION
23	WATER	6"	AC	20.1	16.7



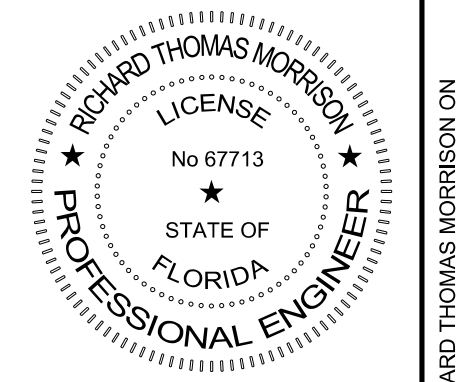
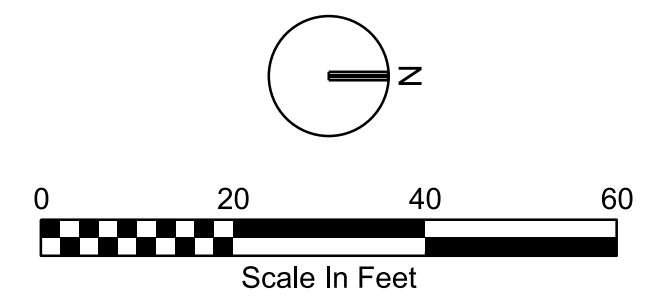
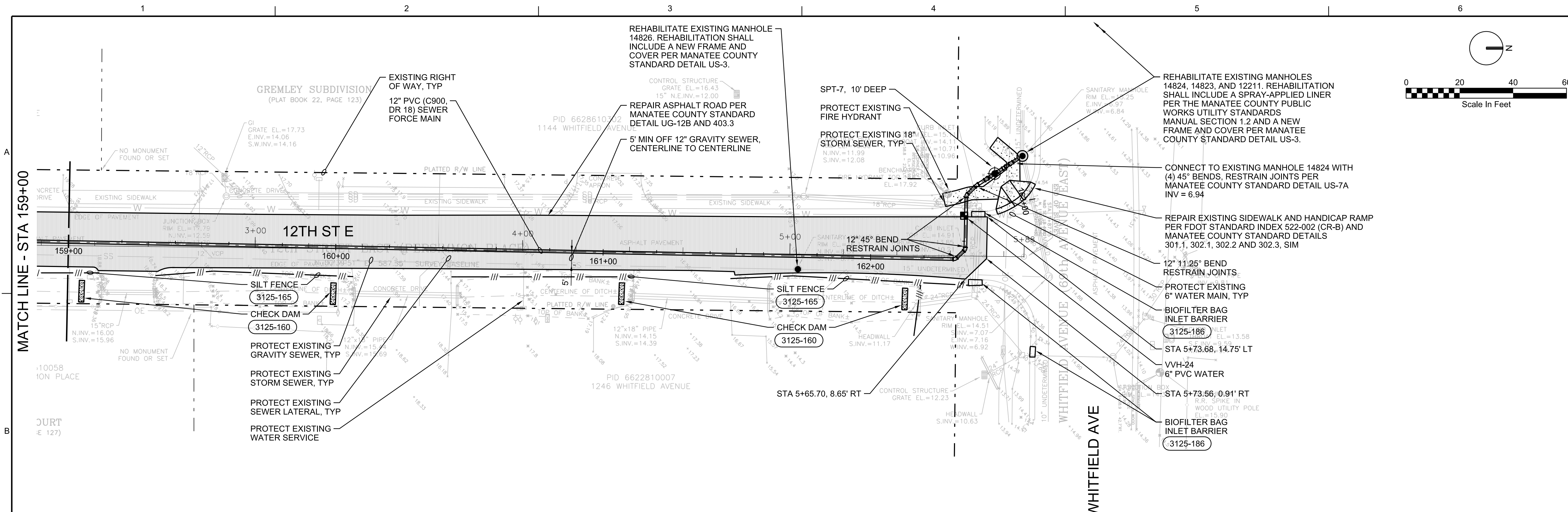
SCALE:
1" = 20' HORIZ
1" = 10' VERT

643 SW 4TH AVE, SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822
RICHARD THOMAS MORRISON PE 67713
LIFT STATION 9A REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

JACOBS
CIVIL
**FORCE MAIN
PLAN AND PROFILE**

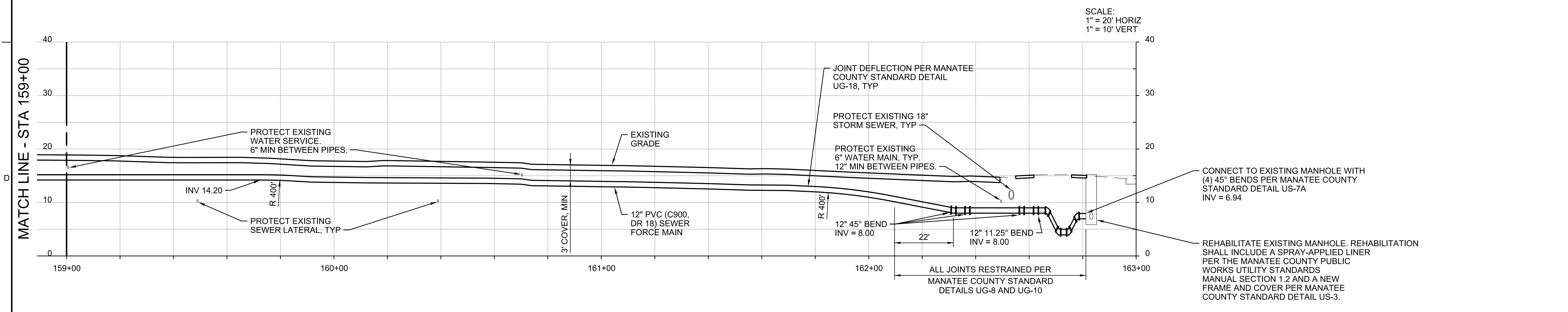
VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	AUGUST 2022
PROJ	D3480400
DWG	C-212
SHEET	27 of 46

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RICHARD THOMAS MORRISON ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



NO.	DATE	DR	CHK	APVD	BY	APVD
		R. MORRISON	C. CHILDRESS	A. MALONE	R. MORRISON	

VVH #	UTILITY DESCRIPTION (OWNER, TYPE)	SIZE	MATERIAL	EXISTING GROUND ELEVATION	TOP ELEVATION
24	WATER	6"	PVC	14.9	10.5



643 SW 4TH AVE, SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822

RICHARD THOMAS MORRISON PE 67713

LIFT STATION 9A REHAB AND FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

JACOBS

CIVIL

FORCE MAIN

PLAN AND PROFILE

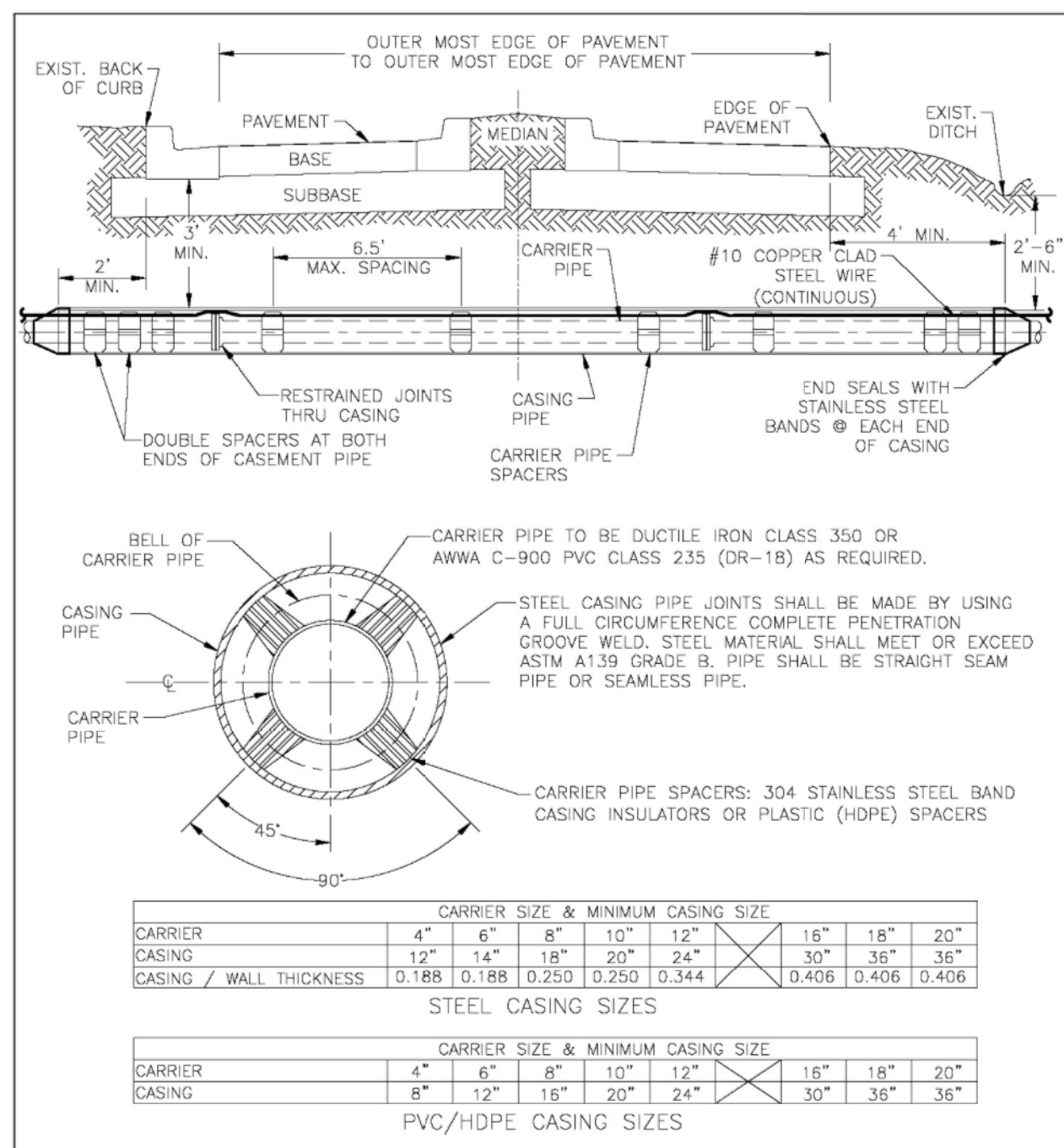
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE AUGUST 2022
PROJ D3480400
DWG C-213
SHEET 28 of 46

BID DOCUMENTS

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RICHARD THOMAS MORRISON ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



CARRIER SIZE & MINIMUM CASING SIZE

CARRIER	4"	6"	8"	10"	12"	16"	18"	20"
CASING	12"	14"	18"	20"	24"	30"	36"	36"
CASING / WALL THICKNESS	0.188	0.188	0.250	0.250	0.344	0.406	0.406	0.406

STEEL CASING SIZES

CARRIER	4"	6"	8"	10"	12"	16"	18"	20"
CASING	8"	12"	16"	20"	24"	30"	36"	36"

PVC/HDPE CASING SIZES

CARRIER	4"	6"	8"	10"	12"	16"	18"	20"
CASING	8"	12"	16"	20"	24"	30"	36"	36"

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REVISION: CASING CROSSING UG-3

REVIEW: DATE: February 25, 2020 DATE OF APPROVAL

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR C900-16 PVC PIPE (DR-18)

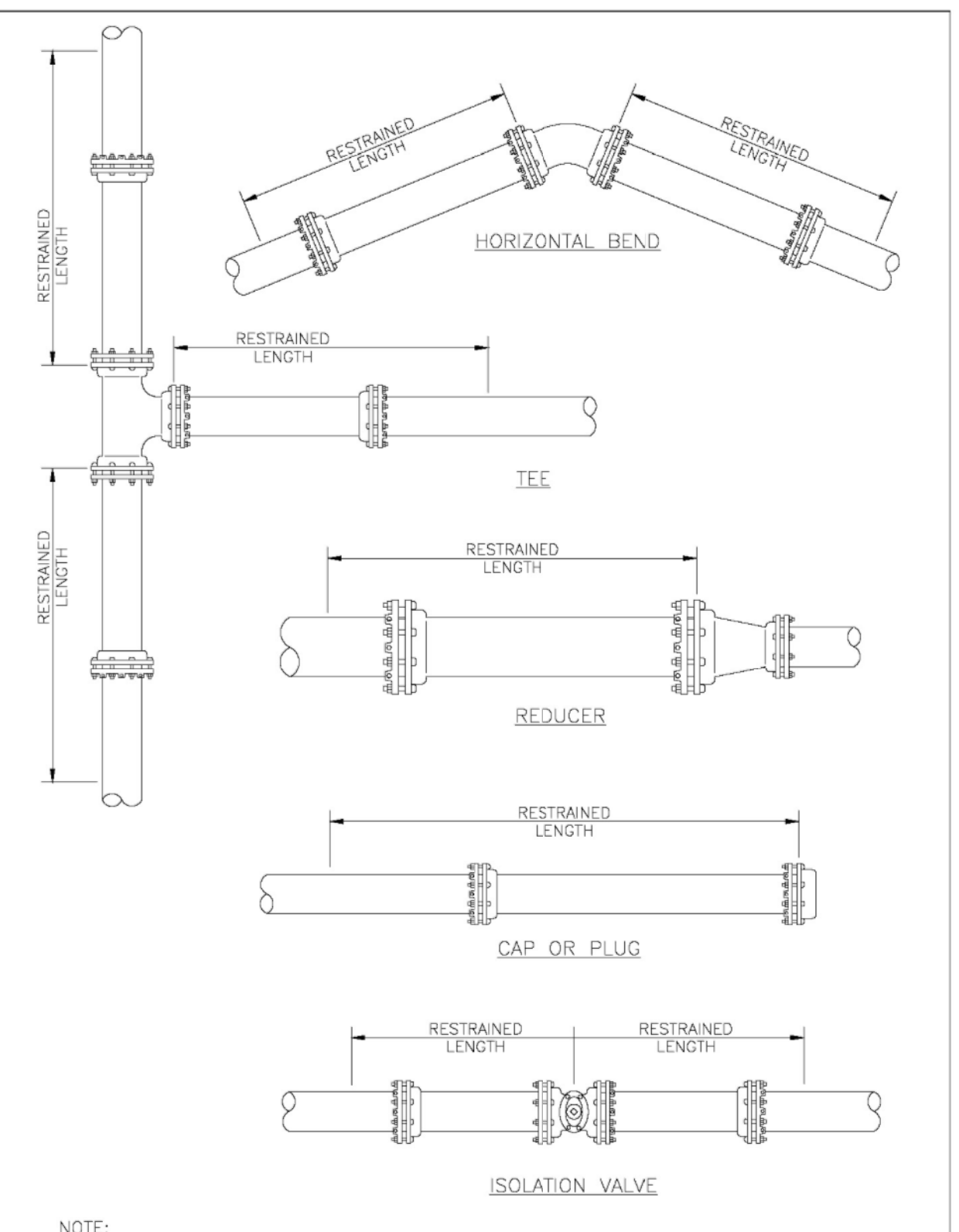
MAIN PIPE SIZE	HORIZ. BENDS			TEES			REDUCERS			PLUGS & VALVES						
	90°	45°	22.5°	SIZE	LENGTH	SIZE	LENGTH	SIZE	LENGTH							
24	90	38	18	X24	189	X20	132	X18	90	X20	84	X16	117	X12	158	214
20	78	32	16	X20	141	X18	101	X16	63	X18	54	X14	107	X10	149	184
16	66	27	13	X16	111	X12	87	X10	41	X12	64	X10	107	X8	111	151
12	52	22	10	X12	80	X10	56	X8	31	X10	53	X8	86	X6	86	118
10	44	18	9	X10	63	X8	49	X6	24	X8	53	X6	81	X4	81	100
8	37	15	7	X8	49	X6	35	X4	1	X6	35	X4	60		60	83
6	29	12	6	X6	35	X4	29	X4	1	X4	29	X4	41		41	63
4	21	8	4	X4	21	X4	12	X4	1	X4	12	X4	12		12	45

- NOTES:**
1. RESTRAIN 11.25' BENDS 50% OF LENGTH FOR 22.5° BENDS.
 2. ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
 3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
 4. PIPE SIZES ARE GIVEN IN INCHES.
 5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
 6. LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
 7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
 8. RESTRAINED LENGTHS TO BE APPLIED TO PIPELINES PER DETAIL UG-10 RESTRAINED LENGTHS FOR PIPE.
 9. ALL RESTRAINED JOINT HARDWARE SHALL CONFORM TO 1.11.17 OF THE PUBLIC WORKS UTILITIES STANDARDS MANUAL.
 10. ALL THREE "LEGS" OF TEES SHALL BE RESTRAINED PER THE STATED LENGTH IN THE TABLE.

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REVISION: RESTRAINED LENGTHS FOR PVC PIPE UG-8

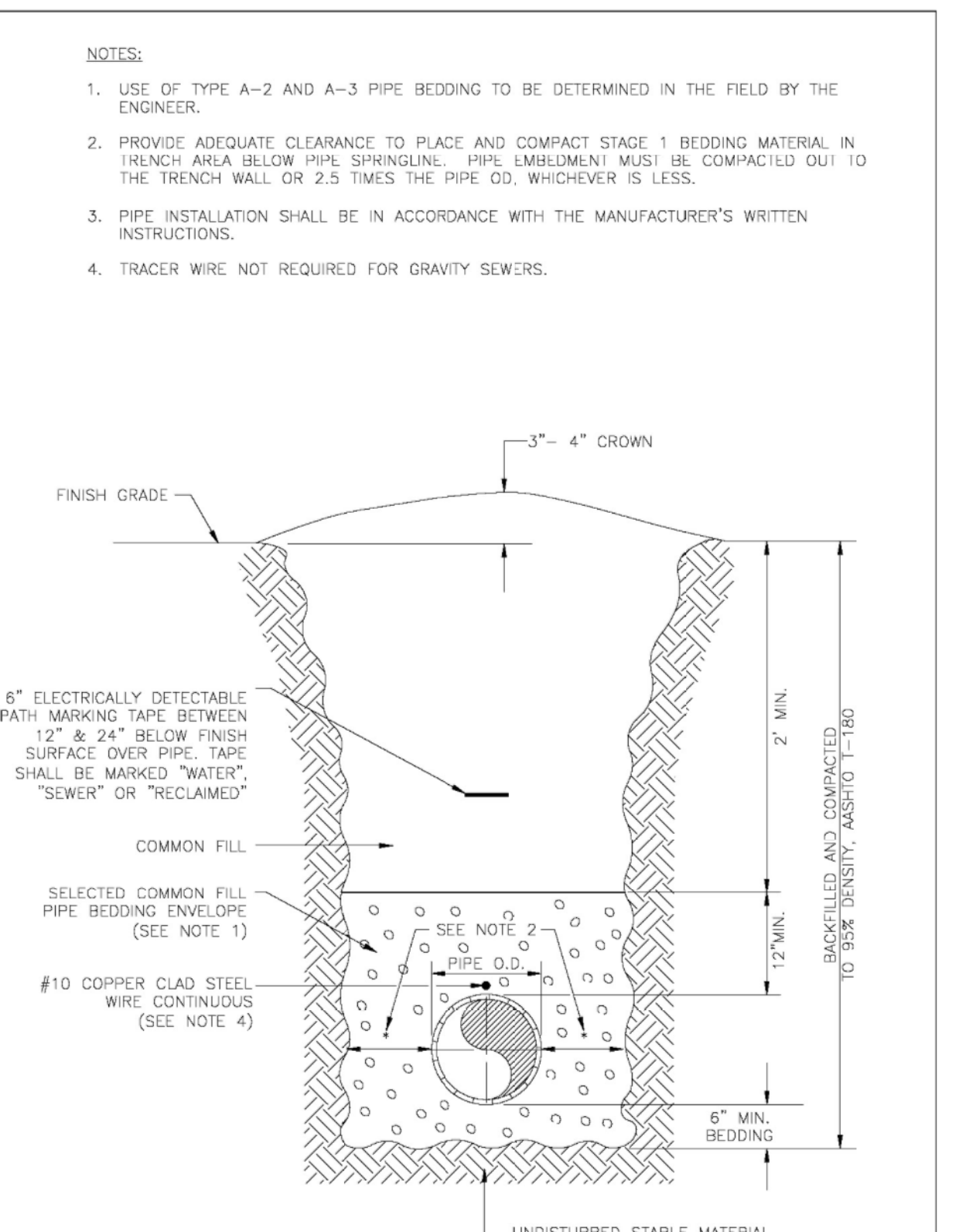
REVIEW: DATE: February 25, 2020 DATE OF APPROVAL



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REVISION: RESTRAINED LENGTHS FOR PIPE UG-10

REVIEW: DATE: February 25, 2020 DATE OF APPROVAL

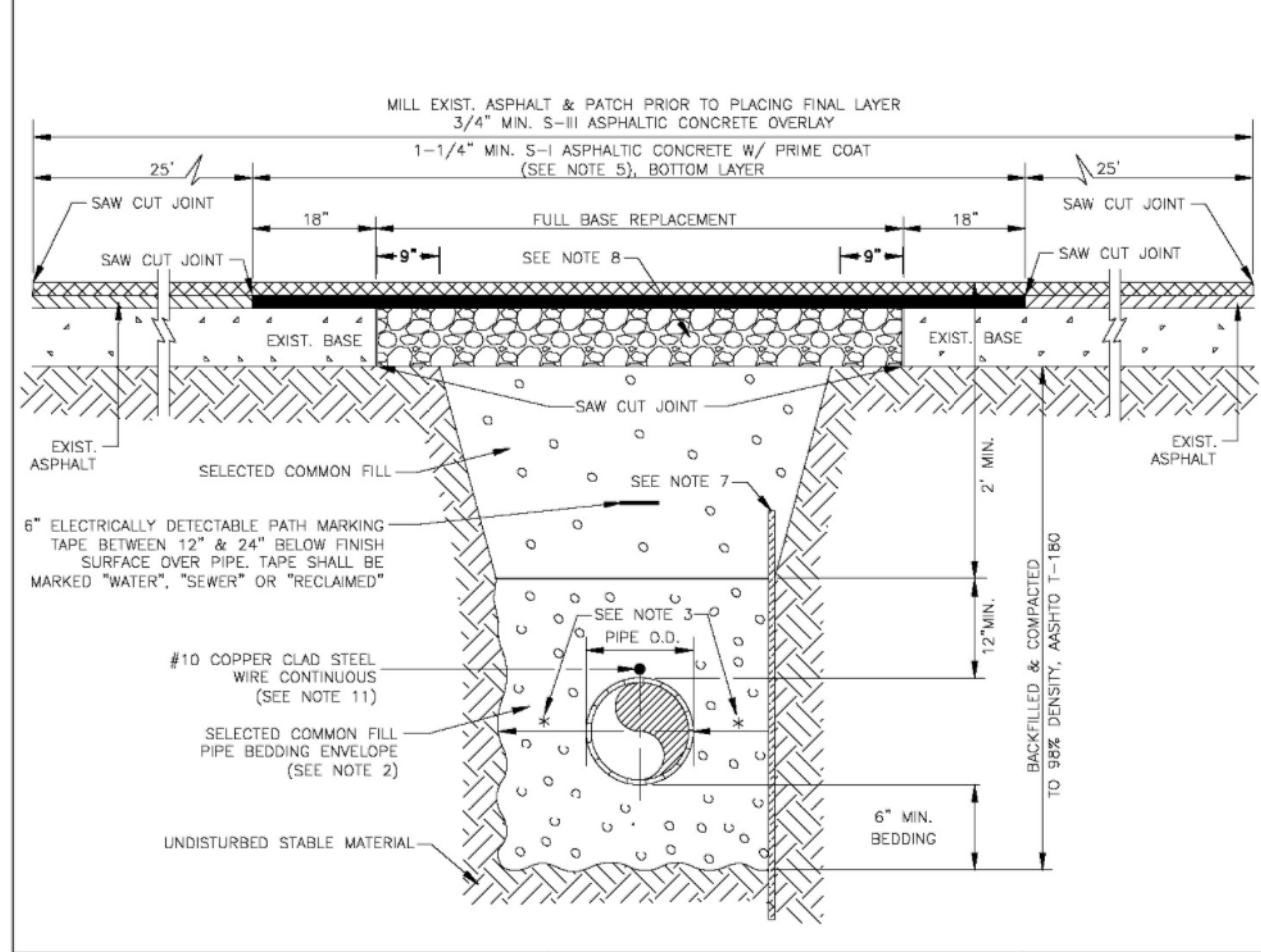


MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REVISION: TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING UG-11

REVIEW: DATE: February 25, 2020 DATE OF APPROVAL

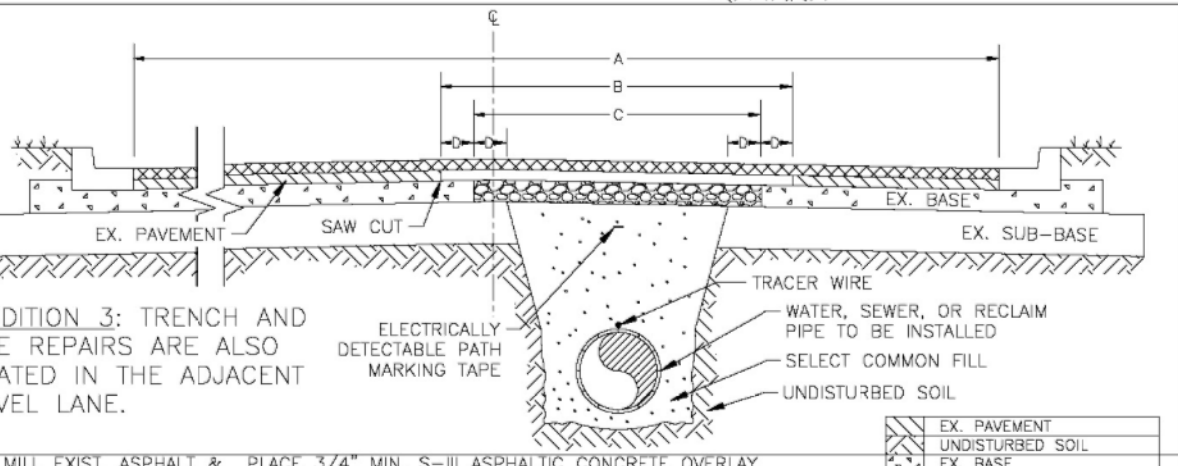
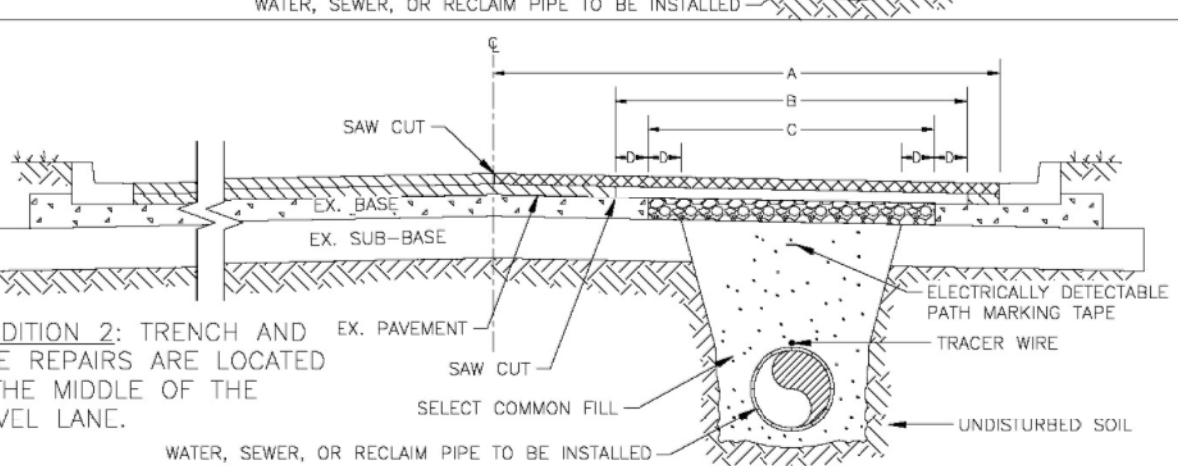
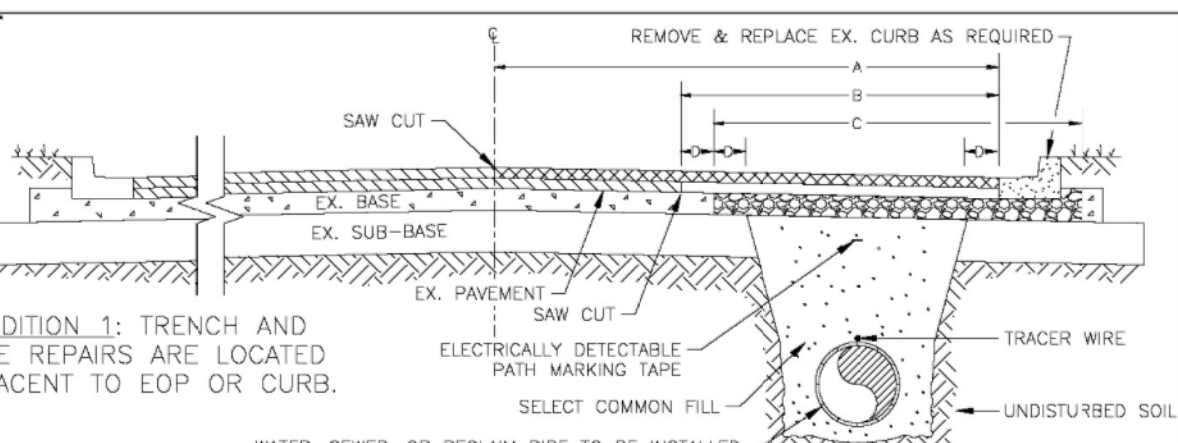
- NOTES:**
1. BITUMINOUS PAVEMENT SHALL BE REMOVED IN CLEAN STRAIGHT LINES BY SAW CUTTING. WHERE BITUMINOUS PAVEMENT ADJONS A TRENCH, THE EDGES ADJACENT TO THE TRENCH SHALL BE TRIMMED TO A NEAT STRAIGHT LINES BEFORE RESURFACING TO ENSURE THAT ALL AREAS TO BE RESURFACED ARE ACCESSIBLE TO ROLLERS OR TAMPERS USED TO COMPACT THE SUB-GRADE OR PAVING MATERIALS.
 2. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
 3. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE. SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
 4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1-1/4 INCH S-I, WHICHEVER IS GREATER.
 6. MILL 25" BACK FROM TRENCH CROSSING SAW CUTS. ADJUST MILLING PER INDIVIDUAL SITE TO NOT IMPACT BASE. SPLIT JOINT TO EXIST ASPHALT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCREPANCY "BLUMP" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
 7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISH GRADE OR 12" BELOW SUBGRADE.
 8. NEW BASE SHALL MATCH EXISTING; OR BE CRUSHED CONCRETE, 8" MIN. THICKNESS, LBR ≥150, WHICHEVER IS GREATER.
 9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
 10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.
 11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
 12. NOTES 5, THRU 10, ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A LOCAL ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REVISION: TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (LONGITUDINAL) UG-12

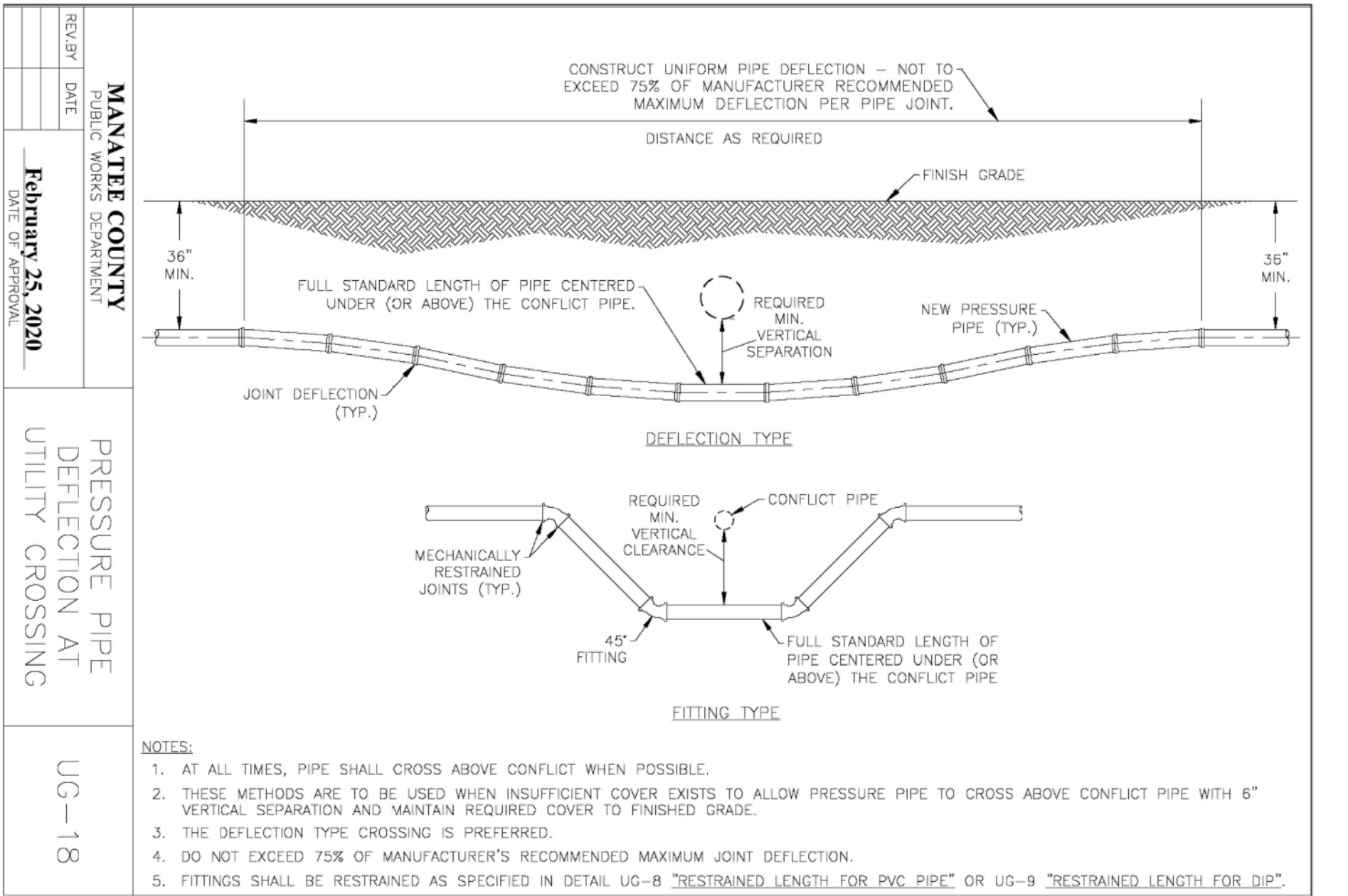
REVIEW: DATE: February 25, 2020 DATE OF APPROVAL



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REVISION: TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING (LONGITUDINAL) UG-12B

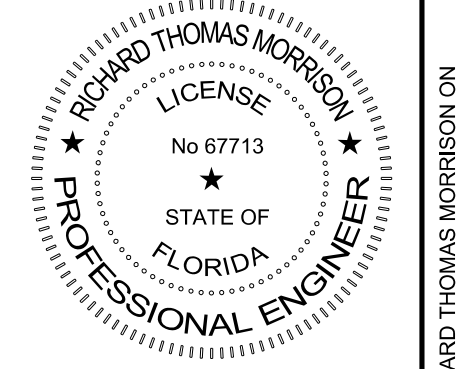
REVIEW: DATE: February 25, 2020 DATE OF APPROVAL



MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

REVISION: PRESSURE PIPE DEFLECTION AT UTILITY CROSSING UG-18

REVIEW: DATE: February 25, 2020 DATE OF APPROVAL



REVISION: R MORRISON A MALONE C CHILDRESS R MORRISON

NO. DATE DSGN

643 SW 4TH AVE SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822

RICHARD THOMAS MORRISON PE 67713

LIFT STATION BA REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

JACOBS

CIVIL

MANATEE COUNTY
STANDARD DETAILS

VERIFY SCALE

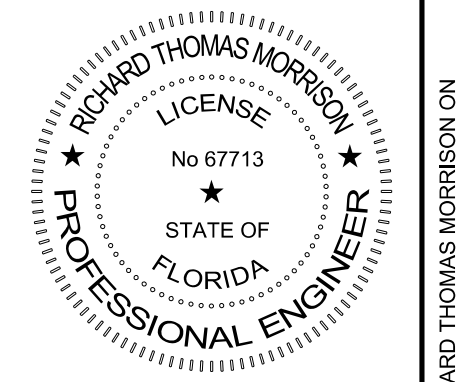
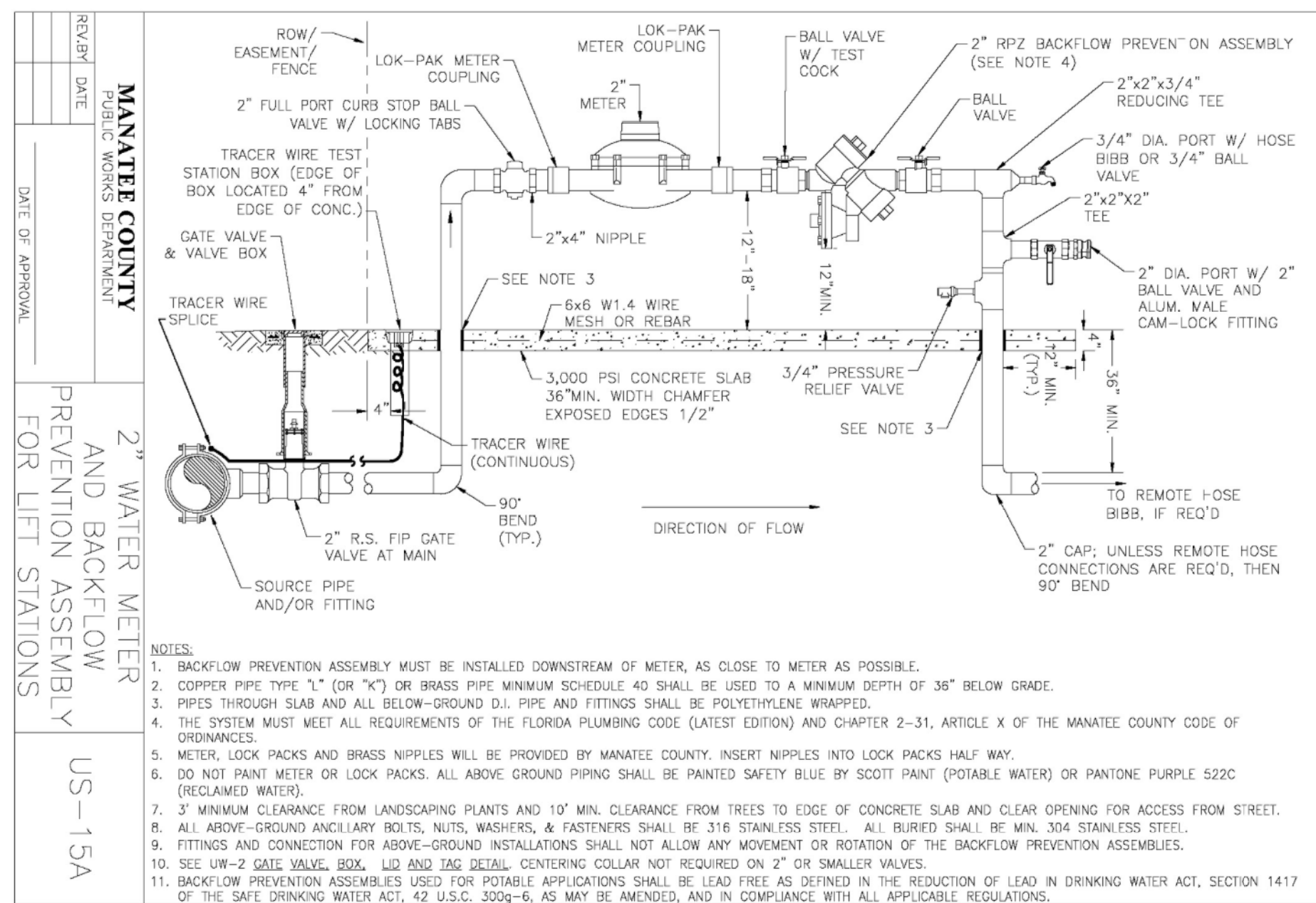
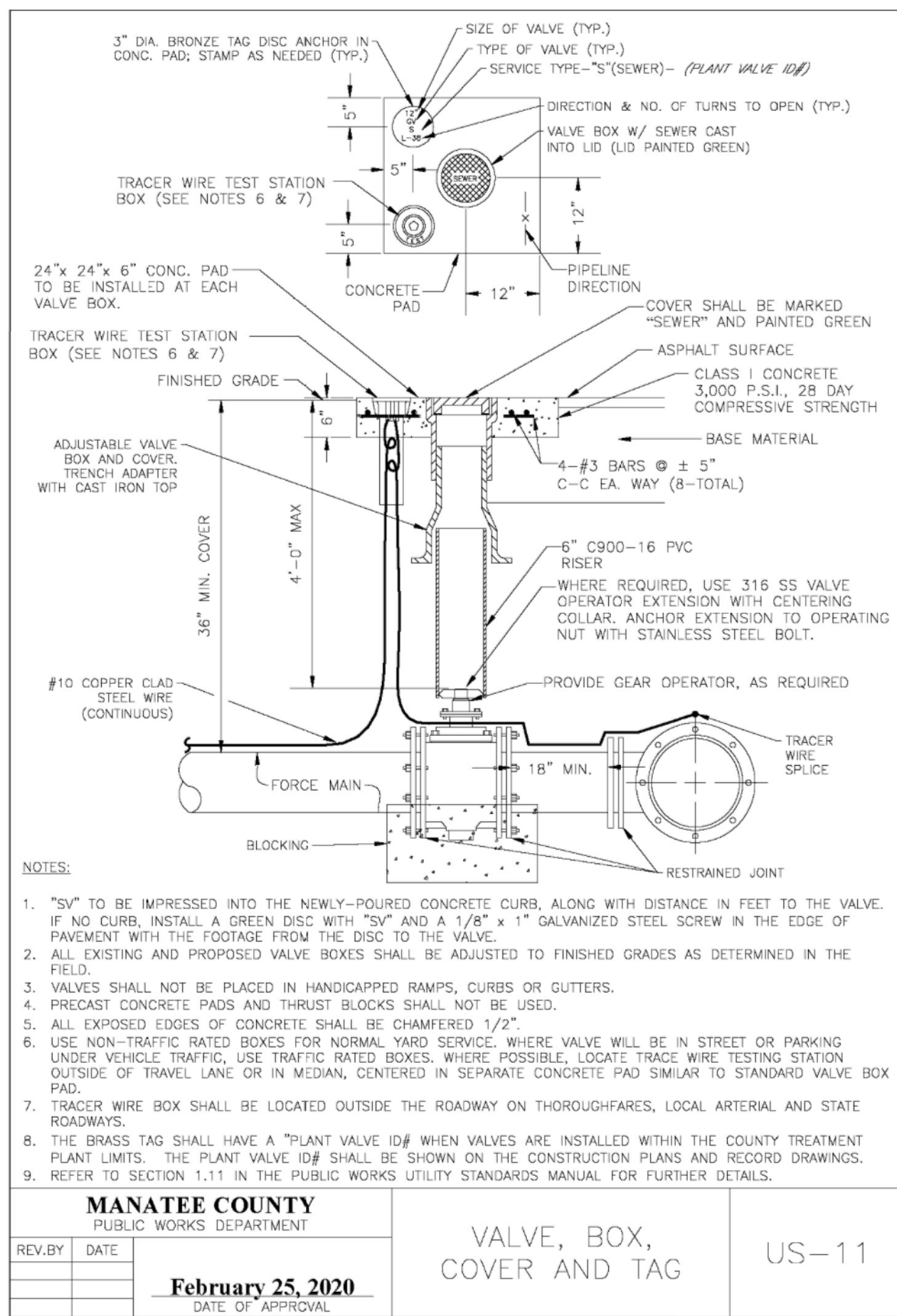
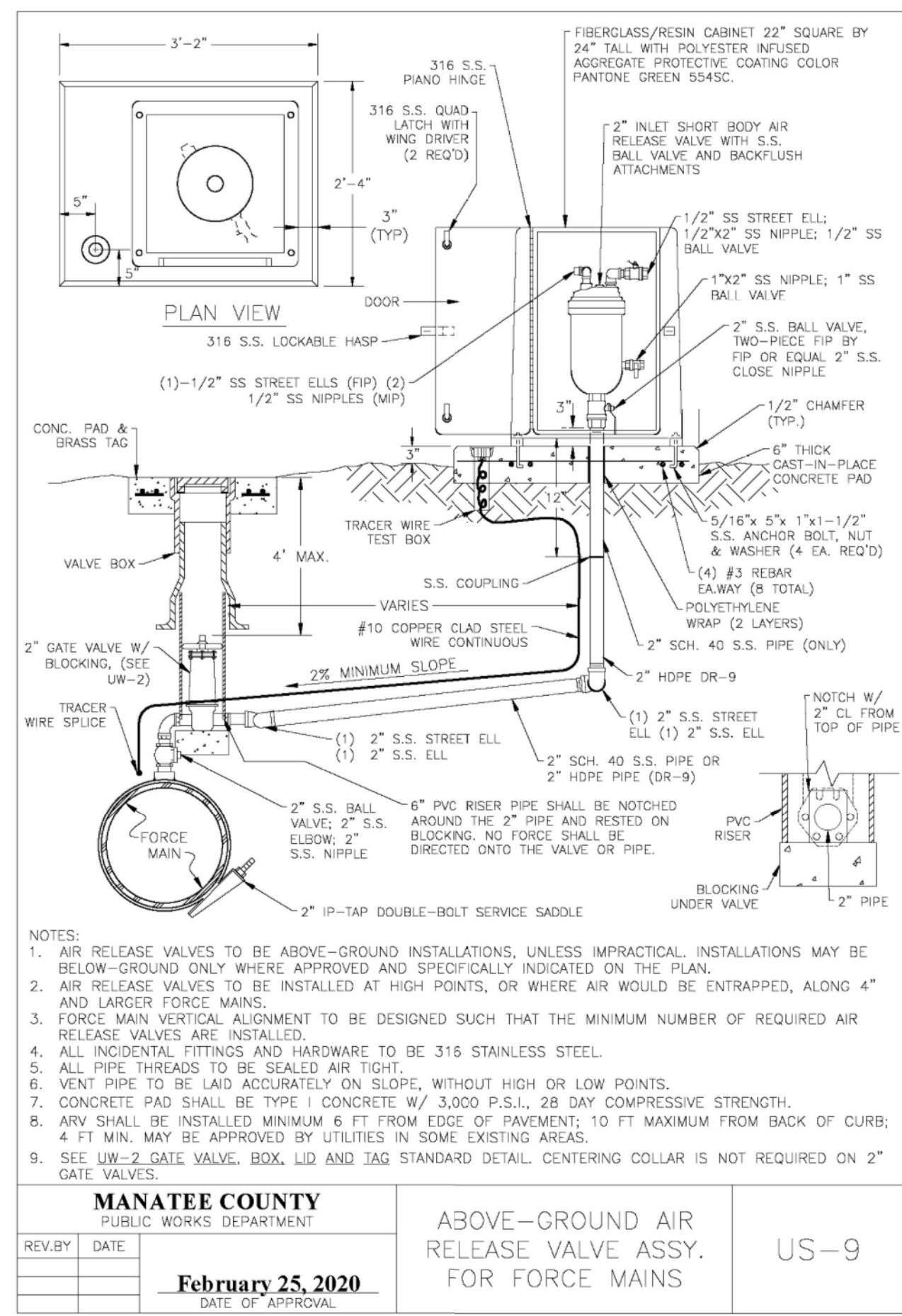
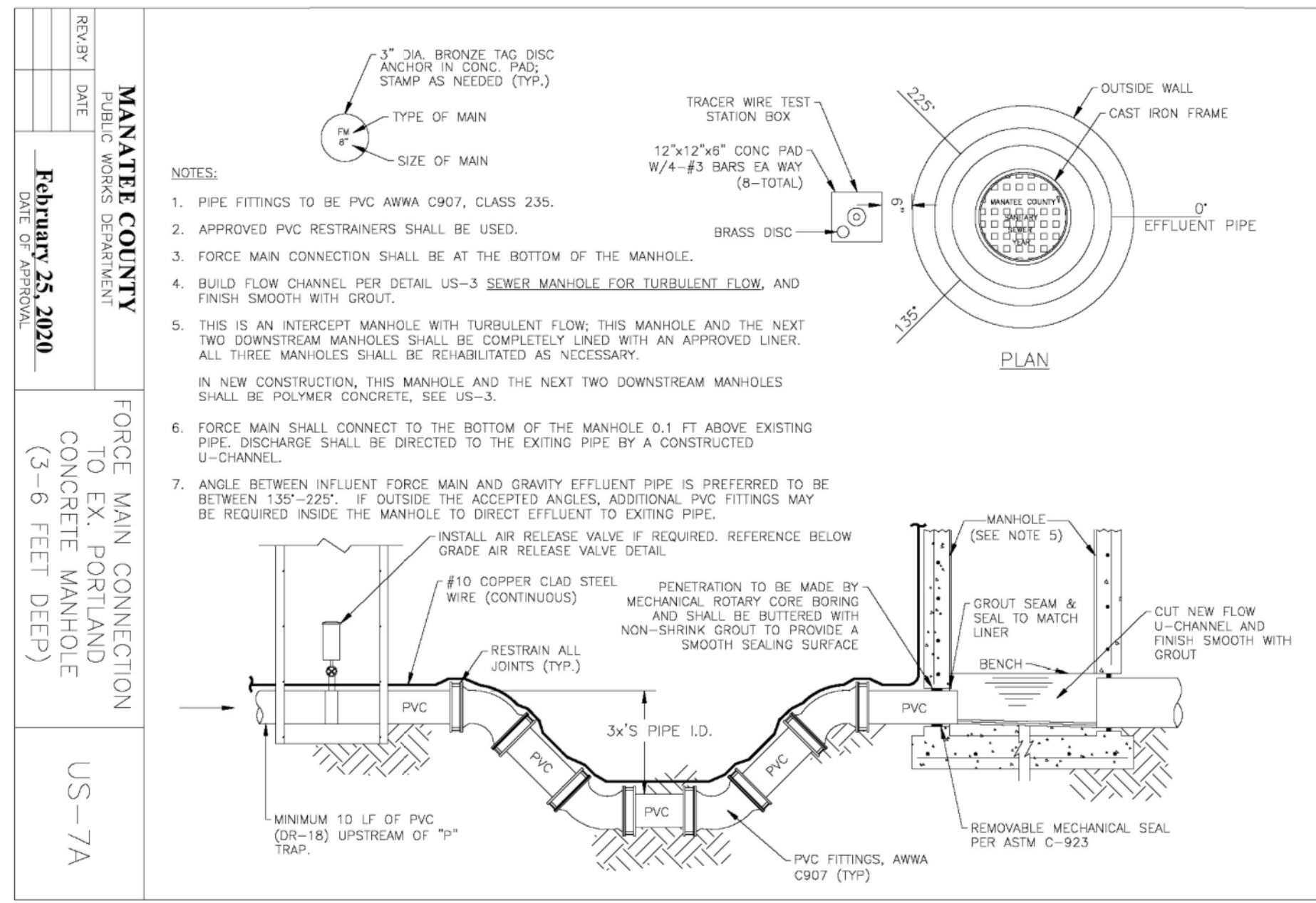
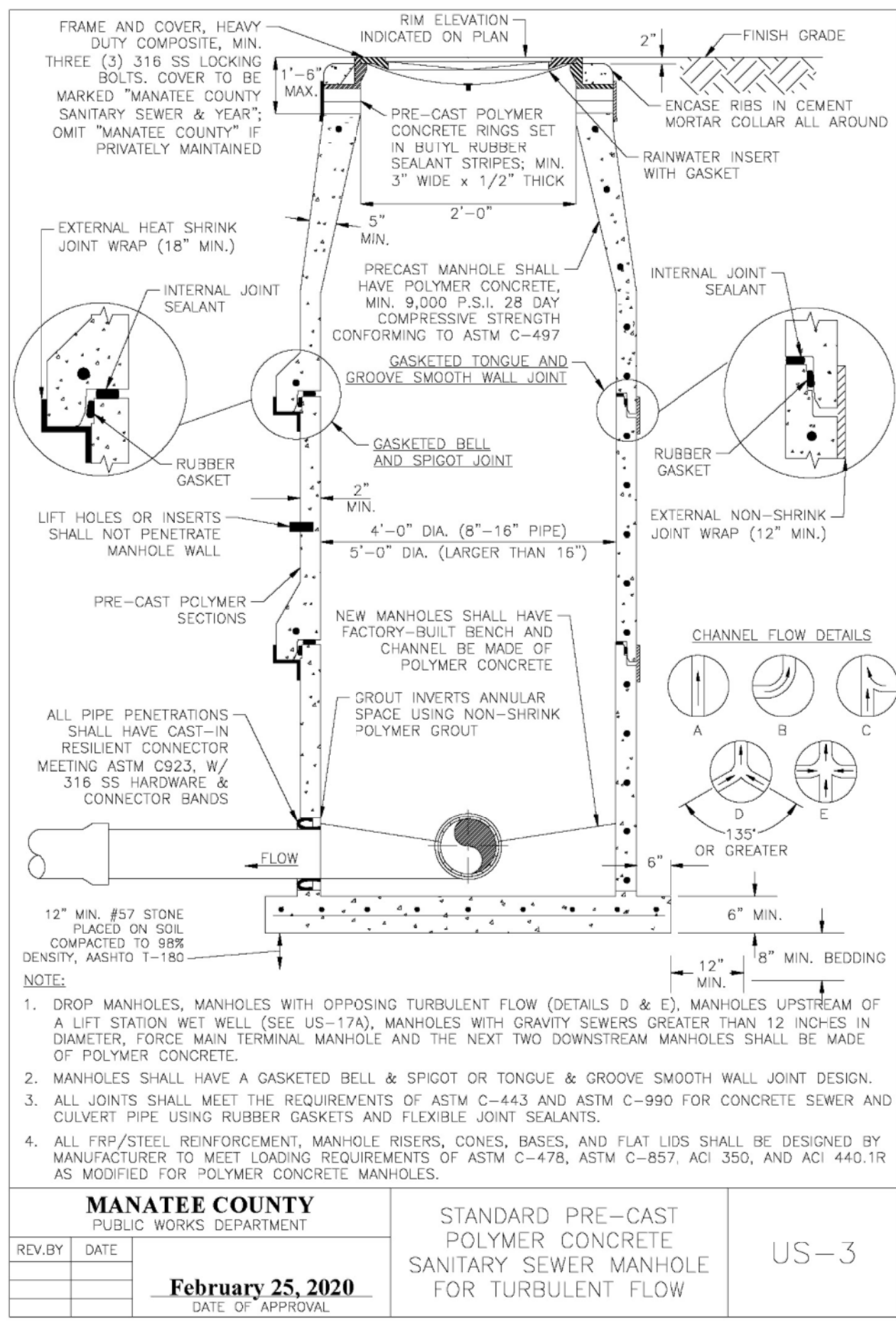
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE: AUGUST 2022

PROJ: D3480400

DWG: C-501

SHEET: 29 of 46



NO.	DATE	DR	REVISION	CHK	BY	APVD
		R MORRISON	C CHILDRESS			
		A MALONE				

643 SW 4TH AVE SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822

RICHARD THOMAS MORRISON PE 67713

LIFT STATION BA REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

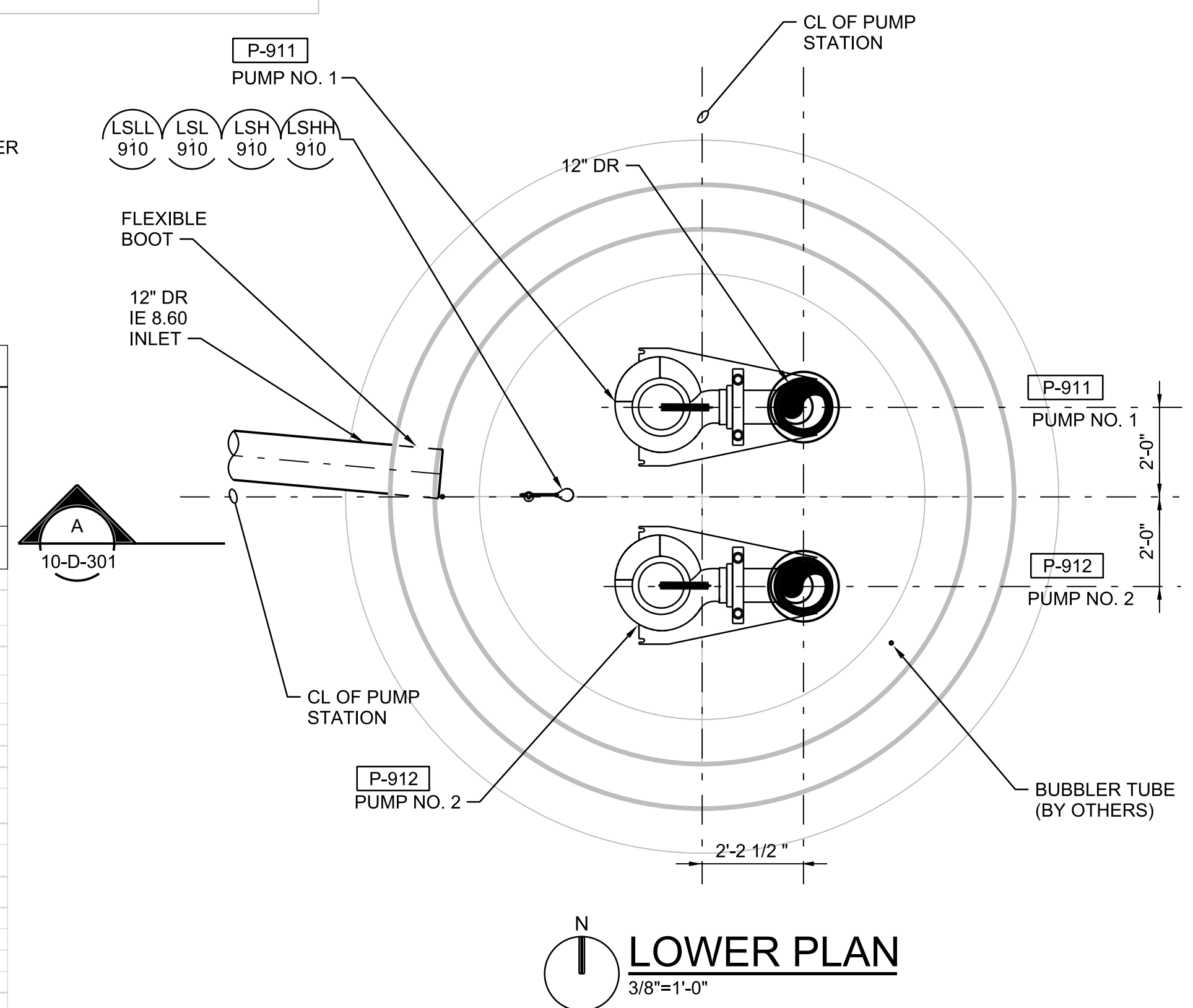
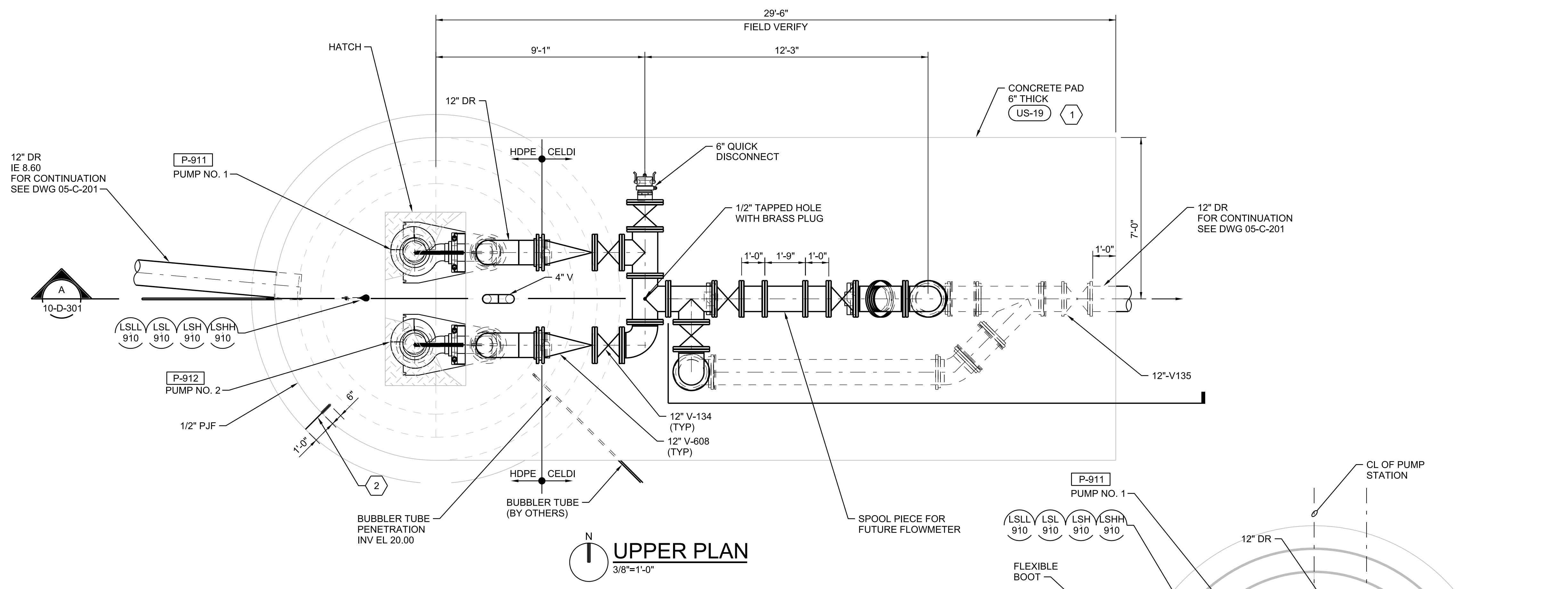
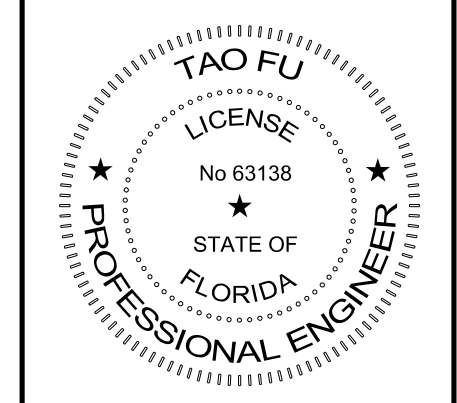
JACOBS

CIVIL

MANATEE COUNTY
STANDARD DETAILS

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	AUGUST 2022
PROJ	D3480400
DWG	C-502
SHEET	30 of 46

THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF JACOBS AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY RICHARD THOMAS MORRISON ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



PUMP STATION STREET ADDRESS	PUMP STATION INFORMATION SCHEDULE OF ELEVATIONS										WET WELL DIA.	DISCHARGE PIPE DIA.	DISCHARGE F.M DIA.	BASE EXTENDER	BOTTOM SLAB THICKNESS (INCHES)	PIPE HOLE DIA. (SEE NOTES)	CONTROL ELEVATION	PUMP SUCTION CLEARANCE (INCHES)	SITE FLOOD ELEVATION (DESIGN NOTE 10)	INFLUENT SIZE	HATCH SIZE (SEE TABLE BELOW)
	TOP ELEV (NOTE 9)	MEROOD LEVEL	ALARM ELEVATION	LEFT BLANK	LAG PUMP ON ELEVATION	LEAD PUMP ON ELEVATION	PUMP OFF ELEVATION (NOTE #1)	BOTTOM ELEVATION (NOTE #5)	I	J											
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R			
	24	-	-	-	8.00	7.50	-0.50	-3.00	12 ft	12"	12"	-	-	-	-	-	-	-	12"	-	

PUMP MANUFACTURER	ALL PUMPS			
	WILO..	FLYGT	HYDROMATIC	KSB
MODEL	-	-	SRL	-
IMPELLER	-	-	12.88"	-
PUMP DISCHARGE	-	-	8"	-
MOTOR (RPM)	-	-	1200	-
HORSEPOWER (HP)	-	-	35	-
PHASE/VOLT/AMPS (NOTE #3)	-	-	3 phase, 480V	-
AIC (SEE NOTE #4)	-	-	35kAIC	-
DESIGN POINT (GPM) @ TDH (FT)	-	-	1530 gpm @ 50 ft	-
RUNOUT POINT (GPM) @ TDH (FT)	-	-	3080 gpm @ 22 ft	-
EMERGENCY MAIN	-	-	200A	-
NORMAL SERVICE MAIN	-	-	200A	-
CB #1 TO PUMP NO. 1	-	-	100A	-
CB #2 TO PUMP NO. 2	-	-	100A	-
CONTROL PANEL MCB	-	-	15A	-
STARTER (SIZE & TYPE)	-	-	NEMA 4 FVNR	-
ELECTRIC SERVICE (TYPE & SIZE)	-	-	3 phase, 480V @200A	-

WET WELL I.D.	POLYMER CONCRETE FLOATATION COLLARS			
	DEPTH 0-10FT	DEPTH 11-15FT	DEPTH 16-20FT	DEPTH 21-30FT
	MIN BASE EXTENDER (IN)	MIN WEIGHT OF TOTAL STRUCTURE (LBS)	MIN BASE EXTENDER (IN)	MIN WEIGHT OF TOTAL STRUCTURE (LBS)
8'-0"	3	35600	3	37600
10'-0"	5	57580	5	75000
12'-0"	8	82900	8	113200

DISCHARGE PIPE DATA (WITHIN WET WELL)					CONCRETE WET WELL DIRECTIONS		
PIPE SIZE	PIPE HOLE DIA.	PUMP SEPARATION	MIN PUMP OUT SIZE	HATCH SIZE (MIN)	WET WELL I.D.	WALL THICKNESS (MIN)	TOP SLAB THICKNESS (MIN)
4"	10"	26"	4"	42"x45"	8'-0"	0'-9"	0'-10"
6"	12"	32"	6"	42"x60"	10'-0"	1'-0"	1'-0"
12"	20"	45"	12"	-	12'-0"	1'-0"	1'-0"

FREE STANDING PUMP OUT FOR PIPE SIZES GREATER THAN 6"					POLYMER WET WELL DIRECTIONS		
PIPE SIZE	MIN PUMP OUT SIZE	HATCH SIZE (MIN)	WET WELL I.D.	WALL THICKNESS (MIN)	TOP SLAB THICKNESS (MIN)		
8"	15"	38"	8"	0'-6"	0'-10"		
10"	17"	44"	10"	0'-6 1/2"	0'-10"		
12"	20"	45"	12"	0'-7"	1'-0"		

MCC PANEL	
THE COMBINED MOTOR CONTROL AND RTV PANEL SHALL BE AS NOTED BELOW. CONTRACTOR SHALL SUBMIT APPLICABLE SHOP DRAWING PACKAGE, SEE JEA COM FOR DETAILS	
FIXED SPEED PANEL: 240/120 VOLT, 3 PHASE, OPEN DELTA FULL VOLTAGE MOTOR STARTING, 15 STARTS PER HOUR	
FIXED SPEED PANEL: 480 VOLT, 3 PHASE, FULL VOLTAGE MOTOR STARTING, 15 STARTS PER HOUR	
1P-3P VFD PANEL: 480/277 VOLT, 3 PHASE, WYE, FULL VOLTAGE MOTOR STARTING, 15 STARTS PER HOUR	
3P VFD PANEL: 480/277 VOLT, 3 PHASE, WYE, FULL VOLTAGE MOTOR STARTING, 15 STARTS PER HOUR	

PUMP STATION INFORMATION NOTES

- "SV" = STORAGE VOLUME PER DESIGN ENGINEER AND SHALL BE DESIGNED FOR 12 MINUTE CYCLE TIME. MINIMUM STORAGE DEPTH SHALL BE 24"
- IF PUMP MANUFACTURER REQUIRES A GREATER SEPARATION, THAT SEPARATION SHALL BE USED WITH THE ADDITION OF FLANGED FILLERS OR SPOOL PIECES. THE DIFFERENT SEPARATION MUST BE APPROVED BY MANATEE COUNTY UTILITIES PRIOR TO CONSTRUCTION AND SHALL BE PROVIDED AT NO ADDITIONAL COST TO MANATEE COUNTY UTILITIES.
- ALL PUMP MOTORS SHALL BE 3 PHASE
- AMPERE INTERRUPTING CAPACITY (AIC): CONTACT THE ELECTRICAL UTILITY COMPANY FOR THIS DATA IF AVAILABLE

GENERAL SHEET NOTES

- FOR DESIGN CRITERIA AND ADDITIONAL INFORMATION SEE STRUCTURAL GENERAL NOTES SHEET.
- TEST PIPES AND VALVES @ 150 PSI.
- COAT THE EXPOSED VALVES AND PIPES. COLOR SHALL BE PER THE COUNTY STANDARDS RUSTOLEUM 7538 HUNTER GREEN.

SHEET KEYNOTES

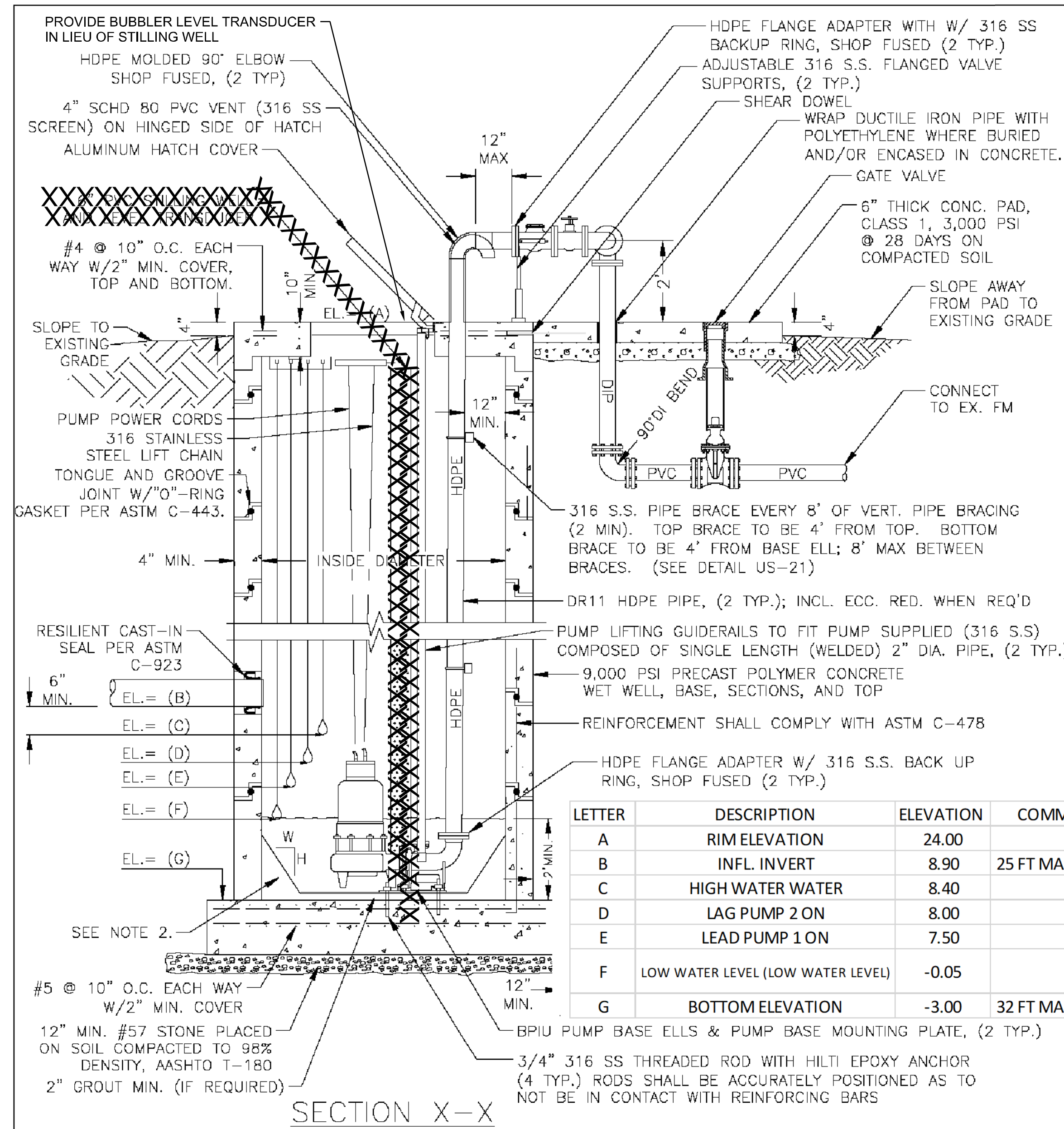
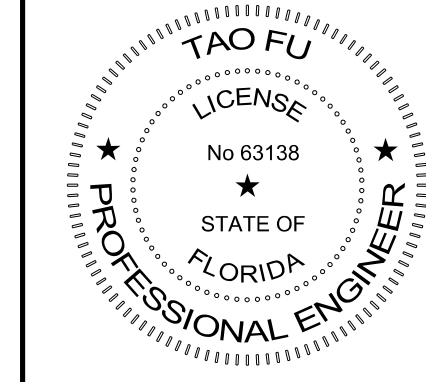
- #5@9" OC EACH WAY AT CENTER OF SLAB. SEE STANDARD DETAIL 0330-002.
- #4@12" RADIAL EPOXY SHEAR DOWELS AT CENTER OF SLAB-ON-GRADE. SEE STANDARD DETAIL 0330-002.

643 SW 4TH AVE SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822
TAO FU PE 63138

LIFT STATION 9A REHAB AND FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

JACOBS
PROCESS MECHANICAL
LIFT STATION
UPPER AND LOWER PLAN

1" = X'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE AUGUST 2022
PROJ D3480400
DWG D-201
SHEET 36 of 46



LETTER	DESCRIPTION	ELEVATION	COMMENTS
A	RIM ELEVATION	24.00	
B	INFL. INVERT	8.90	25 FT MAX DEPTH
C	HIGH WATER WATER	8.40	
D	LAG PUMP 2 ON	8.00	
E	LEAD PUMP 1 ON	7.50	
F	LOW WATER LEVEL (LOW WATER LEVEL)	-0.05	
G	BOTTOM ELEVATION	-3.00	32 FT MAX DEPTH

- 6" MINIMUM VERTICAL SPACING BETWEEN ALL PUMP AND ALARM CONTROL LEVELS.
- POLYMER CONCRETE FILLET ALL AROUND WET WELL: 6-FT DIA.=12"H x 6"W; 8-FT DIA. & GREATER=18"H x 12"W.
- THE VALVE CONCRETE PAD SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL BE NOT MORE THAT 1/4" UNDER A TEN FOOT (10') STRAIGHT EDGE, NOT MORE THAN 1/8" ON A FIVE FOOT (5') TRANSVERSE SECTION. THE EDGE OF THE CONCRETE PAD SHALL BE CAREFULLY FINISHED WITH A EDGING TOOL HAVING A RADIUS OF 1/2".
- EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE CONC. PAD AND THE WET WELL SHALL BE 1/2" MATERIAL AND SHALL MEET THE REQUIREMENTS OF AASHTO M153 OR AASHTO M213.
- THIS DETAIL SHALL APPLY TO LIFT STATIONS WITH 4" OR GREATER FORCE MAINS. LIFT STATIONS WITH FORCE MAINS LESS THAN 4" REFER TO DETAIL US-27A.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		SEWAGE LIFT STATION SECTION VIEW	US-19
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

GENERAL LIFT STATION NOTES:

- ALL ACCESS COVERS SHALL BE ALUMINUM, WITH 316 STAINLESS STEEL HARDWARE AND RATED FOR 300 P.S.F. LOADING. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE 2 COATS BITUMASTIC EPOXY, TOTAL 16 MILS DFT. ALL ACCESS COVERS SHALL BE EQUIPPED WITH A LOCKING STAPLE OR BAR FOR USE WITH A PADLOCK. PADLOCKS FOR WETWELL, FENCE GATE AND CONTROL PANELS OF PUBLICLY OWNED & MAINTAINED LIFT STATIONS SHALL BE FURNISHED BY THE MANATEE COUNTY UTILITIES DEPARTMENT, UPON ACCEPTANCE.
- INSTALL WET WELL VENT ON THE HINGED SIDE OF THE WET WELL HATCH COVER, BETWEEN DISCHARGE PIPING AND MATCH HEIGHT.
- GROUND SHALL BE SLOPED AWAY FROM SLAB TO NATURAL GROUND ELEVATION IN ALL DIRECTIONS. A 4-INCH REVEAL SHALL BE PROVIDED AROUND THE STRUCTURES. SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH WASHED SHELL OR ROCK WITHIN LIFT STATION FENCING; SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD TYPE MULCH UNDER THE SHRUBS AND UP TO OUTSIDE OF THE FENCE. WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD-TYPE MULCH SHALL BE LOCATED UNDER THE TREES FOR A MINIMUM DISTANCE OF 3 FEET FROM THE TREE. SODDING OR SHREDDED WOOD-TYPE MULCH SHALL BE INSTALLED ON THE REMAINDER OF THE SITE TO THE EDGE OF THE EASEMENT.
- ALL FORCE MAIN PIPING AND FITTINGS FROM THE PUMP BASE ELBOW IN THE WETWELL UP TO THE CHECK VALVE IN THE ABOVE GROUND VALVE ASSEMBLY, SHALL BE DR11 HDPE. THE HDPE FITTINGS SHALL BE MOLDED FITTINGS. ALL CONNECTIONS TO IRON BODIED FLANGE FITTINGS IN THE WETWELL (PUMP BASE ELLS) AND TO THE CHECK VALVES SHALL BE MADE USING HDPE FLANGE ADAPTERS WITH 316 STAINLESS STEEL BACKUP RINGS. ALL HDPE CONNECTIONS SHALL BE THERMAL FUSED. ALL PIPING DOWNSTREAM OF THE VALVE ASSEMBLY TO THE FIRST BURIED FITTING SHALL BE DUCTILE IRON PIPE (CL-53), THEN PVC (DR18).
- ALL PIPING BELOW GROUND SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. GREEN-RAW SEWAGE; PURPLE-RECLAIMED: BLUE-POTABLE WATER.
- ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL.
- ALL TOP, SECTIONS, AND BASE SHALL BE PRECAST POLYMER CONCRETE, MIN. 9,000 PSI COMPRESSIVE STRENGTH. SEE PRECAST POLYMER CONCRETE SANITARY SEWER MANHOLE FOR TURBULENT FLOW DETAIL.
- ALL ABOVE-GROUND METAL APPURTENANCES INCLUDING BOLTS, NUTS AND WASHERS SHALL BE 316 STAINLESS STEEL. ALL STAINLESS STEEL BOLTS SHALL BE TREATED WITH NEVER-SEIZE PRIOR TO ASSEMBLY.
- VERTICAL HDPE PUMP DISCHARGE PIPE IN THE WET WELL SHALL BE BRACED PER DETAIL US-21. THE PIPE SHALL BE CLAMPED TO A SINGLE LENGTH OF 2" 316 SS TUBING (OR 2" 316 SS ANGLE) INSTALLED HORIZONTALLY. THE TUBE SHALL HAVE 6"x6"x1/2" PLATES WELDED TO EACH END AND ATTACH TO THE WALL BY 316 SS ANCHORS. THE PIPE SHALL BE CLAMPED TO THE TUBING WITH CUSHIONED 316 SS U-BOLTS.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION.
- TOP OF WET WELL AND VALVE ASSEMBLY SLAB SHALL BE AT THE SAME ELEVATION.
- THE EXTERIOR SURFACES OF THE CONCRETE WET WELL AND VALVE ASSEMBLY PAD EXPOSED ABOVE GRADE SHALL BE COATED WITH A LEAST TWO COATS OF H&C SILICONE ACRYLIC CONCRETE STAIN, PATIO GREEN, MANUFACTURED BY FLR PAINTS, INC. ABOVE GROUND VALVE ASSEMBLY & PIPING SHALL BE PAINTED, RUSTOLEUM 7538 HUNTER GREEN. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID OVER-SPRAY ONTO THE VALVE ASSEMBLY CONCRETE PAD.
- FOR 5/8" WATER METER, PROVIDE POTABLE WATER SERVICE CONNECTION WITH 3/4" BRASS HOSE BIB. PROVIDE AN APPROVED BACKFLOW PREVENTION ASSEMBLY INSTALLED AT THE ROW. ALL WATER SERVICE PIPING FROM WATER METER TO BE TYPE "K" COPPER OR BRASS; 3/4" MIN. DIAMETER FOR 5/8" METER AND 2" MIN. DIAMETER PIPING FOR 2" METER.
- LANDSCAPING SHALL BE IRRIGATED WITH NON-POTABLE WATER. A RAIN SENSOR SHALL BE FURNISHED AND INSTALLED.
- HOSE BIB TO BE A MINIMUM OF 6 FEET FROM THE ELECTRICAL CONTROL PANEL, 24" ABOVE THE SURROUNDING FINISH GRADE, AND ANCHORED TO A 4" PVC CONCRETE FILLED PIPE. EXACT LOCATION TO BE DETERMINED IN THE FIELD W/COUNTY PERSONNEL.
- WATER METER ASSEMBLY TO BE INSTALLED BY CONTRACTOR AS PART OF WATER SERVICE CONNECTION WITH FEES PAID BY THE DEVELOPER.
- BASE AND FIRST WALL SECTION OF WET WELL SHALL BE MONOLITHIC.
- EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO CONSTRUCT WATERTIGHT STRUCTURES WITH NO VISIBLE LEAKS. COMPLETED STRUCTURES THAT ARE NOT WATERTIGHT AND/OR DO NOT MEET THE REQUIREMENTS OF ASTM C-443 WILL BE REJECTED.
- FLEXIBLE GASKET CONNECTORS SHALL MEET THE REQUIREMENTS OF ASTM C-923 LATEST REVISION.
- ALL GATE VALVES SHALL BE RESILIENT SEAT NON-RISING STEM TYPE IN ACCORDANCE WITH THESE STANDARDS.
- ELECTRICAL SERVICE SHALL BE 3 PHASE MINIMUM, UNLESS THE ELECTRICAL UTILITY PROVIDES CORRESPONDENCE STATING THAT 3 PHASE SERVICE IS UNAVAILABLE.
- ELECTRICAL CONDUIT SHALL BE RUN BY THE SHORTEST ROUTE POSSIBLE FROM THE ELECTRICAL SOURCE TO THE CONTROL PANEL AND FROM THE CONTROL PANEL TO THE LIFT STATION WET WELL.
- A FLOW METER AND EMERGENCY BACKUP PUMP SHALL BE REQUIRED FOR ALL LIFT STATIONS THAT MEET THE CRITERIA LISTED IN SECTION 1.14.14 OF THE PUBLIC WORKS UTILITY STANDARDS MANUAL.
- THE CONTROL PANEL, HOSE BIB, EMERGENCY BACKUP PUMP, FUEL STORAGE TANK AND ANTENNA SHALL NOT BE LOCATED BETWEEN THE WET WELL, VALVE ASSEMBLY AND THE DRIVEWAY. THE PUMP SHALL NOT BE LOCATED WITHIN 25 FEET OF THE EDGE OF THE LIFT STATION EASEMENT AT THE ROW LINE.
- THE ANTENNA FOR THE RADIO TELEMETRY UNIT REQUIRES DIRECT LINE-OF-SIGHT SIGNALING CAPABILITY TO THE UTILITIES DEPARTMENT'S OFFICE THAT WILL RECEIVE THE SIGNAL. THERE SHALL BE AN UNOBSTRUCTED HORIZONTAL ANGLE OF FIFTEEN (15) DEGREES FROM THE ANTENNA MAST (7.5 DEGREES ON BOTH SIDES OF THE DIRECT LINE-OF-SIGHT AZIMUTH). NO TREE SHALL BE PLANTED WITHIN THE DESIGNATED UNOBSTRUCTED ANGLE FOR A TWENTY (20) FEET HORIZONTAL DISTANCE MEASURED FROM THE MAST. LANDSCAPE BUFFER PLANTINGS ARE TO BE FIELD ADJUSTED IN COORDINATION WITH THE LOCATION OF THE CONSTRUCTED TELEMETRY ANTENNA. THE ANTENNA TOWER/MAST SHALL BE TO THE LEFT OF THE CONTROL PANEL.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		LIFT STATION NOTES	US-20
REV. BY	DATE		
	February 25, 2020		
	DATE OF APPROVAL		

NO.	DATE	DR	REVISION	BY	TFU
			CHK	J MAU	

643 SW 4TH AVE SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822
TAO FU PE 63138

LIFT STATION 9A REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

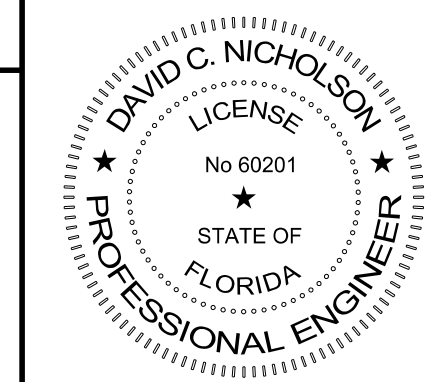
JACOBS
PROCESS MECHANICAL
STANDARD DETAILS

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	AUGUST 2022
PROJ	D3480400
DWG	D-502
SHEET	39 of 46

BID DOCUMENTS

SHEET KEYNOTES

- NEMA 4X STAINLESS STEEL TERMINAL JUNCTION BOX.
- REFER TO SPECIFICATION SECTION 40 90 01, INSTRUMENTATION AND CONTROL FOR PROCESS SYSTEM AND MANATEE COUNTY TYPICAL PUMP CONTROL PANEL STANDARD FOR ADDITIONAL CONTROL PANEL REQUIREMENTS.
- CLASS 1, DIV 1 CONDUIT SEAL OFF.
- LIGHT AND RECEPTACLE FED FROM CPT IN PANEL PCP-900.
- 24VDC POWERED FROM CP-900
- LUMINAIRE PER E-201 KEYNOTE
- FURNISH AND INSTALL A 2" CONDUIT COMPLETE WITH PULL CORD AND CAPS TO FUTURE FLOW METER.



NO.	DATE	DR	CHK	BY	APVD
		T TWIST	A PASTRANA		D NICHOLSON
		DSGN	REVISION		

643 SW 4TH AVE SUITE 400
GAINESVILLE, FLORIDA 32601
EB2822
DAVID C. NICHOLSON PE 60201

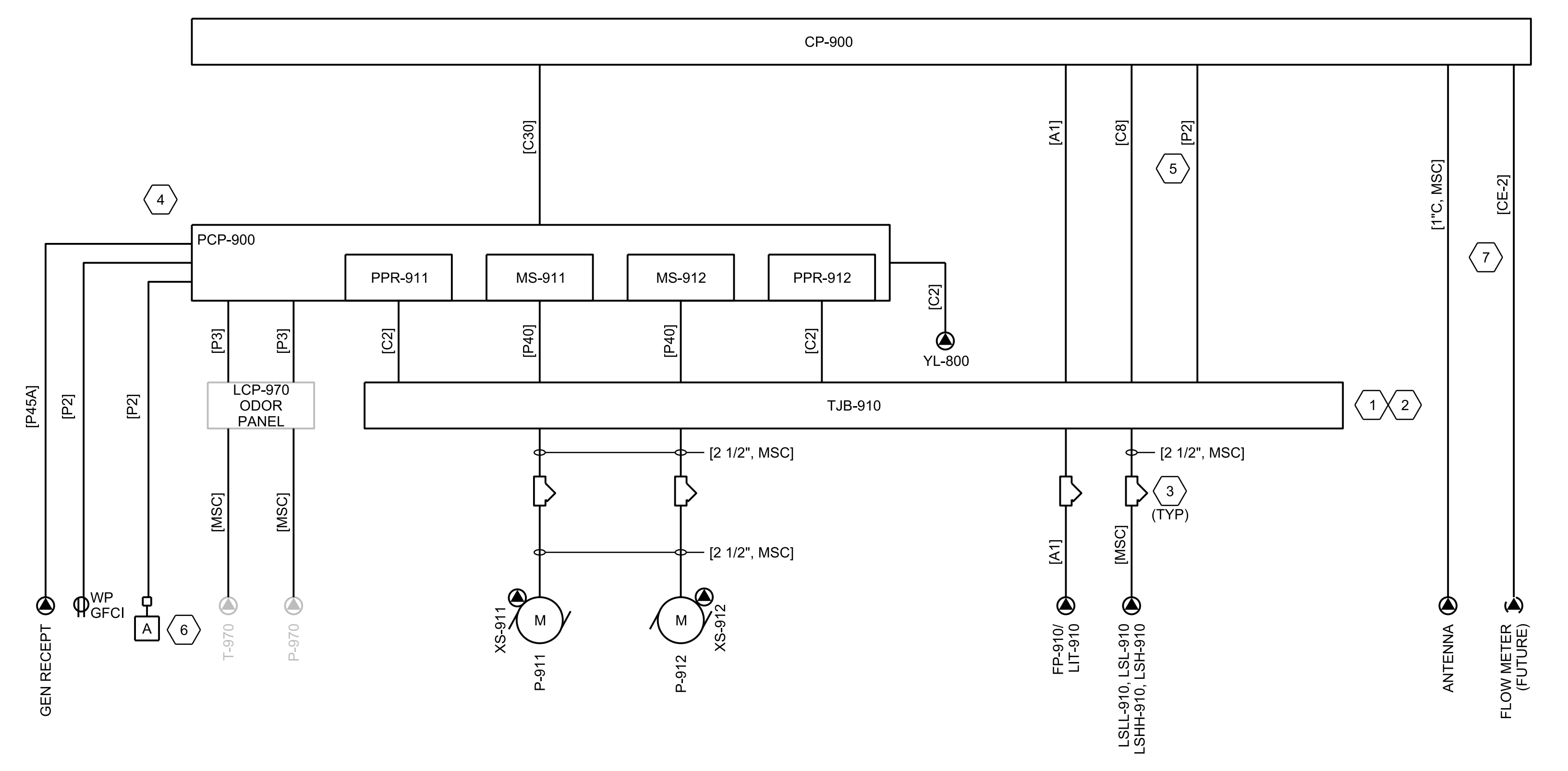
LIFT STATION 9A REHAB AND
FORCE MAIN REPLACEMENT
MANATEE COUNTY
BRADENTON, FLORIDA 34205
MANATEE COUNTY PROJECT NO. 6074081

JACOBS
ELECTRICAL
RISER DIAGRAM

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE AUGUST 2022
PROJ D3480400
DWG E-202
SHEET 43 of 46

BID DOCUMENTS

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY DAVID C. NICHOLSON ON THE DATE ADJACENT TO THE SEAL. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



RISER DIAGRAM

NTS

